

**The Micro-Dynamics of Health and Education Provision  
in the Slums of Nairobi**

by

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## **Abstract**

Over the past thirty years, the provision of social welfare changed dramatically in much of the developing world. Economic and political reforms limited the role of the state and promoted private sector involvement in service delivery. Explosive growth in the number of non-governmental organizations and community-based organizations followed, as non-state actors attempted to fill gaps in social service provision left by state retrenchment. This dissertation explores how the increase in non-state provision and the ceding of what is traditionally viewed as the responsibility of the state to a diverse group of actors has affected poor households' access to health and education services.

Using data from an original survey of 1,054 households in Kibera and Korogocho, two informal settlements in Nairobi, Kenya, the study deviates from conventional theoretical and empirical approaches to research on service provision in developing countries. I adopt a multi-dimensional conceptualization of access that expands on standard indicators and includes perceptions of accessibility and quality and satisfaction with services. Furthermore, I explore the relational and contextual nature of service provision through a multi-level analysis that includes micro- and meso-level sociopolitical factors and meso-level organizational factors.

This approach yields several findings relevant to research and policy. First, perceptions matter; health and education outcomes depend on both service quality and households' service-seeking behavior, and behavior is shaped by perceptions. This work argues for the consideration of social demand factors in the development of policies and interventions. Second, in contrast to narratives in public and scholarly discourses, I find broad support for public health services; in the fragmented service environment in the settlements, the state plays an important

role in ensuring access to care for the most impoverished households. Access to state services also depends less on households' social positionality. These findings suggest that efforts to improve equity and access should focus on strengthening state capacity and improving public provision rather than supporting a fragmented system of non-state providers. Finally, the community-level sociopolitical and organizational context shapes households' perceptions and experiences. A multi-level approach is needed to more effectively improve health and education outcomes in low-income urban communities.

# Chapter 1

## Introduction

Over the past thirty years, the provision of social welfare services has changed dramatically in much of the developing world. The rise of neoliberal globalization and the associated economic and political reforms imposed on governments by international financial institutions limited the role of the state, channeled an increasing portion of foreign aid money to non-state actors, and promoted private sector involvement in health, education, and other basic services. At the same time, rapid urbanization and weak economic growth generated increasing concentrations of poor people in urban areas (Chen & Ravallion, 2007; UN-Habitat, 2010). The influx of people exceeded the capacity of cities to provide adequate housing, infrastructure, and health and education services, and state retrenchment further limited governments' ability to meet the demand for services (Portes & Hoffman, 2003; UN-Habitat, 2010). Explosive growth in the number of non-governmental organizations (NGOs) and community-based organizations (CBOs) followed, as these non-state actors attempted to fill the gaps in social service provision left by state retrenchment.

When the state ceases to provide universal, citizen-based services and subsidize access for the poor, wealthier citizens can afford higher-cost private options and rely on the market to meet their welfare needs. One of the key arguments for state provision of services, however, is the recognition that the market is not likely to provide an adequate level of services for the poor (Barr, 1998). This dissertation explores how the increase in non-state provision and the ceding of what is traditionally viewed as the responsibility of the state to a diverse

group of actors has affected poor households' access to services. What are the relative contributions of state and non-state actors to health and education service provision? What household-level characteristics are associated with service access, utilization, and satisfaction? Are any individuals or groups systematically excluded from access? Finally, how do community-level factors shape households' experiences with service provision?

The shift toward non-state social welfare provision is the subject of a significant body of research, but findings offer a limited understanding of the consequences of non-state provision for vulnerable individuals and groups (Bratton, 2012; MacLean, 2011). Analyses using macro-level data such as government expenditures on social welfare, national poverty indices, infant and maternal mortality rates, and other aggregate measures predominate existing studies, and the results do not indicate whether any individuals or groups are un- or under-served and why. Using data from an original survey of 1,054 households in Kibera and Korogocho, two informal settlements in Nairobi, Kenya, one goal of the dissertation is to discover the extent to which systematic differences exist in health and education service accessibility, utilization, and satisfaction among poor households.

The restricted focus of existing research also obscures the effects of the changing service environment on households' experiences and livelihood strategies. Much of the literature has been preoccupied with technical solutions and organizational designs to improve models of service provision (Levy & Walton, 2013; Lewis & Opoku-Mensah, 2006; McLoughlin, 2011; Pritchett & Woolcock, 2004). These relatively narrow debates miss important features of the larger picture. Studies focus on questions of "how much?" (e.g., how much money is spent) and "how many?" (e.g., how many students registered for school, how many vaccines administered), but not enough attention is paid to questions of "how?" and "what happened?" in terms of health or education outcomes, beneficiaries' experiences, and distributional impacts. When individuals' access to social welfare is considered, it is typically conceptualized according to a quantitative level of services or an

objective measure of access like physical proximity, both of which fail to account for differences in quality and service utilization.

This dissertation broadens the scope of the inquiry, adopting a multi-dimensional conceptualization of the micro-experience of health and education provision that captures households' utilization of services, perceptions of accessibility, and satisfaction with service quality. Achieving targets for health and education outcomes in developing countries depends on both the quantity and quality of available services and individuals' service-seeking behavior (Cahn, 1997; Gilson, 2003). Research across the developing world has shown that perceptions of service quality and accessibility influence utilization patterns (Amooti-Kaguna & Nuwaha, 2000; Babalola & Fatusi, 2009; Bazant et al, 2009; Bratton, 2007; Dipankar Rao & Peters, 2007; Fotso & Mukiira, 2012; Gertler & van der Gaag, 1990; Kiguli et al, 2009; Muriith, 2013; Onah et al, 2006; Prata, Montagu, & Fefferys, 2005; Sahn et al, 2003; Tooley & Dixon, 2006), but the pervasive focus on the supply side of provision in both research and policy ignores a key determinant of outcomes. By including perceptions in the analysis, this dissertation provides a more complete account of the consequences of state retrenchment and the growth of non-state provision for poor households and highlights the need for policy and interventions to consider demand factors in order to more effectively influence health and education outcomes.

Additionally, most existing research limits the of study non-state provision to non-governmental organizations (NGOs), thereby ignoring the contributions of the plethora of community-based organizations (CBOs), religious groups, and private for-profit providers involved in social welfare provision (Mares & Carnes, 2009; Otiso, 2000; Tukahirwa et al, 2011). Households' access to services and ability to meet their health and education needs depends on the full range of providers in the community, so all providers in the target geographic areas are included in this study.

Finally, the dissertation bridges the persistent separation between macroeconomic and social analyses of service provision. Provision is not an



“apolitical, technocratic solution to a policy problem” (Cammett & MacLean, 2014, p. 2), but existing studies rarely delve deeper than the formal institutional level to examine the intricate sociopolitical contexts that shape individuals’ access to social welfare services. Critics of decentralization have shown how local hierarchies of economic and political power create unequal access to social welfare (Bardhan, 2002; Cammett & MacLean, 2011; Diaz-Cayeros, 2005; Hyden, 2006), and the literature on clientelism demonstrates how political behavior affects access to social welfare, public goods, employment, and other benefits (Cammett & MacLean, 2011; Gough & Wood, 2004; Kitschelt & Wilkinson, 2007). In the context of non-state service provision, however, the micro-politics of incentives and relationships between actors at the point of service delivery has been neglected (Levy & Walton, 2013; McLoughlin & Batley, 2012; Michielson et al, 2011).

By introducing household- and community-level sociopolitical and organizational factors to the analysis, the dissertation highlights the relational nature of service provision and offers insight into the non-monetary resources on which households rely to access services. Drawing on secondary data on civil society organizations and healthcare providers in Kibera and Korogocho, the chapters that follow explore the potential contributions of community and organizational contexts to the equity, sustainability, and inclusivity of health provision. By examining these questions, the dissertation addresses both the theoretical debates on the role of the state and the best organizational forms of service provision and the practical debate regarding how to improve health and education provision in low-income urban communities throughout the developing world.

The remainder of the introductory chapter proceeds as follows. First, it summarizes the argument supported throughout the dissertation. Second, it provides an overview of non-state social welfare provision, including the historical context that contributed to the growth of the sector, a typology of providers, and a brief review of literature on the advantages and disadvantages of non-state provision. The third section introduces the research design and offers justification

for key methodological choices, and the conclusion supplies a roadmap of the chapters that follow.

## **A Summary of the Argument**

Within the literature on public and private provision during the era of state retrenchment, there are two pervasive narratives.<sup>1</sup> In the first, non-state providers meet the demand generated by the absence of or limitations in state provision (Batley & Rose, 2011; Brett, 1993; Brinkerhoff, 2002; Douglas, 1987; Korten, 1987; Sood, 2000). In the second, the growth in non-state provision offers higher quality options for those who can afford to pay, and those who cannot must rely on underfunded, inadequate government facilities (Adésínà, 2009; MacLean, 2011). In the context of Nairobi's informal settlements, survey data reveal that the effects of state retrenchment on households' experiences of health and education provision are far more complex than either narrative suggests.

Thirty-five percent of survey respondents reported that the health provider most frequently visited by members of the household is operated by the government, and 41 percent of households with school age children have at least one child enrolled in a public school. Furthermore, when asked where they would go for medical treatment if they had the means to seek the services of any type of health provider, 53 percent of households selected the government as their preferred provider. Disaggregating preferences by quintile of lived poverty status revealed that higher portions of more impoverished households prefer public providers, but 46 percent of the most secure households also expressed a preference for public health facilities.

Public provision clearly plays a larger role in meeting slum-dwellers' health and education needs than public and scholarly discourses suggest. The inclusion of perceptions in the survey revealed trends that contradict the conventional wisdom driving the shift toward non-state provision (e.g., Harding, 2009). Respondents

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<sup>1</sup> These narratives are general versions of more complex theories discussed in greater detail in Chapter 4.

acknowledged the challenges associated with inadequate staffing levels, drug and supply shortages, and long waiting times at public health facilities, but the majority nevertheless views the state as a credible and desirable health service provider. Furthermore, the survey revealed negative perceptions of the services provided by NGOs, and very few households expressed preferences for health facilities or schools operated by these organizations.

The second largest portion of respondents prefers private for-profit health providers. Though the low-cost private for-profit sector constitutes 85 percent of health providers in Korogocho and 84 percent in Kibera (APHRC, 2013), very little is known about the quality of care available. As described in Chapter 2, most of these facilities are small in scale, not regulated by the government or any other regulatory body, and practitioners have often received no formal training (APHRC, 2013; Fotso & Mukiira, 2012; Muriithi, 2013; Muthaka et al, 2004). Deregulation was a key component of the “enabling” environment created by neoliberal reforms, and accompanied limitations on government spending hindered efforts to enforce remaining regulations. Similar developments occurred in other low-income countries; the growth of private for-profit provision is not limited to Kenya or sub-Saharan Africa (Basu et al, 2012; Mills et al, 2002; Patouillard et al, 2007; Sudhinaraset et al, 2013). What little research does exist on the sector suggests that providers often over-prescribe medicines and repeatedly treat symptoms rather than underlying causes, contributing to poor health outcomes (Basu et al, 2012; Bhatia et al, 2004; Brugha & Zwi, 1998; Gbotosho et al, 2009; Gupta et al, 2009; Marriott, 2009; Muhuri et al, 1996; Pongsupap & Van Lerberghe, 2006; Siddiqi et al, 2002).

Rather than discounting the state and continuing to shift resources toward non-state health provision, this dissertation argues that more efforts should be directed toward improving the capacity and quality of public provision. The competition between state and non-state providers for staff and funding directly contributes to the problems households encounter at public facilities, and the complex, fragmented service environment that has developed as a consequence of

the promotion of non-state provision makes accessing quality services increasingly challenging for vulnerable households.

Just as expanding the conceptualization of access to include perceptions and preferences shed light on the importance of public health provision, the addition of sociopolitical characteristics to demand-side explanatory factors revealed that conventional indicators do not capture the social factors that constrain the demand for, access to, and effective use of services. Spatial proximity to a service provider is standard in most models; in urban areas with high concentrations of providers of all types, however, physical access is a relatively minor issue.<sup>2</sup> Despite the abundance of clinics and schools, survey data showed that households' ability to successfully navigate the system and utilize quality services varies widely. Households located in close geographic proximity to one another offered disparate estimates of the number of providers in their communities, signaling that this variation begins with the perception of service availability.

In individual-level analyses on service utilization, education is routinely employed as a proxy for information. People with higher levels of education are more likely to be informed about service availability and the advantages of service utilization, and they are also better able to successfully demand access to quality services (Berry et al, 2004; Krishna, 2008; MacLean, 2011; Montgomery & Ezeh, 2005; Tukahirwa et al, 2011; World Bank, 2004). Throughout the analysis in this dissertation, however, the level of education attained by the household head was almost never significantly associated with perceptions of accessibility, utilization, and satisfaction. Formal education may contribute to households' awareness of their service needs and make it easier to seek out the necessary information, but it is neither necessary nor sufficient to help households' navigate the service environment in the slums.

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<sup>2</sup> Physical access can be an obstacle when it is unsafe to travel even a short distance to a school or clinic, particularly at night. Spatial proximity measures do not capture this challenge, however, as the concern is a contextual factor rather than the distance to the provider.

Most informal settlements have organically grown economic, social, political, and communal systems that form a tightly woven social fabric where social capital, bartering, and community support are central to slum dwellers' livelihood strategies (Mutua, 2015). In this context, relationships facilitate access to services; households rely on advice and support from formal and informal community groups, political connections, and other social ties (Gilson, 2003). Some of this information transmission is formalized through the mission and nature of the group—for example, welfare groups, self-help groups focused on health and education, and community insurance cooperatives—and some is derived from being connected to more people who can share their information, experiences, and knowledge (Adhikari & Goldey, 2010; Agrawal et al, 2008; Binzel & Fehr, 2009; Bowles & Gintis, 2002; Coleman, 1988; Cranston, 1996; Montgomery & Ezeh, 2005; Sorenson et al, 2006; Uphoff, & Wijayarathna, 2000).

To examine the influence of non-monetary resources on the dimensions of the micro-experience of services (e.g., perceptions of accessibility, utilization, and satisfaction with quality), I employ household-level measures of political activism, community involvement, and interpersonal trust. Although several sociopolitical factors are significantly associated with outcomes, there is less consistency across the various dimensions of the micro-experience than expected. Despite the similar socio-demographic composition of Kibera and Korogocho and the shared institutional context as informal settlement communities within Nairobi, household-level analyses of the full sample frequently revealed distinct differences between slums and among villages within each settlement that cannot be attributed to household characteristics.

While conventional wisdom recognizes the importance of contextual factors to service provision and welfare outcomes, existing studies seeking to explain welfare policies and outcomes largely focus on the preferences of political and bureaucratic elites acting within the formal institutional framework (Mares & Carnes, 2009). Macro-level factors, including global and state institutions, policies, and norms, are routinely employed to account for context. One of the key insights from the 2004

World Development Report, *Making Services Work for Poor People*, however, is that service provision and welfare outcomes depend on three key (and deeply political) relationships: between citizens and service providers; between citizens and policymakers; and between policymakers and service providers. Many of these relationships operate on the meso level, which includes both sociopolitical characteristics of the community and organizational factors that describe individual service providers and the collective “system” of provision that households must navigate in order to meet their health and education needs.

I use household-level data to generate aggregate measures of community-level sociopolitical factors and examine the interaction between household- and community-level sociopolitical contexts and the associated effects on the micro-experience of health provision. Furthermore, I draw on secondary data on service provision and civil society in Kibera and Korogocho to qualitatively explore key differences between the settlements that become evident during quantitative analyses.

This meso-level examination yields two major findings. First, as the role of centralized state provision decreases and more citizens utilize localized and community-based providers, these meso-level relationships and conditions become increasingly important. Household- and community-level sociopolitical factors are much more relevant to outcomes in the context of non-state provision. To the extent that accessibility and affordability of health services provided by the state are less dependent on households’ social positionality and communities’ sociopolitical context, this work suggests that efforts to improve equity should focus on strengthening and expanding public provision rather than supporting a fragmented system of NSPs.

Second, meso-level contextual factors condition the effects of household-level characteristics. Experiences in Kibera and Korogocho suggest that the relationships and resources that facilitate access to quality services in one community may be insignificant in others, even when the macro-level conditions are identical. This raises concerns about generalizability, but it also suggests the need for a different

methodological approach. Few attempts have been made to introduce community-level factors to analyses, largely due to a lack of data, analytical difficulties, and conceptual challenges (Babalola & Fatusi, 2009; Phillips et al, 1998). Though the sample size is small, insights from quantitative and qualitative comparisons between Kibera and Korogocho suggest that standard quantitative measures customarily employed in research on service provision in developing countries do not capture the concepts and mechanisms of theoretical and practical interest at the meso level. Instead, the goal should be to develop an understanding of the most relevant processes, key relationships, and interactions at the confluence of the individual, community, organizational, and institutional contexts. To that end, I identify four mechanisms that, based on this research, incorporate the meso-level factors that wield the most influence over households' experiences with health and education provision and the non-monetary resources that facilitate access. Exploring the operation of these mechanisms in diverse settings should offer generalizable strategies for promoting equitable and responsive service provision in low-income urban communities.

## **Historical Context: The Growth of Non-State Provision**

The extent and nature of non-state social welfare provision varies widely across the developing world. Internal factors specific to each country's historical, institutional, political, and socioeconomic context account for this variation, but the increasing prominence of non-state provision can be partially attributed to two interrelated global-level trends: the retrenchment of the state and the increase in both the number of civil society organizations seeking to provide services and the resources they command (Kanyinga, 1995; Mehrotra, 2005). The largely external nature of the factors driving these trends accounts for the overall pattern of growth in non-state social welfare provision (Cammett & MacLean, 2011).

First, the emergence of neoliberal reforms in the 1980s supported by the World Bank, the International Monetary Fund (IMF), and bilateral donors prompted a shift in the strategy guiding social welfare provision. Neoliberals argue

that excessive and inefficient state intervention in the economy is to blame for the poor macroeconomic conditions in many developing countries. Similarly, neoliberal supporters argue that low literacy rates and poor health outcomes stem from weaknesses in state social service provision, including: 1) poor coordination among agencies, inadequate technical capacity, financial constraints, and lack of political will; 2) inflexibility and inability to respond to the unique needs of diverse citizens; 3) allowing elite groups to benefit from government policies at the expense of the poor; and 4) widespread corruption, rent-seeking behavior, and misallocation of resources (Gilbert & Ward, 1985; Kyessi, 2005; Otiso, 2000, 2003; Syagga et al, 2001; UN-Habitat, 2003).

Guided by this understanding of the challenges facing developing countries, the World Bank, IMF, and other leaders created a policy agenda designed to restore free market principles, drastically reduce state intervention, and promote the development and growth of the private sector (Stein, 2008). In response to the perceived failure of centralized governments to provide basic services efficiently and equitably, the neoliberal prescription envisioned a new role for the state in creating an “enabling” environment in which partnerships within the private and community sectors would take the lead in the provision of basic services (Baken & Van der Linden, 1993; Beall, 2000; Harris & Giles, 2003; Jones & Ward, 1994; Mkandawire, 2001). The structural adjustment policies imposed on governments borrowing money from the IMF and World Bank prompted institutional changes like decentralization and deregulation (Devas, 2004; Rakodi, 1997).

With respect to social welfare provision, the most salient policy changes included the reduction in state expenditure on social services, the privatization of government units—many of which were responsible for infrastructure and basic service provision—and a de-emphasis on social welfare in policymaking (Adésinà, 2009; DiMuzio, 2008; Mkandawire, 2001; Rono, 2002; UN-Habitat, 2003). User fees for utilizing public goods like education and healthcare were introduced to promote efficiency in their allocation (Stein, 2008). The newly reduced role of the state left



many citizens without access to services, and the emphasis on enabling non-state providers created space and opportunity for non-state actors to fill the gaps.

A second, albeit related, external factor driving the growth in non-state provision was a shift in development theory and best practices concerning foreign aid (Kanyinga, 1995). The neoliberal view challenged the prescriptions for state-led development that prevailed during the 1960s and 1970s, and reports of widespread corruption and graft at all levels of government in developing countries fueled a distrust of the state and a search for development alternatives (Fowler, 1995; Obiyan, 2005; Peet & Hartwick, 2015). Civil society organizations were increasingly viewed as a viable alternative, owing to their purported efficiency relative to the state, potential to serve as agents of democratization, and alignment with the emerging consensus favoring participatory development (Obiyan, 2005). Foreign governments, international organizations like the United Nations and World Bank, and international NGOs escalated their support of and engagement with civil society organizations (international, regional, and indigenous) working in developing countries. The number of NGOs formally consulting with the United Nations increased from 700 in 1992 to more than 3,400 in 2012; an additional 23,000 organizations currently work with the NGO Branch of the organization.<sup>3</sup>

Donors increasingly diverted foreign aid from states and channeled it through these civil society organizations. Between 1990 and 1999, the amount of external aid channeled to NGOs in Africa increased from less than \$1 billion to nearly \$3.5 billion (Hearn, 2007). The involvement of civil society organizations in development projects funded by the World Bank increased from 21 percent of all projects in 1990 to more than 80 percent in 2009.<sup>4</sup> The influx of donor money created incentives for individuals and groups to form new organizations and compete for funds, which contributed to the explosive growth in the number of organizations. Since the shift occurred at a time when many countries were facing

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<sup>3</sup> Data from the website of the NGO Branch of the United Nations Department of Economic and Social Affairs, <http://csonet.org>, accessed 12 February 2013.

<sup>4</sup> World Bank, "Defining Civil Society," <http://go.worldbank.org/Y55YH23K50>, accessed 12 February 2013.

cuts in state budgets that left many government bureaucrats unemployed and stagnant economies that limited other economic opportunities, the incentives to start and grow non-governmental development organizations were particularly strong (Fowler, 1995). A feedback effect reinforced the prominence of the non-state sector: as the number of viable organizations increased and the scope of their development efforts expanded, funding them became even more attractive to donors.

Several internal factors explain the growth of civil society organizations and their increasing involvement in service provision in Kenya. Following independence, political elites responded to shrinking budgets and citizens' increasing demands for services<sup>5</sup> by encouraging people to form self-help groups, known as *harambee*, to provide social welfare. The community-based groups took the initiative (by, for example, building schools and health facilities) and applied for matching funds from the state to support their endeavors. Though the institutionalized support for groups eventually waned as state funding disappeared and structural adjustment policies were implemented, the strategic choice of political elites to structure social welfare around *harambee* contributed to the growth of civil society organizations and their role in social service provision (Semboja & Therkildsen, 1995). Between 1992 and 2002, the number of registered CBOs (*harambee* groups and their successors) skyrocketed from 30,000 to 220,000 (Brass, 2010; Kanyinga, 1995). Additionally, the number of registered NGOs increased from 511 in 1996 to more than 7,000 by 2013,<sup>6</sup> and a 1990 survey indicated that the combined yearly budget of NGOs involved in social welfare was \$200 million, a figure equivalent to 31 percent of yearly government expenditures on education, health, and social welfare (Obiyan, 2005). By 1991, the World Bank estimated that NGOs provided

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<sup>5</sup> According to Kanyinga (1995), citizens' increasing demands for services largely resulted from the political strategy pursued by elites seeking to achieve independence by promoting popular nationalist movements. In order to win support for their efforts, they promised that an independent Kenyan state would provide the services and public goods that were under-provided or exclusionary under the colonial regime.

<sup>6</sup> Government of Kenya NGO Coordination Board website, <http://www.ngobureau.or.ke>, accessed 12 February 2013.

approximately 40 percent of all health services in Kenya (Semboja & Therkildsen, 1995).

Comprehensive data documenting the nature and scope of non-state social welfare provision across the developing world is scarce, but most observers agree that Kenya's experience is not unique. In their introduction to a special issue of *Public Administration and Development* devoted to the subject, Batley and Rose note that:

Governments have widely failed to provide adequate public services. In many developing countries, non-state providers could be seen as filling the gaps left by the failure of government services. Indeed, the situation is often reversed—it is the government that is the minority provider. (2011, p. 230)

As the preceding historical account illuminates, the key forces generating this reality stemmed from lack of government resources and weak state capacity, external pressures to liberalize the economy, and a general distrust of the developmental state rather than a theoretically- or empirically-based preference for non-state provision (Mehrotra, 2005; Semboja & Therkildsen, 1995). As Fowler (1995) argues in the context of East Africa, “the division of labor between NGOs and the government results from historical circumstances and imperatives, it is not a product of conscious choice” (p. 61). Despite an incomplete understanding of the dynamics and effects of this unconscious choice, policymakers, international organizations, and donors continue to promote non-state provision and allocate significant portions of aid funds to non-state providers. The analysis in this dissertation suggest, however, that strategies to promote and fund non-state provision rarely consider contextual factors and often contribute to an increasingly fragmented service environment that has negative consequences for households' access to services.

## Overview of Non-State Social Welfare Provision

### *Typology of Providers*

Non-state provision of services is defined as all providers operating outside the public sector, and it includes both for profit and not-for-profit entities (Moran & Batley, 2004). The range of providers that meet this criterion is extensive and diverse, incorporating organizations of varying sizes, scopes, and missions (Assaad, 1999; DiMuzio, 2008; Otiso, 2000; Otiso, 2003). Most typologies in the literature tend to classify providers according to their origins (e.g. international, domestic, local), sources of funding (international, domestic, the state, self-funding), and the degree of formality or informality of the organization's structure and operation (see, for example, Cammett & MacLean, 2014; Moran & Batley, 2004). Table 1.1 indicates the main types of non-state providers that operate across the developing world.

**Table 1.1: Typology of Non-State Service Providers**

|                    |               | FORMAL                            |   |   |   | INFORMAL   |   |
|--------------------|---------------|-----------------------------------|---|---|---|--|---|
|                    |               | For-Profit Companies              | Secular Non-Governmental Organizations (NGOs) | Ethnic/Sectarian Organization                   | Faith-Based Organizations (FBOs)                      | Community-Based Organizations (CBOs)   | Informal Providers  |
| LEVEL OF OPERATION | International | Multi-national corporations       | International NGOs/INGOs (e.g. Oxfam, CARE)   | Transnational ethnic organizations and networks | International religious charities (e.g. World Vision) | N/A  | N/A   |
|                    | Domestic      | For-profit firms and institutions | Domestic NGOs                                 | Ethnic and sectarian political groups           | Local FBOs and religious groups                       | Village or neighborhood-based, sometimes formed on the basis of common identity (e.g. ethnicity) | Small scale informal providers and individual practitioners |

Adapted from Cammett & MacLean (2014)

Of the types of providers listed in the table, non-governmental organizations (NGOs) populate most of the literature on non-state provision (see, for example, Bebbington, 2004; Brass, 2010; Brinkerhoff & Brinkerhoff, 2004; Clayton, 1998; Fowler, 1991, 1995; Hearn, 1998, 2007; Mercer, 2002; Rose, 2007). In the context of Kenya, non-state social welfare is predominantly provided by secular non-governmental organizations (NGOs), faith-based organizations (FBOs), and

community-based organizations (CBOs, which also include *harambee* groups) (Kanyinga, 1995; Brass, 2010). An NGO, according to the Government of Kenya, is:

A private voluntary grouping of individuals or associations not operated for profit or for other commercial purposes but which have organized themselves nationally or internationally for the benefit of the public at large and for the promotion of social welfare, development, charity, or research in the areas inclusive but not restricted to health, relief, agricultural, education, industry and supply of amenities and services (Republic of Kenya, 1992).

This definition and the legal classification and registration of organizations based upon it do not differentiate between secular and non-secular orientations, though the majority of NGOs registered with the government are secular (Brass, 2010).

Although non-secular organizations are sometimes considered a subset of NGOs, MacLean and Cammett (2014) characterize faith-based organizations (FBOs) by their “administrative, cultural, and/or financial connections to religious communities, traditions, or places of worship” (p. 47). In Kenya, many individual churches or national-level church organizations operate schools and clinics but do not register as NGOs.<sup>7</sup> An examination of non-state provision focusing solely on NGOs would miss the significant contributions of these groups.

Community-based organizations (CBOs) comprise another category of non-state providers.<sup>8</sup> Cammett and MacLean (2014) define CBOs as “self-organized grassroots associations formed to serve the shared, vested interests of the members of a neighborhood or community” (p. 48). CBOs often formalize connections made in schools, churches, ethnic groups, youth, sports, or cultural associations; the grassroots organizational framework they provide is often utilized as a vehicle for service provision (Otiso, 2000; Post & Mwangi, 2009; UN-Habitat, 2003; Vakil, 1996). CBOs are funded primarily by contributions from community members or NGOs, and there is wide variation in the degree of formalization and connection with the state or other external institutions (Kyessi, 2005; Otiso, 2003).

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<sup>7</sup> As Brass (2010) notes, the fact that many faith-based organizations engaged in activities that fall within the definition of NGOs do not register as such with the NGO Coordination Board makes it very difficult to assess the extent of FBO involvement in service provision.

<sup>8</sup> While NGOs are registered by the NGO Coordination Board, CBOs register with the Ministry of Culture and Social Services as specified in the Societies Act (Brass, 2010).

Though typologies like the one depicted in the chart are useful for thinking about the diversity of service providers, the distinctions tend to be less clear in practice. It is often difficult, for example, to differentiate between services provided by NGOs and those provided by CBOs. Many NGOs in Kenya rely on CBOs to implement their work; observers often discover “nested” relations in which international NGOs fund the programs of a Kenyan NGO, which then redistributes funds and organizes services through various CBOs (Brass, 2010). Additionally, just because an organization is considered a CBO does not mean it is self-organized or grassroots in nature. The emergence of community participation as a “best practice” and donor emphasis on CBO involvement sometimes lead external actors to impose organizational structures where none exist. In Kenya, Post and Mwangi (2009) state that “many official CBOs have not arisen spontaneously, but rather in response to the desire of NGOs to have a community counterpart” (p. 673). The extent to which these CBOs are representative of community interests, supported by community residents, and equal partners with external actors should be questioned, as social cohesion and bottom-up collective action are difficult to externally impose (Beall, 2000; DiMuzio, 2008; Gilbert & Ward, 1985).

## **NSPs: Improving Service Provision or Contributing to the Problem?**

Until the mid-1990s, the development policy-making community produced most of the literature on non-state service provision, and it promoted non-state provision based on both neoliberal theory and the emerging emphasis on participation within development studies (Hearn, 2007). From the neoliberal perspective, economic models suggest that the introduction of multiple non-state providers (NSPs) creates competition that promotes efficiency, a greater diversity and customization of services, and improved accountability between providers and users (Brett, 1993; Brinkerhoff, 2002; Hansmann, 1987; Sood, 2000; Weisbrod, 1975). Organizational theory suggests that the less hierarchical, more flexible, and more democratic structure of NSPs (compared to government bureaucracies) allows

them to be more innovative and aware of and responsive to the needs of local communities, and thus more effective in service delivery (Brett, 1993; Brinkerhoff, 2002; Douglas, 1987; Sood, 2000). Because the NSP literature focuses mainly on non-profit NGOs, the lack of profit-seeking motivation and widespread perception of these organizations as altruistic and committed to serving the poor lead proponents to argue that non-state providers are more capable than the state of addressing the myriad problems with social welfare provision observed across the developing world (Brinkerhoff, 2002; Douglas, 1987; Korten, 1987; Sood, 2000).

A second strand of literature promotes non-state provision because of NSPs' potential to contribute to positive development outcomes beyond service provision itself. In response to the failures of state-led development in Africa and elsewhere, Korten (1989) articulates a new vision for development which views NGOs as "instruments of voluntary people's action, capable of enhancing democracy (broadly defined to include both economic and political democracy), social justice, self-reliance ...sustainability [and] the elimination of exploitation" in development programs (p. 2). Many scholars (e.g., Bratton, 1989) generally agree that the proliferation of NGOs and other NSPs usually strengthens civil society by facilitating the involvement of previously disenfranchised groups and individuals and promoting collective action for improved service provision. Others extend this argument, claiming that the increased participation in civil society reduces economic differentiation, mitigates class and other identity-based conflicts, and contributes to the integration of society as a whole (Brett, 1993). By exposing citizens to democratic practices, creating opportunities for organization and collective action, and increasing expectations and demands for services, the growth of NGOs and non-state provision can act as a force for democratization.

By the mid-1990s, a strand of literature more critical of NGOs and non-state service provision began to emerge. Observers with experience in developing contexts claimed that existing accounts were overly optimistic about NGO capacity and contributions (Gideon, 1998; Mukhija, 2005):

NGOs have been heralded as important urban partners, reaching where governments and international agencies cannot reach and objectively addressing urban poverty and representing the urban poor. Nevertheless, it is highly questionable whether on their own, NGOs have the potential to bring about fundamental transformation or to assault the structural causes of poverty. (Beall, 2000, p. 850)

As Edwards and Hulme (1996) note, “much of the case for emphasizing the role of NGOs and grassroots organizations [in the early literature] rests on ideological grounds rather than empirical verification” (p. 961). Donors’ decision to divert aid resources from states to non-state actors ensures that state service provision will be less effective, even if the non-state actors do not have a true comparative advantage (Fowler, 1995; Hearn, 1998; Hearn, 2007; Mkandawire, 2004; Semboja & Therkildsen, 1995).

Though empirical data was (and is) still scarce, the implementation of structural adjustment policies and donor priorities that favored NGOs resulted in increased involvement of non-state actors in service provision, and case studies documented the experiences. Robinson and White’s (1997) study of civil society organizations (CSOs) in service provision, based on an extensive review of available case studies, found that non-state provision plays an important role when state provision is weak or non-existent, but the sector is nevertheless characterized by a number of deficiencies. Problems highlighted by Robinson, White, and other studies include:

- Little evidence supports the claim the NGO service provision is more effective than state provision;
- The cost-effectiveness of NGOs is questionable and unsupported by empirical evidence;
- NGOs are not necessarily more democratic, accountable, or less hierarchical or bureaucratic than the state;
- NGOs may not reach the poorest groups in society;
- The scale of coverage is often limited and patchy, the quality of services is highly variable, and competition between NGOs can lead to fragmentation and overlap in services;



- NGOs often have little autonomy from donor agencies, leading to services that are more responsive to the priorities of donors than those of local communities; and
- NGOs are highly dependent on external assistance, so the services are not sustainable if the funding disappears

(Brinkerhoff, 2002; Edwards & Hulme, 1998; Fisher, 1997; Fowler, 1997; Hilhorst, 2003; Lewis & Opuku-Mensah, 2006; Oyugi, 2008; Robinson & White, 1997; Sood, 2000; Tvedt, 2006; Zaidi, 1999).

The perception of NGOs as transparent, accountable entities whose interests are always in harmony with the interests of the communities in which they work should, based on experiences recounted in the literature, be questioned (DiMuzio, 2008; Ganapati, 2009; Gideon, 1998; Otiso, 2003; Post & Mwangi, 2009; Wit & Berner, 2009). Very little is actually known about the NGO sector. Most NGOs have poor evaluation procedures, and few studies seek to understand how variations in type, ideology, and organizational structure affect both the nature and outcome of NGO involvement (Fernandez-Maldonado & Bredenoord, 2010; Otiso, 2003; Vakil, 1996). Otiso spent several years working with NGOs in the slums of Nairobi, and he cautions against accepting conventional wisdom:

Many NGOs are not paragons of financial responsibility as is widely believed, but are opportunistic moneymaking schemes, especially in an era of increased donor funds flows through NGOs rather than the state. This opportunism not only causes some NGOs to shift locations and objectives to attract donor resources, it also causes others to make sufficient impact to attract funds but not enough to empower their beneficiaries. (2003, p. 224)

Additionally, NGOs are not necessarily the best vehicle for promoting community participation and equitable resource allocation. Case studies reveal a tendency to ignore – either unknowingly or intentionally in an attempt to avoid conflict – existing social cleavages and the distribution of power among various groups (Gilbert & Ward, 1985; Otiso, 2000; Post & Mwangi, 2009). According to Mercer’s (2002) review of the literature, “the social, political, cultural, or economic cleavages that exist in society are more likely to be replicated in (and even exacerbated by) NGOs than they are to be challenged” (p. 18).

Another point raised by some scholars is the issue of “philanthropic particularism.” One source of non-state providers’ relative efficiency arises because they do not face the same expectations of universality and equity as the state (Bebbington, 2004; Brinkerhoff, 2002; Douglas, 1987; Salamon, 1987). Although there may be some conditionality attached to external funding, NGOs are generally able to choose their location, clientele, projects, and services. Some studies attribute NGOs’ failure to reach the poorest citizens to philanthropic particularism (Bebbington, 2004).

In addition to concerns raised about the services themselves, many scholars argue that the provision of services by NGOs and other non-state actors undermines state legitimacy and capacity and reduces accountability between states and citizens (Clayton et al, 2000; Obiyan, 2005). A growing body of research continues to explore the consequences of both state retrenchment and non-state service provision on the state itself and notions of citizenship, but there is little consensus among scholars. Some argue that when NSPs fill gaps in service provision, state legitimacy is often enhanced because people give the state credit for providing services even when the state is not involved (e.g., Brass, 2010; Brinkerhoff, 2002; Tsai, 2007). Others disagree, suggesting that when NGOs compensate for the absence of the state, their continued presence and community-centered approach to provision can justify the state’s continued under-provision of infrastructure and services, foster a dependency relationship between the NGO and community, and weaken accountability between the state and citizens (DiMuzio, 2008; Gulyani & Bassett, 2007; Otiso, 2003).

In general, existing research on non-state provision is fragmented. McLoughlin (2011) describes the literature as “prescriptive, incomplete, anecdotal...and dominated by subjective accounts of selected case studies largely produced within the NGO community” (p. 242), while Lewis and Opoku-Mensah (2006) lament that “an overemphasis on organizational case studies leaves a picture that is rich in detail but lacking in contextualization and weak theorization” (p. 699). Furthermore, the focus on the service providers, the services themselves, the

effects on state legitimacy, and other organizational and macro-level outcomes offer no account of the consequences for individuals.

## **Overview of Research Design**

The dependent variable in the dissertation is the micro-experience of social service provision. There are multiple dimensions to the concept, and I describe the research design and methodology in detail in Chapter 3 and the operationalization of the various dimensions in the context of the models and research questions throughout the chapters. What follows is a conceptual overview and an explanation of key methodological choices.

### ***Conceptualization of the Dependent Variable***

Access to social welfare is typically conceptualized according to a quantitative level of services or an objective measure of access like physical proximity, both of which fail to account for differences in quality and service utilization. In order to gain insight into households' qualitative experiences of accessing services provided by non-state actors and examine whether utilization rates, perceptions of quality, and satisfaction with services vary systematically, I follow MacLean (2011) and Bratton (2012) and adopt a multi-dimensional conceptualization of the micro-experience of accessing services. By examining the multiple dimensions, I generate a broader understanding of the consequences of state retrenchment and the growth of non-state health and education provision for households' access to services.

The first dimension is service utilization. By documenting whether individuals (or members of their household) have accessed services provided by non-state actors, it is possible to identify any systematic differences between individuals that interact with NSPs and those that do not.

**Table 1.2: Dimensions of the Micro-Experience of Social Welfare Provision**

| Conceptual Dimension                           | Indicators  |
|--|---|
| Service Utilization                            | <ul style="list-style-type: none"> <li>• Utilization and/or attempted utilization of health or education services provided by non-state actors in the past year (and frequency of use)</li> <li>• Utilization and/or attempted utilization of health or education services provided by the state in the past year (and frequency of use)</li> </ul>   |
| Perceived Accessibility                        | <ul style="list-style-type: none"> <li>• Awareness of services provided by state and non-state actors in the community</li> <li>• Are the services user-friendly? Inclusive?</li> <li>• Are there any barriers (transportation, affordability, exclusion based on identity or other characteristic, etc.) to accessing the services?</li> </ul>   |
| Perceived Quality                              | <ul style="list-style-type: none"> <li>• Three sub-dimensions: service product (i.e., technical quality), service delivery (i.e., functional quality), and service environment</li> <li>• Specific quality-related issues with health and education services (facilities, staff, etc.)</li> </ul>   |
| Overall Perception of Social Welfare Provision | <ul style="list-style-type: none"> <li>• Are the health and education services provided in the community able to meet individuals' and households' needs? The needs of the community in general?</li> <li>• How confident are residents that in the event of a medical emergency they would be able to access and afford quality care (regardless of provider)?</li> <li>• Are the educational services in the community equipping members of their household with the skills necessary to escape poverty and build sustainable livelihoods? What about other people in the community?</li> </ul> |

The second dimension is perceived accessibility. Previous research on service provision suggests that the objective criterion of physical proximity – commonly used as an indicator of access – and the subjective judgment of accessibility and ease of use are independent (Bratton, 2007).<sup>9</sup> Although spatial proximity may be correlated with perceived accessibility, Bratton’s (2012) research in sub-Saharan Africa suggests that spatial proximity is merely one component of individuals’ perceptions of access and is often a weak predictor. In order understand the micro-level consequences of non-state provision, it is important to document individuals’ perceptions of service accessibility, including their awareness of services being provided in the community, ease of use and degree of inclusivity, and any barriers that prevent or make it difficult to access services (e.g., transportation, cost, exclusionary practices, etc.). Previous research suggests that awareness of service

<sup>9</sup> Bratton (2007, p. 17) includes both physical proximity and ease of use in a multivariate explanation of service satisfaction.

availability and the salience of particular barriers may vary systematically between population groups (Goddard & Smith, 2001). Furthermore, several studies have established the importance of perceptions of accessibility to service-seeking behaviors (Amooti-Kaguna & Nuwaha, 2000; Babalola & Fatusi, 2009; Bazant et al, 2009; Ngware et al, 2013; Onah et al, 2006).

The third dimension is perceived quality. There is an extensive literature on the conceptualization of service quality (for a review, see Brady & Cronin, 2001), but I employ a three-component model developed by Rust and Oliver (1994) that has been widely used in health care surveys. Soliciting users' perceptions regarding the three components—the service product (i.e., technical quality), the service delivery (i.e., functional quality), and the service environment (e.g., facilities)—allows the researcher to examine the sub-dimensions individually or to create an overall index of service quality. While subjective judgments about quality are not equivalent to objective measurements of quality or the quantitative outcome indicators commonly employed in the literature (e.g., number of vaccines administered, school attendance rates, money spent on health and education), research shows that perceptions of quality affect individuals' willingness to utilize services, particularly when there are real or opportunity costs to doing so (Ensor & Cooper, 2004; Fotso & Mukiira, 2012; Karkee et al, 2014; Kiguli et al, 2009; Leonard, 2003; Muriithi, 2013; Prata, Montagu, & Fefferys, 2005; Tooley & Dixon, 2006). In the case of education, for example, parents are less willing to pay school fees and accept decreases in children's contributions to the household due to school attendance if they are unsatisfied with the quality and do not anticipate long-term benefits to materialize (Hillman & Jenkner, 2004; Tooley et al, 2008). The situation is similar for health care, as people are less likely to seek out and pay for some level of preventative and prenatal care unless they believe the quality of care is acceptable (Amooti-Kaguna & Nuwaha, 2000; Babalola & Fatusi, 2009; Bazant et al, 2009). In this way, perceptions of quality are of first-order importance and a crucial component of the micro-level experience of service provision.

The fourth and final dimension involves individuals' overall perceptions of the ability of the social welfare providers (state and non-state) in their community to meet the needs of members of their households and the community at large. This dimension is not included in other studies that seek to broaden the conceptualization of access (e.g., Bratton, 2012; MacLean, 2011), but it provides a subjective assessment of the degree to which the system of health and education services promotes individual and community well-being. In the event of a medical emergency, for example, how confident are individuals that they would be able to access and afford quality care, and do confidence levels vary systematically? This dimension, though highly subjective, seeks to illuminate the extent to which the system as a whole reduces vulnerability and promotes sustainable livelihoods.

### ***Why Surveys?***

An understanding of the micro-dynamics of non-state social welfare provision cannot be gleaned from expenditure data, objective measures of spatial proximity, school attendance and immunization rates, and standard health and education outcomes. Though commonly employed in existing research, these indicators offer no insight into individuals' experiences and perceptions of service quality, and their contribution to discussions of the mechanisms underlying distributional outcomes and obstacles to access and utilization are inferential.

Furthermore, analyses of household-level Afrobarometer survey data on satisfaction with government health and education services reveal that subjective criteria exert more influence over satisfaction than objective criteria (Bratton, 2007, p. 23). For Afrobarometer respondents, the most important determinant of satisfaction is ease of use, or the degree to which citizens "regard services as being open to all types of clientele and as being uncomplicated to operate" (Bratton, 2007, p. 24). Objective criteria like physical proximity were far less significant. Similarly, Carlson (2011) surveyed residents in Uganda about the quality of state service provision in their communities and compared the results to her own inventory of providers and assessment of facility and service quality. She found that respondents

accurately estimate objective quality indicators (e.g. the number of textbooks or medical center staff), but that their subjective assessment of overall quality is also impacted by their attitudes towards the government and the regime in power. Utilizing survey methodology in the context of this dissertation research allowed me to gather data on a mixture of objective and subjective variables related to service provision as well as the demographic and sociopolitical variables necessary to examine contextual factors and construct community-level indices for meso-level analyses.

### ***Why Health and Education?***

Social welfare encompasses a broad array of services, but I chose to focus on health and education for three reasons. First, the links between health and education and economic growth, poverty reduction, individual welfare and well-being, and other desirable macro- and micro-level phenomena are well established in the literature. Empirical evidence indicates that the provision of social welfare services like health and education has important effects on poverty, democracy, economic growth, political stability, and social cohesion (Easterly & Levine, 1997; Stewart, 2001). Healthier and better-educated individuals are less likely to fall into poverty and more likely to build livelihood opportunities, protect themselves from economic shocks, and contribute to long-term economic growth (Berry et al, 2004; Bratton, 2007; Krishna, 2007; Montgomery & Ezeh, 2005). Spink (2007) argues that absent or inequitable services actually generate poverty and perpetuate individuals' and families' vulnerability. It is important to note, however, that the effects on poverty, democracy, and economic growth associated with improvements in social welfare provision are different if access to quality services is inequitably distributed. The development of systematic differentiation in access to health and education services between groups produces effects in other areas, as initial differences condition outcomes and limit future possibilities. Unfortunately, such inequalities are remarkably durable, even if formal mechanisms of exclusion are eliminated (Stewart, 2007; Tilly, 1998). Experience within settings differentiated by

levels of exclusion provides individuals across groups systematically different and unequal preparations for future economic, social, and political contexts, and this inequality is subject to increasing magnitude with each ensuing generation.

Second, the majority of health and education services are provided through what Cammett and Issar (2010) call “bricks and mortar” institutions. Whereas the nature of some services allows non-state actors to be minimally involved in service delivery and have no physical location within the community, providers of health and education services necessarily interact with beneficiaries on some level and have some physical existence (however informal or rudimentary) in or near the community. In addition to being logistically easier to locate, individuals are more likely to be aware of the presence of the NSPs.

Finally, I chose health and education services because of the prominence of non-state provision in these sectors and the applicability of the services to a broad segment of the population. Most households have a need for health care at some point and many have (or had) school-age children, so information about their experiences related to these services (or lack thereof and why) provide fruitful data for analysis.

### ***Why Kenya?***

Kenya is a prime case study for this research. The country falls near the middle of the less-developed countries internationally, making it representative of the category of countries as a whole. Kenya ranks 145<sup>th</sup> out of 186 countries in the 2012 Human Development Index (UNDP, 2013); this ranking locates it near the top of the list of countries that fall in the “low human development” category. Similarly, Freedom House scores Kenya the average “partly free” 4.0 out of 7.0 in its annual Freedom in the World index (Freedom House, 2013).

In addition to being generally representative of less-developed countries, Kenya offers an interesting context for an examination of non-state social welfare provision for several reasons. First, the relationship between NGOs and the Kenyan government has varied over time. The regime of President Moi, who governed from



1978 to 2002, was clearly threatened by the prominence of NGOs and viewed them as a potential threat to state legitimacy. Moi instituted the NGO Act in 1990 and used the oversight and regulatory mechanisms it granted the NGO Coordination Bureau to harass and de-register several NGOs during the 1990s. When President Kibaki came to power in 2002, the administration attempted to work with NGOs in a more complimentary manner. Several popular NGO leaders were hired into the civil service, and state cooperation with (or co-optation of, according to some observers) NGOs and other NSPs has been widely publicized (Brass, 2010). As a consequence of these shifting attitudes and policies, Kenya serves as somewhat of a middle ground between countries with extremely hostile relationships with NSPs and those that welcome and enable non-state providers.

Second, public service provision in Kenya has long been fraught with distributional issues related to ethnic identity and political affiliation. Recognizing the importance of inequalities between categorical groups, Stewart (2001) differentiates horizontal inequalities, which exist between culturally defined groups, from vertical inequalities, which exist across individuals and households. During the more than 45 years since independence, Kenya has amassed significant socioeconomic horizontal inequalities between ethnic groups and regions (Stewart, 2010).<sup>10</sup> Social welfare provision is one dimension of these inequalities, as reflected by significant differences in social expenditures and outcomes by region.<sup>11</sup> In an examination of public spending patterns, Barkan and Chege (1989) find that, while overall levels of expenditure are nearly equal under two different administrations, the percentages going to road construction in two districts comprised of different ethnic groups shifted from 44 percent and 32 percent in 1979 to 20 percent and 65 percent by the end of the 1980s. Additionally, Miguel (2004) finds that higher local

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<sup>10</sup> Stewart's article provides an extensive historical overview and empirical support for this claim.

<sup>11</sup> Ethnicity is highly correlated with geographic region in Kenya, as most regions are dominated by a particular ethnic group. The Kikuyu are predominately in Central Province, Luhya in Western Province, Luo in Nyanza and Kalenjin in the Rift Valley. The Rift Valley (the location of the worst of the violence in 2008) contains sizeable numbers of Kikuyu and Luhya as well (Stewart, 2010).

ethnic fragmentation in Kenyan school districts leads to lower funding and worse school facilities.

### ***Why Informal Settlements?***

Informal settlements are visible and enduring manifestations of urban poverty. According to UN-Habitat,

...a slum is an area that combines, to various extents, the following characteristics: inadequate access to safe water, inadequate access to sanitation and other infrastructure, poor structural quality of housing, overcrowding, and insecure residential status. (2003, p. 12)

Currently, nearly one billion people live in informal settlements around the world (Acioly, 2007; Greene, 2010; Martínez et al, 2008), and that number is projected to increase by five million each year based on recent growth rates (UN-Habitat, 2010).

Informal settlements in Nairobi are a prime location to conduct research into the micro-level consequences of non-state service provision for several reasons. Because one of the defining features of informal settlements is the inadequate public provision of infrastructure and basic services, non-state actors provide the majority of the health and education services utilized by residents. The limited access to services provided by the state offers a useful context for studying non-state provision. At the same time, there are differences in the landscape of non-state providers among the settlements in Nairobi, allowing for variation in the community-level factors.

Additionally, locating the research in Nairobi's slum communities makes it possible to conduct a meaningful examination of distributional consequences. Unlike other areas of the city or locations across the country, residents of informal settlements reflect the ethnic diversity of the country. Groups often cluster in neighborhoods within a slum, but existing surveys suggest that the demographics of most settlements as a whole generally mirror the demographics of the country (K'Akumu & Olima, 2007). Previous studies concerned with equity of non-state provision used the geographic distribution of NGOs across the country as a proxy for the distribution of services and interviews with NGO leaders about how and why they chose where to locate to explain the patterns observed (e.g., Bebbington, 2004;

Brass, 2012). In the context of Brass's research in Kenya, region served as a proxy for ethnicity. Neither proxy is an ideal indicator, but the geographic distribution of NGOs offers no insight into service quality or micro-level trends in access or service utilization. Furthermore, existing studies seeking to cover broader geographic areas focus solely on NGOs (Brass, 2010, 2012; Brinkerhoff, 2002; Hearn, 1998, 2007; Mercer, 1999, 2002; Teamey & McLoughlin, 2009). By locating this research in informal settlements where a large, ethnically diverse population resides in a small geographic area, it is possible to include the entire spectrum of non-state providers in the study. Expanding the scope contributes to a more comprehensive assessment of the micro-level consequences of non-state provision

Finally, locating the study in informal settlements has value because the residents are among the most in need of access to high-quality health and education services. Data collected by the United Nations indicates that informal settlement dwellers are more likely to die earlier, experience more hunger and disease, attain less education, and have fewer opportunities for employment than urban residents occupying formal housing (UN-Habitat, 2007). Results of a 2009 UN-Habitat survey show that, in all 27 cities in Asia, Africa, and Latin America covered by the survey, informal settlements and their inhabitants are

...systematically excluded from mainstream economic, social, cultural and political programs and initiatives...when asked to rank the most vulnerable groups in their respective cities for the purposes of the survey, experts reckoned that along with the disabled, slum dwellers were the most vulnerable in terms of exclusion. (UN-Habitat, 2010, p. 86)

A plethora of survey and census data indicates that, compared to the inhabitants of non-slum areas, slum dwellers are often subject to multiple layers of exclusion, as they are far more likely to be poor and uneducated, migrants or ethnic minorities, and female (Abdenur, 2009; Acioly, 2009; Amis, 1984; Brakarz, 2002; Gulyani et al, 2010; UN-Habitat, 2010; Wekesa et al, 2010).

Though residents of informal settlements are among those most in need of health and education services, they are also among those with the fewest resources to pay for them. Current events suggest that the need for accessible, equitable, and

sustainable health and education services in poor urban communities will only intensify in the future. Displaced by war and persecution, masses of people—estimated at nearly 60 million and increasing daily—are pouring into refugee camps, existing informal settlements, and villages destroyed by violence (Silverstein, 2015). Koonings and Kruijt (2009) predict that the concentration of large segments of the urban poor “will have fundamental socioeconomic and political consequences and will involve the possibility of destabilization of the economic, social, and political order” (p. 8). Examining the consequences of state retrenchment and the growth of non-state provision for some of the most vulnerable and excluded members of society serves as an important test of the theoretical arguments propelling state retrenchment from social welfare provision.

## **Roadmap of the Chapters Ahead**

In the chapters that follow, I aim to successively deepen our understanding of the micro-dynamics of health and education provision in Kibera and Korogocho, tying findings to research from other low-income urban communities and developing countries to show that surveyed households’ experiences are not unique. Chapters 2 and 3 provide the background necessary to interpret the subsequent findings: Chapter 2 supplies a detailed description of the study context and the systems of health and education provision in the communities. Chapter 3 outlines the research design and methodology employed throughout the analysis.

Chapters 4 and 5 focus solely on the household-level characteristics associated with access, utilization, and satisfaction. Chapter 4 explores the household-level consequences of the simultaneous processes of state retrenchment and the growth in non-state provision. It examines the relative contributions of state and non-state providers to health and education provision in the communities and the micro-level characteristics associated with interaction with state and non-state services. Chapter 5 introduces the concept of social proximity and estimates the extent to which household-level sociopolitical factors are associated with various dimensions of the micro-experience of provision.

Chapters 6 and 7 broaden the analysis to include the role of the community-level context in shaping households' experiences with health provision. Chapter 6 examines the community-level sociopolitical context, while Chapter 7 looks at the organizational context, which includes characteristics of both service providers and civil society organizations. Finally, the conclusion reviews findings and implications for policy and practice.

## Chapter 2

### **Study Context: Nairobi, Informal Settlements, and Fragmented Systems of Health and Education Provision**

#### **Introduction**

In the introductory chapter, I described the historical context that led to the growth of non-state social welfare provision across the globe and furnished a typology of common non-state providers. In this chapter, I focus on the historical events, policy changes, and demographic shifts that have contributed to the development of the systems of health and education provision present in Nairobi's informal settlements. While I focus specifically on Kenya in this study, I include literature from other countries to highlight commonalities between Nairobi and other cities in the developing world. Throughout the chapter, I draw on an interdisciplinary compendium of literature and data to construct a picture of the social, economic, and political contexts in which survey participants reside.

Following a brief description of Nairobi, I outline some of the challenges associated with life in informal settlements. Slums play an important role in housing low-income individuals and families in urban areas of the developing world. Because of this, slum formation must be viewed as a key aspect of poor households' livelihood strategies. Informal settlements provide housing for migrants, theoretically enabling them to acclimate to the city, obtain employment, and save enough money to move to higher quality, formal sector housing (Gulyani & Talukdar, 2008; Smit, 2006). Slum residents provide a continuous supply of low-cost labor and drive the informal economy, offering services and commercial activities for community members and the city at large (UN-Habitat, 2003). As Gulyani and

Bassett (2007) note, the development literature often “valorizes” informal settlements for these reasons.

In reality, however, while a minority of slum dwellers may experience upward mobility, the majority are unable to escape the inadequate living conditions of the slums (Gulyani & Talukdar, 2008). The living conditions impede the development of residents’ human and economic capital and impose negative consequences on the city as a whole (Ferguson & Navarrete, 2003). The review of the micro- and macro-level consequences of informal settlements in this chapter reinforces the critical importance of high-quality, equitable, affordable, and widely accessible education and health service provision in these communities.

The next two sections successively address health and education provision in Nairobi. For each service type, I review the historical evolution of provision and offer a brief account of the services currently provided by state and non-state actors. Together, these sections provide an overview of the service environment that shapes surveyed households’ experiences. The picture of the systems of health and education provision—in both Nairobi at large and the slums in particular—that emerges portrays a fragmented, opaque, and exceedingly diverse service environment. The chapter concludes with descriptions of Kibera and Korogocho and the logic that informed their selections as the sites for this research.

Generating an understanding of how and to what extent households successfully navigate the service environment and access quality healthcare and schools is one of the primary goals of the dissertation. The background information in this chapter reveals an unfortunate paradox: while slum dwellers face multiple dimensions of exclusion and vulnerability, the service environment in the communities that developed following state retrenchment and the growth of non-state provision is among the most unregulated and difficult to navigate.

## **Nairobi: A City of Contrasts**

Nairobi, the capital of Kenya and the largest city in East Africa, is located in the highlands of the south-central area of the country. The city’s name comes from a

Maasai phrase meaning “a place of cool waters” (Mitullah, 2003). It was founded in 1899 during the construction of the Uganda Railway and quickly grew into a European settlement and the eventual commercial and business hub of British East Africa. Throughout its history, Nairobi has been a divided city with widespread marginalization and inequity. The colonial regime designed and enforced a system of racial residential segregation that eventually transformed into socioeconomic and legal-tenural segregation following independence in 1963 (K’Akumu & Olima, 2007).

Pursuing the development of “modern” economic sectors, the nascent Kenyan government redirected resources from agriculture to manufacturing and other urban enterprises. They provided incentives and supports to urban workers, doing nothing to address falling agricultural profits and the needs of rural residents. People migrated to Nairobi and other urban areas en masse to escape rural poverty and access government benefits, but the industries did not expand at similar rates. The supply of affordable housing was small, so un- and under-employed migrants and other low-income residents were unable to obtain formal sector housing. Informal settlements multiplied in number and size as these residents were forced to acquire land through informal (and often illegal) means and build structures with whatever materials were available (Annez, Buckley, & Kakarickal, 2010; UN-Habitat, 2003).

Currently, an estimated 70 percent of Nairobi’s more than three million residents reside in informal settlements that occupy only 5 percent of the city’s land area (UN-Habitat, 2012). Most dwellings within these slums are rented by the room, and many households occupy single rooms. Despite the lack of basic services and the poor quality of the structures, the rents are high (Amis, 1984; Gulyani & Talukdar, 2008). Nevertheless, youth and families continue to move to Nairobi from rural areas to look for work, and they are joined by an increasing number of refugees from Somalia and other surrounding countries. Many of these migrants seek shelter in the slums, and the communities are home to members of all of Kenya’s ethnic groups (Dafe, 2009).



Today, Nairobi is the hub of East Africa, a bustling economic and political capital home to Kenya's richest and most powerful citizens. It is also home to Kenya's poorest and most vulnerable citizens. Standing on the roof of the 28-story Kenyatta International Conference Centre (KICC) in Nairobi's central business district (CBD), the view across the city lays bare the stark contrasts contained within its borders. The cluster of modern office buildings in the CBD gives way to the leafy enclaves populated by the sizable expat community and wealthy Kenyans who work in the financial and commercial enterprises or the plethora of international organizations and NGOs based in the city. The relative lushness stretching out to the expansive Nairobi National Park and the Ngong Hills is evidence of the relatively low population density. Modern shopping malls, well-stocked supermarkets, restaurants, cinemas, and other amenities cater to residents of these areas, and their parking lots are filled with late model Land Rovers and Mercedes. Only the tall gates topped with razor wire, armed guards searching entering vehicles and using long mirrors to check for explosives, and additional teams of armed guards ushering patrons through metal detectors and rifling through bags suggest that life here may be less idyllic than it appears.



*Figure 2.1* View from the KICC to the Ngong Hills with Kibera in the foreground.

Shifting one's gaze in either direction, the green is, with the exception of the occasional park or group of trees, replaced by dirt, asphalt, and concrete. Apartment

buildings, businesses, and other structures are constructed closely together as the population density increases. The most notable feature of the view from the KICC, however, is the sea of corrugated metal visible on the outskirts of the city and in swathes between the leaves and concrete. Underneath the corrugated metal roofs of the slums, most of Nairobi's residents live without—or with limited access to—schools, health care, water, sanitation, and public transportation. The patterns of land utilization and residential segregation observable from the aerial view of the city have contributed to a systematic and inequitable distribution in both the quantity and quality of public services (K'Akumu & Olima, 2007). As the overview of health and education provision in Nairobi later in this chapter highlights, the inequitable access to services is a product of the interaction between spatial segregation and the system of service provision in Nairobi and Kenya as a whole.

## **Challenges of Life in Informal Settlements**

### ***Micro-Level Consequences***

Inadequate living conditions in informal settlements affect residents' health, economic opportunities, and prospects for upward mobility. The inadequacy begins with the housing units comprising informal settlements. Most dwellings are constructed with weak, impermanent building materials, including mud, discarded timber, straightened oil drums, used corrugated metal sheets, plastic and canvas sheets, and cardboard cartons (Gulis et al, 2004; UN-Habitat, 2003). A survey of slums in Nairobi reported that only 12 percent of houses have external walls constructed with permanent materials (brick, stone, or concrete blocks), while 32 percent of houses have dirt floors (Gulyani et al, 2010). The structures provide inadequate protection against the weather, and the dirt floors magnify the dampness, which has been associated with rheumatism, arthritis, and respiratory diseases like pneumonia and bronchitis (Smit, 2006). The impermanent materials are particularly susceptible to catching fire; the risk is heightened by indoor smoking and cooking without sufficient ventilation (Murray, 2009; Smit, 2006). Furthermore, the discarded iron sheets and wood pieces used in construction often

contain particles of lead paint and other harmful chemicals associated with stunted intellectual growth and behavior problems. Poorly constructed houses create injury hazards and breeding grounds for mold, mice and rats, flies, and cockroaches (Sheuya et al, 2007). Small, overcrowded housing units facilitate the transmission of diseases and contribute to higher rates of diarrhea in children, higher prevalence of HIV and AIDS among residents, and higher infant mortality rates in informal settlements compared to non-slum areas in the same city (Ambert, 2006; Amuyunzu-Nyamongo & Taffa, 2004).

Aside from the physical structure of the housing units, one of the defining features of informal settlements is the inadequate provision of infrastructure and basic services. Deficits include lack of (or inadequate levels of): sanitation; piped water; electricity; waste collection; storm drainage; street lighting; paved sidewalks and roads; emergency routes; schools, clinics, and other institutional buildings; and safe leisure areas for adults and children, including playgrounds, parks, and meeting spaces (Abdenur, 2009; UN-Habitat, 2003). The electricity connection rate in the slums of Nairobi was 22 percent in 2010; 77 percent of households rely on kerosene or paraffin as an alternative source of lighting (Gulyani et al, 2010). As with all other basic services in informal settlements, the quality of connections varies but is typically less reliable than in other areas of the city. Frequent outages and extended service disruptions are common, and services may only be available for a few hours a day even when fully functioning (Baker, 2008; UN-Habitat, 2003). Without access to electricity and proper ventilation, households depend on unvented biomass fuels for cooking and heating. In addition to the risk of fire, the implications for respiratory health include higher rates of lung cancer in adults, low birth rates, asthma, bronchitis, pneumonia, and ear infections in children (Adler, 1994; Sheuya et al, 2007).

Limited access to clean water is another defining feature of informal settlements. Lack of consistent access to clean drinking water and inadequate sanitation contribute to outbreaks of chronic diseases, parasitic infections, waterborne diseases like cholera, and airborne diseases such as influenza,

pneumonia, and tuberculosis (Adler, 1994; Brakarz, 2002). Only 19 percent of slum households in Nairobi have access to private, piped water connections via an in-house receptacle or a yard tap (Gulyani et al, 2010). Due to the lack of availability of public services and the unwillingness of private providers to serve low-income neighborhoods, the remaining households must rely on alternative sources of supply, including kiosks, water resellers, and other small-scale providers (Dagdeviren & Robertson, 2009).

In addition to the lower quality of many of these sources, the alternative delivery systems are significantly more expensive. Data from 47 countries and 93 locations indicates that average water prices charged by private vendors compared to the formal network are 1.5 times higher for piped network operators, 4.5 times higher for point sources, and up to 12 times higher for mobile distributors; overall, the median price of water in informal settlements is almost five times the average price (Baker, 2008; UN-Habitat, 2003). As a consequence of the high cost, households in informal settlements generally use less than half the amount of water as the average household in the same city (UN-Habitat, 2003).

As Amis (1995) and Gulyani and Talukdar (2008) highlight, the lower-quality, higher-cost paradox for water provision in slums is part of a general problem these households face. The lack of access to affordable formal sector provision – either housing or social welfare services – forces low-income households to spend more money than should be necessary for low quality, informal housing and services. Lack of transportation and easy access to central markets, for example, compels slum dwellers to buy lower quality food in small quantities from local outlets at higher prices. Incidences of nutritional deprivation are more numerous and more extensive than would be expected if low incomes were the only limiting factor (UN-Habitat, 2010).

Toilets, sanitation, and garbage collection are also inadequate in informal settlements. Gulyani, Talukdar, and Jack (2010) report that the average number of households sharing a toilet facility is 19.1 in Nairobi, translating into averages of 57 and 60 people sharing one toilet. Approximately 6 percent of Nairobi households

have no access to toilet facilities, relying instead on the bush or the use of bags discarded on communal piles, railroad tracks, and rivers. The latter option is commonly described as the “flying toilet.” Despite the obvious sanitary concerns associated with piles of human waste from flying toilets and other garbage, most slum households dispose of solid refuse by dumping, burning, or burying it (Dafe, 2009).

Estimates for access to organized garbage collection vary by location, but only 12 percent of households in Nairobi’s informal settlements report some type of collection. Only 1 percent of those households are served by a public system, and the other 11 percent must pay for private collection; residents complain that both are irregular and infrequent (Dafe, 2009; Gulyani et al, 2010). Ooi and Phua (2007) emphasize the links between inadequate sanitation and rates of illness and mortality, citing studies indicating that poor sanitation explains why Dhaka, Bangladesh—where only a quarter of the population has access to the piped sewer system and only two-thirds of households are connected to the city’s potable water supply—has one of the highest rates of death from infectious diseases in Asia.

Disposal of liquid waste and stormwater drainage are similarly problematic. Although 58 percent of Nairobi slum households have a drain outside their house, only 44 percent of these residents report that the drains work properly most of the time (Gulyani et al, 2010). The inadequate and poorly functioning drainage infrastructure leads to frequent flooding, which has devastating consequences for the poorly constructed dwellings. Stagnant water is another byproduct, creating fertile conditions for mosquitoes. In malarial countries, the effects on health include rises in infant mortality, periodic episodes of debilitating disease among adults, and increases in health care costs as residents cope with malaria (Martin & Mathema, 2010).

At the level of the neighborhood, informal settlements face additional inadequacies. Many settlements are located on environmentally disadvantageous land. Areas around railroad tracks, steep slopes, dump sites, marshes, riverbeds and other areas prone to flooding, land with contaminated soil or other pollutants,

and abandoned railroad or port yards are very common, as are locations subject to noxious industrial waste (Brakarz, 2002; UN-Habitat, 2003; Wekesa et al, 2010). Korogocho, one of the sites for this study, is located next to the Dandora Municipal Dumpsite on the outskirts of Nairobi. The site is an unrestricted dumping site containing many hazardous materials. A 2007 study commissioned by the United Nations Environment Program examined more than 300 children at St. John's Informal School in Korogocho and found that about 50 percent of the students had respiratory problems and 30 percent had blood abnormalities that signaled heavy-metal poisoning (Kimani, 2008).

Physical layouts of informal settlements range from fairly organized to haphazard, but the density of even highly organized settlements makes the introduction of roads, pathways, drainage, water, sanitation, and other infrastructure very challenging, practically guarantees that fires will quickly spread to multiple dwellings, and limits the ability of fire and rescue services to respond to crises (Adler, 1994; Murray, 2009; UN-Habitat, 2003). A September 2011 fire in a Nairobi slum caused by an oil leak killed at least 75 people and injured hundreds more, but the death toll and damage were arguably consequences of – or at least exacerbated by – the slum conditions more than the oil leak itself. *The Guardian* quoted a businessman and slum dweller:

There is no government here...if there was an official presence, the authorities would have noticed that the spillage had been going on for several hours before the blast and stopped it. But we are left to live like this with no services, access roads or security. (Mutiga, 2011)

Rescue workers had to navigate through overcrowded dwellings and dodge hanging wires that bring illegal power to the tin shacks, which lengthened response time and intensified fire damage (Mutiga, 2011).

The multi-dimensional challenges slum dwellers face, both individually and collectively, perpetuate their vulnerability and social exclusion. Vulnerability, which Moser and Satterthwaite (2008) define as insecurity in the well-being of individuals, households, and communities, can be conceptualized as a lack of resilience to changes that threaten welfare. Changes can be environmental,

economic, social, and political, and can occur as sudden shocks, long-term trends, or seasonal cycles (Moser & Satterthwaite, 2008). Resilient households are able to cope with hardships by drawing on assets they have acquired to protect themselves from negative shocks and improve their well-being over time. These assets may be physical (e.g. housing), human (e.g. labor, skills, good health), financial (e.g. savings, access to credit), social (e.g. support networks), or political (e.g. channels of representation and influence) (Rakodi, 2002). Households without assets that can be mobilized in the face of hardship are vulnerable to increasing poverty and the negative consequences that accompany it. The conditions in many informal settlements both contribute to the occurrence of hardships and ensure that residents are more vulnerable to the negative effects.

Though its meaning is contested, social exclusion is ubiquitous in the development literature and “provides a useful heuristic tool for understanding both persistent and mutating patterns of social disadvantage” by illuminating the “relational and institutional dynamics that serve to include some and keep others out” (Beall, 2002, p. 50). Poverty is clearly a contributing factor, but social exclusion is multi-dimensional; exclusion may be exacerbated by poverty, but the processes of exclusion can cause poverty and trap people in a state of chronic poverty (Beall, 2002). In the context of informal settlements, social exclusion encapsulates the processes that prevent slum dwellers from participating fully in the social, political, and economic life of cities and constrain their ability to acquire sufficient assets to weather hardships and move out of the slums.

Though the potential for accessing and building the physical, human, financial, social, and political assets necessary for resilience is at least somewhat dependent on individual households’ skills, circumstances, and strategies, slum dwellers’ social exclusion creates obstacles to asset accumulation and social mobility (Bhatia & Chatterjee, 2010; Rashid, 2009). The market failures in the land and housing sectors that force residents to seek shelter in informal settlements limit their ability to acquire and improve physical assets like housing. The shortage of infrastructure and the lack of secure tenure present similar obstacles. The majority

of slum dwellers rent their homes (92 percent in Nairobi), and the illegal nature of informal housing renders tenants powerless in the face of exploitation, mistreatment, or eviction by landlords (Abbott, 2002; Abdenur, 2009; Apiyo, 1998; Grudgings, 2011; Milbert, 2006).

Human assets are similarly difficult to accumulate, as lack of access to sanitation, clinics, and schools reduces residents' ability to acquire the education and skills necessary to obtain formal employment and remain healthy in order to maximize return from their labor (Mugisha, 2006). Based on a systematic comparison of slum and non-slum populations within the same city,<sup>12</sup> UN-Habitat concludes that nutritional, health, and educational outcomes of the populations are significantly different, with slum dwellers consistently experiencing more nutritional deprivation, ill health, and poor educational outcomes than their non-slum counterparts (2010). Barriers to human capital development pose cumulative challenges to slum dwellers, as poor hygienic conditions for babies and children are associated with poor educational outcomes and early dropout, which are then associated with higher rates of early pregnancy, domestic violence, and criminal activity (Brakarz, 2002).

For residents of informal settlements, this multi-dimensional exclusion presents significant obstacles to accumulating the assets necessary to develop resilience and become upwardly mobile. Without sufficient assets to cope with changes, slum dwellers may be forced to sell any physical assets they have acquired, move into inferior accommodation (magnifying the health and safety risks and lack of access to services), send children to work rather than school, reduce the quality and quantity of food consumed, postpone medical treatment, or withdraw from informal reciprocity arrangements such as rotating savings and credit associations (Rakodi, 2002). Slum dwellers face unique challenges that make chronic poverty difficult to escape, leaving many of them “trapped in a vicious circle of poverty and deprivation” (Rakodi, 2002, p. 256). Improving the accessibility, quality, and

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<sup>12</sup> The survey of slum and non-slum populations was conducted in 2009 in 27 cities located in Africa, Asia, and Latin America. Conclusions are based on statistical analyses of differences.



effective use of health and education services in these communities is crucial to addressing the exclusion and barriers to human capital development that perpetuate residents' vulnerability.

### ***Macro-Level Consequences***

Slum dwellers bear the majority of the burden, but the negative consequences of informal settlements extend beyond the level of the settlements and impose costs on the city at large. Social and political tensions are often heightened in informal settlements, and eruptions of violence in slum communities have generated public attention. After the Kenyan national elections in December 2007, two months of violence in Kibera caused over 1,100 deaths, led to destruction that rendered nearly 350,000 people homeless, cost the country billions of dollars in economic loss, and very nearly destabilized the entire country (de Smedt, 2009). Oversimplified accounts of the violence portray it as a conflict between ethnic groups but, as de Smedt describes, socioeconomic and political exclusion in Kibera explain why conflict manifested there rather than in non-slum communities (2009). According to Kruijt and Koonings,

Exclusion has increasingly become 'segregation,' in which geographical distance as such is less important than the boundaries drawn by social, political and symbolic attributions. Urban segregation refers not only to the geographical distribution of poverty but also to the territorial and social division of cities in 'go' and 'no-go' areas, from the perspective of the local public administration, even the police. The slums come to be seen as genuine enclaves that obey a different set of rules and codes of conduct. (Koonings & Kruijt, 2009, p. 13)

The gradual loss of the state's enforcement of the rule of law in slums has left a void filled by militias, gangs, and other vigilante groups which, in the case of Kibera, were mobilized by politicians in pursuit of electoral victory (de Smedt, 2009).

Perlman (2010) observed a similar proliferation of drug gangs and armed militias in the favelas of Rio de Janeiro; these groups charge residents exorbitant fees for "protection" and permission to travel in and out of the settlement, buy food, and conduct many aspects of their daily lives. The lack of effective governance and the informal structures that arise in its absence create fear and distrust, "erode the

associational capacity of grassroots actors, and distort the channels of participation and empowerment” (Koonings & Kruijt, 2009, p. 176). The violence and other social ills that often arise impose significant costs that extend far beyond the settlement and even the city, as the case of Kibera’s post-election conflict illuminates.

Slums reduce the efficiency of cities and the economic growth of countries and stunt the human potential of enormous numbers of people. The insecurity, underinvestment, and obstacles to the accumulation of human, financial, social, and physical capital characterizing informal settlements limit the economic potential of the communities and the residents. Given the scale of informal settlements and the proportion of urban residents occupying them in cities across the developing world, the economic potential of these cities, and the countries in which they are located, are limited by the conditions in informal settlements. The benefits of improvements in health and education provision in these communities should extend far beyond the boundaries of the slums.

## **Health Provision in Nairobi**

### ***Historical Background***

The health system in Kenya is pluralistic. A variety of actors, including the national Ministry of Health, Local Authorities, NGOs, faith-based groups, community organizations, and private for-profit institutions, provide an extensive range of services at widely varying costs to users. After independence, the Kenyan government identified free health services as an important component of its development strategy (Kanyinga, 1995; Muriithi, 2013). While public health facilities had charged user fees under the colonial regime, the new government quickly abolished fees, opting to fund the health system largely from general taxes. By 1988, however, pressure from the IMF and the World Bank and the need for revenue to address deteriorating facilities and service quality led the government to reintroduce fees for all public health services (Chuma & Okongu, 2011). The government’s strategy for shedding some of the financial burden of healthcare was two-pronged. The reintroduction of user fees shifted some of the burden to

consumers. At the same time, the government sought to create an enabling environment for increased private sector involvement in health service provision (Muthaka et al, 2004). Non-governmental organizations, faith-based organizations, community groups, and a wide variety of private for-profit providers established services to meet the demand and provide an alternative to public facilities that were widely perceived as low quality and inadequate (Chuma & Okongu, 2011).

Though the proliferation of private provision shifted some of the burden off of the state, the deregulation that enabled the growth of private sector involvement also allowed for an enormous diversity in all aspects of the sector (Muthaka et al, 2004). Non-state providers currently account for more than 50 percent of registered health facilities in Kenya,<sup>13</sup> ranging from chemists dispensing over-the-counter medications to modern hospitals and including everything in between. Many additional non-state providers are unregistered and unlicensed, and mechanisms for oversight, quality control, cost limitations, service coordination, and other regulatory functions are either non-existent or largely unenforced (Chuma & Okongu, 2013; Luoma et al, 2010; Muthaka et al, 2004; Republic of Kenya, 2011). Given the volume of providers, the difficulties inherent in identifying and classifying the diverse array of private providers, and the government's limited resources, regulating the private health sector is a persistent challenge.

An additional notable feature of the system of state and non-state provision in Kenya is the absence of contracting mechanisms between the Ministry of Health and private providers (Luoma et al, 2010). Unlike the public-private partnerships prevalent in many other developing countries, the Kenyan government's enablement strategy encouraged the growth of the private sector to relieve some of the strain on public facilities but opted to keep the sectors completely separate (Muthaka et al, 2004). Cooperation between the Ministry of Health and non-state providers has been historically limited (Luoma et al, 2010; Republic of Kenya,

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<sup>13</sup> This figure was calculated using the Master Facility List of all operational service providers maintained by the Ministry of Health. The list was accessed on 25 May 2015 at <http://www.ehealth.or.ke>.

2011). The lack of coordination and formal channels for communication between sectors has resulted in service duplication, uneven and inequitable coverage, technical delays and complications, and other sources of inefficiency in the health system. Although there are current and future initiatives that aim to give the private sector a voice in the government's strategic planning for health provision, the sectors continue to operate largely independent of one another (Luoma et al, 2010).

### ***Public Health Provision***

The public health system in Kenya is structured like a pyramid. Dispensaries and health centers, located in communities, form the base of the pyramid and offer preventative care and curative outpatient treatment for basic ailments and illnesses. Dispensaries are the most prevalent type of public health facility in the country, comprising 76 percent of all government facilities (see Table 2.1 for the distribution). They are staffed by enrolled nurses and medical assistants and provide outpatient care for minor ailments such as the common cold and basic antenatal care. Health centers account for 17 percent of facilities and provide a wider range of services. Staffed by a clinical officer, midwives or nurses, and occasionally a doctor, they offer basic curative and preventative services for children and adults, reproductive services, and minor surgical procedures such as wound stitching (Muga et al, 2005). In 2004, the failure to meet targeted metrics for improvements in health outcomes among the poorest citizens led the government to eliminate user fees at dispensaries and health centers and institute a registration fee of 10 Ksh (approximately \$0.12 USD) for dispensaries and 20 Ksh for health centers. The registration fees can be waived for children under five, the poor, and treatment for malaria and tuberculosis (Muriithi, 2013).

Individuals in need of services not provided by dispensaries and health centers are referred to facilities in the middle of the public health system pyramid, including sub-district and district hospitals. These facilities offer higher levels of care, but patients pay a fee based on services rendered (Muriithi, 2013). Sub-district

hospitals are similar to health centers, but generally include doctors on staff and are able to perform more surgical procedures, including cesarean sections. District hospitals account for 3 percent of public facilities, and they are the first referral hospital for patients treated at lower level care centers in the district. The training, skill, and competence of the staff is expected to be significantly higher than dispensary and health center staff, and the hospitals should be equipped to offer accident and emergency services and preventative and curative care on an outpatient and inpatient basis. Surgical theaters are also greatly enhanced at the district hospitals, and they are able to offer anesthesia for appropriate procedures (Muga et al, 2005).

**Table 2.1: Distribution of Public Health Facilities in Kenya by Level of Services**

| <b>Facility type</b>       | <b>n</b>    | <b>%</b>    |
|----------------------------|-------------|-------------|
| Dispensary                 | 3693        | 76%         |
| Health Center              | 834         | 17%         |
| Sub-District Hospital      | 140         | 3%          |
| District Hospital          | 137         | 3%          |
| Provincial Hospital        | 9           | 0%          |
| National Referral Hospital | 2           | 0%          |
| Other Hospital             | 14          | 0%          |
| <b>TOTAL</b>               | <b>4829</b> | <b>100%</b> |

*Source:* Ministry of Health Master Facility List, Republic of Kenya (2015)

The top two levels of the health system pyramid are occupied by provincial and national referral hospitals. There are nine provincial hospitals in Kenya, and they serve the geographical province in which they are located. Individuals are referred to these facilities when district hospitals are not able to offer the services or level of care necessary. They are staffed by a variety of medical professionals, including specialists in fields such as surgery, pediatrics, psychiatry, emergency medicine, ophthalmology, and dermatology, and they include intensive and progressive care units (Muga et al, 2005). The two national referral hospitals—Moi Referral and Teaching Hospital in Eldoret and Kenyatta Hospital in Nairobi—offer

the highest level of care available in the country. They have the most sophisticated equipment, the most qualified staff, the highest concentration of resources, and the most rigorous clinical standards and treatment protocols (Muga et al, 2005). These facilities offer the most specialized care, but patients are required to pay fees for services (Muriithi, 2013).

While the hierarchical public health system may be efficient in theory, the reality is much more complicated. Neither the physical health facilities nor the inputs—qualified staff, functioning equipment, supplies, financial resources, etc.—are equitably distributed across the country, and the accessibility and quality of care varies widely (Luoma et al, 2010). The system has been consistently underfunded since independence, so equipment and facilities are in need of repair and replacement (Muthaka et al, 2004). The Service Provision Assessment conducted by the Kenyan government in 2010 revealed that, among all public health facilities in the country, 80 percent have basic client amenities (functioning latrine, waiting area protected from the elements, and a basic level of cleanliness), 32 percent have a regular water supply, 21 percent have a regular electricity supply or generator, and only 6 percent have basic amenities, water supply, and electricity (Republic of Kenya, 2011). According to the 2013 Service Delivery Indicators data collected by the World Bank, over 29 percent of public health providers are absent on any given day, and the absence rate is even higher—44 percent—among large urban health centers. Furthermore, only 58 percent of public health providers were able to correctly diagnose at least 4 out of 5 very common conditions, and public providers followed only 44 percent of the correct treatment procedures for maternal and neonatal complications (Martin & Pimhidzai, 2013).

Though utilization of public health facilities increased by about 30 percent following the elimination of user fees at dispensaries and health centers in 2004, reports of cash shortages at some facilities and widespread collection of informal user fees and bribes suggest that the benefits of the new fee structure may not be widely or equitably distributed (Chuma & Okongu, 2013). The national household expenditure and utilization survey conducted in 2007 by the Government of Kenya

estimated that households paid Ksh 7 billion to public providers during the same period in which Ksh 1.5 billion in user fee revenue was formally processed by public providers (Luoma et al, 2010). Although no recent data on informal user fees is available, the magnitude of the disparity between households' costs and formal registration fees implies that government health services may be more expensive and access may be more restricted than policies indicate.

### ***Private Provision***

Unlike the well-defined hierarchy of the public health system, the private healthcare sector in Kenya is diverse, defies classification, and exists at many levels of formality. Though the government has formulated a classification system for private providers, deregulation and limited enforcement of existing regulations have led to a lack of adherence that causes confusion for clients and researchers alike. Some facilities identify themselves as hospitals when their level of services is equivalent to a dispensary, and staff sometimes refer to themselves as doctors even if they have no formal medical training (Muthaka et al, 2004). Only some private facilities are registered, so existing studies only partially account for the size of the sector and the volume and nature of services they provide to citizens. In general, as depicted in Table 2.2, non-state providers operating in the country can be classified by ownership, economic orientation, and the approximate level of care they offer (Muthaka et al, 2004).

The private health sector has experienced sustained growth since independence, particularly since the 1980s, but the quality and coverage of services provided by non-state actors varies widely. The not-for-profit sub-sector, which includes non-government organizations (NGOs), faith-based organizations (FBOs), and community-based organizations (CBOs), constitutes a minority of the registered providers in the private sector. Some of these organizations choose to locate in low-income areas and offer free or heavily subsidized care to those who could not otherwise afford it, some aim to provide a high quality alternative to government facilities and charge fees to cover the costs of care, and others are established to

provide services to a specific constituency at varying costs (Muga et al, 2005; Muriithi, 2013).

**Table 2.2: Typology of Non-State Health Service Providers in Kenya**

| NOT-FOR PROFIT SUB-SECTOR   |   | FOR-PROFIT SUB-SECTOR   |
|---|---|---|
| Faith-based organizations (FBOs)  | Other non-governmental organizations (NGOs)   |   |
| <b><i>Christian Health Association of Kenya</i></b><br>Hospitals, health centers, clinics/dispensaries<br><i>383 registered facilities</i>                                | <b><i>NGOs involved in family planning</i></b><br>Stand-alone VCT centers<br><i>114 registered facilities</i>   | <b><i>Private enterprises (institutions)</i></b><br>Hospitals, health centers, clinics/dispensaries, maternity homes, pharmacies<br><i>1,355 registered facilities</i>  |
| <b><i>Kenya Episcopal Conference – Catholic Secretariat</i></b><br>Hospitals, cottage hospitals, health centers, clinics/dispensaries<br><i>412 registered facilities</i> | <b><i>Community-based organizations and providers (CBOs)</i></b><br>Community health workers, community pharmacies, community clinics<br><i>150 registered facilities</i> | <b><i>Private practices (sole practitioner or group) and clinics</i></b><br>Medical specialists ( <i>162 registered</i> )<br>Clinical officers ( <i>565 registered</i> )<br>Nurses/midwives ( <i>995 registered</i> )<br>General practitioners ( <i>414 registered</i> )<br>Unspecified practice ( <i>237 registered</i> )  |
| <b><i>Supreme Council for Kenya Muslims</i></b><br>Health centers, clinics/dispensaries<br><i>13 registered facilities</i>  | <b><i>Other NGOs (international and domestic)</i></b><br>Hospitals, health centers, clinics/dispensaries, temporary medical camps<br><i>349 registered facilities</i>     | <b><i>Workplace clinics</i></b><br>Industrial and academic clinics, dispensaries, pharmacies, chemists<br><i>95 registered</i>  |
| <b><i>Other FBOs</i></b><br>Hospitals, health centers, clinics/dispensaries<br><i>277 registered facilities</i>   |   | <b><i>Individual pharmacies</i></b><br>Registered pharmacists/chemists and/or pharmaceutical technologists<br><br><b><i>Individual laboratories</i></b><br>Radiological laboratories, clinical laboratories<br><br><b><i>Stores and shops</i></b><br>Drug stores, chemists, and market vendors<br><br><b><i>Traditional health practitioners</i></b><br>Traditional birth attendants, herbalists, bonesetters, diviners, etc. |

Source: adapted from Muthaka et al (2004) using data from the Ministry of Health Master Facility List (Republic of Kenya, 2015)



Similar variation in both cost and quality exists within the for-profit sub-sector. Citizens across the socioeconomic spectrum utilize for-profit providers, but there is significant stratification within the system of providers. At the top of the distribution are the high quality, high cost facilities that developed in response to the demand among affluent Kenyans for an alternative to the public sector facilities they perceived as inadequate, unresponsive, overcrowded, and incompetent (Muga et al, 2005). As the level of care, qualifications of staff, availability of equipment and supplies, and condition of the facilities decrease, the cost of care goes down and services become affordable for a larger portion of the population. The fees at all private for-profit facilities are generally higher than those charged in government facilities for the same services, but surveys show that a majority of the public perceives private providers are more accessible and reliable (Bratton, 2012).

The greater accessibility of private for-profit providers is particularly true in urban areas. Table 2.3 displays the distribution of registered health facilities by operator type in Kenya and Nairobi, where government provision comprises only a small portion of operational facilities. Only 15 percent of facilities in Nairobi are operated by the government compared to 46 percent nationwide; the city's ratio of one public facility per 98,009 persons renders it the worst served district in the country (Muriithi, 2013). Long waiting times and travel distances to public facilities creates incentives for private providers to enter the market to meet the demand. Whereas private for-profit facilities account for 38 percent of facilities nationwide, they constitute 61 percent of registered facilities in Nairobi (Republic of Kenya MOH, 2015). The for-profit sub-sector also dominates the private sector in Nairobi for all facility types with the exception of stand-alone VCT centers that offer HIV testing and counseling and family planning services (see Table 2.4 for the distribution of facilities by provider type). There is intense competition among these providers for staff and patients; as a consequence, the private for-profit sector in Nairobi and other urban areas is highly fragmented and uncoordinated (Muga et al, 2005).

**Table 2.3: Registered Health Care Providers in Kenya and Nairobi by Operator Type**

| Operator type | Kenya         | Nairobi    |
|---------------|---------------|------------|
| Government    | 4,737<br>46%  | 134<br>15% |
| NGO           | 349<br>3%     | 100<br>11% |
| Faith-based   | 1,083<br>11%  | 117<br>13% |
| CBO           | 150<br>1%     | 12<br>1%   |
| Private       | 3,875<br>38%  | 559<br>61% |
| <b>TOTAL</b>  | <b>10,194</b> | <b>922</b> |

*Source:* Republic of Kenya Ministry of Health Master Facility List (2015)

**Table 2.4: Registered Health Service Providers in Nairobi by Facility Types**

| Type of Facility          | Public    |            | Private   |         |           | Total private | Total |
|---------------------------|-----------|------------|-----------|---------|-----------|---------------|-------|
|                           |           | For-profit | NGO       | CBO     | FBO       |               |       |
| Dispensaries              | 77<br>39% | 61<br>31%  | 18<br>9%  | 4<br>2% | 37<br>19% | 120<br>61%    | 197   |
| Clinics/Medical Centers   | 17<br>4%  | 357<br>78% | 51<br>11% | 2<br>0% | 30<br>7%  | 440<br>96%    | 457   |
| Health Centers            | 29<br>33% | 38<br>44%  | 7<br>8%   | 2<br>2% | 11<br>13% | 58<br>67%     | 87    |
| Hospitals                 | 9<br>20%  | 28<br>62%  | 0<br>0%   | 0<br>0% | 8<br>18%  | 36<br>80%     | 45    |
| VCT Centers (stand-alone) | 8<br>14%  | 4<br>7%    | 29<br>52% | 3<br>5% | 12<br>21% | 48<br>86%     | 56    |

*Source:* Republic of Kenya Ministry of Health Master Facility List (2015)

### ***Health Provision in Informal Settlements***

Like Nairobi as a whole, the city's informal settlements are not widely served by public health facilities. A study of four slums in Nairobi conducted by the African

Population and Health Center (APHRC) in 2002 found that, out of the 125 health facilities located in or near the four communities, only 4 were public; 15 were private not-for-profit and the other 106 were private for-profit (Fotso & Mukiira, 2012). Furthermore, only 38 percent of all facilities were licensed by the Kenyan Medical Practitioners and Dentist Board, the entity charged with licensing health providers. The Clinical Officers Board and the Nursing Council had licensed 20 percent of the facilities, 27 percent had business licenses from the City Council, and 16 percent were not licensed at all. Additionally, 72 percent of all of the health facilities had no working guidelines or standard protocols for services; more than 75 percent of these were private for-profit providers and half of all private for-profit facilities claimed never to have been supervised by any agency (Fotso & Mukiira, 2012).

By 2009, the number of non-state providers in the settlement areas had quadrupled but public provision and oversight remained low. Out of 503 health facilities serving the slum communities, 6 (1 percent) were public, 79 (16 percent) were private not-for-profit, and 418 (83 percent) were private for-profit (APHRC, 2013). Furthermore, the level of care offered at both public and private facilities near the slums is basic, with the exception of Kenyatta Hospital which requires a referral for services. Four of the six public facilities were health centers and the other was a dispensary. Among the private providers, 81 percent were clinics,<sup>14</sup> 9 percent were dispensaries, and 3 percent were health centers (APHRC, 2013).

## **Education Provision in Nairobi**

### ***Historical Background***

The history of primary and secondary education provision in Kenya and the growth of the private sector follow a similar trajectory as health provision, with a few notable exceptions. The post-independence government prioritized education and devoted considerable resources to the expansion of the public school system

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<sup>14</sup> The services provided by clinics vary widely, but the most sophisticated are equivalent to a health center and the most rudimentary resemble pharmacies or dispensaries (Muga et al, 2005).

(Ogola, 2010). Due to budget crises and the implementation of neoliberal structural adjustment policies mandated by the IMF and the World Bank, however, the government introduced a cost-sharing system for public primary and secondary schools in 1988 (Ogola, 2010). Whereas the government's strategy for shifting costs of health provision created space for private providers but kept the sectors separate, the cost-sharing system for education relied on a partnership between the government, communities, parents, NGOs, religious organizations, and other non-state actors. Under the new framework, parents, communities, and other organizations were responsible for the construction and maintenance of schools, all physical infrastructure, textbooks and other teaching and learning materials, uniforms, examination fees, compensation for non-teaching staff, security, transport, and other capital and indirect costs. The government paid the teachers and all expenses for general administration and planning and curriculum development (Onsomu et al, 2004). To supplement the funds provided by local governments and other organizations—which varied widely across communities—schools charged fees to each enrolled student (Ogola, 2010).

As economic conditions in the country continued to decline after the implementation of the cost-sharing system, decreases in government funding for education placed an increasing financial burden on parents and communities. Fewer families could afford the fees, and communities did not have the resources to address deteriorating facilities and declining education quality (Onsomu et al, 2004). By 2002, net primary school enrollment was just 61.7 percent (Kimenyi, 2013). The increasing global focus on the right to education and the emphasis on universal free primary education in the Millennium Development Goals, accompanied by a need for the poverty reduction and economic growth associated with educational attainment, led the Kenyan government to implement a Free Primary Education (FPE) policy in 2003 and eliminate tuition fees at public primary schools (Ngagi, 2012; Oketch et al, 2008; Wildish, 2011). In 2008, the policy was expanded to include public secondary schools (Ohba, 2011). To compensate for the loss of revenue, the government allocated capitation grants to schools; for each

student enrolled, a school receives approximately \$14 USD per year (Bold et al, 2013). The announcement of FPE generated widespread interest in education among households unable to afford to send their children to school under the prior fee structure, but the policy itself was formulated and enacted with relatively little planning. The government did not allocate funds to construct additional classrooms and hire more teachers to accommodate the influx of students (Ngware, 2013; Oketch et al, 2008). As was the case with the growth of the private health sector, the inability of public schools to meet the demand and the negative public perceptions of overcrowded and poorly maintained facilities led to the growth of private education provision, particularly in urban areas.

### ***Public Provision***

While public/government schools still comprise the majority of primary and secondary schools in Kenya, public education continues to be provided through a partnership between the government, communities, parents, NGOs, FBOs, and other non-state actors. The government pays teachers' salaries and capitation grants for textbooks and provides supervision, curriculum development, and support for other pedagogical and administrative processes. Local governments (city or county councils) contribute additional funds to some schools, often in the form of salaries for non-teaching staff or grants for capital costs. Communities continue to finance some school construction, maintenance, and other operational costs, including feeding programs (Chuck, 2009; Onsomu et al, 2004). The amount the government grants for electricity and water, for example, is insufficient; providing these utilities requires additional contributions (Chuck, 2009). Communities are also involved in the management of schools through participation on school committees. Primary school parents' associations and secondary school boards of governors manage the schools' finances, physical infrastructure, provision of textbooks and other teaching and learning materials, and other aspects of the day-to-day operation of the institutions (Onsomu et al, 2004).

Though direct school fees were abolished with the introduction of FPE, parents continue to pay a number of indirect costs for all enrolled students, including the purchase of mandatory uniforms, examination fees, stationary, transportation, and other ancillary costs. For 2014, the average cost of uniforms and materials for a public primary school student ranges from \$20 to \$50 USD; secondary students must pay an average of \$250 per year (Ohba, 2011). The education non-profit Uwezo Kenya published estimated 2015 fees for Olympic Primary and Secondary schools, public institutions located on the periphery of the Kibera settlement in Nairobi that serve students from the slum. At the primary school, official fees are \$7.48 USD per month, and yearly expenses can total as much as \$180. For secondary school students, the monthly fees are \$23.65 and yearly expenses can reach \$250.<sup>15</sup> Across the country, research indicates that indirect costs associated with public school enrollment comprise more than 25 percent of household income for households in the lowest income quintile (Njagi, 2012).

In addition to community and parental involvement, the Ministry of Education formalized a mechanism for sponsorship of public schools. As defined in the Republic of Kenya Basic Education Act No. 14 of 2013, a sponsor refers to “a person or institution who makes a significant contribution and impact on the academic, financial, infrastructural and spiritual development of an institution of basic education” (Republic of Kenya, 2013). Sponsors can be private individuals, entrepreneurs, religious groups, NGOs or CBOs, or even local government authorities (Onsomu et al, 2004). Sponsors are expected to:

...participate and make recommendations of review of syllabus, curriculum, books and other teaching aids; be represented in the School Management Committees and Board of Management; provide supervisory and advisory services in matters regarding spiritual development in schools including the appointment of chaplains at their own expense; maintain spiritual development while safeguarding the denomination or religious adherence of others; and offer financial and infrastructural support. (Republic of Kenya, 2013)

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<sup>15</sup> <http://www.uwezakenya.org/our-work/sponsorship/estimated-costs-of-education-in-kibera/>

After the implementation of FPE and the elimination of fees for secondary education, enrollment in primary schools across the country increased from 5.9 million students in 2002 to 7.6 million in 2006 and 9.9 million in 2011 (Ngware et al, 2013). Among enrolled students, the primary school completion rate surged from 63 percent in 2002 to 81 percent in 2007, and the transition rate from primary to secondary school increased by 10 percent (Chuck, 2009). By 2007, the net secondary school enrollment rate reached 25 percent for males and 23 percent for females (Ohba, 2011).

There are, however, increasing concerns about the quality of education being provided to students. Schools are overcrowded, facilities are inadequate, and there is a severe shortage of teachers. Classrooms designed to accommodate 30 students are regularly packed with 90 students or more, and multiple classes are often forced to share one room (Chuck, 2009). The primary school student-teacher ratio has increased from 40 students per one teacher to 60-90 students per teacher (Ogola, 2010). According to research for the World Bank's 2013 Service Delivery Indicators for Kenya, only 35 percent of public school teachers demonstrated mastery of the curriculum they teach, and neither seniority nor years of training correlated with teacher competence. Furthermore, absenteeism and a general lack of effort are big problems; only 55 percent of public school teachers are in class teaching on a given day (Martin & Pimhidzai, 2013). Among public school teachers in Nairobi, researchers from the African Population and Health Research Center found that the average score on a standardized math knowledge test was less than 50 percent, and some individuals score as low as 17 percent (Ngware, Oketch & Ezeh, 2011).

In addition to the general concerns about the quality of public education in the country, evidence is gradually supporting the hypothesis that FPE exacerbates inequity in the quality of education between schools (Chuck, 2009). The increases in enrollment following the implementation of FPE were not evenly distributed, because the new enrollees largely came from families who had been previously unable to afford to send their children to school. Schools located in wealthier areas experienced little change in enrollment, as children from the area served by the

schools could already afford an education. Schools in poorer areas—including slums—absorbed a large influx of students but did not have the infrastructure to support them. The cost-sharing framework of public school financing, the dearth of financial resources in these low-income communities, and the inability of the government grants to support construction of new classrooms and other operating costs led to deteriorating conditions and fueled the disparity between schools (Chuck, 2009). Though sponsorship can alleviate some of the financial burden and fund infrastructure and instructional support that parents and the community cannot, not all schools benefit from generous sponsors. At public primary schools serving Nairobi’s informal settlements, teacher-student ratios regularly approach and exceed 1:100 (Chuck, 2009, Uwezo, 2010).

### ***Private Provision***

Prior to the implementation of FPE the private education sector in Kenya was dominated by schools catering to affluent residents. School ownership was diverse and included private entrepreneurs, religious organizations, and NGOs, but the high quality education they sought to provide required tuition fees unaffordable to the majority of households (Onsomu et al, 2004). After FPE, enrollment in Kenya’s private schools swelled from 4.4 percent in 2005 to 10.5 percent in 2009 (Kimenyi, 2013). The majority of this growth in private provision can be attributed to the establishment of low-cost private schools accommodating the poor, most of which are located in urban areas.

The introduction of FPE generated more interest in education, both because the elimination of fees made school affordable and because politicians and other organizations working in the country emphasized the benefits associated with educational attainment. An increasing number of low-income parents recognized the value of education and prioritized school enrollment, but the public schools serving informal settlements and other poor communities were unable to meet the demand and/or are perceived as low quality by parents and community members (Chuck, 2009; Motala, 2009; Njagi, 2012, Rose, 2006; Tooley, 2009; Wildish, 2011).



In response, community groups, FBOs, NGOs, and private entrepreneurs established what are known in Kenya as non-formal schools (NFS). These schools, referenced in the international literature as “low-cost private schools” or “private schools for the poor,” are not necessarily as informal as the name suggests. Some of them utilize the government’s formal primary and secondary school curricula, are recognized by the Ministry of Education, and register as private institutions (Wildish, 2011). Others do not offer the same formal structure but provide alternative learning opportunities for students who do not have the opportunity or financial resources to pursue a formal education; some of these schools are registered by the Ministry of Culture and Social Services (Onsomu et al, 2004).

Because many non-formal schools are neither registered nor overseen by a government department or umbrella organization, the size of the sector is largely unknown. A 2004 study identified approximately 349 non-formal primary schools in Nairobi enrolling almost 41,000 students—almost 17 percent of all primary students in the city at the time (Onsomu et al, 2004). Several years later research conducted in one informal settlement in Nairobi located 76 additional NFS attended by more than 12,000 students (Tooley et al, 2008), and the total number of students enrolled in non-formal schools in the city was estimated to exceed 120,000 (Hoppers, 2011).

In addition to uncertainty surrounding the number of non-formal schools and the size of the population they serve, it is difficult to provide a comprehensive description of the schools and assess the quality of the education they provide. In general, most non-formal schools are small and located in impoverished communities. They are established and operated by a wide range of non-state actors, from private individuals to international NGOs. Those that are able to secure financial support and other resources from outside the community may attract qualified staff, but most rely on volunteers and unqualified teachers (Mugisha, 2006). In the slum areas of Nairobi, 75 percent of non-formal schools are temporary structures constructed with either mud or iron sheets, and electricity, water, sanitation, and other infrastructure are absent for most schools and deficient

when they exist. Ventilation is generally poor, and the environment facilitates the transmission of communicable diseases (Ngome & Kimiywe, 2007).

Non-formal schools are not free, but the fees are low compared to formal private schools and exceptions are often made for orphans and families who are unable to pay. As part of a study on educational attainment in slum communities, APHRC collected data on fees paid to public, formal private, and low-cost private schools in Nairobi. For grade three students, annual charges average 1,720 Ksh at government schools, 10,100 Ksh at formal private schools, and 3,245 Ksh at low-cost private schools (Ngware et al, 2013). Despite the fact that fees at non-formal primary schools are almost double the cost of public primary schools, enrollment in non-formal schools continues to grow. Data from APHRC's demographic surveillance system in two slums in Nairobi reveal that 44 percent of students residing in the communities attend low quality, fee charging private schools (Oketch et al, 2010). More recent studies suggest that number now exceeds 50 percent (Uwezo, 2014).

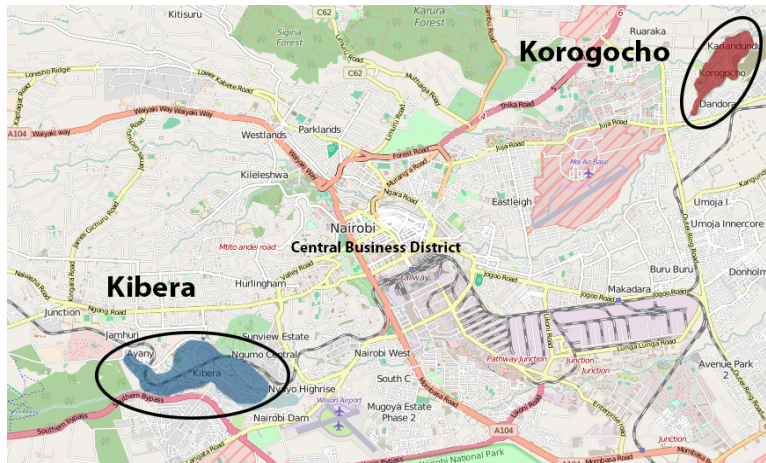
Observers of Kenya's experience with FPE were initially puzzled by the growth of non-formal schools and poor parents' decision to pay higher fees to send their children to schools with unqualified teachers, limited textbooks and other supplies, and inadequate facilities when more "appropriate" public schools were free and located nearby (Oketch et al, 2010). Some NFS enrollments can be explained by the limited spaces available in public schools, but survey research shows that many parents have strong negative perceptions of the quality of public schools and believe their children will receive a better education at non-formal schools (Hoppers, 2011; Ngome & Kimiywe, 2007; Ngware et al, 2013; Oketch et al, 2010; Wildish, 2011).

The surge of enrollment following FPE at public schools near slums and other poor communities resulted in teacher-student ratios of 1:100, and parents express concern with overcrowded conditions and poor supervision (Chuck, 2009; Hopper, 2011). Non-formal schools may have inferior inputs (e.g. facilities, teacher qualification, textbooks, supplies, etc.), but a higher value is placed on the much smaller teacher-student ratio; one study estimated that there are 28 students per

teacher at informal schools in Kibera (Tooley et al, 2008). As an increasing number of non-formal schools are registering with the Ministry of Education and participating in standardized testing—providing a means to compare student achievement across the sectors—emerging data supports parents’ perceptions about school quality. Even though the per-student funding is, on average, 64 percent lower at non-formal schools than public schools, students from the non-formal schools outperform their public school counterparts by a large margin (Kimenyi, 2013).

## **Selection and Description of Study Sites**

There are currently at least 134 informal settlements in Nairobi, and there is wide variation in land area, population size and density, types of housing, and the demographic composition and socioeconomic status of residents (Owuor & Mbatia, 2012; UN-Habitat, 2012). The availability of public health and education facilities also varies by settlement, as does the landscape of non-state providers serving the communities. In order to capture some of the variation between and within slums, I conducted the survey in particular villages within two settlements. I employed purposive sampling to choose the locations. This allowed me to select a sample population representative of key aspects of the diversity among residents of Nairobi’s informal settlements—particularly the ethnic composition of the communities, the average household income, and the specific service providers located within close proximity to the survey respondents. At the same time, limiting the sample to particular villages within two settlements made it possible to gain insight into the experiences and perceptions of enough households with spatial access to the same schools and health providers to develop an understanding of how household-level characteristics affect access to, utilization of, and satisfaction with health and education provision.



**Figure 2.2** Map of metropolitan Nairobi showing the location of Kibera and Korogocho.

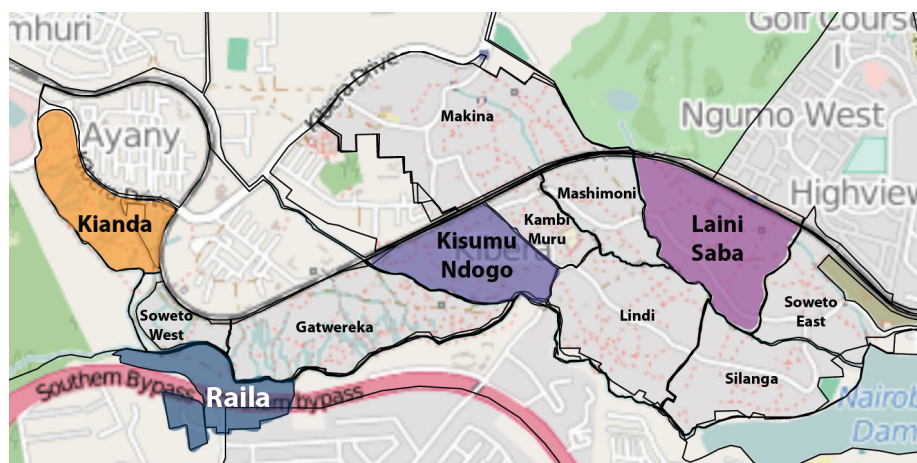
### ***Kibera***

The first settlement chosen for the study, Kibera, has been widely cited as the largest slum in sub-Saharan Africa (UN-Habitat, 2003). Situated on approximately 250 hectares (or 1.5 square miles) of land located seven kilometers southwest of the center of Nairobi, Kibera is one of the oldest and most established informal settlements in the city (Otiso, 2000). Kibera was established in 1912 by the Colonial government to house African veterans, largely of Nubian and Boran origin, who served in the British army during World Wars I and II (Marx et al, 2014; Muriithi, 2013). The nascent Kenyan government formally reclaimed the land after independence, but the population continued to grow as Kibera became a landing point for migrants from rural areas (Amis, 1984). The 2009 Kenya Population and Housing Census reports Kibera's population as 170,070, whereas UN-Habitat estimates range between 350,000 and 1 million people (Marras, 2009). Enumerations by several NGOs working in the settlement over the last few years have reported estimates ranging between 235,000 and 270,000 (Marx et al, 2014).

As Kibera rose to prominence in both popular media and scholarly research, numerous NGOs established programs in the community and journalists, filmmakers, and visiting dignitaries have toured the slum over the past few years. Though the number of shared pit latrines is increasing, the “flying toilet” (defecation in a plastic bag that is then thrown onto a nearby heap of trash) still

predominates. Most people cook over open flames fueled by charcoal, and vendors along the paths sell various sized buckets of charcoal pieces for 30, 40, and 50 shillings; some residents spend 30 percent or more of their income on fuel for cooking (Crosson, 2005). There are pubs, food stands, stalls selling used clothing and other items, churches, schools, clinics, restaurants, and more constructed out of anything and everything from reclaimed wood and corrugated metal sheets to rocks, mud, tarps, and sticks. Some dwellings have electricity through mostly illegal hookups, and there are communal water taps in central locations available for those who can afford the fees. Structures are built practically on top of one another and the pathways separating the rows are narrow, uneven, and flooded with water when it rains.

Kibera is divided into thirteen villages, and settlement patterns, population composition, and density vary widely across the villages (Otiso, 2000). Because Kibera's population growth was fueled by rural-urban migration from all parts of Kenya, the slum is a microcosm of the country as a whole. All Kenyan (African) ethnic groups are represented, although they are not distributed evenly across villages. Most villages house people of all ethnic groups, but one group is often dominant (De Maio, 2013; de Smedt, 2009; Marx et al, 2014).



*Figure 2.3* Map of Kibera highlighting surveyed villages.

Governance in Kibera is multi-layered, mixing formal and traditional institutions. The slum is divided between two parliamentary constituencies and

multiple city council wards, and elected councilors provide political representation to local government. At the same time, however, the Department of Provincial Administration—a division of the national government’s Office of the President—appoints chiefs to govern each of the four locations that include portions of the slum. These locations are divided into 9 sublocations, and assistant chiefs (also appointed by the Provincial Administration) report to the location chief. The sublocations are further divided into villages, and elders selected from each village comprise the customary governance structure, which is separate from both the local and provincial administrations (Marx et al, 2014; Omenya & Lubaale, 2012).

In order to capture the diversity within the settlement without incorporating too much variation in the geographic location of respondents, I purposefully chose to conduct the survey in four villages within Kibera: Laini Saba, Raila, Kisumu Ndogo, and Kianda. Although data on slum populations is very limited, previous qualitative and quantitative research indicates that the variation in average income, ethnic composition, and number of service providers found in these villages is representative of the variation found in Kibera as a whole (Crosson, 2005; de Smedt, 2009; Marx et al, 2014; Matheka & Erulkar, 2007; Otiso, 2000). Laini Saba is considered one of the most affluent villages, and the most prevalent ethnic groups are the Kikuyu and Kamba. Raila and Kianda are among the poorest villages, but Raila contains a high concentration of Luos while multiple ethnic groups are significantly represented in Kianda. Economically, Kisumu Ndogo constitutes the middle ground between the relative affluence of Laini Saba and the relative poverty of Kianda and Raila. Though Luos are the most prevalent ethnic group in the village, the highest concentration of Nubians in Kibera resides in Kisumu Ndogo. Kenyans of Nubian origin constitute a small fraction of Kibera’s population, but they are well represented in the local administration and among structure owners (Crosson, 2005; De Maio, 2013; de Smedt, 2009; Desgroppe & Taupin, 2011; Marx et al, 2014; Muriithi, 2013).

## ***Korogocho***

The second settlement selected for the study is Korogocho, a community founded by rural immigrants to Nairobi in the 1960s. Though Korogocho was developed more than 60 years after Kibera, it has become the fourth largest slum in Nairobi. A Participatory Urban Appraisal (PUA) conducted in 2010 on behalf of UN-Habitat and the Republic of Kenya estimated Korogocho's population to be between 100,000 and 120,000, but the 2009 Census data indicates that 42,000 people reside in 12,909 households within the settlement (APHRC, 2013; Gathuthi et al, 2010; KNBS, 2010). Whereas the population of some other informal settlements in the city is relatively transient, the average length of time respondents surveyed by UN-Habitat had been living in their communities was 10 years for Kibera (Crosson, 2005) and over 17 years for Korogocho (Gathuthi et al, 2010). Located approximately eleven kilometers from Nairobi's central business district in the Eastern part of the city, Korogocho occupies 50 hectares (approximately 0.2 square miles) of a mix of government-owned land that was allocated by the City Council of Nairobi as reserve for the Nairobi and Gitathuru rivers and private land onto which the settlement has expanded to accommodate the growing population (Gathuthi et al, 2010; Oketch et al, 2008).



**Figure 2.4** Map of Korogocho highlighting surveyed villages.

The population of Korogocho is diverse; residents represent 30 ethnic groups, engage in a wide range of legal and illegal livelihoods, and form a variety of household structures (Gathuthi et al, 2010). The slum is divided into eight different villages, each with a distinctive character and history, autonomous leadership, and ethnic composition (Kago, 2009). Korogocho comprises one location in the Kenya Provincial Administration structure headed by a Chief and is further divided into three sub-locations headed by assistant Chiefs; these leaders are civil servants appointed to time-limited terms by the Provincial Administration. Each village selects or elects elders to work with the Chiefs as representatives of the people (Gathuthi et al, 2010).

Due to its close proximity to the main Nairobi dumping site and the heavily polluted Nairobi river, human and industrial waste pose a major health problem for residents (APHRC, 2013). Mud is the most common building material for dwellings, followed by corrugated iron sheets. No flooring is installed in a majority of homes, and corrugated iron sheets are almost universally utilized for roofs (Gathuthi et al, 2010). A 2005 survey of 9,00 households in Korogocho found that 94.5 percent of residents purchase water from communal taps, 77.3 percent utilize shared traditional pit latrines, and 85.6 percent rely mainly on kerosene or paraffin to light their homes (Epari et al, 2008). Most residents generate household income by operating small businesses, as opportunities for wage employment are extremely limited (APHRC, 2013). Across Korogocho's eight villages, the percentage of households with incomes below the poverty line ranges from 42 percent to 78 percent, making it among the poorest areas of Nairobi (Zulu et al, 2011).

Although Korogocho and Kibera share many characteristics of slum communities—widespread poverty, high population density, inadequate housing, poor sanitation and water quality, and limited access to basic services—comparatively high levels of insecurity and poor accessibility in Korogocho introduce additional sources of exclusion and vulnerability. Safety is a major concern in Kibera, especially after dark, but if reasonable precautions are followed most



residents and visitors can securely travel the main thoroughfares during daylight hours. The situation in Korogocho is much different, however, and conditions have continued to worsen following the post-election violence in 2007-08. High levels of unemployment, especially among youth and young adults, has fueled participation in gang violence and organized crime; incidences of robbery, rape, kidnapping, stabbing, shooting, and drug and alcohol abuse (and associated violence) are disturbingly frequent (UN-Habitat, 2012). According to survey results from the 2010 PUA, insecurity was the number one concern among residents: between 43 and 71 percent (depending on village of residence) of respondents reporting feeling unsafe in their home and community (Gathuthi et al, 2010).

Another survey conducted in four slum communities in Nairobi revealed that 58 percent of respondents from Korogocho reported having “personally been a victim of a crime” within the preceding 12 months, compared to 34 percent of respondents from Kibera. When victimization propensities were extrapolated from the survey data, results suggest that residents of Korogocho are 32 percent more likely to be a victim of crime than the overall average, whereas the propensity in Kibera was 23 percent lower than average (Teresia, 2011). Certain areas of Korogocho, including the bridge connecting Korogocho to Babadogo—a place where many residents travel for employment and basic services—have become “no go” zones for pedestrians and motorbikes as gangs have asserted control over territory (Gathuthi et al, 2010; UN-Habitat, 2012). Even though a plethora of formal and non-formal health and education facilities are located within the settlement, residents report that insecurity is a critical barrier to utilization (Amnesty International, 2010; Mudege et al, 2008; personal interviews, 2014). Additionally, the PUA focus group participants believe that violence and safety concerns have driven away NGOs and other individuals and groups who wish to help.

One factor contributing to the comparatively high levels of insecurity in Korogocho is the settlement’s poor accessibility. Streets that facilitate access into and within slums are associated with enhanced safety and reduced fear of crime, as the flow of people into and out of the slum raises the level of activity (UN-Habitat,

2012). Transportation in and out of Kibera is not difficult; multiple paved roads lead from the surrounding relatively affluent areas to different entrances to the settlement, and a constant flow of buses and *matatus* (privately owned minibuses) are available nearby for transportation to other parts of Nairobi. The connections between Kibera and the formal areas of the city bridge, to some extent, the socio-spatial gap that marginalizes informal settlements.

Korogocho, however, is located in the Eastland outskirts of Nairobi city. The roads leading to the settlement from nearby formal areas are poor quality, congested with garbage trucks leading to the Dandora dumpsite, and are neither serviced by public transportation nor pedestrian friendly. The nearest public bus stop is several kilometers away, and many residents walk up to two hours or more each way to get to jobs and other activities around Nairobi (UN-Habitat, 2012). Though *matatus* formerly transported residents and visitors from bus stops to the entrances to the settlement, insecurity has driven them away in recent years. During a 2012 street flow survey conducted over a period of 24 hours at all entrances and exits to the settlement, observers spotted only one *matatu* (UN-Habitat, 2012). During fieldwork in the summer of 2014, *matatus* no longer ventured into Korogocho, most taxi drivers refused to travel to an entrance, and those that could be convinced to do so charged exorbitant fees unaffordable to residents (personal interviews, 2014).

Based on insights from the PUA and other secondary sources, I selected Grogon B, Kisumu Ndogo, and Highridge as representative villages within the settlement. Kisumu Ndogo (Luo) and Grogon B (Kikuyu) are each dominated by one ethnic group, while Highridge appears to be the most ethnically diverse village (Kago, 2009). Additionally, the average income of survey respondents in each of the selected villages is representative of the range found in the settlement: the average in Kisumu Ndogo was the highest, Grogon B was the lowest, and the average income in Highridge was nearly identical to the average across all seven villages (Gathuthi et al, 2010). Once fieldwork commenced, however, it quickly became apparent that the security situation in Grogon B had deteriorated to the point

where it was unsafe for enumerators to enter the village, even if they were familiar with the area and members of the predominant ethnic group. The interview team met with the local chief and elder and was strongly advised to leave immediately; the entire village has become a “no go zone.” After discussions with chiefs and elders from several neighboring villages, I selected Korogocho B to replace Grogon B. Data from the PUA indicated that the median income is the second lowest among the villages and, though there are higher concentrations of other ethnic groups compared to Grogon B, the majority of residents are Kikuyu (Gathuthi et al, 2010; Kago, 2009).

## Chapter 3

### Data and Methodology

#### Introduction

One of the key shortcomings of existing studies on service provision in developing countries is the pervasive reliance on aggregate macro-level data and objective micro-level measures that offer limited insight into households' experiences. Spatial proximity to a service provider, aggregate spending on social services, school enrollment rates, indicators of maternal and infant mortality, and other routinely employed measures do not capture individuals' perceptions of service accessibility and quality. Furthermore, such measures do not shed light on the barriers to access or the challenges households encounter throughout the service-seeking experience. As a consequence of these omissions, efforts to improve service provision informed by the research may fail to consider important determinants of individuals' service-seeking behavior. Health and education outcomes depend on the effective use of services, and perceptions of accessibility and quality influence individuals' decisions regarding whether or not to utilize services and the choice of provider (Amooti-Kaguna & Nuwaha, 2000; Bazant et al, 2009; Ensor & Cooper, 2004; Fotso & Mukiira, 2012; Karkee et al, 2014; Kiguli et al, 2009; Leonard, 2003; Onah et al, 2006; Prata, Montagu, & Fefferys, 2005; Tooley & Dixon, 2006).

In order to incorporate households' perceptions and preferences into the analysis, I adopted a multi-dimensional conceptualization of the micro-experience of service provision inspired by MacLean (2011) and Bratton's (2007, 2012) work with Afrobarometer data. I created an original household survey to collect information on

the multiple dimensions of access to, utilization of, and satisfaction with health and education services in Nairobi's informal settlements. In the remainder of this chapter I review the research design and methodology employed in the dissertation. First, I describe the survey instrument and data collection procedures, including mechanisms for quality assurance. Next I highlight the key limitations and challenges of the survey data and, where applicable, the strategies used to minimize bias. In the third section, I explain the models and statistical techniques used in the analyses and justify the application of principal component analysis to facilitate modeling and interpretation. The final section includes descriptive statistics on the survey sample.

## **Survey Description**

To obtain information about residents of Kibera and Korogocho and their experiences of health and education provision, I created an original household survey. I did not want to limit the study to the perceptions and experiences of one individual, because I sought to gain insight into the ways in which households access services and into the collective contributions of state and non-state providers to the accessibility, equity, and quality of the service environment. Each household unit with its members is the unit of analysis, and the survey collected information about all members of the household. A household was defined as either a group of people living together in one housing unit, or people living in the vicinity but not necessarily the same unit who depend on the same source(s) of income and food and share in the decisions, financing, and experiences of health and education provision.<sup>16</sup>

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<sup>16</sup> The second definition is intended to account for situations in which families are spread among several housing units, either because they are residing with extended family members, there is not enough room in one unit, a child attends boarding school, etc. If a person does not sleep in the unit but fully depends on the occupant or occupants for financial support and the occupant(s) are involved in the decisions, financing, and experiences of health and education provision, the person can be considered a member of the household. This situation was encountered infrequently, and most cases involved a minor child attending boarding school or living with extended family in a rural area to attend school.

The first goal of the survey was to document the micro-experience of health and education provision: awareness of provision in the community, perceptions of the accessibility and quality of state and non-state provision, utilization, and satisfaction with the quality of services. The micro-experience also includes respondents' overall assessments of health and education service provision in the communities, including the degree to which they feel they are able to meet the health and education needs of household members and their perceptions of the accessibility and equity of provision throughout the community.

The second goal of the survey was to collect demographic and sociopolitical characteristics of the household to facilitate an examination of household-level factors that affect the multiple dimensions of the micro-experience of service provision. Demographic questions include a household roster, ethnicity, religion and religious attendance, educational attainment, occupation, income, length of residence in community, and an index of lived poverty adapted from Afrobarometer surveys (Mattes, 2008). Sociopolitical questions include political affiliation and level of involvement, interest in public affairs, membership and extent of involvement in community organizations, and trust in various individuals, groups, and institutions.

Many of the questions were adapted from Afrobarometer and Demographic and Health (DHS) surveys. While I designed the survey and oversaw its implementation, I hired Ipsos Kenya, the Nairobi-based subsidiary of international survey research firm Ipsos, to translate the survey into Swahili and conduct the interviews in Kibera and Korogocho.<sup>17</sup> Ipsos Kenya is the largest survey firm in East Africa and has extensive experience in public opinion polling and survey research for clients such as the United Nations Development Program (UNDP), Afrobarometer, and other American scholars. Before finalizing the survey instrument, I met with several members of the Public Affairs department, including those whose focus is health, education, and urban development, to review the

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<sup>17</sup> Formerly known as The Steadman Group and then Synovate, the company was founded in Kenya and had recently been acquired by Ipsos, a global market and public opinion research firm that is currently the third largest research company in the world.

questions. Their feedback on both the questions themselves and the pre-coded response options contributed to the efficacy of the survey by ensuring that the wording was appropriate for the context and that my understanding and interpretation of the responses are accurate.

Prior to data collection, I spent five full days reviewing and pre-testing the survey with the 26 Kenyan enumerators assigned to the project. All enumerators had received extensive training from Ipsos on survey protocol and techniques such as avoiding biasing the results or leading respondents. Additionally, all of the enumerators were young Kenyans fluent in both English and Swahili and able to blend into the communities in which the survey was conducted. During the first part of the training we went through all of the questions as a group and practiced interviewing one another in order to illuminate any ambiguity or confusion regarding the questions and pre-coded responses. Feedback from these sessions and the pilot interviews conducted in a nearby informal settlement was incorporated into the final version of the survey instrument.

Although the survey collected far more information than can be analyzed in this dissertation, I use the data to compare state and non-state services, explore differences between communities, and examine how factors beyond poverty status affect households' experiences with health and education provision.

## **Data Collection**

Due to the difficulties inherent in conducting surveys in informal settlements, Ipsos selected supervisors familiar with both Kibera and Korogocho to oversee the data collection. All supervisors and enumerators participated in five days of training, pre-testing, and pilot interviews led by project managers from Ipsos and myself. I was not present during the interviews to avoid bias in the results. Supervisors met with village elders and chiefs prior to sending enumerators into the field to discuss the study and survey and proactively address any suspicions or problems that could have arisen during data collection. Additionally, the entire team of enumerators stopped by the chief's office each day before beginning

interviews so that leaders were aware of their presence and knew who to talk to if any issues arose.

After the survey had been translated into Swahili and all revisions from training sessions and pilot interviews were incorporated, the survey instrument—preceded by the verbal consent agreement and screening questions and programmed with skip logics—was uploaded to smartphones furnished by Ipsos. Both English and Swahili versions were available, and enumerators were able to select a language at the beginning of the interview based on respondents' preferences. All of the questions were closed-ended and a number of pre-coded responses were included, but enumerators were able to enter a different response if the answer did not match any of the existing codes. All responses were encrypted and sent wirelessly to Ipsos, along with the GPS coordinates of the household, at the completion of each interview.

The sample size of 1,000 households was divided evenly between the two settlements. Within each settlement, the interviews were distributed among the selected villages in proportion to village population. This process involved estimates; accurate population data for villages within Kibera and Korogocho are not available, as village boundaries do not correspond with census enumeration areas.<sup>18</sup> For Korogocho, I obtained population estimates for Highridge, Kisumu Ndogo, and Korogocho B from the African Population and Health Research Center (APHRC). Since 2002, APHRC has managed the Nairobi Urban Health and Demographic Surveillance System (NUHDSS)<sup>19</sup> in an area that includes Korogocho. For Kibera, I relied on a number of sources, including disaggregated census data obtained by Ipsos and estimates from Map Kibera and other NGOs working in the settlement. Though the numbers varied somewhat by source, the proportion of the population residing in each village was generally consistent and interviews were allocated accordingly. The targeted and actual sample sizes by settlement and

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<sup>18</sup> Additionally, census counts for informal settlements are highly contested.

<sup>19</sup> <http://aphrc.org/projects/nairobi-urban-health-and-demographic-surveillance-system-nuhdss/>



village are provided in Table 3.1. The actual number of interviews completed exceeded the target for each location.

**Table 3.1: Targeted and Actual Sample Size by Location**

| <b>Location</b>  | <b>Targeted Sample Size</b> | <b>Actual Sample Size</b> |
|------------------|-----------------------------|---------------------------|
| <b>Kibera</b>    | <b>500</b>                  | <b>520</b>                |
| Kianda           | 125                         | 131                       |
| Kisumu Ndogo     | 80                          | 86                        |
| Laini Saba       | 220                         | 226                       |
| Raila            | 75                          | 77                        |
| <b>Korogocho</b> | <b>500</b>                  | <b>534</b>                |
| Highridge        | 241                         | 240                       |
| Kisumu Ndogo     | 158                         | 166                       |
| Korogocho B      | 101                         | 128                       |
| <b>Total</b>     | <b>1,000</b>                | <b>1,054</b>              |

### ***Sampling Procedure***

Since addresses and phone numbers of potential respondents were unavailable, enumerators employed a random route sampling procedure commonly used to generate approximately random samples in informal settlements and similar areas (Häder & Gabler, 2003). First, the enumerators identified a prominent fixed landmark in each village such as a school, clinic, or religious institution. They then proceeded away from the landmark using the “left hand rule,” which required them to select houses on their left side only. If there were no residential dwellings immediately to the left of the landmark, they kept walking until they reached the first dwelling on the left. Enumerators used the date to determine which house to sample first. If they were working on the 2<sup>nd</sup> day of the month, for example, they would skip the first two houses and stop at the 3<sup>rd</sup> house. If they were sampling on the 21<sup>st</sup> of the month, they would stop at the 4<sup>th</sup> house ( $2+1=3$ , so skip the first three and stop at the 4<sup>th</sup>).

Once the first dwelling was identified, the enumerator introduced the survey and asked for the adult member of the household who is most familiar with the health and education experiences of all members of the household. After administering a successful survey, the enumerators would skip four houses before

attempting to conduct another interview. If they were unsuccessful, they would continue to try the next house on the left until completing or scheduling an interview. Then they would skip four houses again and keep going. If an individual(s) was present at a dwelling but it was not the person most qualified to answer the questions, enumerators were instructed to find out when the appropriate person would return and schedule a repeat visit. They then skipped four houses and attempted another interview at the fifth house. Enumerators revisited a second and third time; if they were unable to conduct the interview after three visits, the interview was closed.

In order to ensure that portions of the population were not over or under sampled, I established soft quotas for both gender and age group. Since the locations do not correspond with census enumeration areas, I used district level statistics.<sup>20</sup> The quotas and achieved sample by gender and age group are displayed in Table 3.2.

**Table 3.2: Gender and Age of Respondents by Location**

|                  | Gender     |            | Age   |            |       |            |       |            |       |            |       |           | Total        |
|------------------|------------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|-----------|--------------|
|                  | Male       | Female     | 18-24 |            | 25-34 |            | 35-44 |            | 45-54 |            | 55+   |           |              |
|                  |            |            | Quota | Actual     | Quota | Actual     | Quota | Actual     | Quota | Actual     | Quota | Actual    |              |
| <b>Kibera</b>    | <b>247</b> | <b>273</b> | 144   | 147        | 185   | 188        | 95    | 97         | 47    | 58         | 29    | 30        | <b>520</b>   |
| Kianda           | 64         | 67         | 36    | 37         | 46    | 46         | 24    | 21         | 12    | 19         | 7     | 8         | 131          |
| Kisumu Ndogo     | 48         | 38         | 23    | 26         | 30    | 29         | 15    | 16         | 7     | 10         | 5     | 5         | 86           |
| Laini Saba       | 105        | 121        | 63    | 62         | 81    | 85         | 42    | 45         | 21    | 21         | 13    | 13        | 226          |
| Raila            | 30         | 47         | 22    | 22         | 28    | 28         | 14    | 15         | 7     | 8          | 4     | 4         | 77           |
| <b>Korogocho</b> | <b>176</b> | <b>358</b> | 155   | 159        | 190   | 214        | 89    | 92         | 41    | 44         | 25    | 25        | <b>534</b>   |
| Highridge        | 81         | 159        | 75    | 76         | 91    | 92         | 43    | 41         | 20    | 19         | 12    | 12        | 240          |
| Kisumu Ndogo     | 49         | 117        | 49    | 52         | 60    | 61         | 28    | 29         | 13    | 16         | 8     | 8         | 166          |
| Korogocho B      | 46         | 82         | 31    | 31         | 39    | 61         | 18    | 22         | 8     | 9          | 5     | 5         | 128          |
| <b>Total</b>     | <b>423</b> | <b>631</b> |       | <b>306</b> |       | <b>402</b> |       | <b>189</b> |       | <b>102</b> |       | <b>55</b> | <b>1,054</b> |
|                  | 40%        | 60%        |       | 29%        |       | 38%        |       | 18%        |       | 10%        |       | 5%        | 100%         |

<sup>20</sup> Nairobi West District census data was used for Kibera and Nairobi North District data was used for Korogocho.

## *Quality Assurance*

There were a number of procedures established to ensure that interview protocols were followed and to minimize bias and other sources of error in the results. A supervisor was assigned to each village to oversee all of the enumerators working in the village. The supervisor and all members of the interview team met daily to discuss any issues and go over the tasks for the day. The supervisors monitored enumerators' call sheets, traced their routes, and randomly revisited households to ensure that all procedures had been followed and to seek clarification if there were any inconsistencies in the data. Additionally, the surveys were submitted electronically to the Ipsos office at the time of completion, and project managers reviewed incoming data in real time. They plotted the GPS coordinates of each interview to ensure that enumerators stayed within village boundaries and that all areas of each village were covered. The managers consulted regularly with field supervisors to address any problems as they arose and to monitor progress on soft quotas.

The smartphones used by the enumerators were programmed for the microphone to turn on automatically for one random question during each interview and to record audio until the response was submitted and the next question appeared. No indication was given that the microphone was enabled, so while enumerators were aware that a question would be recorded, they never knew when recording would occur. The audio files were transmitted to Ipsos with the survey responses, and project managers reviewed the audio to ensure that all enumerators were following protocol, refraining from leading the respondent or otherwise biasing the results, and coding responses correctly. Furthermore, each response was time stamped; if the timing was off (i.e., significantly shorter or longer than average or expected durations) or if there were other inconsistencies that could not be corroborated by field supervisors, the interview was dropped from the data set.

## **Key Challenges and Limitations of the Survey**

The most obvious limitation of this study is that the sample was drawn from small geographic areas that may not be representative of the population of slum dwellers in Nairobi and is certainly not representative of the global population of poor households affected by the state retrenchment and the growth of non-state health and education provision. Although conclusions from this study cannot be generalized beyond Nairobi, I employed purposive sampling to choose both settlements and villages as representative of the broader population as possible within the financial constraints of the project and the limitations posed by safety concerns. Security is poor, particularly in Korogocho, and it had deteriorated to the point that one of the villages originally chosen was unsafe for enumerators to enter and another village was substituted. Some of the slum's most vulnerable residents were not represented in the sample as a consequence, but the enumerators' safety was paramount.

A second key limitation is that, given the lack of census data or other information with which to construct a sampling frame, the sample is not completely random. This was unavoidable given the characteristics of informal settlements. Random route sampling and soft gender and age quotas were employed to ensure the sample was as random as possible and particular categories were not significantly overrepresented. Additionally, in order to avoid the overrepresentation of households with unemployed adults arising from absenteeism during the weekdays, enumerators conducted interviews on both weekdays and weekends. Safety concerns precluded interviewing after dark, but visits were made at varying days and times in order to minimize sampling errors.

As is the case for any survey, there are several identifiable challenges and sources of response biases. The first is suspicion among respondents about the project and its purpose, the presence of "outsiders," and how their responses will be used. This suspicion can be heightened as residents see enumerators conducting interviews over the period of several days, and it can either discourage people from

participating or elicit guarded responses or responses they think we want to hear. In order to reduce suspicion, the supervisors and interview teams met with chiefs and elders prior to and throughout the fieldwork to inform the community and garner the support of respected leaders. Furthermore, enumerators and supervisors were assigned to villages based on their ethnicity, their ties to and familiarity with the communities, and their ability to blend in and not draw unnecessary attention to themselves.<sup>21</sup>

Bias is particularly likely for questions involving sensitive matters like ethnicity, religion, and politics. Due to the legacy of the post-election violence that caused widespread unrest and destruction in both Kibera and Korogocho and the ongoing tension and insecurity—particularly in Korogocho—suspicion and wariness are heightened among residents. Enumerators reported encountering a great deal of suspicion about who exactly was conducting the survey. Many people seemed to believe that the government was somehow involved and thus were initially guarded. All sensitive questions were placed at the end of the survey instrument to give respondents time to understand the nature of the research and feel comfortable talking with the enumerators. The enumerators reported that suspicion among respondents did subside during the interviews and they sensed authenticity in the responses. Nevertheless, these are subjective assessments and some of the responses were likely influenced by suspicion and distrust.

A second challenge is research fatigue. Nairobi's informal settlements—especially Kibera—are frequently chosen for studies on poverty. The United Nations Human Settlement Programme (UN-Habitat) is based in Nairobi, and the city's relative accessibility and developed infrastructure have attracted many NGOs and researchers. On one hand, Kibera's notoriety and the presence of many non-state service providers in the settlement facilitated this study of non-state provision. On the other hand, frequent participation in research causes fatigue among respondents who may not see any direct benefits of the research in their lives. There

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<sup>21</sup> Assignments were also made using these criteria for safety reasons. People who are obviously not from the area are often targets for crime and harassment.

is understandably considerable frustration. The enumerators' training included a thorough description of the project, research goals, and how findings would be disseminated so they were able to respond when challenged by frustrated participants.

## **Data Analysis**

### ***Factor and Principal Component Analysis***

Given the number of variables comprising some of the dependent and independent variables in the study, it was necessary to reduce the dimensionality of the dataset to facilitate statistical modeling. The survey questions capture particular aspects of the theoretical constructs of interest, but no single variable provides an adequate proxy for the concept. Satisfaction with services includes respondents' assessments of the technical and functional quality of services and the adequacy of the facility, for example, and the response to a single question does not account for all of the dimensions. The same situation arises for other concepts, including community involvement, political activism, interpersonal trust, perceptions of service accessibility and quality, and socioeconomic status. Selecting one variable as a proxy would provide an inaccurate indicator of the theoretical construct and lose valuable information from the data (Bro & Smilde, 2014). Including all of the variables in the models was not feasible because many of the component variables for each concept are highly correlated; the individual coefficient estimates and variances would be biased and may lead to inaccurate conclusions (Greene, 2008).

Consequently, I employed factor analysis (FA) and principal component analysis (PCA) to aggregate information contained in numerous variables. The resulting components or factor scores are treated as indicators of the underlying constructs or latent variables that are not measured directly (Kolenikov & Angeles, 2009). The advantage of FA and PCA over more crude indices obtained by summing or averaging variables is that the factors capture more of the variation in the

original data (Abdi & Williams, 2010; Comrey, 1973; Filmer & Pritchett, 2001; Jolliffe, 2002; Pearson, 1901; Rencher, 2002).

Though FA and PCA are both commonly used for dimension reduction, the two methods are different. The factors produced by FA seek to explain as much of the common variance across the variables included in the analysis, while PCA factors explain as much of the total variance among all the variables (Abdi & Williams, 2010; Caudill et al, 2000; Comrey, 1973; Jolliffe, 2002). Both techniques have been widely utilized to create measures of socioeconomic status from survey data (Abeyasekera, 2005; Caudill et al, 2000; Filmer & Pritchett, 2001; Kolenikov & Angeles, 2009; MacLean, 2011; Mattes, 2008; Mberu et al, 2014; Rutstein & Johnson, 2004; Vyas & Kumaranayake, 2006) as well as indices of social capital (Bjørnskov, 2006; Harpham et al, 2002; Narayan & Cassidy, 2001; Onyx & Bullen, 2000; Portela et al, 2013; Portes & Vickstrom, 2015) and satisfaction with social services (Afolabi et al, 2012; Jehu-Appiah et al, 2012; Khamis & Njau, 2014; Ware & Hays, 1988), but PCA is most prevalent.

In applying both FA and PCA to this data, my goal was to identify the most important information from the multiple variables and to extract this information to simplify the data and facilitate statistical modeling (Abdi & Williams, 2010). After selecting the relevant variables for each concept, I used Stata to perform PCA and FA using Pearson, Spearman, and polychoric correlation matrices. Factors and principal components summarize the correlation structure of the data, so the validity of scores depends on the matrix containing the correlation coefficients between each variable and the other variables (Jolliffe, 2002). Each correlation coefficient (Pearson, Spearman, and polychoric) is calculated based on different assumptions, so the choice of correlation was important.

In all but one case, I opted to use principal component analysis with polychoric correlation because this method accounted for the largest amount of variance in the original variables and produced factors that are substantively interpretable. Instead of treating ordinal variables as continuous like the more widely employed Pearson coefficient, polychoric correlation takes the ordinal nature

of survey data into account (DiStefano, 2002; Kolenikov & Angeles, 2009; Medina-Solís et al, 2006). It presumes that there is an underlying continuous variable—such as satisfaction with health services—that is associated with the ordinal data generated by the survey (e.g., adequacy of equipment and supplies, capability of staff, recovery of patients, etc.). Each ordinal variable is assumed to come from a normally distributed latent continuous variable (e.g., satisfaction with health services). The ordinal variable and the latent variable are connected by cut points, or thresholds, representing the point on the continuum of the latent variable at which the value of the ordinal variable changes (Choi et al, 2010; Kolenikov & Angeles, 2009; Rigdon & Ferguson, 1991). For the latent variable measuring satisfaction with health services and an ordinal variable signifying the perception of the capability of health facility staff, for example, the cut points indicate the values of the latent satisfaction variable at which a respondent’s perception of staff capability changes from “not capable” to “somewhat capable.”

In generating the correlation matrix for PCA, the cut points represent the joint probability of the ordinal variables and they are estimated by maximum likelihood. The polychoric correlation coefficient is therefore a maximum likelihood estimate of the correlation of the underlying continuous distribution connecting the variables (Choi et al, 2010). Numerous studies have used simulations to show that, compared to Pearson and Spearman coefficients, polychoric correlation is consistent, asymptotically normal and efficient, and more accurately estimates the variance explained by the factors for ordinal and discrete data (DiStefano, 2002; Holgado-Tello, 2010; Kolenikov & Angeles, 2009; Olsson, 1979).

The tables in Appendix A detail each factor used throughout the dissertation. The tables provide the method and correlation structure employed for each variable, the percent of variation in the original variables it represents, the constituent variables, and the descriptive statistics. The factor loadings in parentheses following each variable included in the factor indicate the correlation between the original variable and the factor score (Abdi & Williams, 2010; Jolliffe, 2002). The loadings facilitate substantive interpretation, as the factor is more strongly



influenced (and therefore more closely represents) the variables with higher loadings.

### ***Models and Presentation of Quantitative Data***

Many of the dependent variables (DVs) used in the analyses are binary, ordinal, or categorical. Variables of quintiles were generated for those that were initially continuous, including the factors obtained using principal component analysis, to facilitate meaningful interpretation of the results. Though the specific models used in the analyses will be detailed in the chapters in which they appear, the techniques employed throughout the dissertation include logistic, ordered logistic, and multilevel mixed effects logistic and ordered logistic models.

#### *Logistic Models for Binary Outcome Variables*

For the basic logit model, depicted in equations 3.1 and 3.2, the probability of an outcome occurrence (e.g.,  $Y=1$  if a household has not received treatment from a health care provider in the past year) is a function of a set of explanatory variables  $X_1$  to  $X_k$ . Following the example, the probability that a household has not accessed health services,  $p$ , depends on the set of values of the explanatory variables.

$$\text{[Equation 3.1]} \quad \Pr(Y = 1 | X_1, X_2, \dots, X_k) = F(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)$$

$$\text{[Equation 3.2]} \quad \Pr(Y = 1 | X_1, X_2, \dots, X_k) = \frac{\exp(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)}{1 + \exp(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)}$$

The estimates generated for the coefficients  $\beta_0$  through  $\beta_k$  are in log-odds units and are not easily interpretable. I often choose to display the model results as odds ratios, which are calculated as  $e^{\beta_k}$  and represent the odds of  $Y=1$  (or  $p$ ) when  $X_k$  increases by one unit.

To interpret the results of logit models, I calculate predicted probabilities of outcomes given a particular set of values of the independent variables (IVs) using equation 3.3:

$$[\text{Equation 3.3}] \quad p_c = [1 + \exp(-X_j^{(c)})\beta_j - X^* \beta^*]^{-1}$$

where  $c$  is a chosen value of  $X_j$  and  $X^* \beta^*$  is a vector of the remaining independent variables set at particular values. I also estimate changes in the probability of an outcome for different values of explanatory variables,  $D$ , as follows:

$$[\text{Equation 3.4}] \quad D_{\logit} = [1 + \exp(-X_j^{(b)})\beta_j - X^* \beta^*]^{-1} - [1 + \exp(-X_j^{(a)})\beta_j - X^* \beta^*]^{-1}$$

where  $X_j^a$  and  $X_j^b$  are different hypothetical values of  $X_j$ . Holding other variables in  $X^*$  constant, the statistic equals the estimated effect on  $Pr(Y=1)$  of an increase in  $X_j$  from  $a$  to  $b$ . Since the logit function is not linear, the change will have a different effect depending on the points on the curve at which the chosen values fall.

### *Ordered Logit Models for Ordinal Outcome Variables*

When the dependent variable is ordinal rather than binary, I employ ordered logit models in the analyses. In the ordered logit model, there is a continuous, unmeasured latent variable,  $Y^*$ , from which the values of the observed ordinal variable,  $Y$ , are derived (equation 3.5). There are cut points or thresholds,  $v$ , of  $Y^*$  where the value of the ordinal dependent variable  $Y$  changes.

$$[\text{Equation 3.5}] \quad y_i^* = \beta_0 + \beta_1 x_{1i} + \dots + \beta_k x_{ki} + \varepsilon_i$$

If, for example, there are three values of ordinal variable  $y_i$  ( $M=3$ ), then:

$$[\text{Equation 3.6}] \quad \begin{aligned} Y_i &= 1 \text{ if } Y_i^* \leq v_1 \\ Y_i &= 2 \text{ if } v_1 \leq Y_i^* \leq v_2 \\ Y_i &= 3 \text{ if } Y_i^* \geq v_2 \end{aligned}$$

The conditional probabilities of each outcome  $M$  (1, 2, and 3) can be calculated as follows:

$$\begin{aligned}
 P(Y_i = 1) &= 1 - \frac{\exp(X_i\beta - v_1)}{1 + \exp(X_i\beta - v_1)} \\
 \text{[Equation 3.7]} \quad P(Y_i = 2) &= \frac{\exp(X_i\beta - v_1)}{1 + \exp(X_i\beta - v_1)} - \frac{\exp(X_i\beta - v_2)}{1 + \exp(X_i\beta - v_2)} \\
 P(Y_i = 3) &= \frac{\exp(X_i\beta - v_2)}{1 + \exp(X_i\beta - v_2)}
 \end{aligned}$$

The ordered logit model is only useful, however, if the effects of each IV on the DV are constant across all values of the ordinal dependent variable (Borooah, 2002). If this parallel regression or proportional odds assumption is not met, however, the coefficients and odds ratios can suggest incorrect, incomplete, or misleading results (Williams, 2006).

For analyses involving ordinal dependent variables, I used the Brant test of parallel regression assumption in Stata (Long & Freese, 2006). If either the model as a whole or any independent variables violated the assumption, I employed a partial generalized ordered logit model that estimates separate coefficients for different values of the dependent variable for the regressors with non-uniform effects across values of the DV. For IVs with consistent effects, a single coefficient estimate is generated. In equation 3.8, the  $\Pr(Y=j)$  is the same across all values of  $j$  for the vector of IVs  $X'$ . For the subset  $X''$ , the  $\Pr(Y=j)$  varies and the model estimates a separate vector of coefficients  $\beta_j$  for each of the  $j-1$  values of the DV.

$$\text{[Equation 3.8]} \quad \Pr(Y_i = j | X\beta) = F(v_j - X_i'\beta - X_i''\beta_j) - F(v_{j-1} - X_i'\beta - X_i''\beta_j)$$

By only estimating separate coefficients for the regressors that fail to meet the proportional odds assumption, the partial generalized ordered logit model preserves

efficiency, simplifies interpretation, and conveys information about how the effects of certain IVs vary across the values of the dependent variable (Williams, 2006).

### *Multilevel Mixed Effects Logit and Ordered Logit Models*

The introduction of village-level covariates to the analyses in Chapter 6 necessitates the use of multilevel mixed effects models. In earlier chapters, I employ fixed effects to control for the settlement of residence; the coefficient on the fixed effect parameter estimates the extent to which variation in outcomes not explained by the household-level covariates may be attributed to location-specific factors. With the addition of village-level covariates, however, ignoring the nested structure and assuming that all observations are independent could lead to biased coefficient estimates and deflated standard errors (Hedeker & Gibbons, 1994; Larsen & Merlo, 2005; Subramanian, 2004). Mixed effects models improve estimation by accounting for correlations within clusters. They include fixed effects intended to describe variation in the full sample, while the random effects allow for varying intercepts and slopes across subgroups (Hamilton, 2013). The random intercepts represent the combined effect of all omitted cluster-specific covariates that cause a change in the dependent variable, allowing us to model unobserved heterogeneity (Santos et al, 2008; Skrondal & Rabe-Hesketh, 2004).

The general formula for a multilevel mixed effects ordered logit regression with two levels is displayed in Equation 3.9.

$$\lambda_{ijc} = \log \frac{P_{ijc}}{1 - P_{ijc}} = \gamma_c - x_{ij}'\beta + z_{ij}'v_i$$

[Equation 3.9] 
$$P_{ijc} = \Pr(Y_{ij} \leq c | v; \gamma_c, \beta, \Sigma_v) = \frac{1}{1 + \exp(-\lambda_{ijc})}$$

$$p_{ijc} = \Pr(Y_{ij} = c | v; \gamma_c, \beta, \Sigma_v) = P_{ijc} - P_{ijc-1}$$

In this equation, the values of  $i$  index the clusters in the second level, the values of  $j$  index the units in the first level (e.g., individuals or households), and the values of  $c$  indicate the response categories or values of the ordinal dependent variable.  $Y_{ij}$  is the ordinal response of cluster  $i$  and unit  $j$ ,  $\gamma_c$  represent the threshold parameters on the latent continuous variable where the value of ordinal DV changes,  $x_{ij}$  is the covariate vector that includes variables from both levels,  $z_{ij}$  is the vector for random effects,  $\beta$  are the fixed effects parameters, and  $v_i$  is the random effect for cluster  $i$  (Hedeker & Gibbons, 1994).

For most of the models in Chapter 6, however, there are four levels: household, ethnicity, village, and informal settlement.<sup>22</sup> The general four-level model is described in Equation 3.10:

$$\begin{aligned}
 \text{[Equation 3.10] Level 1 (Household): } & \text{Log}\left[\frac{P_{hevs}}{1-P_{hevs}}\right] = \beta_{0hevs} + a_{hevs} \\
 \text{Level 2 (Ethnicity): } & \beta_{0evs} = \delta_{00vs} + b_{0evs} \\
 \text{Level 3 (Village): } & \delta_{00vs} = \gamma_{000s} + c_{00vs} \\
 \text{Level 4 (Slum): } & \gamma_{000s} = d_{0s}
 \end{aligned}$$

where  $hevs$  index the household, ethnicity, village, and slum.  $\beta$  represents the parameter estimates for fixed effects at the household level,  $\gamma$  represents fixed effects at the village level, and  $a_{hevs}$ ,  $b_{0evs}$ ,  $c_{00vs}$ , and  $d_{0s}$  refer to the random effects of intercepts at the household, ethnicity, village, and slum level.

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<sup>22</sup> For dependent variables measuring affordability of fees or satisfaction with health services at a particular facility, a fifth level is added to allow a random effect for each facility.

## Descriptive Statistics<sup>23</sup>

**Table 3.3: Gender of Household Head**

| Location     | Gender Of Household Head |            |            |            |
|--------------|--------------------------|------------|------------|------------|
|              | Male                     |            | Female     |            |
|              | #                        | %          | #          | %          |
| Kibera       | 428                      | 82%        | 92         | 18%        |
| Kianda       | 107                      | 82%        | 24         | 18%        |
| Kisumu Ndogo | 71                       | 83%        | 15         | 17%        |
| Laini Saba   | 187                      | 83%        | 39         | 17%        |
| Raila        | 63                       | 82%        | 14         | 18%        |
| Korogocho    | 378                      | 71%        | 156        | 29%        |
| Highridge    | 161                      | 67%        | 79         | 33%        |
| Kisumu Ndogo | 116                      | 70%        | 50         | 30%        |
| Korogocho B  | 101                      | 79%        | 27         | 21%        |
| <b>Total</b> | <b>806</b>               | <b>76%</b> | <b>248</b> | <b>24%</b> |

**Table 3.4: Ethnic Distribution of Respondents**

| Ethnicity                    | Frequency   | Percentage  |
|------------------------------|-------------|-------------|
| Kamba                        | 126         | 12%         |
| Kikuyu                       | 194         | 18%         |
| Kisii                        | 44          | 4%          |
| Luhya                        | 280         | 27%         |
| Luo                          | 299         | 28%         |
| Other                        | 104         | 10%         |
| Don't know/refused to answer | 7           | <1%         |
| <b>Total</b>                 | <b>1047</b> | <b>100%</b> |

**Table 3.5: Religious Affiliation of Respondents**

| Religion                             | Frequency   | Percentage  |
|--------------------------------------|-------------|-------------|
| Catholic                             | 275         | 26%         |
| Protestant (mainstream)              | 96          | 9%          |
| Protestant (evangelical/Pentecostal) | 316         | 30%         |
| Christian (general)                  | 223         | 21%         |
| Muslim                               | 88          | 8%          |
| Traditional religion                 | 23          | 2%          |
| None                                 | 30          | 3%          |
| Don't know/refused to answer         | 3           | <1%         |
| <b>Total</b>                         | <b>1054</b> | <b>100%</b> |

<sup>23</sup> Additional descriptive statistics are presented in Appendix B.

## **Chapter 4**

# **The Micro-Level Consequences of State Retrenchment and the Growth of Non-State Provision**

### **Introduction**

The preceding chapters provided a general overview of the ways in which the rise of neoliberal globalization and the associated policies imposed on governments by international financial institutions necessitated economic and political reforms that limited the role of the state and promoted private sector involvement in health, education, and other basic services. It is generally assumed that non-state actors fill gaps in social service provision left by state retrenchment, but the ways in which the simultaneous processes of state retrenchment and the growth of non-state provision are experienced at the household level are not adequately explored in existing literature. Taking advantage of survey data that includes experiences with both state and non-state providers, this chapter explores the consequences of both processes. What are the relative contributions of state and non-state providers to health and education provision in Kibera and Korogocho? At the micro level, what are the characteristics of un- and under-served households? Does experience with state and non-state services depend on household attributes? Furthermore, using respondents' perceptions of the technical quality, functional quality, and service environment of their most frequently visited health provider and school, I examine whether perceptions of quality and satisfaction vary by provider type and household-level characteristics.

As originally conceived, this dissertation was to focus solely on non-state health and education provision. I assumed, based on prior surveys and published research, that residents of Nairobi's informal settlements would have very limited access to public providers and that an overwhelming majority of respondents would have no interaction with government-operated facilities. I intended to examine how, in the absence of universal public provision, non-state actors shape households' access to and experiences of health and education provision.

Though the focus was to be on non-state provision, I opted to include identical sets of questions about government providers and to collect respondents' perceptions of the technical quality, functional quality, and service environment of their most frequently visited health provider and school, regardless of the operator. Initial visits to the communities reinforced the assumption of limited government provision, but a new government clinic opened in Korogocho roughly a year before my fieldwork and I realized that gaining any insight into the micro-experience of health and education provision in the settlements would only be possible with data on households' interactions with the full range of providers.

The decision to broaden the scope of the survey proved to be a good one, as far more respondents utilize government schools and health facilities than expected. Thirty-five percent of survey respondents reported that the health provider most frequently visited by members of the household is government-operated, and 41 percent of households with school-age children have at least one child enrolled in a public school. Furthermore, when asked where they would go for medical treatment if they had the means to seek the services of any type of health provider, 53 percent of households selected the government as their preferred provider. The findings challenge prevailing narratives about the role of the state in social service provision, particularly for health services. Furthermore, the complexity, fragmentation, and lack of regulation characterizing the diverse non-state sector highlights the shortcomings in our understanding of the sector and its contributions to poor households' health and education outcomes.



The chapter begins with a review of existing literature, followed by descriptions of the dependent and independent variables and empirical strategy used in the analysis. The third section documents respondents' perceptions of the accessibility and quality of state and non-state health and education provision and provider preferences using descriptive statistics from the survey. The fourth section includes the results and interpretation of regression models examining the relationship between household characteristics and interaction with state and non-state providers and satisfaction with services. The concluding section summarizes findings and discusses implications for policy.

## **The Micro-Level Consequences of State Retrenchment**

Existing literature on the consequences of state retrenchment with respect to social welfare provision has several threads. The first, which I reviewed in Chapter 1, originally accompanied the development and implementation of neoliberal economic theories and policies. The second strand of literature emerged in response to the experiences of widespread implementation of structural adjustment policies (SAPs) in developing countries during the 1980s and the growing realization of the social costs of the approach. Though many countries experienced varying degrees of economic growth, unemployment increased drastically as domestic firms were unable to compete with foreign companies operating locally as a result of the liberalization policies. Exporters captured most of the benefits of economic growth and both inequality and poverty rose steadily (Green, 1996; Gwynne & Cristobal, 2000). Data from multiple countries revealed sharp increases in infant mortality rates and worsened nutritional status of many children after the implementation of SAPs (Cornia et al, 1987), and post-independence gains in health and education outcomes in many African countries eroded (Rono, 2002).

With respect to social welfare, the criticisms of the neoliberal model and concerns with state retrenchment took several forms. At the macro level, the focus was largely on the state and the economic objectives of the reforms. Some examined the social outcomes through the lens of neoliberal theory, highlighting unrealistic

assumptions, disregard for the many contextual factors<sup>24</sup> that influence both the implementation process and the outcomes, and the failure of governments to fully implement the reforms (Portes, 1997; Rudra, 2002; Van De Walle, 2001). As Rodrik (1998) argues, the paradox of globalization is that the focus on market liberalization exported from developed countries is accompanied by demands on the state for a social safety net (widely available in developed countries in some form or another). The prescriptions for stabilization and adjustment involve a severe reduction in government expenditures and the elimination or privatization of many state programs, thereby rendering governments incapable of providing the most basic public goods (roads, public education, health, etc.). A lack of access to these goods is an impediment to human capital development and a social consequence that poses a threat to political stability and undermines long-term potential for development and future growth (Mkandawire, 2001).

Other studies began to examine the consequences of state retrenchment from social service provision for the citizens of countries where SAPs were implemented. The prevailing theme was that social conditions of vulnerable groups, particularly children, women, and the poor, deteriorated significantly after structural adjustment (Cornia et al, 1987). As the cost of health and education provision shifted from the state to recipients of the services, financial barriers led to non- or under-utilization of services among the poor (Adésinà, 2009; Mweya & Ndulu, 1994; Rono, 2002). Case studies showed that women's health worsened as they put the nutrition and health of their children above their own, and school enrollment among girls stagnated or dropped as boys' education was prioritized when families could not afford school fees (Afshar & Dennis, 1992; Elson, 1991; Okuonzi, 2004).

While many studies published in the wake of state retrenchment focused on social outcomes and service distribution, the analyses were conducted using macro-

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<sup>24</sup> Portes (1997) noted that the results of any comprehensive economic development program depend on the internal characteristics of the state and its external relationship with the class structure of civil society. Though the effectiveness depends on other factors, such as human capital, the characteristics of market organizations, and the structure and capacity of political institutions, the policy prescriptions were the same for all countries.

level data such as government expenditures on social welfare, national poverty indices, infant and maternal mortality rates, and other aggregate measures. As economist and former World Bank staff member Ravi Kanbur highlights in his discussion of disagreements within the development community, however, this level of aggregation fails to capture community- and household-level experiences:

If the bus service that takes a woman from her village to her sister's village is cancelled, it will not show up in these measures. If the health post in the slum runs out of drugs, it will not show up. If the primary school textbooks disappear, or if the teacher does not turn up to teach, it will not show up...focusing on [these measures] solely misses out on disaggregated detail. (Kanbur, 2001, p. 1087)

Furthermore, changes in national or other aggregate measures can be driven by significant divergence among geographic or social groups. A decline in the national poverty rate, for example, may be composed of a decrease in poverty in rural regions and an increase in urban areas; similar variation can occur along gender, ethnic, or religious lines (Kanbur, 2001). For the portions of the population experiencing worsening conditions and facing greater hardship, aggregate improvement is meaningless.

The third, nascent strand of the literature seeks to address the shortcomings of the macro-level studies by introducing micro-level analyses. Most micro-level research has occurred in the literature on non-state provision, and the focus is often on the work of one organization or a specific group or type of providers. What these studies tend to neglect, however, are the connections between the service providers and the meso- and macro-level contexts in which they operate. As Mkandawire (2001) notes, “As a consequence of this ‘projectizing and micro-izing,’ they tend not to address the impacts of their activities on efficiency in the allocation of scarce resources, their incentive compatibility in large market economies, or their effects on long-term economic growth” (p. 3). Additionally, case and single-sector studies rarely undertake systematic examinations of how the entire landscape of non-state actors providing services in a particular geographic area affects residents’ micro-experience of social welfare provision.

Within the literature on state retrenchment that focuses on the effects of declining public provision, very little research has examined household- and individual-level consequences of state retrenchment (MacLean, 2011; Rondo, 2002). In a 2011 article in *World Development*, Lauren MacLean highlighted the dearth of micro-level analyses and examined the consequences of state retrenchment through what she termed the "micro-experience" of public social welfare provision. Her initial conceptualization of the micro-experience of health and education services involved two dimensions: individuals' perceptions of accessibility and perceptions of quality (MacLean, 2011). Using data from Afrobarometer surveys conducted in 18 African countries during 2005-2006, MacLean intended to examine individual-level perceptions of accessibility and quality. She discovered, however, that "a statistically and substantively significant number of Africans reported that they had 'no experience' with public schools and/or clinics" (MacLean, 2011, p. 1157). She consequently added a third dimension to the micro-experience—interaction with public social services—and limited the study to comparing characteristics of the population that has experience with public health and education provision to the characteristics of the population that does not.

MacLean's analysis of data, collected twenty years after *Adjustment with a Human Face* highlighted the social consequences of SAPs for the poor, presents a very different picture than the studies that generated publicity in the late 1980s. She discovered that the poor were actually *more* likely to utilize government health and education services than the wealthier citizens who opted for more expensive—but seemingly higher quality—private providers. State retrenchment in Africa, she concluded, "has not meant the absolute exclusion of the poor but instead might have stimulated the growth of a two-tiered social service system where those who could pay frequently chose to opt out of what the state had to offer" (MacLean, 2011, p. 1161). This conclusion was echoed by South African sociologist Jimí Adésínà in a retrospective review of social policy in sub-Saharan Africa:

The paradox of the dual system of social service delivery (public versus private), developed under the neoliberal regime, is that the people with a voice had relocated to the private sector largely as a result of poor service induced by

underfunding. The public sector was then condemned for its inability to match the private sector in service delivery. (2009, p. S48)

From this perspective, state retrenchment has led to an erosion in the quality of government health and education services, and non-state provision meets the demand for higher quality services among those who can pay for it. The poor and vulnerable continue to rely on lower quality, albeit less expensive, public providers.

Synthesizing (and somewhat oversimplifying) the literature on public and private provision during the era of state retrenchment, two narratives on the simultaneous reduction of state provision and growth in non-state provision can be identified. In the first, non-state providers meet the demand generated by the absence of or limitations in state provision. This is a welcome development for some, particularly those who view government provision as inefficient and corrupt and those who argue that non-state actors can more flexibly meet the needs of citizens. In the second, the growth in non-state provision offers higher quality options for those who can afford to pay, and those who cannot must rely on underfunded, inadequate government facilities.

Although both narratives suggest that NSPs meet a demand generated by state retrenchment, the predicted consequences for the poor are quite different. In the first, the accessibility of government provision may become more restricted for the poor, but non-state providers may fill in the gaps and offer higher quality services. In the second, the poor are forced to rely on low quality government provision. Which of these narratives more accurately describes the situation in Nairobi's informal settlements?

## **Methodology**

### ***Dependent Variables***

The various dependent variables used throughout the chapter measure utilization of and satisfaction with health and education services at the household level, capturing different dimensions of the micro-experience of service provision. Interaction with service providers, interchangeably referred to as utilization, is

conceptualized in several ways in the models that follow. To gain insight into the households that are unable to access or face difficulties in accessing services, I employ multiple measures of non- and under-utilization of services. For health, the dichotomous variable *no\_health* equals 1 if the respondent reported that no members of the household have sought medical treatment at a health facility of any type over the past five years. Because this indicator also includes households whose members had no need for services during the period and not just those for whom financial and other barriers restricted access,<sup>25</sup> a second indicator variable was used in some models. The dichotomous variable *no\_care* equals 1 if the respondent or another member of the household was unable to receive treatment the last time medical care was needed. Even though the household may have utilized health services at some point over the preceding year, the inability to access care when needed indicates the under-utilization of services. As a measure of under-utilization of education, *low\_enroll* equals 1 if at least one age-eligible member of the household is not enrolled in school (i.e., if the percentage of eligible children enrolled is less than 100).<sup>26</sup>

**Table 4.1: Households with Low Utilization of Services**

|   | Percentage of households |
|---|--------------------------|
| No experience with health providers of any type over the past 5 years | 8%                       |
| Difficulty accessing health services                                  | 18%                      |
| No enrollment in school   | 6%+                      |
| Less than full enrollment   | 28%+                     |

+ percentage of households with school age children

The percentages of households reporting non- or under-utilization of services are displayed in Table 4.1. Eight percent of households had no experience with health providers of any type over the past five years, and 18 percent were unable to access health services the last time a member of the household needed treatment.

<sup>25</sup> In response to follow up questions about why no members of the household had utilized health services over the past five years, 68% said they were not in need of medical care.

<sup>26</sup> If there are no school age individuals, the value is missing so as to exclude households with no need for services from the analysis.

Among households with school age children, 6 percent reported that none of the eligible children are enrolled in school and 28 percent indicated that at least one of the age-eligible members is not enrolled.

Households reporting an inability to access medical treatment when needed were asked a follow-up question to investigate the barriers to care. The responses and the frequency with which they were cited by survey participants are listed in Table 4.2. The majority of reasons related to financial concerns: “could not afford the cost of the visit” was the most common response, followed by “weren’t sick enough to justify the cost of the visit.” Other households were unable to afford the cost of transport to a health facility. A smaller portion of responses mentioned problems with health providers ranging from inadequate supplies and equipment and inadequate skills to being denied care, long lines, and previous negative experiences.

**Table 4.2: Reasons for Under-Utilization of Health Services**

| <b>Reason for not being able to access health care last time it was needed</b> | <b>Frequency of Response</b> |
|--|------------------------------|
| Could not afford the cost of the visit   | 74                           |
| Could not afford the cost of transport   | 10                           |
| Could not get transport to a facility  | 7                            |
| Could not take time off work   | 4                            |
| Weren’t sick enough to justify cost of visit                                   | 22                           |
| Did not know where to go   | 1                            |
| Badly treated previously   | 3                            |
| Facility was not open when needed  | 5                            |
| Waited too long without being attended to                                      | 2                            |
| Tried but were denied health care  | 8                            |
| The health care provider was not available                                     | 1                            |
| The health care provider’s drugs or equipment are inadequate                   | 12                           |
| The health care provider’s skills are inadequate                               | 5                            |

The second set of dependent variables measure households’ interaction with state and non-state service providers. For health, *any\_gov\_health* and *any\_ngo\_health* indicate whether any member of the household has sought treatment from a public health facility or non-government facility, respectively, over the past year. Similarly, *any\_public\_school* and *any\_ngo\_school* indicate whether any member of the household was enrolled in a government or non-government

school during the preceding year. The descriptive statistics for each of these measures are displayed in Table 4.3. In her analysis of Afrobarometer data, MacLean (2011) found that 31 percent of respondents had no interaction with public schools, while 60 percent had some. Among surveyed households in Kibera and Korogocho with age-eligible members, more than half (59 percent) have no experience with public schools and 20 percent have no children enrolled in non-state schools.

For health services, MacLean (2011) reported that 77 percent of Africans have some experience with public health facilities and 17 percent do not. Given the limited availability of public provision in informal settlements and existing research citing very limited interaction with government clinics among slum dwellers, it is surprising that 51 percent of households surveyed in Kibera and Korogocho have experience with public providers. A larger portion—68 percent—has utilized non-state health services, and 28 percent reported interaction with both state and non-state providers.

**Table 4.3: Interaction with Public and Private Providers**

|  | Percentage with no experience | Percentage with some experience |
|--|-------------------------------|---------------------------------|
| Government schools                         | 59%+                          | 41%+                            |
| Non-state schools                          | 20%+                          | 80%+                            |
| Government <i>and</i> non-state schools    | 79%+                          | 21%+                            |
| Public health providers                    | 49%                           | 51%                             |
| Private health providers                   | 32%                           | 68%                             |
| Public <i>and</i> private health providers | 72%                           | 28%                             |

+ percent of households with school age children

In order to examine the relationship between household-level factors and each of the measures of utilization described above, I use a simple logit model to estimate how changes in household characteristics affect the probability that the household utilizes services and interacts with state and non-state providers.

Therefore,  $\Pr(DV=1) = f(\alpha + \beta_{\text{poverty\_f1\_qt}} + \beta_{\text{poverty\_f2\_qt}} + \beta_{\text{Age\_hh}} + \beta_{\text{Age\_hh2}} + \beta_{\text{female}=1} +$



$\beta_{\text{female}=2} + \beta_{\text{low\_ed}} + \beta_{\text{high\_ed}} + \beta_{\text{health\_status\_qt}} + \beta_{\text{kibera}} + \varepsilon$ ), where each of the variables used is described in Table 4.4.

The last set of dependent variables in the chapter measure satisfaction with health and education services. The survey questions used to construct the measures are very specific in nature and refer to aspects of the technical quality, functional quality, and adequacy of the facilities. For health services, components include satisfaction with opening hours of facility; availability, capability, and respectfulness of staff; adequacy of equipment and other supplies; and recovery of patients treated by the provider. For education, the factor indicates the degree to which the following are a problem at the school: insufficient number of teachers; poor performance on exams; poor quality of school buildings or facilities; classroom overcrowding; textbook shortages; poor teaching; lack of student safety in either the school building or the area around the school; and financial corruption. I divided the factor scores for satisfaction into quintiles and employed ordered logit models to assess the impact of household characteristics on the probability of falling within each quintile of satisfaction. Therefore,  $\Pr(\text{DV}=1,2,3,4,5) = f(\alpha + \beta_{\text{poverty\_f1\_qt}} + \beta_{\text{poverty\_f2\_qt}} + \beta_{\text{Age\_hh}} + \beta_{\text{female}=1} + \beta_{\text{female}=2} + \beta_{\text{low\_ed}} + \beta_{\text{high\_ed}} + \beta_{\text{kibera}} + \varepsilon)$ , where each of the variables used is described in Table 4.4.

**Table 4.4: Dependent and Independent Variables Used in the Chapter**

| <b>Variable</b><br><i>(Stata name)</i>                          | <b>Description</b>   |
|---|--|
| <b><i>Dependent Variables</i></b>                               |  |
| No health care utilization<br><i>(no_health)</i>                | Indicates whether any member of the household has sought treatment at a health care facility over the past 5 years. 0 = at least one visit; 1 = no visits.   |
| No health care access<br><i>(no_care)</i>                       | Indicates whether the respondent or a member of the household was able to access health care services the last time he or she needed care. 0 = able to access care last time it was needed; 1 = unable to access care last time it was needed. |
| Experience with government providers<br><i>(any_gov_health)</i> | Indicates whether any member of the household has sought treatment at a public health facility in the past year. 0 = no experience with government providers; 1 = a member of the household has visited at least one government provider.      |

|   |  |
|---|--|
| Experience with non-government providers<br>( <i>any_ngo_health</i> ) | Indicates whether any member of the household has sought treatment at a non-state health facility in the past year. 0 = no experience with non-state providers; 1 = a member of the household has visited at least one non-state provider.   |
| Low enrollment percentage<br>( <i>low_enroll</i> )                    | Indicates whether the percentage of school age children in the household enrolled in school is less than 100%. 0 = all school age children are enrolled; 1 = at least one school age child is not enrolled; missing if there are no school age children in the household.  |
| Experience with public schools<br>( <i>any_public_school</i> )        | Indicates whether any member of the household is enrolled in a public school. <i>any_public_school</i> : 0 = no children enrolled in public school; 1 = at least one child is enrolled in public school; missing if there are no school age children in the household.   |
| Experience with non-state schools<br>( <i>any_ngo_school</i> )        | Indicates whether any member of the household is enrolled in non-state school. <i>any_ngo_school</i> : 0 = no children enrolled in a non-state school; 1 = at least one child is enrolled in a non-state school; missing if there are no school age children in the household.   |
| Satisfaction with health services<br>( <i>healthsat_pc_qt</i> )       | Quintiles of a factor variable measuring satisfaction with health services. If members of household visited more than one provider, responses relate to experiences with most frequently visited provider. Ranges from 1 = household is among the least satisfied to 5 = household among the most satisfied quintile. For additional details see Appendix A in Chapter 3.                    |
| Satisfaction with education services<br>( <i>satedu_pc_qt</i> )       | Quintiles of a factor variable measuring satisfaction with education services. If members of household are enrolled in more than one school, responses relate to experiences with school in which most children are enrolled. Ranges from 1 = household is among the least satisfied to 5 = household among the most satisfied quintile. For additional details see Appendix A in Chapter 3. |

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***Independent Variables and Controls***

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|  |  |
|--|--|
| Poverty (flow)<br>( <i>poverty_f1_qt</i> )   | Quintiles of a factor variable measuring lived poverty in terms of daily experiences (income, frequency of going without food, water, etc.). Ranges from 1 = household is among the most impoverished quintile to 5 = household among the least impoverished quintile. For additional details see Appendix A in Chapter 3. |
| Poverty (assets)<br>( <i>poverty_f2_qt</i> ) | Quintiles of a factor variable measuring lived poverty in terms of assets (ownership of radio, bicycle, electricity, etc.). Ranges from 1 = household is among the most impoverished quintile to 5 = household among the least impoverished quintile. For additional details see Appendix A in Chapter 3.                  |
| Age of household head<br>( <i>Age_hh</i> )   | Age of household head (measured in years).   |
| Age squared<br>( <i>Age_hh2</i> )            | Square of the age of the household head (in years). Controls for the curvilinear relationship between age and interaction with/need for health care services.  |
| Female<br>( <i>Female</i> )                  | Indicates the sex of the respondent and whether the household head is female. 0 = male respondent and household head; 1 = female respondent and male household head; 2 = female household head   |

|  |  |
|--|--|
| Low education<br>( <i>low_ed</i> )                                     | Indicates the level of education attained by the household head. 0 = no formal education or some primary school; 1 = completed primary school or higher.   |
| Medium education<br>( <i>med_ed</i> )                                  | Indicates the level of education attained by the household head. 0 = no formal education or only some primary school or completed secondary education or more; 1 = completely primary school up to some secondary education (but did not complete secondary education). Used as the control so it does not appear in the models. |
| High education<br>( <i>high_ed</i> )                                   | Indicates the level of education attained by the household head. 0 = no formal education through some secondary education; 1 = completed secondary education or beyond.  |
| Kibera<br>( <i>kibera</i> )  | Indicates settlement of residence. 0 = household lives in Korogocho; 1 = household lives in Kibera.  |
| Number of school-age children<br>( <i>num_children</i> )               | Indicates the number of school-age children in the household.  |
| Public health<br>( <i>health_public</i> )                              | Indicates the operational entity of the most frequently visited health provider. 0 = not operated by the government; 1 = operated by the government.   |
| Public school enrollment<br>( <i>pub_sch_pct</i> )                     | Measures the percentage of school age children enrolled in a public school. Ranges from 0 = no children enrolled in public school to 1 = all children enrolled in public school.   |
| Perception of government health quality<br>( <i>qualgovhealth_pc</i> ) | Continuous principal component variable measuring perceptions of the quality of government health care. Constituent variables include frequency of encountering long waiting times, absent doctors, dirty facilities, inadequate medicines/supplies, etc. For additional details see Appendix A in Chapter 3.                    |
| Perception of non-state health quality<br>( <i>ngohealthqual_pc</i> )  | Continuous principal component variable measuring perceptions of the quality of non-state health care. Constituent variables include frequency of encountering long waiting times, absent doctors, dirty facilities, inadequate medicines/supplies, etc. For additional details see Appendix A in Chapter 3.                     |
| Health status<br>( <i>health_status_qt</i> )                           | Quintiles of a continuous variable capturing the number of days members of the household are unable to participate in their regular activities due to poor health in an average month.   |
| Government health service accessibility<br>( <i>GovHealthAccess</i> )  | Ordinal indicator of perceived accessibility of public health services measured by response to “How easy or difficult is it to obtain medical treatment at a public clinic or hospital?” 1 = very difficult; 2 = difficult; 3 = easy; 4 = very easy.   |
| Non-state health service accessibility<br>( <i>NGOHealthAccess</i> )   | Ordinal indicator of perceived accessibility of health services provided by non-state actors. Measured by response to “How easy or difficult is it to obtain medical treatment from non-government providers?” 1 = very difficult; 2 = difficult; 3 = easy; 4 = very easy.   |
| Public school accessibility<br>( <i>GovEduAccess</i> )                 | Ordinal indicator of perceived accessibility of public primary schools measured by response to “How easy or difficult is it to obtain a place in a public primary school for a child?” 1 = very difficult; 2 = difficult; 3 = easy; 4 = very easy.   |

Non-state school  
accessibility  
(*NGOEduhAccess*)

Ordinal indicator of perceived accessibility of non-state primary schools. Measured by response to “How easy or difficult is it to obtain a place in a private primary school for a child?” 1 = very difficult; 2 = difficult; 3 = easy; 4 = very easy.

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## ***Explanatory Factors***

The choice of explanatory factors for the chapter was based on Andersen’s widely used behavioral model of health service utilization (Andersen, 1995; Andersen & Newman, 1973; Hendryx et al, 2002; Phillips et al, 1998). According to the model, access is a function of the need for medical care, socioeconomic and other factors that enable individuals to successfully seek treatment, and predisposing or perception factors such as preferences and expectations of quality.

### *Need for Medical Care/Educational Enrollment*

For the models examining utilization of and satisfaction with health services, the need for medical care is assessed by the total number of days in an average month that members of the household are unable to participate in their normal activities (e.g., work or school) due to poor health. To limit the influence of outliers, I divided the values into quintiles and generated an ordinal variable indicating relative self-reported health status. Households in the lowest quintile are the least limited by health problems, while those in the fifth are the most limited. Because the regressions involving education are limited to the subsample of households with at least one school-age member, no measure of need is included in the models.

### *Lived Poverty Status*

In studies on access to social welfare provision, income and other measures of poverty are widely cited as key predictors of access (Berry et al, 2004; Bratton, 2007, 2012; MacLean, 2011; Montgomery & Ezech, 2005; Tukahirwa et al, 2011; World Bank, 2004). Although some services at both public and NGO health facilities are free or heavily subsidized, most existing research still finds that poverty remains associated with statistically significant reductions in access (see, for example, Tukahirwa et al, 2011). Throughout the dissertation, poverty is conceptualized and measured as the lived experience of poverty. The majority of

slum dwellers derive most of their income from casual work in the informal sector, and economic systems within the communities often involve bartering; measuring average income is difficult and may not capture all the resources on which households rely to meet their basic needs (Chant, 2002; Mutua, 2015; UN-Habitat, 2010).

To generate a conceptually relevant measure of poverty, I included the Afrobarometer questions related to lived poverty in the survey and used principal component analysis to calculate indices for each household (Bratton, 2007, 2012; Mattes, 2008; MacLean, 2011). The first factor variable includes the households' average monthly income as estimated by respondents as well as the frequency with which members of the household have gone without food, clean water, medical treatment/medicines, fuel for cooking, and a cash income. The second factor is a measure of asset poverty, and it includes electricity and ownership of a radio, television, motorcycle, and bicycle. To facilitate interpretation, I divided the factor scores for both poverty measures into quintiles.

### *Education of Household Head*

Existing research on access to health and education services identifies education as an enabling factor: people with higher levels of education are more likely to be informed about service availability and the advantages of service utilization, and they are also better able to successfully demand access to quality services (Berry et al, 2004; Krishna, 2008; Montgomery & Ezeh, 2005; Tukahirwa et al, 2011; World Bank, 2004). I collapsed the level of education obtained by the household head into three categories—high, medium, and low. The dummy variable for high education equals 1 if the household head completed secondary school or beyond. Medium education includes the completion of primary school through some secondary school, and it is the reference category. The dummy variable for low education indicates that the household head either has no formal education or attended primary school but did not complete.

### *Perceptions of Service Quality and Accessibility*

Previous research suggests perceptions of the quality of social services affect individuals' decisions to utilize services and their choices between state and non-state service providers (Bratton, 2007; Fotso & Mukiira, 2012; Karkee et al, 2014; Kiguli et al, 2009; Muriithi, 2013; Prata, Montagu, & Fefferys, 2005; Tooley & Dixon, 2006). To investigate the extent to which this is the case in Kibera and Korogocho, I generated factor variables measuring the perceived quality of health services provided by state and non-state actors and public schools.<sup>27</sup> I review descriptive statistics for the components of these factors in the next section. I also include ordinal variables indicating respondents' perceptions of the degree of difficulty associated with accessing health and education services provided by both state and non-state actors, as research in multiple countries document a connection between perceptions of access and utilization (Amooti-Kaguna & Nuwaha, 2000; Babalola & Fatusi, 2009; Bazant et al, 2009; Ngware et al, 2013; Onah et al, 2006).

### *Demographic Controls*

Several additional variables are included in the models as controls. The first of these is the age of the household head. Research on healthcare utilization shows that the young and the old access medical care more frequently than others; to control for this curvilinear relationship, I included both age and age<sup>2</sup> in all models measuring utilization of health services (Muriithi, 2013). Age was included in all other models to ascertain if certain age groups are more likely to prefer or utilize state services compared to non-state services (or vice versa). The second set of control variables indicates the ethnicity of the household. In some contexts, mechanisms of social exclusion (deliberate or unconscious, e.g., by tailoring services to the preferences of one group or failing to make accessing services transparent and user-friendly for all) on the basis of gender, ethnicity, and other aspects of one's identity can operate to limit access or reduce satisfaction with services (Berry et al,

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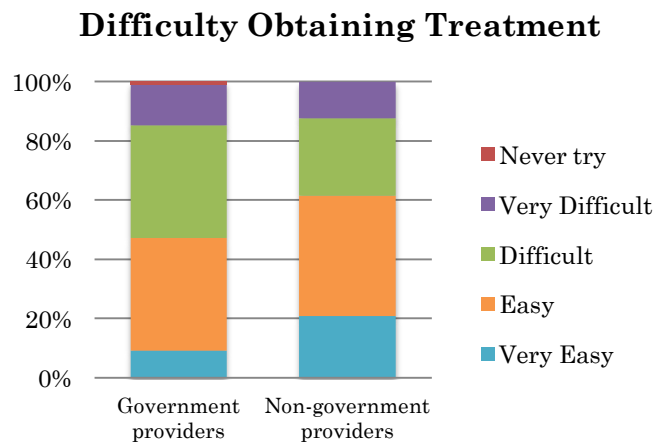
<sup>27</sup> For detailed descriptions of each factor and factor loadings, see Appendix A. I was unable to use a measure of the perceived quality of non-state schools because a relatively large portion of respondents was unable to answer some of the questions included in the measure. The large number of missing values significantly reduced the sample size.

2004; Tukahriwa et al, 2011). Indicator variables for female respondent and female-headed households are included, as is a dummy variable that equals 1 when the household is located in Kibera. The fixed effect for settlement of residence should capture the effect of community-specific characteristics not included in the models.

## Respondents' Perceptions of Accessibility and Quality

### Health

In general, there were clear differences between perceptions of public and private health provision. For difficulty obtaining treatment, the responses for government and non-government providers were similar, though more respondents found it “very easy” to get treatment from non-government providers and fewer found it “difficult.” Interestingly, pairwise correlations comparing the degree of difficulty or ease with which households are able to access services from government and non-government providers are strongly and significantly negatively correlated (the Pearson correlation is -0.4082 and the *p*-value is 0.000).

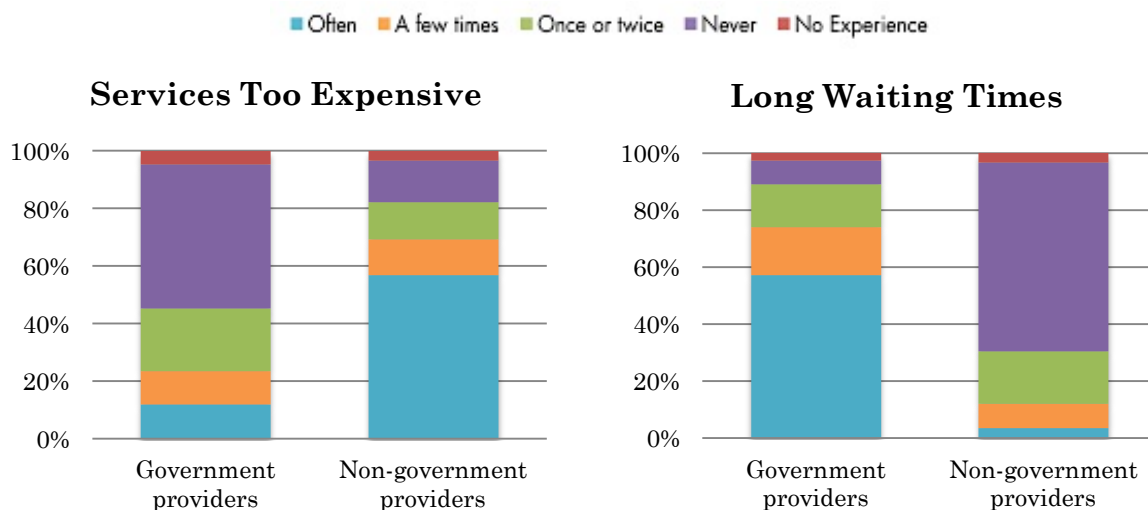


**Figure 4.1** Difficulty obtaining health services from government and non-government health providers.

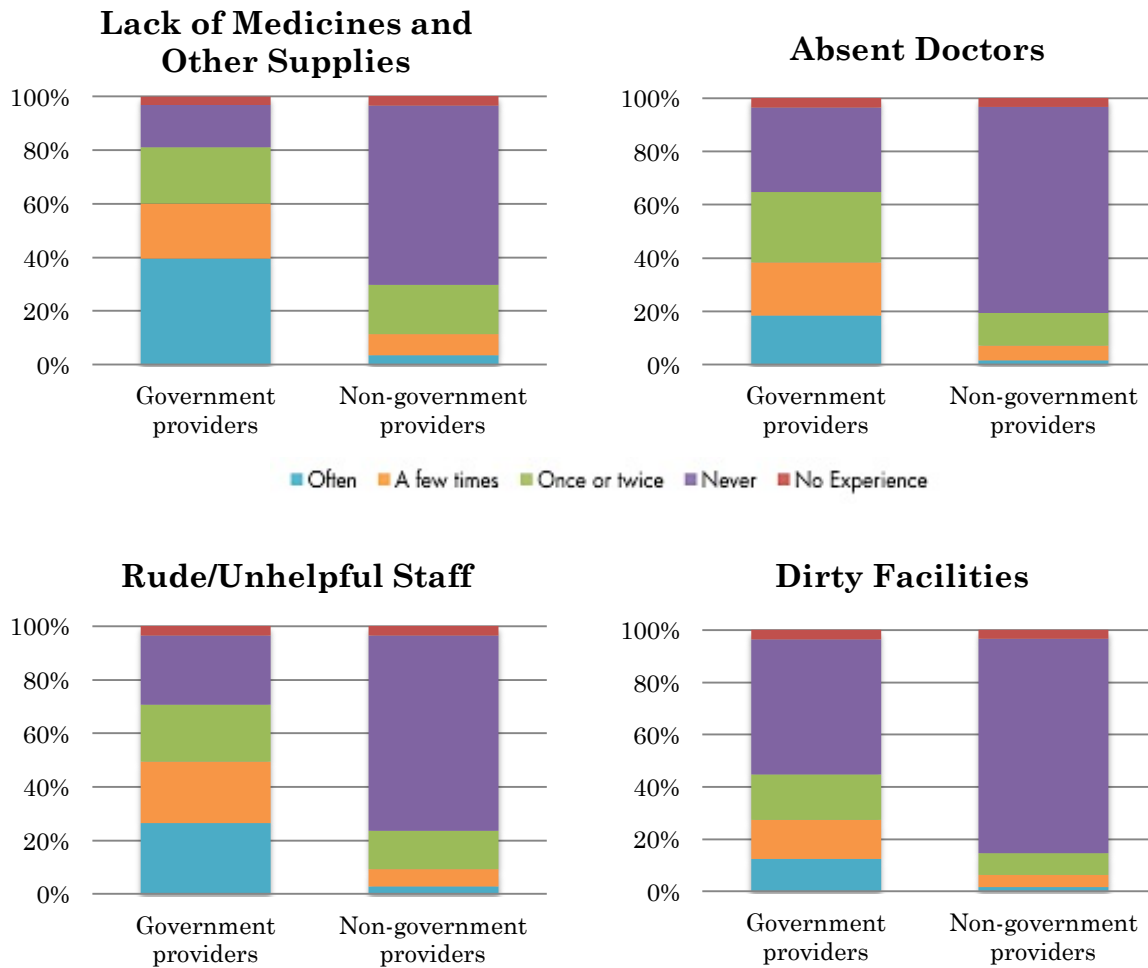
When asked about affordability, the majority of respondents (57 percent) reported that services from non-government providers are “often” too expensive, compared to only 12 percent for government providers. Fifty percent of respondents “never” find services from government providers too expensive, while only 14

percent never encounter financial barriers to non-government provision. Though assessments of the difficulty of obtaining treatment at public and private facilities do not differ drastically, government provision appears to be more widely financially accessible.

Respondents were also asked a series of questions about specific problems they may have encountered when seeking treatment at both government and non-government facilities. All problems were encountered more frequently with government provision, but the largest disparity occurs with waiting times: more than 57 percent often encounter long waiting times at government providers, compared to less than 8 percent for non-government providers. Lack of medicines and other supplies is also more prevalent for government providers; 40 percent indicated that it was often a problem, 20 percent encountered it “a few times,” and an additional 21 percent reported “once or twice.” Comparatively, 67 percent never experience medicine or supply shortages at non-government facilities and less than 4 percent often face the problem. As Figure 4.2 illustrates, absent doctors, rude and/or unhelpful staff, and dirty facilities are also encountered more frequently with government providers.







**Figure 4.2** Perceived quality of health services provided by state and non-state actors.

## Education

Whereas nearly all respondents were able to answer questions about both non-government and government health provision and appeared to have well-formed perceptions about both types of providers, fewer people were able to answer similar questions about schools.<sup>28</sup> Nearly every respondent gauged the difficulty of obtaining a place in both types of schools and most reported the frequency of

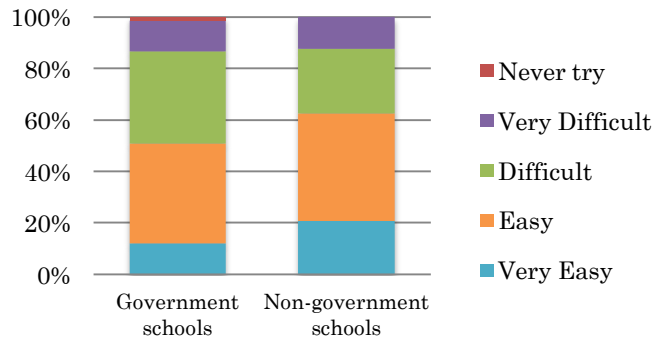
<sup>28</sup> The purpose of these questions was to document *perceptions* about state and non-state health and education provision, so the questions were posed to everyone regardless of whether they had utilized the services in the past year. Similar questions were asked later about the particular providers they utilized, but respondents were not asked whether these perceptions are based on personal experience, the experiences of others, or general impressions. Therefore, some respondents may have answered some of the questions about a particular service and indicated they did not know for others.

encountering unaffordable fees, but fewer could answer the questions about specific problems, particularly in relation to non-government schools. One possible explanation for the disparity is that respondents without school-age children are more likely to have perceptions and opinions about government schools because there are fewer of them and there is widespread media coverage of teacher strikes, the poor condition of many public schools, and allegations of corruption. The diverse non-state sector is less prominent in the public discourse.

The distribution of responses for difficulty obtaining a place in school mirrors the responses for health services for both provider types. More respondents find it very easy to get into non-government schools (21 percent) than government schools (12 percent), a slightly larger portion say it is easy (42 percent vs. 39 percent), and about 12 percent reported that it is very difficult to obtain a place in both types of schools. As was the case with health services, the pairwise correlation between the degree of difficulty or ease with which households are able to enroll a child in public and private schools was strong, significant, and negative (the Pearson correlation coefficient is -0.405 and the  $p$ -value is 0.000). It appears there may be an either/or perception of the accessibility of state and non-state health and education services: households view *either* public *or* private services as accessible. The extent to which household- and community-level characteristics contribute to this pattern will be examined throughout the dissertation.

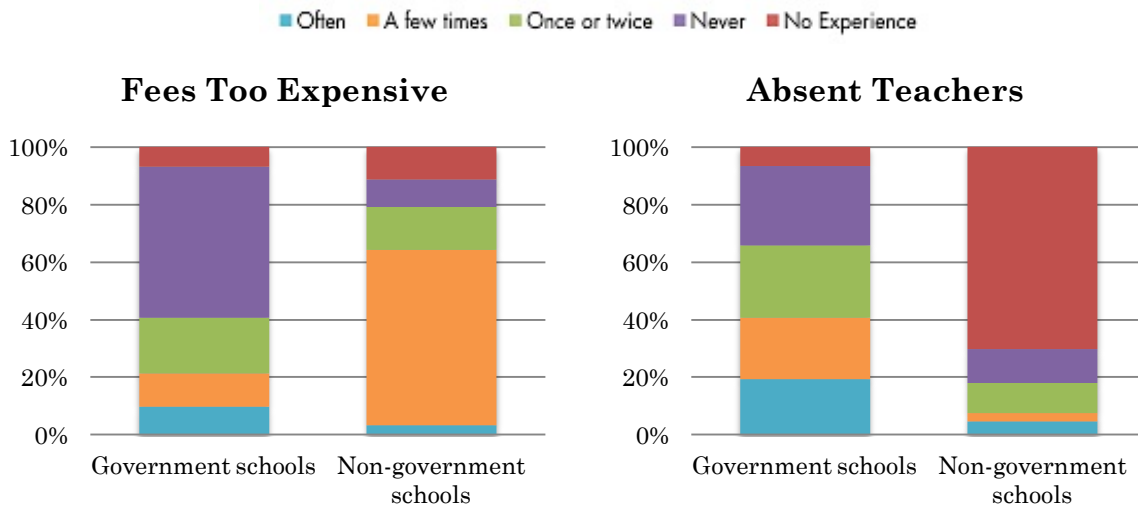
The introduction of free primary education (FPE) in 2003 increased the affordability of public schools, as reflected by the 60 percent of respondents who never encounter unaffordable fees at government schools. Less than 10 percent never face financial barriers at non-government schools, and 61 percent indicate that affordability was a problem a few times. There is a slight reversal at the other extreme, however, as only 3 percent often find fees too expensive at non-government schools and 10 percent respond similarly for government schools. Although purely speculative, the comparatively fewer households that regularly encounter unaffordable fees at non-state schools may be attributed to the greater flexibility in fees at non-state schools (Chuck, 2009).

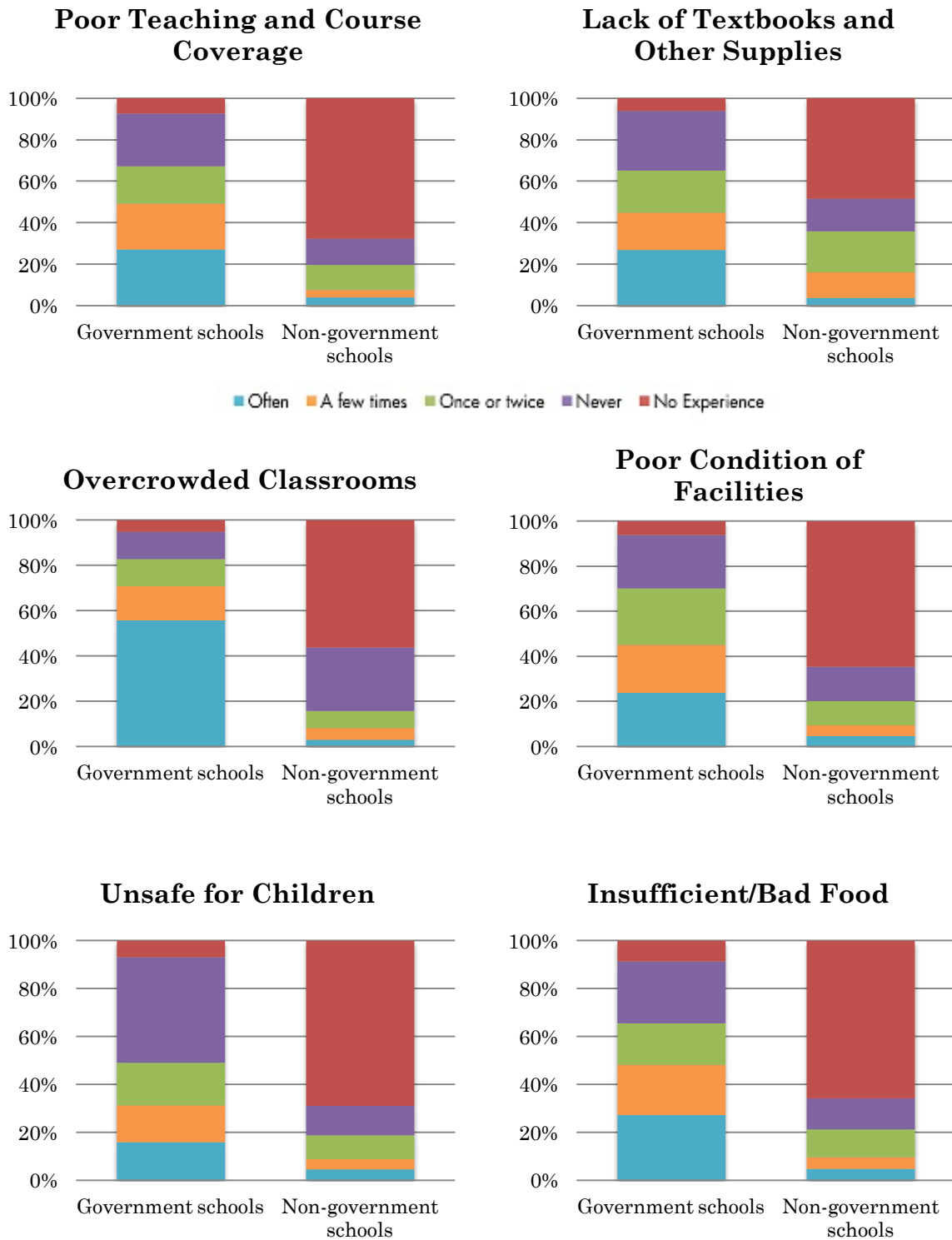
### Difficulty Obtaining a Place in School



**Figure 4.3** Difficulty obtaining places in government and non-government primary schools.

For the remaining questions about specific problems, the large proportion of respondents who were unable to answer in relation to non-government schools render it difficult to make meaningful comparisons of perceptions by type. The problems are encountered more frequently at government schools, but that is mostly due to the fact that a much larger percentage answered the question. The notable exception is overcrowded classrooms; 56 percent encounter overcrowded classrooms often in public schools, and it is highly unlikely that figure would be matched for non-state schools in a similarly large sample based on the distribution of responses in the current sample.





**Figure 4.4** Perceived quality of government and non-government schools.

## Preferred Providers

Given the frequency with which respondents encountered problems with public health provision, it was surprising that a majority of respondents—almost 53 percent—chose the government as their preferred health care provider. Forty-seven percent prefer non-state health providers, with 32 percent of all respondents opting for private for-profit providers rather than other non-state providers. NGOs, CBOs, and FBOs receive significant portions of foreign aid and donor support due to their purported efficiency and effectiveness, but households appear to have a much less favorable view of the services they provide. This finding directly contradicts an assertion by the Center for Global Development that poor people “want to go” to private providers and will “persist in doing so” (Harding, 2009).

**Table 4.5: Preferred Type of School and Healthcare Provider**

|                              | School Health Provider |       |
|------------------------------|------------------------|-------|
| Government                   | 36%                    | 52.6% |
| NGO                          | 5%                     | 11%   |
| CBO                          | 13%                    | 0.7%  |
| Faith-based                  | 3%                     | 2.6%  |
| Private for-profit           | 42%                    | 32.2% |
| Traditional healer           | --                     | 0.1%  |
| Pharmacy/chemist             | --                     | 0.3%  |
| Don't know/refused to answer | 1%                     | 0.5%  |

When preferences are disaggregated by quintile of lived poverty in Table 4.6, it is evident that more impoverished households prefer government provision than those facing less material hardship; 67 percent of the lowest quintile opt for public facilities compared to 46 percent of the highest quintile. However, 46 percent is still a substantial share of the most secure households, and the finding challenges the narrative that anyone who can afford private services utilizes the non-state sector and the poor are forced to rely on inadequate public provision. This preference is not limited to slum communities; the 2007 Household Health Expenditure and Utilization Survey conducted by the Government of Kenya showed that wealthier households in the country are more likely to utilize government hospitals than other

types of providers (Muriithi, 2013). The data also corroborate findings from Afrobarometer surveys in which majorities of citizens prefer public to private services in 10 of 12 countries (Bratton, 2007). In spite of limited capacity and uneven quality, the state still has credibility as a service provider.

**Table 4.6: Preferred Provider by Lived Poverty Status**

| Poverty Quintile<br><i>poverty_f1_qt</i> | Government |        | NGO    |        | CBO    |        | FBO    |        | Private for-profit |        |
|--|------------|--------|--------|--------|--------|--------|--------|--------|--------------------|--------|
|  | Health     | School | Health | School | Health | School | Health | School | Health             | School |
| (most impoverished) 1                    | 67%        | 44%    | 10%    | 9%     | 1%     | 12%    | 2%     | 4%     | 22%                | 32%    |
| 2  | 57%        | 40%    | 11%    | 4%     | 1%     | 10%    | 4%     | 4%     | 28%                | 41%    |
| 3  | 50%        | 33%    | 15%    | 7%     | 0%     | 13%    | 3%     | 6%     | 33%                | 43%    |
| 4  | 44%        | 34%    | 13%    | 5%     | 1%     | 11%    | 2%     | 1%     | 39%                | 48%    |
| (least impoverished) 5                   | 46%        | 30%    | 9%     | 2%     | 1%     | 17%    | 3%     | 1%     | 40%                | 50%    |

The preference for public provision was not the case for schools, however, as only 36 percent prefer government-operated schools. Sixty-four percent prefer non-state schools, among which private for-profit institutions were most frequently selected (42 percent of all respondents) followed by community-based organizations with 13 percent. Once again, NGOs fared poorly; only 5 percent of respondents prefer schools operated by NGOs.

Respondents were asked to state and rank the reasons why they prefer to utilize services from their preferred provider, and the most common reasons and the number of households citing each reason are displayed in Table 4.7 for health services and Table 4.8 for schools. “Reliable, effective treatment” was the most common response for all types of health providers except CBOs, for which convenient location is the primary motivating factor. A larger share of those that prefer private for-profit providers cites effective treatment as the primary reason compared to other types. With 36 percent, the second most cited reason households prefer public providers is that services are “free or affordable”; a similar pattern occurs for NGOs and FBOs, but few that prefer private for-profit facilities are motivated by financial considerations. Among the other reasons, 18 households

prefer government providers because the staff are more qualified, and 9 refer to the higher quality treatment at public facilities compared to others. These reasons are cited less frequently for other types of providers, but less waiting time and cleaner facilities account for more households' preference for private for-profit providers.

**Table 4.7: Reasons for Health Provider Preference**

| <b>Reason 1 for Health Provider Preference</b> | <b>Public</b> | <b>NGO</b> | <b>CBO</b> | <b>FBO</b> | <b>Private for-profit</b> |
|--|---------------|------------|------------|------------|---------------------------|
| Reliable, effective treatment                  | 277           | 66         | 2          | 19         | 253                       |
| Convenient location                            | 35            | 12         | 3          | 1          | 31                        |
| Less waiting time                              | 0             | 3          | 1          | 1          | 11                        |
| Free or affordable                             | 197           | 30         | 1          | 4          | 9                         |
| I know the providers                           | 4             | 1          | 0          | 1          | 4                         |
| Cleaner facilities                             | 4             | 0          | 0          | 0          | 12                        |
| Higher number of staff                         | 3             | 1          | 0          | 0          | 2                         |
| More qualified staff                           | 18            | 1          | 0          | 1          | 5                         |
| Friendlier or more respectful staff            | 0             | 0          | 0          | 0          | 2                         |
| Higher quality treatment than others           | 9             | 1          | 0          | 0          | 5                         |
| Medicines are available                        | 1             | 1          | 0          | 0          | 2                         |
| Staff are more available                       | 0             | 0          | 0          | 0          | 3                         |

Turning now to school preferences, 54 percent of households that prefer public schools cite affordability as the primary reason and 18 percent cite the availability of space. Among households preferring private for-profit schools, an almost equal number refer to the availability of spaces and “better teachers and instruction” as their motivating factor. The larger number of teachers and the regular presence of teachers are the second and third most common reasons, followed by convenient location. The number of teachers, the regular presence of teachers, and the higher quality of teachers and instruction are also the most frequently cited advantages for schools operated by CBOs, but the preference for NGOs is overwhelmingly driven by affordability. In general, it appears that preferences for public schools are more likely to be based on affordability and availability, whereas the higher number of teachers, lower absenteeism rates, and quality instruction make private for-profit and CBO schools more attractive. An inadequate number of trained teachers plagues public education in many developing countries, and the shortage is exacerbated by the competition with non-

state schools for staff and funding (e.g., Ngware et al, 2013; Njagi, 2012; Rena, 2011).

**Table 4.8: Reasons for School Preference**

| <b>Reason 1 for School Provider Preference</b> | <b>Public</b> | <b>NGO</b> | <b>CBO</b> | <b>FBO</b> | <b>Private for-profit</b> |
|--|---------------|------------|------------|------------|---------------------------|
| Only schools with available spaces             | 69            | 4          | 8          | 15         | 82                        |
| Convenient location                            | 28            | 7          | 9          | 2          | 54                        |
| Free or affordable                             | 208           | 23         | 10         | 8          | 23                        |
| Have more teachers                             | 14            | 3          | 21         | 2          | 67                        |
| Teachers are regularly present                 | 12            | 2          | 12         | 2          | 65                        |
| Better teachers and instruction                | 30            | 5          | 54         | 3          | 80                        |
| Offer extracurricular activities               | 4             | 2          | 4          | 1          | 13                        |
| School provides more resources than others     | 3             | 3          | 1          | 4          | 13                        |
| School building and facilities are better      | 0             | 0          | 1          | 1          | 4                         |
| Safer  | 1             | 0          | 2          | 1          | 4                         |
| Better exam results                            | 1             | 1          | 8          | 0          | 23                        |
| Better reputation                              | 1             | 1          | 2          | 1          | 4                         |
| Easy recognition for secondary school entrance | 7             | 0          | 0          | 0          | 0                         |

## **Access and Utilization**

Although perceptions of accessibility and quality may influence health- and education- seeking behaviors, they do not in and of themselves reveal any information about the degree to which perceptions affect utilization or about whether and how utilization varies according to household-level characteristics. In this section, I examine measures of access and utilization for both health and education services to determine: 1) the characteristics of households that report no interaction with service providers of any type; 2) the characteristics of households that interact with public providers; and 3) the characteristics of households that interact with non-state providers.

### ***What are the characteristics of un- and under-served households?***

#### *Health*

As expected, the two versions of the dependent variable for utilization produced somewhat different results (see Table 4.11). One noticeable difference is the effect of lived poverty status: reductions in poverty appear to decrease the



likelihood of being unable to access health services when treatment is needed but increase the probability of receiving no care. When access was measured using the indicator for interaction with any healthcare provider over the past five years, the coefficient estimate for poverty status was positive. A one-quintile improvement in the household's lived poverty status (i.e., the household becomes less impoverished) may *increase* the probability of having no interaction with health providers. Though this may initially seem counterintuitive because affordability is a frequent barrier to utilization, it likely reflects the fact that poverty is also negatively associated with health status, particularly in developing countries. More and better quality food, sanitation, clean water, and other amenities promote health and well-being, and less impoverished households are better able to access these resources (Gulyani & Talukdar, 2010).

In order to examine the extent to which the regression results throughout the chapter reflect correlations between poverty status and health, Table 4.9 compares the mean factor score for lived poverty by utilization indicator using Welch's t-test for means with unequal variances. On average, households that have not utilized any health services over the past five years are significantly less impoverished than those that have accessed care (higher factor scores indicate improvements in living conditions). Furthermore, the descriptive statistics in Table 4.10 reveal that the number of days in an average month that members of the household are unable to engage in their usual activities due to poor health generally decreases as living conditions improve. When the outcome variable indicates households' inability to access health services last time treatment was needed, poverty has the opposite effect. The average poverty factor score for households reporting under-utilization is significantly lower and more impoverished households appear to face poor health with greater frequency.

The other notable observation from Table 4.9 is the significant difference in poverty scores between households that have experience with government health provision compared to those that do not. The fact that households reporting no interaction with public health facilities are significantly less impoverished seems to

tentatively confirm MacLean’s hypothesis that the poor are forced to rely on government provision, though the magnitude of the difference is small and may reflect the lack of need for care among less impoverished households.

**Table 4.9: Relationship between Poverty Status and Access to Healthcare**

| Outcome Variable  | Poverty Status<br>(poverty_f1) |                       | Welch’s t-statistic |
|---|--------------------------------|-----------------------|---------------------|
|   | Positive outcome mean          | Negative outcome mean |                     |
| No health utilization<br>(no_health)                            | 3.644                          | 3.273                 | 3.84***             |
| Inability to access care when needed<br>(no_care)               | 2.730                          | 3.374                 | -7.78***            |
| Experience with government health provision<br>(any_gov_health) | 3.209                          | 3.407                 | -3.38***            |
| Experience with non-state health provision<br>(any_ngo_health)  | 3.288                          | 3.348                 | 0.93                |

Higher factor scores for poverty reflect increases in standard of living/reductions in poverty.

\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

**Table 4.10: Healthcare Intensity and Health Status by Poverty Quintile**

| Poverty Quintile<br><i>poverty_f1_qt</i> | Obs | Healthcare Intensity <sup>a</sup> |          | Health Status <sup>b</sup> |         |
|--|-----|-----------------------------------|----------|----------------------------|---------|
|  |     | Mean                              | St. Dev. | Mean                       | St.Dev. |
| (most impoverished) 1                    | 195 | 1.344                             | 0.819    | 8.140                      | 0.728   |
| 2  | 195 | 1.133                             | 0.720    | 6.347                      | 0.634   |
| 3  | 193 | 1.104                             | 0.764    | 5.980                      | 0.590   |
| 4  | 193 | 0.979                             | 0.661    | 6.005                      | 0.640   |
| (least impoverished) 5                   | 192 | 0.927                             | 0.627    | 4.070                      | 0.519   |

<sup>a</sup> Number of times members of the household sought medical treatment over the past year. 0 = never; 1 = 1-5 times; 2 = 6-10 times; 3 = more than 10 times

<sup>b</sup> Number of days members of the household are unable to participate in normal activities due to poor health in a usual month

Returning to the regression results in Table 4.11, when access was measured by whether or not the respondent or a member of the household was able to receive health services last time treatment was needed, a one quintile improvement in the

household's lived poverty status is associated with a *decrease* in the probability of being unable to access services when needed. Because both the log-odds and the odds ratios reported in Table 4.11 are difficult to interpret, I provide a substantive interpretation of the results in Table 4.12. When the poverty status quintile is 1 and all other covariates are set at their means, the predicted probability that a member of the household was unable to access care the last time it was needed is 0.188. Put differently, 18.8 percent of the most impoverished households are likely to face difficulty accessing health services. When poverty status quintile is changed to 5 and all other variables remain the same, the probability drops to 0.033; less than 4 percent of the least impoverished households are expected to encounter similar difficulties. The difference between these two probabilities is large and statistically significant. The most impoverished households are more than 15 percent more likely to under-utilize health services than the least impoverished households.

**Table 4.11: Access to Health Care**

|                   | MODEL 1:<br>No utilization of health<br>services over the past 5<br>years<br>( <i>no_health</i> ) |                 |              | MODEL 2:<br>Unable to access services<br>last time treatment was<br>needed<br>( <i>no_care</i> ) |                 |              |
|-------------------|---|-----------------|--------------|--|-----------------|--------------|
|                   | $\beta$   | Exp ( $\beta$ ) | Robust<br>SE | $\beta$  | Exp ( $\beta$ ) | Robust<br>SE |
| Poverty (flow)    | 0.160*  | 1.174*          | 0.114        | -0.477***  | 0.621***        | 0.051        |
| Poverty (assets)  | 0.028   | 1.029           | 0.109        | 0.074  | 1.077           | 0.088        |
| Age               | -0.163***   | 0.849***        | 0.036        | -0.087**   | 0.917**         | 0.035        |
| Age <sup>2</sup>  | 0.002***  | 1.002***        | 0.000        | 0.001*   | 1.001**         | 0.0004       |
| Female respondent | -1.351***   | 0.259***        | 0.106        | -0.242   | 0.785           | 0.202        |
| Female HH         | -0.032  | 0.969           | 0.296        | -0.232   | 0.793           | 0.217        |
| Low education     | 0.164   | 1.178           | 0.435        | 0.536**  | 1.709**         | 0.425        |
| High education    | 0.107   | 1.113           | 0.341        | -0.300   | 0.741           | 0.212        |
| Health status     | -0.568***   | 0.567***        | 0.081        | 0.018  | 1.019           | 0.080        |
| GovHealthAccess   | -0.344**  | 0.709**         | 0.109        | -0.677***  | 0.508***        | 0.074        |
| NGOHealthAccess   | -0.173  | 0.841           | 0.115        | -0.161   | 0.852           | 0.111        |
| Kibera            | -0.707**  | 0.546**         | 0.159        | -0.138   | 0.871           | 0.208        |
| Constant          | 3.424**   | 30.699**        | 41.707       | 2.909**  | 18.335**        | 21.693       |
| Observations      |   | 990             |              |  | 962             |              |
| Wald $X^2$        |   | 77.64***        |              |  | 86.80***        |              |

Ethnicity controls included in the model but not shown.

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

Another finding from the second model (DV indicates the inability to access services last time treatment was needed) is the significance of perceptions of the accessibility of government health services. The magnitude of the effect is actually larger than the effect of lived poverty. With all other covariates set at their mean values, the probability of being unable to access care for a household that views obtaining treatment from public health facilities as “very difficult” is 0.191; for an otherwise identical household that perceives obtaining treatment from public facilities as “very easy,” that probability decreases to 0.030. The effect of perceptions of non-state health service accessibility is not statistically significant, which suggests that improving perceptions of accessibility for public health facilities is more likely to reduce under-utilization of treatment than similar efforts within the non-state sector. It also reinforces the continued importance of state provision, particularly for the most vulnerable households.

**Table 4.12: Changes in Predicted Probabilities for Model 2**

| Variable        | Range of Change                  | Probability of not accessing health care <sup>b</sup> among the most impoverished | Probability of not accessing health care among the least impoverished | Change in probability |
|-----------------|----------------------------------|---|---|-----------------------|
| Poverty         | Full range (1 to 5) <sup>a</sup> | 0.188   | 0.033   | -0.155***             |
|                 |                                  | <b>GovHealthAccess “very difficult”</b>   | <b>GovHealthAccess “very easy”</b>                                    |                       |
| GovHealthAccess | Full range (1 to 4)              | 0.191   | 0.030   | -0.161***             |

<sup>a</sup> The bottom of the range (1) is the lowest quintile of the factor variable for lived poverty, whereas the least impoverished is defined as the highest quintile (5). Education dummies set at 0, all other covariates at their means.

<sup>b</sup> The respondent or member of the household was unable to access health care last time it was needed.

In both models, the relationship between female respondents and female-headed households and non- or under-utilization of health services was negative, but the only statistically significant coefficient estimates the relationship between interaction with health services and female respondents. In the first model, female

respondents were significantly less likely to report no interaction with health services during the preceding five years. Given that respondents are asked about the health-seeking behaviors of all members of the household and existing research suggests that women are often marginalized in service provision following state retrenchment (Okunzi, 2004), the strong association between female respondents and household-level utilization patterns is somewhat surprising. The number of male and female respondents was roughly even both in the entire sample and within each settlement, so the coefficient is not driven by a small number of potentially unrepresentative cases. It is possible, however, that women are simply more aware of the healthcare experiences of household members. Research on gender and development highlights women's frequent role as primary caregiver (see, for example, Elson, 1991), and it is possible that male respondents are less involved in interactions with health providers and thus less likely to recall specific services over a five-year period. The measure of access in the second model only draws on the most recent instance a member of the household needed healthcare, and the coefficient on female respondent is no longer significant.

The indicator for female-headed households was not significant in either model. Though most studies on the impacts of SAPs found that female-headed households were overrepresented among the poor (Buvinić & Gupta, 1997), targeted subsidies introduced in response to research drawing attention to the negative effects of SAPs on vulnerable households have likely lessened the negative relationship between female headship and access to services.

Among other demographic controls, both age and age<sup>2</sup> are significant, reflecting the theorized curvilinear relationship in which the very young and the very old are generally more in need of healthcare services. Education was significant in the second model only. When access is conceptualized as the ability of individuals to access care when treatment is need, households in which the head has either no formal education or some primary school are more likely to face difficulty accessing treatment.

The only other significant association occurs between Kibera residence and no reported interaction with healthcare providers. When *no\_health* is the dependent variable, the coefficient on the dummy variable for Kibera is large and negative; the predicted odds of a household in Kibera reporting no interaction with health services is 0.546 times that of a household in Korogocho with identical characteristics. The direction of the association is the same when *no\_care* is the dependent variable, but the magnitude is much smaller and no longer statistically significant.

### *Education*

The models for low educational enrollment are less informative than those for health services.<sup>29</sup> Lived poverty status is insignificant with the exception of asset poverty. A one quintile improvement in households' asset poverty status (i.e., as the household acquires more physical assets) decreases the likelihood that at least one age-eligible child is not enrolled in school. The the apparent insignificance of income and lived poverty is surprising, and I initially thought the effect may be captured by the independent variable for the number of school-age children in the household since the addition of one child significantly increases the likelihood of less than full enrollment. I added interaction terms between the first poverty factor and the number of children to explore this further, but predicted probabilities generated using the model revealed that the effect on enrollment associated with increases in the number of age-eligible children was neither significantly nor substantively affected by poverty status (results not shown). Additionally, goodness-of-fit and other regression diagnostics indicate that the interaction terms decrease the utility of the model.

There are two plausible explanations for the possible unimportance of lived poverty status, though exploring both further would require additional fieldwork. First, the emphasis on educational attainment within the Kenyan government and

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<sup>29</sup> This will be a common theme throughout the chapter and could be attributed to either the smaller sample size, the omission of important explanatory factors, or a combination of both. Additional explanatory variables are added to the models in later chapters of the dissertation.

the international and domestic NGOs working in the informal settlements (especially Kibera) have increased the affordability of primary school significantly over the past decade (Chuck, 2009; Njagi, 2012, Oketch et al, 2010; Rose, 2006; Tooley, 2009; Wildish, 2011). Tuition at public schools was eliminated with the introduction of FPE in 2003, and the number of non-formal, low-cost private schools in the slums mushroomed to accommodate overflow from overcrowded and underfunded public schools. Many of these private schools—particularly those operated by faith-based organizations and NGOs—receive external funding that allows them to accommodate students whose families cannot afford tuition costs (observations from fieldwork, 2014; Chuck, 2009; Wildish, 2011).

The second plausible explanation stems from prevalent livelihood strategies of slum households. Walking through the main thoroughfares of Kibera or Korogocho in the middle of a school day, the paths are lined with stands manned by children selling charcoal, used clothing, food, and other goods and services. A parent is sometimes nearby overseeing the operation, but older children are often left in charge while adults take on other work inside and outside the slum (Brakarz, 2002; Davis, 2006; Gulyani & Talukdar, 2010; Rakodi, 2002; Richards et al, 2007; UN-Habitat, 2010; Wekesa et al, 2010). Limited employment opportunities, low wages, and the economic segregation of slums from the formal cities in which they are located mean that multiple members of households must engage in income-generating activities in order to survive. Even the most economically secure households surveyed are still poor, and their relative security may be attributed to the involvement of children in economic activities rather than school. To the extent that low enrollment among less impoverished households helps account for their relative security, the real issue may not be the cost of school attendance but the lack of economic opportunities for adults to support households without contributions from children.

In contrast to the health models in which perceptions of public service accessibility are correlated with utilization, the results from model 4 indicate that the perceived accessibility of non-state schools is more influential for enrollment.

The magnitude is small and the statistical significance is weak, but households that view non-state schools as easier to access are less likely to have at least one age-eligible member not enrolled in school. Perceptions of public school access appear to have no effect on enrollment.

The final significant association of note in the models is Kibera residence. The odds of low enrollment for a household in Kibera are about 0.68 that of an otherwise identical household in Korogocho. The significance of the fixed effect for settlement of residence is a recurring theme in many of the models in this chapter and will be explored further in subsequent chapters.

**Table 4.13: Educational Enrollment**

|                     | Percent of school age children enrolled<br>in school is <100<br>( <i>low_enroll</i> ) |           |                 |           |
|---------------------|---|-----------|-----------------|-----------|
|                     | Model 3   |           | Model 4         |           |
|                     | Exp ( $\beta$ )   | Robust SE | Exp ( $\beta$ ) | Robust SE |
| Poverty (flow)      | 0.926   | 0.073     | 0.935           | 0.074     |
| Poverty (assets)    | 0.821***  | 0.058     | 0.837**         | 0.061     |
| Age                 | 0.979**   | 0.010     | 0.976**         | 0.010     |
| Female respondent   | 1.014   | 0.238     | 1.033           | 0.245     |
| Female HH           | 0.592*  | 0.161     | 0.595*          | 0.164     |
| Low education       | 1.095   | 0.262     | 1.094           | 0.263     |
| High education      | 1.089   | 0.279     | 1.083           | 0.281     |
| Kibera              | 0.646**   | 0.140     | 0.678*          | 0.149     |
| # eligible children | 1.518***  | 0.116     | 1.511***        | 0.113     |
| GovEduAccess        |   |           | 1.025           | 0.120     |
| NGOEduAccess        |   |           | 0.823*          | 0.095     |
| Constant            | 0.555   | 0.352     | 0.896           | 0.691     |
| Observations        | 605   |           | 594             |           |
| Wald $X^2$          | 52.05***  |           | 54.41***        |           |

Ethnicity controls included in models but not shown.

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

### ***Does experience with state and non-state services depend on household attributes?***

#### *Interaction with State and Non-State Health Providers*

Table 4.14 displays the results of logit regressions on dichotomous dependent variables indicating whether or not a member of the household has received services



from state and non-state health providers. There are two specifications for each provider type: models 5 and 7 include the full sample, and models 6 and 8 include only those households that have visited a health facility within the past five years. At first glance, it is clear that controlling for no interaction in the second set of regressions significantly reduces the explanatory power of the models.

Looking first at results from the full sample in models 5 and 7, one of the more notable findings concerns the relationship between lived poverty status and experience with providers of both types. The absence of a statistically significant relationship between lived poverty and utilization of non-state services is surprising given that fees are generally higher at non-state facilities and respondents reported encountering unaffordable fees at NSPs more frequently. For government provision, however, there is a significant negative relationship between lived poverty and utilization; a one-quintile improvement in economic security decreases the probability of having experience with public health facilities, though the magnitude of the effect is small. Taken at face value, the negative relationship appears to partially affirm the two-tiered service experience MacLean (2011) described—households that can afford services from non-state providers flock to higher-quality facilities and leave the poor to depend on lower-quality government provision.

In light of the association between economic security and health documented earlier in the chapter, however, the results from model 5 warrant further exploration. Health status is included in models of healthcare utilization to control for need, and its significance in models 5 and 7 suggests that poor health is associated with experience with providers of both types. While the number of days members of the household are unable to engage in normal activities due to poor health is a measure of health status, it is not a perfect proxy for the number of times a household is in need of medical care as not every ailment requires professional treatment. It is possible that the coefficient on lived poverty is capturing residual differences in need.

Consequently, models 6 and 8 examine the extent to which household characteristics explain experience with state and non-state providers among the

subset of households that have utilized health services. After controlling for utilization, none of the covariates are significantly associated with government provision. Lived poverty status is not a significant predictor of interaction with public facilities among households that have visited at least one provider, which contradicts the two-tiered service environment described in existing literature (Adésinà, 2009; MacLean, 2011).

**Table 4.14: Utilization of State and Non-State Health Facilities**

|                  | Any Government Health |          |                               |          | Any Non-State Health |          |                               |          |
|------------------|-----------------------|----------|-------------------------------|----------|----------------------|----------|-------------------------------|----------|
|                  | Model 5               |          | Model 6<br><i>no_health=0</i> |          | Model 7              |          | Model 8<br><i>no_health=0</i> |          |
|                  | Exp ( $\beta$ )       | Robst SE | Exp ( $\beta$ )               | Robst SE | Exp ( $\beta$ )      | Robst SE | Exp ( $\beta$ )               | Robst SE |
| Poverty (flow)   | 0.894**               | 0.047    | 0.916                         | 0.050    | 0.964                | 0.056    | 1.022                         | 0.065    |
| Poverty (assets) | 0.933                 | 0.047    | 0.936                         | 0.050    | 1.003                | 0.058    | 1.010                         | 0.064    |
| Age              | 1.069**               | 0.031    | 1.044                         | 0.031    | 1.057*               | 0.031    | 1.017                         | 0.034    |
| Age <sup>2</sup> | 0.999*                | 0.0003   | 0.999                         | 0.0003   | 0.999**              | 0.0003   | 0.999                         | 0.0003   |
| Female resp.     | 1.496**               | 0.240    | 1.292                         | 0.213    | 1.301                | 0.232    | 0.995                         | 0.191    |
| Female HH        | 1.335                 | 0.243    | 1.334                         | 0.258    | 0.861                | 0.168    | 0.809                         | 0.175    |
| Low education    | 1.021                 | 0.187    | 1.045                         | 0.199    | 0.681*               | 0.137    | 0.643**                       | 0.137    |
| High education   | 1.106                 | 0.184    | 1.135                         | 0.196    | 0.789                | 0.147    | 0.783                         | 0.164    |
| Kibera           | 0.997                 | 0.151    | 0.921                         | 0.146    | 1.894***             | 0.318    | 1.795***                      | 0.330    |
| Health status    | 1.122**               | 0.056    | 1.038                         | 0.054    | 1.335***             | 0.078    | 1.242***                      | 0.079    |
| Quality          | 1.123**               | 0.056    | 1.089                         | 0.057    | 1.237**              | 0.116    | 1.194*                        | 0.122    |
| Constant         | 0.184**               | 0.131    | 0.495                         | 0.365    | 0.200**              | 0.151    | 0.791                         | 0.681    |
| Observations     | 930                   |          | 856                           |          | 921                  |          | 849                           |          |
| Wald $\chi^2$    | 45.91***              |          | 24.66*                        |          | 70.18***             |          | 45.70***                      |          |

Ethnicity controls included in models but not shown.

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

Moving on to non-state provision, the most striking finding—other than the insignificance of relative lived poverty—is the continued significance of many covariates after controlling for utilization. Households headed by individuals with low education are less likely to have experience with non-state providers, and the magnitude and statistical significance of the effect both increase in the second specification. Health status and perceived quality are more influential for non-state interaction than for experience with public providers, and poor health and favorable perceptions of quality continue to increase the probability of non-state utilization among households who have visited a health facility. Finally, residents of Kibera

are significantly more likely to utilize non-state health services than households in Korogocho.

### *Interaction with Public and Private Schools*

The last models in this section examine experience with government and non-government schools. Less impoverished households are less likely to have a child enrolled in a government school. Aside from this correlation, the most notable finding is really the absence of findings. The intercepts imply that there is a low probability of interaction with public schools and a very high probability of experience with non-state schools, but the covariates in the models do not offer much insight into why this is the case or what household characteristics may explain the variation.

**Table 4.15: Utilization of State and Non-State Schools**

|                        | Any Public School<br>Model 9 |          | Any Non-State School<br>Model 10 |          |
|------------------------|------------------------------|----------|----------------------------------|----------|
|                        | Exp ( $\beta$ )              | Robst SE | Exp ( $\beta$ )                  | Robst SE |
| Poverty (flow)         | 0.860**                      | 0.063    | 1.042                            | 0.090    |
| Poverty (assets)       | 1.069                        | 0.077    | 1.067                            | 0.094    |
| Age                    | 1.258***                     | 0.076    | 0.782***                         | 0.055    |
| Age <sup>2</sup>       | 0.998***                     | 0.001    | 1.003***                         | 0.001    |
| Female respondent      | 0.716                        | 0.161    | 1.522                            | 0.409    |
| Female HH              | 1.224                        | 0.309    | 1.276                            | 0.379    |
| Low education          | 1.130                        | 0.260    | 0.933                            | 0.264    |
| High education         | 0.891                        | 0.208    | 1.037                            | 0.284    |
| Kibera                 | 1.155                        | 0.231    | 0.752                            | 0.181    |
| Quality of gov schools | 1.079                        | 0.050    | 0.978                            | 0.055    |
| Constant               | 0.003***                     | 0.003    | 774.831***                       | 1273.124 |
| Observations           | 534                          |          | 534                              |          |
| Wald $X^2$             | 46.27***                     |          | 20.15**                          |          |

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

## **Satisfaction with Services**

In the final section of the chapter, I examine the effects of both provider type and household characteristics on households' satisfaction with health and education services. In addition to the inclusion of both state and non-state provision to the analyses, the use of satisfaction with services as a dependent variable is a key

extension to MacLean’s (2011) research on the micro-experience of service provision in the wake of state retrenchment.

## Health

Satisfaction with health services is quantified by an ordinal variable indicating a household’s level of satisfaction relative to other households by quintile. If households had experience with multiple facilities in the preceding year, respondents answered the constituent questions for the facility most frequently visited by members of the household. Ordered logit models include a dummy variable that equals 1 when the health facility is operated by the government. I also separated the measure of lived poverty into indicator variables for each quintile, relaxing the assumption of proportional odds and allowing for a non-linear relationship between poverty and satisfaction.

**Table 4.16: Impact of Provider Type on Satisfaction with Health and Education Services**

|  | Model 11: Health<br><i>healthsat_pc1_qt</i> |            | Model 12: Education<br><i>satedu_pc1_qt</i> |            |
|--|---|------------|---|------------|
|  | Exp ( $\beta$ )                             | Robust SE  | Exp ( $\beta$ )                             | Robust SE  |
| Public<br><i>health_public/pub_sch_pct</i> | 0.375***                                    | 0.052      | 0.521***                                    | 0.204      |
| Poverty (flow)                             |   |            |   |            |
| 1 <sup>st</sup> quintile                   | <i>ref</i>                                  | <i>ref</i> | <i>ref</i>                                  | <i>ref</i> |
| 2 <sup>nd</sup> quintile                   | 1.525**                                     | 0.318      | 1.149                                       | 0.230      |
| 3 <sup>rd</sup> quintile                   | 2.183***                                    | 0.450      | 0.952                                       | 0.271      |
| 4 <sup>th</sup> quintile                   | 1.846***                                    | 0.384      | 1.138                                       | 0.273      |
| 5 <sup>th</sup> quintile                   | 1.884***                                    | 0.403      | 3.904***                                    | 0.303      |
| Poverty (assets)                           | 0.935                                       | 0.043      | 1.041                                       | 0.066      |
| Age  | 0.994                                       | 0.006      | 0.988                                       | 0.010      |
| Female respondent                          | 1.150                                       | 0.171      | 0.802                                       | 0.200      |
| Female HH                                  | 0.959                                       | 0.169      | 0.868                                       | 0.216      |
| Low education                              | 1.199                                       | 0.213      | 0.836                                       | 0.208      |
| High education                             | 1.115                                       | 0.167      | 1.051                                       | 0.218      |
| Kibera                                     | 1.441**                                     | 0.211      | 0.948                                       | 0.204      |
| Observations                               | 879   |            | 501   |            |
| Wald $X^2$                                 | 94.47***                                    |            | 60.98***                                    |            |

Ethnicity controls included in the models but not shown.

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

The regression results in Table 4.16 suggest that there is, in fact, a non-linear relationship between lived poverty status and satisfaction with health services. The predicted probabilities in Table 4.17 offer a more substantive interpretation of the effect. The probability of being among the least satisfied when all other covariates are set at their means is 0.30 for the most impoverished, 0.16 for households in the median quintile, and 0.18 for the least impoverished. A similar pattern occurs in the predicted probabilities of being among the most satisfied: the likelihood is 0.05 for the lowest quintile, 0.11 for the median, and 0.10 for the highest.

**Table 4.17: Predicted Probabilities for Health Satisfaction**

|  | Probability of<br>being in the lowest<br>quintile of<br>satisfaction (1) | Probability of<br>being in the<br>median quintile of<br>satisfaction (3) | Probability of<br>being in the<br>highest quintile of<br>satisfaction (5) | <i>Change in<br/>probability<br/>(1-5)</i> |
|--|--|--|---|--|
| <b>Public Health = 0</b>                           | 0.15   | 0.51   | 0.12  | -0.03                                      |
| <b>Public Health = 1</b>                           | 0.32   | 0.34   | 0.05  | -0.27***                                   |
| <i>Change in<br/>probability</i>                   | 0.17***  | -0.17***   | -0.07***  |  |
| <b>Poverty status = 1<br/>(most impoverished)</b>  | 0.30   | 0.36   | 0.05  | -0.25**                                    |
| <b>Poverty status = 3<br/>(median)</b>             | 0.16   | 0.50   | 0.11  | -0.05**                                    |
| <b>Poverty status = 5<br/>(least impoverished)</b> | 0.18   | 0.48   | 0.10  | -0.08***                                   |
| <i>Change in<br/>probability (1-5)</i>             | -0.12***   | 0.12***  | 0.05***   |  |

Education dummies are set at zero and all other variables are set at their means.

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

Aside from the positive effect associated with Kibera residence, the only other statistically significant covariate is the indicator for public health facility. Households utilizing government provision are likely to be significantly less satisfied than an otherwise identical household receiving care at a non-state facility. However, predicted probabilities in Table 4.17 indicate a more nuanced relationship. At the first and third quintiles of satisfaction, the change in

probability associated with public versus private facilities is 0.17; households receiving services from public providers are 17 percent less likely to be among the least satisfied and 17 percent more likely to be in the median quintile. At the highest quintile of satisfaction, the change in probability decreases to 0.07. Furthermore, the relationship between non-state providers and satisfaction is not linear. When all other covariates are set at their means, households receiving services from non-state providers are slightly *more* likely to be in the lowest quintile of satisfaction than the highest.

A look at the specific health facilities visited by survey participants and the average satisfaction scores by facility offers some insight into the impact of provider type on satisfaction. Households reported interactions with 1,753 facilities in the preceding year, 528 (30 percent) of which are operated by the government.<sup>30</sup> Of the interactions with public facilities, 58 percent are national, district, sub-district, or provincial hospitals; the remaining 42 percent are health centers, clinics, and dispensaries. Of the lower-level facilities, 29 percent are health centers and 71 percent are dispensaries. Upon calculating the average satisfaction score by facility for some of the most frequently visited public and private facilities, it becomes clear that the negative relationship between public services and satisfaction is largely driven by dissatisfaction with public health centers (see Table C.2 in Appendix C). While not among the most highly rated, respondents' experiences with public hospitals are comparable to experiences with average non-state facilities. Also notable from the facility averages is the wide range of satisfaction among non-state providers.

These findings suggest that the narrative in which government facilities are inadequate and higher quality NSPs cater to those who can afford their services oversimplifies both the public and the private sectors. The type of government facility affects households' satisfaction, and non-state providers do not have a uniformly positive effect on satisfaction. Furthermore, research from other developing countries suggests that overly optimistic assessments of NSP

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<sup>30</sup> These are the total facility counts, not the number of different facilities.

effectiveness and efficiency are not limited to Kenya or sub-Saharan Africa. In a systematic examination of peer-reviewed research including case studies, meta-analyses, reviews, and case-control analyses, as well as reports published by NGOs and international agencies, Basu and colleagues (2012) found that private sector health providers more frequently violated medical practice standards, and patient outcomes were generally poorer at private facilities. Furthermore, efficiency was lower in the private sector, owing in part to financial incentives for unnecessary testing and treatment. The negative effect of consumer accountability on efficiency and health outcomes at private facilities has been highlighted in other studies as well (e.g., Bhatia et al, 2004; Brugha & Zwi, 1998; Gbotosho et al, 2009; Gupta et al, 2009; Marriott, 2009; Muhuri et al, 1996; Pongsupap & Van Lerberghe, 2006; Siddiqi et al, 2002). Particularly when providers lack proper training and technical knowledge, catering to consumers with limited health literacy leads to the dispensation of unnecessary (and sometimes harmful) drugs and the repeated and inefficient treatment of symptoms rather than underlying causes.

Though Basu and co-authors (2012) note the prevalence of long waiting times, inferior hospitality, and limited availability of equipment, medicines, and trained healthcare workers at public health facilities, the authors argue that many of these challenges arise from the competition between the public and private sectors for funding and staff. As long as donor support and international policies continue to shift resources from the public to the private sector, it is unreasonable to expect public health facilities to provide comparable care. Based on evidence from this dissertation and other research, however, patterns in households' preferences and health outcomes challenge the theoretical arguments used to justify the shift toward private health provision.

### ***Education***

Returning briefly to the regression results in Table 4.16, satisfaction with schools is negatively associated with the percentage of students enrolled in public schools. Predicted probabilities in Table 4.18 show that the effect of public provision

is smaller for education than for health. The probability of falling within the median quintile of satisfaction is roughly the same regardless of the operating entity of the school. As was the case for health services, there is a non-linear relationship between poverty status and satisfaction. The estimated effect of poverty is not significant until the highest quintile, but the magnitude is large; the probability of being among the most satisfied is 0.13 for the most impoverished and 0.37 for the least impoverished.

**Table 4.18: Predicted Probabilities for Education Satisfaction**

|   | Probability of being in the lowest quintile of satisfaction (1) | Probability of being in the median quintile of satisfaction (3) | Probability of being in the highest quintile of satisfaction (5) | Change in probability (1-5) |
|---|---|---|--|-----------------------------|
| <b>Public School Percentage = 0</b>               | 0.15  | 0.22  | 0.19   | 0.04                        |
| <b>Public school percentage = 1</b>               | 0.25  | 0.21  | 0.11   | -0.14***                    |
| <i>Change in probability</i>                      | 0.10***   | 0.01  | -0.08***   |                             |
| <b>Poverty status = 1</b><br>(most impoverished)  | 0.21  | 0.22  | 0.13   | -0.08***                    |
| <b>Poverty status = 5</b><br>(least impoverished) | 0.06  | 0.17  | 0.37   | 0.31***                     |
| <i>Change in probability</i>                      | -0.15***  | -0.05**   | 0.24***  |                             |

Education dummies are set at zero and all other variables are set at their means.

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

## Conclusions and Implications

The review of existing literature on the simultaneous processes of state retrenchment and the growth of non-state social welfare provision at the beginning of the chapter identified two recurring narratives regarding the effects of these processes on households' experiences with health and education provision. In the first, non-state providers meet the demand generated by the absence of or limitations in state provision. In the second, the growth in non-state provision offers



higher quality options for those who can afford to pay, and those who cannot must rely on underfunded, inadequate government facilities.

In the context of Nairobi's informal settlements, survey data reveal that the effects of state retrenchment on the micro-experience of health and education provision are far more complex than either narrative suggests. What some refer to as a two-tiered or dual social welfare system (Adésínà, 2009; MacLean, 2011) is actually comprised of multiple tiers separated by gaps of varying sizes, and the location of government providers among the tiers varies by facility and level of care and education. Deregulation was a key component of the enabling environment created by neoliberal reforms, and accompanied limitations on government spending hindered efforts to enforce remaining regulations. While this may have fostered the development of the higher-quality system of non-state provision referenced in the second narrative, it also fostered the development of a fragmented, opaque, and exceedingly diverse non-state sector accessible to the poor.

There has been an increasing focus on the explosion of non-formal, low-cost schools in many African countries following the implementation of FPE (Mugisha, 2006; Ngware et al, 2013; Oketch et al, 2010; Onsomu et al, 2004; Tooley et al, 2008; Wildish, 2011; Uwezo, 2014), but most studies on non-state health provision focus on NGOs and exclude the plethora of CBOs, FBOs, chemists, and other private for-profit providers on whom many households rely for care. Based on insights from Kibera and Korogocho, the low-cost private sector is a critical component of the micro-experience of social service provision—and of the livelihood strategies of slum dwellers. Evidence suggests that these low-cost private providers are neither efficient nor effective, but more research is needed to understand their contributions to health provision and health outcomes in poor communities.

State retrenchment has limited the ability of governments to meet the demand for services, and continued budget cuts have exacerbated overcrowded classrooms, insufficient stocks of medicines and other supplies, and shortages of teachers and health professionals. In spite of these problems, many households utilize public health facilities and schools. In fact, the majority of respondents would

*prefer* to obtain treatment from a government health provider if they could visit any type of service provider. Though the preference for public facilities is more common among more impoverished households, 46 percent of the most secure households still prefer government providers. NGOs, CBOs, and FBOs receive significant portions of foreign aid and donor support due to their purported efficiency and effectiveness, but households appear to have a much less favorable view of the services they provide. According to literature cited in Chapter 1, NGOs and other NSPs are just as susceptible to corruption as the state, and research reviewed earlier in this chapter suggests that NSPs as a whole are neither more efficient nor more effective at improving health outcomes.

The state remains a credible health service provider, and households that perceive public health facilities as accessible are less likely to under-utilize services. Based on these findings, more resources should be directed toward improving the accessibility and quality of public health provision.

## **Chapter 5**

# **Beyond Poverty: The Influence of Social Proximity on the Micro-Experience of Health and Education Provision**

### **Introduction**

Macroeconomic approaches to service provision focus almost exclusively on affordability; after controlling for need and location, income and other measures of poverty are widely cited as the key individual-level determinant of both access and outcomes (Baru et al, 2010; Berry et al, 2004; Bratton, 2007, 2012; Chuma & Okongu, 2011; MacLean, 2011; Marriott, 2009; Moe & Rheingans, 2006; Montgomery & Ezeh, 2005; Tukahirwa et al, 2011; World Bank, 2004). The analysis in Chapter 4 confirmed this relationship in most cases, but the relatively narrow range of incomes and asset ownership present in informal settlements does not reflect the societal distribution. That widespread variation in access and utilization exists within the limited range of socioeconomic indicators suggests that factors beyond basic socioeconomic and demographic characteristics influence slum dwellers' micro-experiences of health and education provision.

Furthermore, the descriptions of the systems of service provision in Chapter 2 illuminate the complexity of the service environment and the emergence and increasing dominance of the low-cost private sector of health and education providers that offer affordable services for the poor. As survey results reviewed in this chapter reveal, households located in close geographic proximity to one another offered disparate estimates of the number of providers in their communities, signaling that variation begins with the perception of service availability. More

than 300 of the 335 schools in Kibera identified by Map Kibera are non-formal, and minimal information is available to help parents locate schools and assess the quality of instruction (Map Kibera, 2015). A study conducted by the African Population and Health Research Center (2013) located 178 health facilities in Kibera and 184 in Korogocho, but the Ministry of Health Master Facility List of registered providers identifies 40 facilities in Kibera and 10 in Korogocho (Republic of Kenya MOH, 2015). The private sector is diverse, unregulated, opaque, and difficult to navigate; the absence of regulation has a negative impact on quality and cost (Baru et al, 2010; Barua & Singh, 2003; Kamat 2001; Michielson et al, 2011). No information is available for the vast majority of service providers in the communities, fees are rarely posted for price comparisons, and no mechanisms for quality assessments and the dissemination of findings exist (APHRC, 2013).

In this environment, households' ability to access quality services depends on more than spatial proximity and affordability. Sociocultural and cognitive barriers to access to health care include low levels of health literacy, lack of awareness about necessary care and treatment options, lack of information about where to go for quality care, demands for bribes, low levels of trust in general and in providers, staff disrespectfulness and abuse, and past experiences with inadequate supplies and facilities (Barua & Singh, 2003; Berlan & Shiffman, 2012; Gilson, 2003; Krishna, 2011; Michielson et al, 2011). Similar sociocultural and cognitive barriers exist amidst the plethora of non-formal schools, programs operated by faith-based organizations, NGOs, CBOs, entrepreneurs, community members, private companies, and self-help groups, and the overcrowded and understaffed public schools (Ngware et al, 2013; Oketch et al, 2010). How do households overcome these challenges, and why are some able to do so while other households with the same economic resources and level of formal education are not? What non-monetary resources do households rely on to navigate the complex landscape of health and education provision and access services, and how does the process affect satisfaction?

There is a growing body of research, predominantly located in literature related to determinants of health and access to health care, that highlights the importance of micro-level sociopolitical mechanisms to individuals' access to services. Consideration of these mechanisms with regard to health outcomes and mediating access to health care in developed countries is widespread (e.g., Allard, 2009; Hendryx et al, 2002; Subramanian et al, 2002; Swaroop & Morenoff, 2006), and a body of literature is emerging in the development context as well (Baru et al, 2010; Barua & Singh, 2003; Chen & Cammett, 2012; Krishna, 2011; Narayan & Pritchett, 1999; Tsai, 2007; Tukahirwa, 2011).

Many studies invoke some form of social capital, a multifaceted concept that is defined and employed in numerous ways. The general factors of interest in social capital research include weak and strong network ties, bridging connections, notions of trust, collective efficacy, and social organization and structure (Bourdieu, 1986; Bowles & Gintis, 2002; Coleman, 1988, 1990; Grootaert & van Bastelaer, 2001; Harpham, et al, 2002; Islam et al, 2006; Portes, 1998; Putnam, 1993, 2000; Uphoff, 2000).<sup>31</sup> While it makes sense that these factors could play an important role in overcoming financial, cognitive, and sociocultural barriers to accessing high quality health and education services, there is no consensus in the existing literature about how they operate and influence social welfare on the micro level (Montgomery & Ezeh, 2005). The distinct effects—positive and/or negative—of each component are understudied, particularly in developing countries and across a variety of institutional, cultural, and political contexts.

In this chapter, I build on this literature and the analysis in the previous chapter by examining the relationship between the micro-experience of health and education provision and indicators of the depth and strength of households'

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<sup>31</sup> For a review of the social capital literature, including definitions and criticisms regarding the empirical and theoretical utility of the concept, see Appendix D.

community and political involvement and interpersonal and institutional trust.<sup>32</sup> As I discuss in the review of social capital literature in Appendix D, I attempt to avoid the common theoretical and methodological criticisms directed towards social capital research by focusing on a subset of factors I collectively refer to as “social proximity” and exploring the ways in which constituent components operate as intervening variables within a particular institutional, sociocultural, and political context. I hypothesize that social proximity shapes the lens through which households assess opportunities, identify possibilities, and evaluate options for health and education services. Based on findings from the household-level analysis in this chapter and the inclusion of community-level sociopolitical factors in Chapter 6, I discover that the role of social proximity grows larger in the absence of universal state provision. As the landscape of providers becomes more fragmented and diverse, non-monetary resources increasingly facilitate access, utilization, and enhanced satisfaction with health and education services.

## **Conceptualization of Social Proximity**

The term “social proximity” has been employed in many disciplines and defined in numerous ways. Social psychologists view social proximity as “the perceived distance between self and other” (IJzerman & Semin, 2009, p. 1215), and social network analysts refer to a quantitative “representation of the flow of communication between individuals in the network” (Alba & Kadushin, 1976, p. 77). Building on the work of Tukahirwa’s (2011) inclusion of social proximity factors as predictors of access to NGO and CBO sanitation services in Uganda, however, I adopt a more general definition whereby a household’s social proximity is a multi-dimensional concept that captures the household’s social positionality—members’ social and political interactions and connections within and outside of the community.

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<sup>32</sup> Many scholars argue that it is not the household-level socio-political characteristics that are most important but the nature and extent of social, political, and associational interactions at the community level. While this chapter focuses solely on the household-level characteristics, I examine the community level in Chapter 6.

Social proximity cannot be reduced to a single indicator or an aggregate measure, because households' relationships vary across the spectrum of sociopolitical activity and the effects on service provision are not uniform (Bjørnskov, 2006). Similarly, the effects are often context specific: a particular type of connection or relationship may be very beneficial in one community and irrelevant in another, particularly when the landscape of service providers and civil society organizations varies as widely as it does between different informal settlements (Sretzer & Woolcock, 2004).

### ***Potential Mechanisms***

Based on existing literature, I have identified three potential mechanisms by which households' social proximity may affect perceptions, utilization, and satisfaction with health and education services: transmission of knowledge and information, material assistance, and direct facilitation of access to services.

#### *Transmission of Knowledge and Information*

Nearly every theory and study related to health service provision cites the paramount importance of information to health-seeking behaviors and healthcare provision (e.g., Berlan & Shiffman, 2012; Cavill & Sohail, 2003; Fotso & Mukiira, 2012; Gilson, 2003; Muriithi, 2013; Pritchett & Woolcock, 2004; Steinberg & Baxter, 1998). Lack of information is recognized as a key cognitive barrier to health care access for the urban poor in developing countries (Baru et al, 2010; Barua & Singh, 2003; Kamat 2001; Michielson et al, 2011). This is unsurprising given the plethora of options for health and education services in and around slums and the dearth of formal mechanisms to provide residents information about service availability, quality, and costs. The absence of available information is particularly problematic given the low levels of health literacy and limited ability to judge the quality of services among the population.

In micro-level analyses, education is routinely employed as a proxy for information. People with higher levels of education are more likely to be informed about service availability and the advantages of service utilization, and they are

also better able to successfully demand access to quality services (Berry et al, 2004; Krishna, 2008; MacLean, 2011; Montgomery & Ezech, 2005; Tukahirwa et al, 2011; World Bank, 2004). Throughout the analyses in Chapter 4, however, the only outcome with which the level of education attained by the household head was significantly associated was interaction with non-state health providers. There was no relationship between education level and the ability to access health services when needed, school enrollment rates, perceptions of accessibility, or satisfaction with services. Formal education may contribute to households' awareness of their service needs and make it easier to seek out the necessary information, but it is neither necessary nor sufficient to help households' navigate the service environment in the slums.

In this context, the extent of a household's social connections may increase access to the knowledge and information. People likely rely on advice and support from formal and informal community groups, social, political, and professional associations, and other social ties. Some of this information transmission is formalized through the mission and nature of the group—for example, welfare groups, self-help groups focused on health and education, and community insurance cooperatives—and some is derived from being connected to more people who can share their information, experiences, and knowledge about when and where to seek care (Adhikari & Goldey, 2010). Even if the other person is not a close friend, the shared identity, interest, concern, or purpose that drew both to the group likely both facilitates the transmission of knowledge and increases the recipients' perception of its accuracy (Agrawal et al, 2008; Binzel & Fehr, 2009; Bowles & Gintis, 2002; Coleman, 1988; Cranston, 1996; Montgomery & Ezech, 2005; Sorenson et al, 2006; Uphoff, & Wijayarathna, 2000).

### *Material Assistance*

The financial cost is a second key barrier to accessing quality services for residents of informal settlements (Ensor & Cooper, 2004; Fotso & Mukiira, 2012; Muriithi, 2013). As is the case with information asymmetries, social proximity factors may help overcome financial barriers by connecting households with



resources to pay for services. Access to support for fees can come through membership in formal savings groups, merry-go-rounds, and community-based insurance schemes; through relationships with socially advantaged individuals or groups; or through close personal relationships with family, neighbors, or other persons who would be willing to help out in an urgent situation (Islam et al, 2006; Montgomery & Ezeh, 2005; Narayan & Pritchett, 1999; Sretzer & Woolcock, 2004). Similarly, existing research suggests that long-term relationships with service providers increase the likelihood that providers will work within the constraints imposed by the patients' or students' financial situation by lowering the fee or offering a payment plan (Hendryx et al, 2002). This is particularly likely among NGOs, CBOs, FBOs, and other non-state providers.

#### *Direct Facilitation of Access to Services*

A third potential barrier to services is “getting in the door” when there is high demand. At public health facilities in and around Kibera and Korogocho, for example, waiting times are long, staff and medicines are routinely unavailable, and demands for bribes reduce affordability (Chuma & Okongu, 2013; Martin & Pimhidzai, 2013). Classrooms at public schools are similarly overcrowded, and textbook shortages and fees pose challenges to residents even if they are able to secure a place in a public school (Chuck, 2009; Ogola, 2010). Among non-state providers, access to services provided by CBOs, churches, and self-help groups may require membership in the group (Tukahirwa, 2011). In these situations, social or political connections can directly facilitate access and, in the case of health services, ensure more personal attention, access to medicines during shortages, or higher quality care (Sretzer & Woolcock, 2004). Jha *et al* (2007) and Krishna (2011) find evidence of this in India, where connections with local leaders and informal power brokers help poor households gain access to public services.

### **Operationalization of Social Proximity Factors**

It is important to acknowledge at the outset that measuring social proximity is fraught with difficulties. Social and political relationships and networks are

complex and context-specific; any attempt to parsimoniously quantify social proximity necessarily ignores nuances and runs the risk of incorrectly attributing an observed effect to a particular social factor when a key variable is unknowingly omitted. A thorough understanding of the relationships in a community and households' positions among them requires extensive local knowledge, cooperation from stakeholders, and an in-depth qualitative examination, all of which are beyond the scope of this dissertation. In spite of these challenges, I selected three components of social proximity—community involvement, interpersonal and institutional trust, and political involvement—based on existing research and the potential mechanisms outlined above (Bjørnskov, 2006). Additionally, to ensure that social proximity factors are not proxies for poverty status, education, or other socio-demographic variables, I confirmed that there is no significant correlation between social proximity factors and other explanatory factors (see correlation matrix in Appendix F).

### ***Community Involvement***

Community involvement is a structural component of social proximity that encompasses group membership, attendance at community meetings, and contact with community leaders (Harpham, et al, 2002; Montgomery & Ezech, 2005; Uphoff, 2000). Using principal component analysis with polychoric correlation, I generated three factors corresponding to membership, attendance, and contact. For most of the analysis in this chapter, I created a summary measure by taking the sum of the three factors.

**Table 5.1: Description of Community Involvement Factors**

| <b>Community Involvement</b>                            |  | <b>Obs</b> | <b>Mean</b> | <b>StDev</b> | <b>Min</b> | <b>Max</b> |
|---|--|------------|-------------|--------------|------------|------------|
| Community group membership<br>( <i>comm_pc1</i> )       | Membership and level of involvement in religious group that meets outside of worship (0.46); membership and level of involvement in a savings group or merry-go-round (0.61); membership and involvement in a women’s group (0.63) | 1006       | 1.42        | 1.24         | -0.35      | 5.28       |
| Contact with leaders<br>( <i>comm_pc2</i> )             | Frequency of contact with a staff member of an NGO or CBO (0.65); frequency of contact with a traditional leader, religious leader, or other community leader (0.70)   | 1006       | 0.97        | 1.11         | -0.39      | 4.83       |
| Attendance at community meetings<br>( <i>comm_pc3</i> ) | Frequency of attending any community meeting (0.71); frequency of getting together with others to raise an issue (0.67)  | 1006       | 2.23        | 1.48         | -0.44      | 5.83       |
| Community involvement<br>( <i>comm_pc</i> )             | Sum of the 3 community involvement factors. This summary factor was created to resolve multicollinearity issues when the individual factors were used in models.   | 1006       | 4.62        | 2.71         | 0          | 13.35      |

Factor loadings in parentheses

### ***Trust***

The second component of social proximity, trust, is cognitive; existing research indicates that cognitive components are conceptually and empirically separate from structural characteristics like group membership (Harpham et al, 2002; Montgomery & Ezeh, 2005; Swaroop & Morenoff, 2006). Gilson notes that “trust is a relational notion: it generally lies between—people, people and organizations, people and events” (2003, p. 1454). Instrumentally, “trust covers a variety of cognitive phenomena that enable individuals to take risks in dealing with others, solve collective action problems, or act in ways that seem contrary to standard definitions of self interest” (Levi, 1998, p. 78). As a form of faith, a basis of evaluation, or an expectation of reciprocity, trust is not an action or outcome like cooperation, but it can facilitate actions and outcomes.

In the context of social welfare, there are two potentially relevant types of trust. The first, interpersonal trust, exists between people. Interpersonal trust may facilitate access to quality health and education services through several channels. Some level of trust is required for the transmission of information and knowledge, as the recipient of the information must trust the source in order to accept and act on whatever advice or assistance is offered. Interpersonal trust is similarly crucial to any relationship with the potential to provide financial resources for services. People are unlikely to form savings or insurance groups with, extend loans to, or offer emergency assistance to individuals they don't trust to reciprocate or fulfill obligations. Additionally, interpersonal trust facilitates direct access to services, as those in a position to assist others have little incentive to do so unless they either share a strong bond, feel a sense of moral obligation, or expect some form of reciprocation (Islam et al, 2006).

Within the category of interpersonal trust, the social capital literature distinguishes between "bonding" and "bridging" trust. Bonding trust exists within a group with some shared social identity, whereas bridging trust refers to the relationships between people from different identity groups (Narayan & Pritchett, 1999; Putnam, 2000; Sretzer & Woolcock, 2004). The extent to which the effects of bridging and bonding trust on access diverge both in direction and magnitude likely depends on the nature of social relations and the landscape of social service providers in the community.

The second type of trust examined is institutional trust, and it exists between people and institutions. In the social capital literature, institutional trust is often classified as linking connections across vertical hierarchies of power (Gilson, 2003). Cross-national studies suggest that institutional trust is derived from views of legitimacy, based on the belief that the institution or its representatives are competent and honest (Tyler, 1998). There is empirical support for the importance of institutional trust to social welfare and service provision, particularly in poor communities where the nature and extent of respect and trust between individuals and representatives of formal institutions is strongly associated with their well-

being (Krishna, 2002; Lipsky, 1980; Narayan, 2000). In slum communities in Uganda, Tukahirwa (2011) found that high levels of trust significantly increase the likelihood that households utilize sanitation services provided by NGOs and CBOs; the marginal effect of trust was the highest among all variables included in the model. Although the macro-level positive effects of institutional trust are realized when there is generalized trust between the individuals and the institutions, particularistic relationships cultivated through patronage, corruption, and nepotism fall within this category and benefit the individuals at the micro level (Sretzer & Woolcock, 2004).

**Table 5.2: Description of Trust Factors**

| <b>Interpersonal Trust</b>                         |  | <b>Obs.</b> | <b>Mean</b> | <b>StDev</b> | <b>Min</b> | <b>Max</b> |
|--|--|-------------|-------------|--------------|------------|------------|
| Bonding: close relations<br>( <i>bonding_rel</i> ) | Trust in family (0.88); trust in neighbors (0.47); trust in members of your own ethnic group/tribe (-0.09)                                     | 1043        | 2.62        | 1.07         | -0.26      | 4.04       |
| Bonding: co-ethnic<br>( <i>bonding_ethnic</i> )    | Trust in family (-0.69); trust in neighbors (-0.03); trust in members of your own ethnic group/tribe (0.73)                                    | 1043        | 1.82        | 1.07         | -0.35      | 3.91       |
| Bonding<br>( <i>bonding</i> )                      | Sum of two bonding factors. This single measure of bonding trust was created for use when effects of the two factors were strongly correlated. | 1043        | 4.44        | 1.79         | 0          | 7.34       |
| Bridging<br>( <i>bridging</i> )                    | Trust in acquaintances (0.71); trust in members of other ethnic groups/tribes (0.71)   | 1018        | 2.36        | 1.11         | 0.21       | 5.39       |
| <b>Institutional Trust</b>                         |  |             |             |              |            |            |
| Government<br>( <i>confidence_gov</i> )            | Confidence in the President (0.48); Prime Minister (0.39); Parliament (0.57); Local government council (0.55)                                  | 886         | 2.52        | 1.55         | -0.16      | 6.47       |
| NGO<br>( <i>confidence_ngo</i> )                   | Confidence in Kenyan NGOs (0.71); confidence in international NGOs (0.71)  | 886         | 2.60        | 1.46         | -0.41      | 5.49       |
| Community<br>( <i>confidence_cbo</i> )             | Confidence in CBOs (0.71); confidence in traditional leaders (0.71)  | 886         | 0.65        | 1.12         | -1.84      | 3.85       |

Factor loadings in parentheses

I constructed indicators of interpersonal and institutional trust using questions about how much respondents trust others (e.g., family, neighbors,

acquaintances, other communities, members of their own ethnic group, etc.) and how much confidence they have in various institutions (e.g., government leaders and legislative bodies, NGOs, CBOs, traditional leaders, etc.). As described in Table 5.2, I generated factors for bonding and bridging interpersonal trust and confidence in government, NGOs, and community-level organizations and leaders using principal component analysis.

### ***Political Activism***

The final component of social proximity employed in this chapter is political activism. Existing research suggests that micro-level politics, defined as individual or household level political activity, participation, and contact with political and party officials, play a role in both promoting access to public social services for the politically connected and excluding those without similar ties (Chen & Cammett, 2012; Edelman & Mitra, 2006; Jha et al, 2007; Krishna, 2011). This is particularly true in countries where clientelism, patronage, and other forms of particularistic political behavior are pervasive. Chen and Cammett's (2012) empirical quantitative and qualitative analysis of access to health services in Lebanon, for example, consistently confirmed that individuals' access to quality services was positively related to their level of political activism. Using survey data from slums in India, Edelman and Mitra (2006) show that political contact facilitates access to public services and basic amenities. The authors discovered that political contact is less influential in other Asian countries, however, reiterating the importance of contextual factors.

Political connections are enormously beneficial in the short run, but politicians' exploitation of slum populations through targeted patronage stymies development and perpetuates residents' vulnerability. de Smedt confirms this pattern in the context of Kibera, where "politicians see Kibera not as a large slum, but as a strategic reservoir for votes" (2009, p. 594). Former Prime Minister Raila Odinga was Kibera's long-time Luo patron and MP from 1992 to 2013, and though he did direct some resources to the community at large, residents' rewards for

electoral and popular support were mostly targeted assistance, allowances, and even rent payments for active supporters (de Smedt, 2009). When Odinga was defeated in the 2007 presidential election, many observers argue that he encouraged—or at least did nothing to prevent—his supporters from participating in widespread violence and destruction in the community (de Smedt, 2009). This violence and the polarization that endures today have perpetuated residents’ vulnerability.

In the context of health and education services in Kibera and Korogocho, the influence of political activism initially appears more relevant for access to public services. As Montgomery and Ezeh (2005) note, however, political involvement may be one indicator of the strength of individuals’ social network ties. The relationship between the non-state providers and the government could also affect the utility of political connections for NSP accessibility.

To construct a measure of political involvement, I performed principal component analysis using survey responses regarding participation in various political functions, voting, party identification, contact with party officials, and campaign work.<sup>33</sup>

**Table 5.3: Description of Political Activism Factor**

| <b>Political Involvement</b>                   |  |      |      |      |        |      |
|--|--|------|------|------|--------|------|
| Political Activism<br>( <i>political_pc1</i> ) | Frequency of contacting a political party official (0.47); campaign meeting or rally attendance (0.49); tried to persuade others to vote for a particular candidate or party (0.53); worked for a candidate or party during the last election (0.52) | 1032 | 0.48 | 0.60 | -0.003 | 1.73 |

Factor loadings in parentheses

<sup>33</sup> The correlation between voting and other activities was low, so whether or not at least one member of the household voted in the last election was excluded from the factor; the inactivity of the 13 percent of respondents who did not vote was captured in the resulting factor. Nearly 43 percent did identify with a particular political party, but dummy variables for key parties were never significant in models and were therefore not included.

## Models

In the sections that follow, I examine the relationship between social proximity factors and three dimensions of the micro-experience of health and education provision: utilization, perceived accessibility, and satisfaction with services. Utilization is measured by binary variables indicating whether one or more members of the household were unable to access health services last time treatment was needed (*no\_care*) and whether none of the school age children in the household are enrolled in school (*not\_enrolled*). In some specifications, perceptions of the accessibility of state and non-state services were included to examine the extent to which perceptions affect utilization.<sup>34</sup> Using logit models,  $\Pr(DV=1) = f(\alpha + \beta_{poverty\_f1\_qt} + \beta_{poverty\_f2\_qt} + \beta_{Age\_hh} + \beta_{Age\_hh2} + \beta_{female=1} + \beta_{female=2} + \beta_{no\_ed} + \beta_{high\_ed} + \beta_{kibera} + \beta_{comm\_pc\_qt} + \beta_{political\_pc1\_qt} + \beta_{bonding\_rel\_qt} + \beta_{bonding\_ethnic\_qt} + \beta_{bridging\_qt} + \beta_{NGOHealth(Edu)Access} + \beta_{GovHealth(Edu)Access} + \varepsilon)$ , where each of the variables used is described in the tables above and below.

In the second section, the dependent variables are perceptions of the accessibility of state and non-state health and education services, all of which are measured on ordinal scales. Respondents were asked: “How easy or difficult is to obtain treatment at a public/non-state clinic or hospital?” and “How easy or difficult is it to obtain a place for a child in government/non-state a primary school?” and chose between very difficult, difficult, easy, and very easy.<sup>35</sup> The final section explores the effects of social proximity factors on satisfaction with the health facility most often visited by members of the household and the school attended by the majority of the children.

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<sup>34</sup> Before including perceived accessibility in the models I confirmed that the relationship was not tautological. Though perceptions and utilization were correlated, there was sufficient variation in the responses of households that did not utilize services to the ordinal question measuring perceived accessibility.

<sup>35</sup> To ensure that this measure portrays a more comprehensive indication of access and is not solely a proxy for affordability of services, I confirmed through pairwise correlations between responses to these questions and identically scaled questions about respondents’ ability to pay fees for services of each type from both public and private providers that correlation is low (all pairwise correlations were  $< |0.12|$ ).



I used ordered logit models and included controls for socioeconomic status, age and education of the household head, ethnicity, gender of respondent and household head, and slum of residence. Each model has two specifications. The first specification includes the controls and indicators for community involvement, political activism, and interpersonal trust. The second adds indicators for institutional trust in government, NGOs, and CBOs. I use ordinal scales for quintiles of the social proximity factors in some models. For most specifications, however, I separated each factor into three quantiles—low, medium, and high—and generated dichotomous indicators for medium and high levels. Low levels became the reference category in the models. The use of indicator variables allows the model to capture non-linear effects across categories and simplifies the postestimation analysis. To test the robustness of this strategy, I compared the results to the original quintile specification (not shown). The predicted probabilities for the low and high categories were nearly identical.

I ran all of the models several times to test both model specification and the robustness of findings to alternative measures of the social proximity factors. The mix of explanatory variables that appear in the sections that follow varies slightly according to the dependent variable, as I omitted variables for which the  $p$  value was nearly 1.000 and report specifications that most successfully account for variation while minimizing multicollinearity and other sources of bias and inefficiency.<sup>36</sup>

**Table 5.4: Dependent Variables and Controls Used in the Chapter**

| Variable<br><i>(Stata name)</i>           | Description  |
|---|--|
| <b><i>Dependent Variables</i></b>         |  |
| No health care access<br><i>(no_care)</i> | Indicates whether the respondent or a member of the household was able to access health care services the last time he or she needed care. 0 = able to access care last time it was needed; 1 = unable to access care last time it was needed. |

<sup>36</sup> I discovered, for example, that the two factors for bonding trust (close relations and co-ethnic) sometimes had opposite effects and in other models had similar effects. For the latter, I often used a single measure of bonding trust (*bonding\_qt*) to avoid unnecessary multicollinearity.

|   |   |
|---|---|
| Not enrolled in school<br>( <i>not_enrolled</i> )                     | Indicates whether at least one school-age member of the household is enrolled in school. 0 = At least one child is enrolled in school; 1 = none of the school-age children are enrolled in school; missing if there are no school age children in the household.  |
| Government health service accessibility<br>( <i>GovHealthAccess</i> ) | Ordinal indicator of perceived accessibility of public health services measured by response to “How easy or difficult is it to obtain medical treatment at a public clinic or hospital?” 1 = very difficult; 2 = difficult; 3 = easy; 4 = very easy.  |
| Non-state health service accessibility<br>( <i>NGOHealthAccess</i> )  | Ordinal indicator of perceived accessibility of health services provided by non-state actors. Measured by response to “How easy or difficult is it to obtain medical treatment from non-government providers?” 1 = very difficult; 2 = difficult; 3 = easy; 4 = very easy.  |
| Government school accessibility<br>( <i>GovEduAccess</i> )            | Ordinal indicator of perceived accessibility of public education measured by response to “How easy or difficult is it to obtain a place in a public primary school for a child?” 1 = very difficult; 2 = difficult; 3 = easy; 4 = very easy.  |
| Non-state school accessibility<br>( <i>NGOEduAccess</i> )             | Ordinal indicator of perceived accessibility of non-state schools measured by response to “How easy or difficult is it to obtain a place for a child in a primary school that is not run by the government?” 1 = very difficult; 2 = difficult; 3 = easy; 4 = very easy.  |
| Satisfaction with health services<br>( <i>healthsat_pc_qt</i> )       | Quintiles of a factor variable measuring satisfaction with health services. If members of household visited more than one provider, responses relate to experiences with most frequently visited provider. Ranges from 1 = household is among the least satisfied to 5 = household among the most satisfied quintile. For additional details see Appendix A.                    |
| Satisfaction with education services<br>( <i>satedu_pc_qt</i> )       | Quintiles of a factor variable measuring satisfaction with education services. If members of household are enrolled in more than one school, responses relate to experiences with school in which most children are enrolled. Ranges from 1 = household is among the least satisfied to 5 = household among the most satisfied quintile. For additional details see Appendix A. |

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**Controls**

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|   |   |
|---|---|
| Poverty (flow)<br>( <i>poverty_f1_qt</i> )  | Quintiles of a factor variable measuring lived poverty in terms of daily experiences (income, frequency of going without food, water, etc.). Ranges from 1 = household is among the most impoverished quintile to 5 = household among the least impoverished quintile. For additional details see Appendix A. |
| Poverty (stock)<br>( <i>poverty_f2_qt</i> ) | Quintiles of a factor variable measuring lived poverty in terms of assets (ownership of radio, bicycle, electricity, etc.). Ranges from 1 = household is among the most impoverished quintile to 5 = household among the least impoverished quintile. For additional details see Appendix A.                  |
| Age of household head<br>( <i>Age_hh</i> )  | Age of household head (measured in years).  |
| Age squared<br>( <i>Age_hh2</i> )           | Square of the age of the household head (in years). Controls for the curvilinear relationship between age and interaction with/need for health care services.   |

|  |  |
|--|--|
| Female<br>( <i>Female</i> )                        | Indicates the sex of the respondent and whether the household head is female. 0 = male respondent and household head; 1 = female respondent and male household head; 2 = female household head   |
| Low education<br>( <i>low_ed</i> )                 | Indicates the level of education attained by the household head. 0 = no formal education or some primary school; 1 = completed primary school or higher.   |
| Medium education<br>( <i>med_ed</i> )              | Indicates the level of education attained by the household head. 0 = no formal education or only some primary school or completed secondary education or more; 1 = completely primary school up to some secondary education (but did not complete secondary education). Used as the control so it does not appear in the models. |
| High education<br>( <i>high_ed</i> )               | Indicates the level of education attained by the household head. 0 = no formal education through some secondary education; 1 = completed secondary education or beyond.  |
| Ethnicity<br>( <i>ethnicity_fewest</i> )           | Categorical variable for ethnicity of respondent. 1 = Kamba; 2 = Kikuyu; 3 = Kisii; 4 = Luyha; 5 = Luo; 6 = other ethnicity.   |
| Kibera<br>( <i>kibera</i> )                        | Indicates settlement of residence. 0 = household lives in Korogocho; 1 = household lives in Kibera.  |
| Public health<br>( <i>health_public</i> )          | Indicates the operational entity of the most frequently visited health provider. 0 = not operated by the government; 1 = operated by the government.   |
| Public school enrollment<br>( <i>pub_sch_pct</i> ) | Measures the percentage of school age children enrolled in a public school. Ranges from 0 = no children enrolled in public school to 1 = all children enrolled in public school.   |

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## Findings

### *Social Proximity and Awareness of Service Providers*

#### *Most Respondents Recognize the Importance of Social Proximity*

Before examining the statistical relationships between the social proximity indicators and measures of perceived accessibility, utilization, and satisfaction, it is useful to consider whether respondents themselves believe that sociopolitical factors affect community members' ability to meet their needs for health and education services. To what extent do they think participation and connections facilitate access? A cursory review of the distribution of responses to the questions below reveals that a majority of respondents either agree or strongly agree that holding leadership positions within the community or being connected to leaders makes it easier to access both health (58 percent) and education (62 percent) services. There

is variation between villages as well: 78 percent of respondents in Raila (Kibera) answered positively to leadership or leadership connections for health, and 75 percent in Kisumu Ndogo (Kibera) did so for education.<sup>37</sup>

The majority of respondents—55 percent for health and 60 percent for education—also view membership in community organizations as a facilitating factor. Interestingly, the pairwise correlations between responses for health and education, 0.37 for leadership connections and 0.35 for membership, are strong and significant but not as high as the nearly identical distributions might suggest. The pairwise correlations for all of the social proximity questions below are similar, implying that respondents’ perceptions of the utility of social proximity depends to some degree on the service in question.

**Being a community leader or having connections to or relationships with a community leader makes it easier to get adequate medical treatment/send your child to a good school.**

|                              | Health | Education |
|------------------------------|--------|-----------|
| Strongly agree               | 11%    | 11%       |
| Agree                        | 47%    | 51%       |
| Disagree                     | 32%    | 30%       |
| Strongly disagree            | 8%     | 7%        |
| Don't know/refused to answer | 2%     | 1%        |

**Being a member of a community organization makes it easier to get adequate medical treatment/send your child to a good school.**

|                              | Health | Education |
|------------------------------|--------|-----------|
| Strongly agree               | 8%     | 9%        |
| Agree                        | 47%    | 51%       |
| Disagree                     | 34%    | 32%       |
| Strongly disagree            | 8%     | 7%        |
| Don't know/refused to answer | 3%     | 1%        |

Fewer respondents believe that political party affiliation, religion, and ethnic identity affect households’ ability to access health and education services. For health, 32 percent agree or strongly agree that particular political party affiliations influence access, 27 percent view religion as important, and 22 percent believe that ethnic identity plays a role.<sup>38</sup> These factors are slightly more relevant for education

<sup>37</sup> Community level differences will be explored further in Chapters 6 and 7.

<sup>38</sup> There may be some bias in responses involving sensitive matters like ethnicity, religion, and politics.

services: 47 percent responded positively for political party affiliation, 36 percent did so for religion, and 24 percent affirmed the connection with ethnic identity. As was the case with community involvement, there was some variation between villages. Regarding the influence of religion on health care access, for example, 17 percent of respondents in Kianda (Kibera) agreed or strongly agreed, compared to 36 percent in Kisumu Ndogo (Korogocho).

**Being affiliated with a particular political party makes it easier to get adequate medical treatment/send your child to a good school.**

|                              | <b>Health</b> | <b>Education</b> |
|------------------------------|---------------|------------------|
| Strongly agree               | 6%            | 7%               |
| Agree                        | 26%           | 40%              |
| Disagree                     | 46%           | 33%              |
| Strongly disagree            | 19%           | 18%              |
| Don't know/refused to answer | 3%            | 2%               |

**Belonging to a particular religion makes it easier to get adequate medical treatment/send your child to a good school.**

|                              | <b>Health</b> | <b>Education</b> |
|------------------------------|---------------|------------------|
| Strongly agree               | 3%            | 4%               |
| Agree                        | 24%           | 32%              |
| Disagree                     | 53%           | 46%              |
| Strongly disagree            | 18%           | 16%              |
| Don't know/refused to answer | 2%            | 2%               |

**It is easier to get adequate medical treatment/send your child to a good school if you are a member of a certain tribe (or tribes).**

|                              | <b>Health</b> | <b>Education</b> |
|------------------------------|---------------|------------------|
| Strongly agree               | 4%            | 4%               |
| Agree                        | 18%           | 20%              |
| Disagree                     | 50%           | 49%              |
| Strongly disagree            | 26%           | 25%              |
| Don't know/refused to answer | 2%            | 2%               |

*Awareness of Service Availability and Information about Quality is Unevenly Distributed*

An additional survey question of interest descriptively touches on the presence of a cognitive barrier to access generated by the complexity and opacity of the service environment and the lack of information about both providers and quality. When respondents were asked whether lack of information about service availability and quality prevents people from obtaining health and education

services, 43 percent answered affirmatively for health and 42 percent did so for education.<sup>39</sup>

**Many people are not able to get adequate medical treatment because they do not know where to go when they need treatment / send their children to good schools because they do not have enough information about schools in the community and the quality of those schools.**

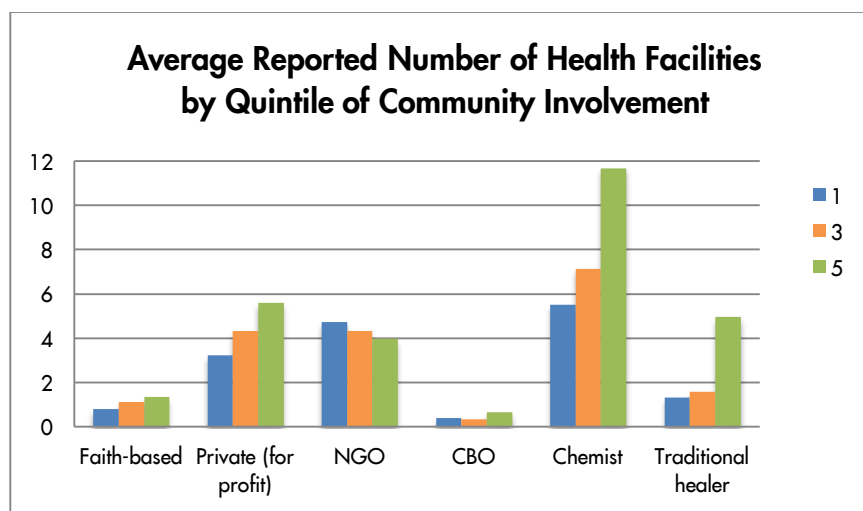
|                              | Health | Education |
|------------------------------|--------|-----------|
| Strongly agree               | 7%     | 7%        |
| Agree                        | 36%    | 37%       |
| Disagree                     | 43%    | 41%       |
| Strongly disagree            | 13%    | 14%       |
| Don't know/refused to answer | 1%     | 1%        |

As depicted in the series of distribution plots in Appendix E, there is little consensus among respondents about how many health and education facilities of various types are located in the communities. Awareness of service availability varies widely within each community, and alarmingly large portions of the population are unaware of the presence of the existing state and non-state health facilities. Both Kibera and Korogocho have an operational government health center and dispensary, for example, but 41 percent said there are no government health centers, and 65 percent reported that no public dispensaries are located in the community. Similarly, 39 percent of respondents indicated that there are no NGO clinics when each settlement has multiple large scale (for the area), internationally funded NGO facilities. Lack of awareness was somewhat less pronounced for government schools but, as the plots illustrate, there was a wide range of reported numbers, and knowledge of schools operated by NGOs and CBOs was low.

Though I am unable to draw any conclusions about causality or whether the mechanisms outlined earlier are responsible for any observed associations, the variation in awareness of service providers and the general perception that information is not equally distributed and that information can facilitate access to health and education do suggest that any information transmitted through social

<sup>39</sup> Community level differences were particularly striking for education. Much larger percentages of respondents from villages in Korogocho agreed or strongly agreed that lack of information is a barrier (58 percent in Korogocho B, 54 percent in Highridge, and 53 percent in Kisumu Ndogo) than in Kibera (27 percent in Kisumu Ndogo, less than 38 percent in Kianda, and less than 37 percent in Raila).

connections could have a positive effect on households. Furthermore, the visual comparison between the average number of health facilities of each type reported by households within quintiles of community involvement (*comm\_pc\_qt*) in Figure 5.1 shows that, with the exception of NGO providers, awareness of providers generally increases as the household's level of community involvement increases. This correlation is purely descriptive and does not control for any other factors, but comparisons of means across other explanatory factors such as poverty status, gender, age, and level of education attained by the household head showed no patterns in awareness.



**Figure 5.1** Average number of health facilities of each type reported by respondents in each quintile of community involvement.

## Social Proximity and Service Utilization

The results of logit models examining the effects of social proximity factors on whether or not the household was able to access health care last time it was needed and whether none of the school age children are enrolled are displayed in Table 5.5 (health) and Table 5.7 (education). Both sets of models explain more of the variation in observed values of the dependent variables than the specifications without social proximity factors in Chapter 4.

The results for two specifications for health utilization are included in Table 5.5. The first includes socio-demographic controls and social proximity factors, and the second adds dichotomous indicators for perceptions of accessibility of government and non-state health services.<sup>40</sup> The coefficients for both state and non-state accessibility are large and significant, a finding that corroborates existing research showing that individuals' perceptions of service accessibility and/or quality affect utilization (Ensor & Cooper, 2004; Leonard, 2003; Tukahirwa, 2011). The addition of these variables to the model had little effect on the coefficient estimates for other covariates; perceptions of accessibility appear to account for variation in utilization not captured by other covariates.

**Table 5.5: Relationship Between Social Proximity Variables and Access to Health Care**

| <i>no_care</i>      | Model 1         |           | Model 2         |           |
|---------------------|-----------------|-----------|-----------------|-----------|
|                     | Exp ( $\beta$ ) | Robust SE | Exp ( $\beta$ ) | Robust SE |
| Povertv (flow)      | 0.570***        | 0.050     | 0.577***        | 0.052     |
| Povertv (assets)    | 1.139           | 0.101     | 1.142           | 0.101     |
| Female resp.        | 0.659           | 0.184     | 0.738           | 0.210     |
| Female HH           | 0.628           | 0.189     | 0.709           | 0.214     |
| Kibera              | 0.946           | 0.224     | 1.005           | 0.247     |
| Community inv.      | 0.792***        | 0.064     | 0.775***        | 0.065     |
| Political activism  | 1.184**         | 0.085     | 1.197**         | 0.086     |
| Bonding (rel) trust | 1.074           | 0.102     | 1.089           | 0.105     |
| Co-ethnic trust     | 0.833*          | 0.080     | 0.851*          | 0.082     |
| Bridging trust      | 1.107           | 0.094     | 1.125           | 0.098     |
| GovHealthAccess     |                 |           | 0.351***        | 0.096     |
| NGOHealthAccess     |                 |           | 0.587**         | 0.159     |
| Constant            | 4.043           | 4.138     | 8.051*          | 8.679     |
| Wald $X^2$          |                 | 72.80***  |                 | 85.85***  |
| Observations        |                 | 899       |                 | 885       |

Age, age<sup>2</sup>, and education controls are included in the models but not shown.

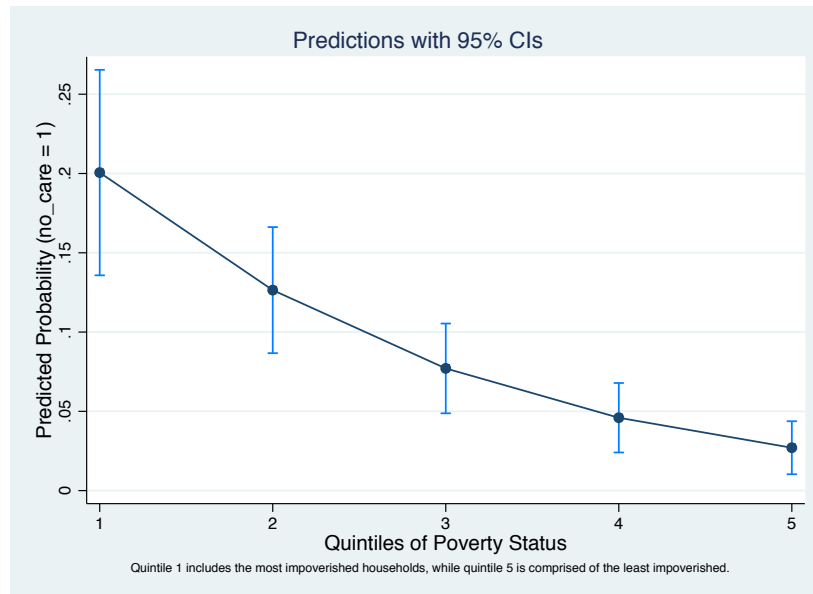
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Among the socio-demographic variables, lived poverty status significantly affects health utilization. As will be the case throughout the chapter, I use predicted probabilities to offer a more meaningful interpretation of the regression results.

<sup>40</sup> GovHealthAccess and NGOHealthAccess are set at 1 if the respondent said that getting treatment at a government/non-state health facility is easy or very easy, 0 if access is perceived as difficult or very difficult.



Figure 5.2 displays the change in the predicted probability of being unable to access care across each quintile of poverty status when all other covariates are set at their means. The predicted probability for the most impoverished households is 0.2, while the probability decreases substantially to 0.027 for the least impoverished households. None of the other socio-demographic controls are significant.



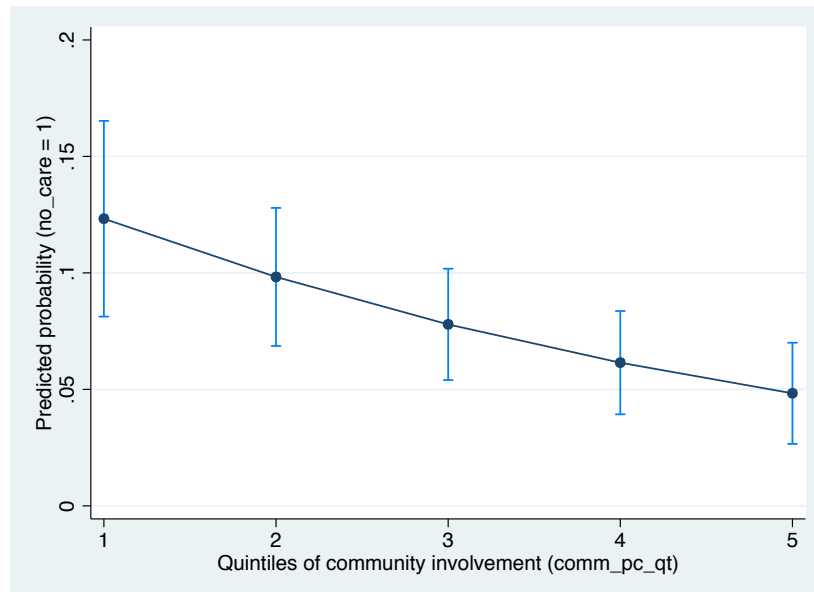
**Figure 5.2** The predicted probability of being unable to access health care last time it was needed by quintile of lived poverty status. Estimates are based on model 2 in Table 5.5. Education is set at medium and all other covariates are set at their means.

Of the social proximity factors, three are significant: co-ethnic trust, political activism, and community involvement. The factor for co-ethnic trust is the only statistically significant measure of interpersonal trust, though it does increase the likelihood of utilization as expected. The significance is weak; the predicted probability of being unable to access care when needed decreases from 0.1 at the lowest quintile of co-ethnic trust to 0.06 at the highest quintile, but pairwise comparisons of the margins are only significant between the third, fourth, and fifth quintiles. Consequently, the results are somewhat inconclusive.

The association between utilization and level of political activism is stronger but in the opposite direction. The predicted probability of being unable to access

treatment when needed is 0.06 for an average household in the lowest quintile of political activism and 0.1 for an otherwise identical household in the highest quintile. The negative effect was unexpected. Political organizations, like other community groups, can facilitate the transmission of information and knowledge and foster both interpersonal and institutional trust; activism might benefit households even if the political nature of the interaction is not relevant. The findings from this set of models do not support that hypothesis.

Community involvement is the most influential social proximity factor in both magnitude and statistical significance. The constituent components of the community involvement factor include membership and level of activity in community groups, attendance at community meetings, and frequency of communication with community leaders. As illustrated in Figure 5.2, the predicted probability of being unable to access health services decreases across each quintile of community involvement. When other covariates are set at their means, a change from the fifth quintile (most involved) to the first more than doubles the probability of being unable to access treatment; this change in probability is significant at the 99 percent level.



**Figure 5.3** The predicted probability of being unable to access health care last time it was needed by quintile of community involvement. Estimates are based on model 2 in Table 5.5. Education set at medium, all other covariates set at their means.

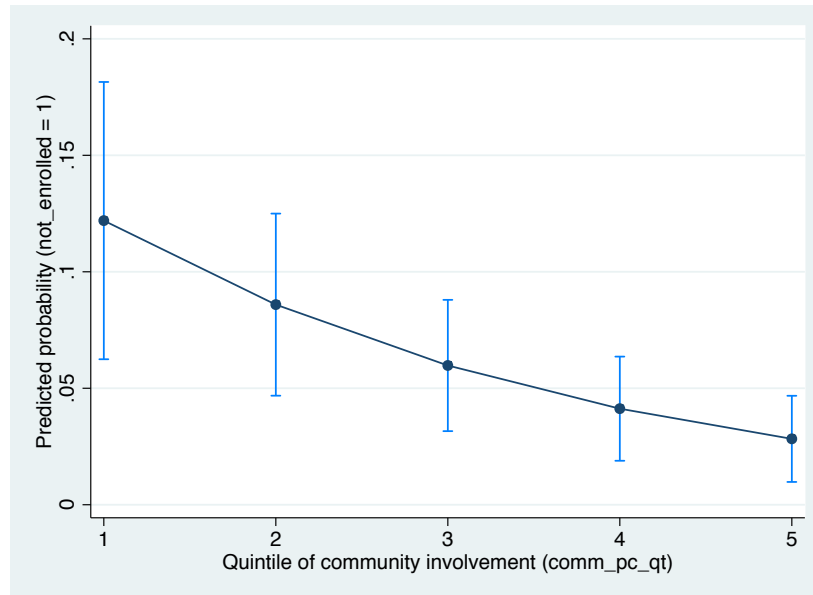
The positive association between households' level of community involvement and service utilization persists and increases in magnitude when the presence of non-enrolled school age children is the dependent variable (see regression results in Table 5.6). The specifications for models 3 and 4 are the same as the first two models, except for the changes in the dependent variable and the perceived accessibility indicators to education. Perceptions of accessibility are less important in the context of school enrollment, however, and lived poverty status is no longer significant. Non-enrollment is less likely among residents of Kibera, but the relationship is only significant at the  $p < 0.1$  level. The strongest predictor of non-enrollment among the variables included in models 3 and 4 is the household's level of community involvement. As depicted in Figure 5.4, the predicted probability of non-enrollment for an average household (all other covariates set at their means) in the lowest quintile of community involvement is at least three times greater than the probability for an average household in the highest quintile of community involvement.

**Table 5.6: Social Proximity and School Enrollment**

| <i>not_enrolled</i> | Model 3         |           | Model 4         |           |
|---------------------|-----------------|-----------|-----------------|-----------|
|                     | Exp ( $\beta$ ) | Robust SE | Exp ( $\beta$ ) | Robust SE |
| Poverty (flow)      | 1.020           | 0.118     | 1.010           | 0.115     |
| Poverty (assets)    | 0.865           | 0.094     | 0.919           | 0.105     |
| Female resp.        | 0.923           | 0.359     | 0.956           | 0.364     |
| Female HH           | 0.596           | 0.264     | 0.594           | 0.264     |
| Kibera              | 0.492*          | 0.180     | 0.497*          | 0.184     |
| Community inv.      | 0.685***        | 0.076     | 0.677***        | 0.074     |
| Political activism  | 1.047           | 0.110     | 1.037           | 0.114     |
| Bonding (rel) trust | 1.057           | 0.132     | 0.999           | 0.120     |
| Co-ethnic trust     | 1.166           | 0.142     | 1.174           | 0.148     |
| Bridging trust      | 1.001           | 0.122     | 1.032           | 0.122     |
| GovEduAccess        |                 |           | 1.425*          | 0.267     |
| NGOEduAccess        |                 |           | 0.801           | 0.156     |
| Constant            | 1.308           | 1.505     | 1.187           | 1.807     |
| Wald $X^2$          |                 | 36.72***  |                 | 38.94***  |
| Observations        |                 | 558       |                 | 548       |

Age and education controls are included in the models but not shown.

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



**Figure 5.4** The predicted probability of non-enrollment by quintile of community involvement. Estimates are based on model 4 in Table 5.6. Education is set at medium and all other covariates are set at their means.

Looking over all four models, most social proximity factors are either insignificant or weakly significant, with the notable exception of community involvement. The positive correlation between higher levels of involvement in the community and the probability of utilizing health services when treatment is needed and enrolling age eligible children in school suggests support for the hypothesis that participation and interaction with other community members can facilitate access to services.

## Social Proximity and Perceptions of Accessibility

In the next set of models, I examine the effects of social proximity factors on respondents' assessments of the level of difficulty or ease with which they are able to obtain treatment from state and non-state health care providers and enroll a

child in a public or private primary school.<sup>41</sup> At the outset, the most notable and unexpected finding from the results of ordered logit models displayed in Tables 5.7 and 5.8 is the lack of consistency in the explanatory power of both socio-demographic and social proximity factors across service and provider types.

For perceptions of the accessibility of health services (see Table 5.7), the significant explanatory factors for one type of provider are either insignificant for the other provider type or significant in the opposite direction. Both measures of poverty (flow and assets) are highly significant for non-state providers (NSPs); as lived poverty decreases, households are more likely to access services with greater ease. The coefficients in the government models suggest that the opposite may be true, but the magnitude is both small and insignificant. Female respondents and household heads are much more likely to view government health services as accessible than male respondents, but female respondents are more likely to view NSPs as more difficult to access. When variables for institutional trust are added to the model, the statistical significance of female respondents for NSPs and female headed households for public providers disappears, but the coefficient for female respondents remains significant for government services.

The observed relationships—or lack thereof—between lived poverty and gender and government health provision make sense in context. User fees for public health centers and dispensaries were eliminated in 2004 and replaced by a nominal registration fee that is waived in a number of circumstances, including for children under age five and the poor (Muga et al, 2005). Failures to meet targeted health outcomes prompted this change, and the government actively sought to improve accessibility among low-income populations. Even though financial barriers are only one of many obstacles to care, these changes do help in that regard. Without similar

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<sup>41</sup> It is important to acknowledge that the dependent variables in these models are perceptions; the intent is to examine respondents' beliefs about service provision and their level of confidence in their ability to access services when needed. These perceptions may have developed in response to particular health- and education-seeking experiences, or they may arise from stories they have heard or long-held beliefs about particular institutions or providers. Nevertheless, perception factors exert significant influence over decisions regarding health and education and any attempt to improve access and outcomes must consider perceptions.

**Table 5.7: Social Proximity and Perceptions of Health Service Accessibility**

|                         | Government Health Access   |                            | Non-State Health Access    |                            |
|-------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|                         | Model 5<br>Exp ( $\beta$ ) | Model 6<br>Exp ( $\beta$ ) | Model 7<br>Exp ( $\beta$ ) | Model 8<br>Exp ( $\beta$ ) |
| Poverty (flow)          | 0.994<br>(0.049)           | 0.964<br>(0.052)           | 1.147***<br>(0.056)        | 1.199***<br>(0.063)        |
| Poverty (assets)        | 0.923<br>(0.045)           | 0.965<br>(0.052)           | 1.139***<br>(0.055)        | 1.130**<br>(0.060)         |
| Female respondent       | 1.525***<br>(0.217)        | 1.468**<br>(0.233)         | 0.745**<br>(0.107)         | 0.829<br>(0.133)           |
| Female HH               | 1.424**<br>(0.255)         | 1.246<br>(0.242)           | 1.068<br>(0.187)           | 1.171<br>(0.228)           |
| Kibera                  | 0.727**<br>(0.099)         | 0.745*<br>(0.114)          | 1.405**<br>(0.206)         | 1.314*<br>(0.214)          |
| Med community inv.      | 0.820<br>(0.129)           | 0.811<br>(0.144)           | 0.774<br>(0.124)           | 0.741*<br>(0.134)          |
| High community inv.     | 0.970<br>(0.165)           | 1.017<br>(0.190)           | 0.715**<br>(0.116)         | 0.679**<br>(0.121)         |
| Med bonding (rel)       | 0.960<br>(0.150)           | 0.960<br>(0.162)           | 0.936<br>(0.145)           | 0.970<br>(0.163)           |
| High bonding (rel)      | 1.089<br>(0.189)           | 0.989<br>(0.186)           | 0.698**<br>(0.124)         | 0.778<br>(0.155)           |
| Med co-ethnic trust     | 1.599***<br>(0.272)        | 1.531**<br>(0.272)         | 0.915<br>(0.155)           | 0.961<br>(0.172)           |
| High co-ethnic trust    | 1.632**<br>(0.328)         | 1.547**<br>(0.338)         | 0.865<br>(0.174)           | 0.951<br>(0.211)           |
| Med political activism  | 1.146<br>(0.187)           | 1.223<br>(0.221)           | 0.816<br>(0.135)           | 0.812<br>(0.150)           |
| High political activism | 0.947<br>(0.142)           | 0.925<br>(0.148)           | 0.814<br>(0.120)           | 0.780<br>(0.123)           |
| Med bridging            | 0.932<br>(0.147)           | 0.869<br>(0.144)           | 1.201<br>(0.189)           | 1.207<br>(0.203)           |
| High bridging           | 0.825<br>(0.171)           | 0.754<br>(0.171)           | 1.748***<br>(0.337)        | 2.052***<br>(0.428)        |
| Med - NGOs              |                            | 0.763<br>(0.137)           |                            | 1.153<br>(0.210)           |
| High - NGOs             |                            | 0.733*<br>(0.134)          |                            | 1.105<br>(0.207)           |
| Med - CBOs              |                            | 0.932<br>(0.162)           |                            | 0.973<br>(0.177)           |
| High - CBOs             |                            | 1.006<br>(0.185)           |                            | 1.088<br>(0.191)           |
| Med - Govt              |                            | 1.238<br>(0.217)           |                            | 0.946<br>(0.159)           |
| High - Govt             |                            | 2.055***<br>(0.376)        |                            | 0.616***<br>(0.113)        |
| Constant cut1           | -2.562***                  | 0.0721***                  | -1.242***                  | 0.336**                    |
| Constant cut2           | -0.572                     | 0.521                      | 0.261                      | 1.568                      |
| Constant cut3           | 1.653***                   | 4.491***                   | 2.113***                   | 9.367***                   |
| Wald X <sup>2</sup>     | 45.94***                   | 69.37***                   | 54.60***                   | 64.66***                   |
| Observations            | 895                        | 759                        | 892                        | 757                        |

Robust standard errors in parentheses. Age, education, and ethnicity controls included but not shown. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

provisions at NSPs, costs are generally higher (Muriithi, 2013). Additionally, women generally have more contact with service providers. They bear more of the responsibility for tending to the health needs of children, and experiences with antenatal care and childbirth may require more health care (Abdenur, 2009; COHRE, 2008; UN-Habitat, 2010). Repeated interactions may foster relationships with particular providers, familiarity with the system, and increased health literacy, all of which may improve their ability to navigate the complexities of the service environment and access necessary treatment.

Another socio-demographic factor with contradictory estimates is the fixed effect for Kibera. Perceptions of public health accessibility are much lower in Kibera and perceptions of the accessibility of NSPs are much higher; the magnitude and significance of the effect are nearly identical but in opposite directions. A government dispensary built by the Italian government and managed by the Ministry of Health recently opened in Korogocho, and it is the first government health facility located in the slum. This development enhances the accessibility of government provision there. Additionally, the non-state health sector is smaller in Korogocho and insecurity has limited the operation and growth of the sector.

The effects of community involvement and interpersonal trust vary considerably by provider type. For public health services, the only significant factor is co-ethnic (bonding) trust. For non-state providers, community involvement, political activism, and both types of bonding trust are negatively associated with perceived accessibility. Most of the coefficient estimates are insignificant, however, with the exception of community involvement and a high level of bonding trust with close relations in one specification. The consistent finding is the large and highly significant relationship between accessibility and bridging trust. In the second specification, the odds ratio indicates that households with high levels of bridging trust are twice as likely to view non-state health services as easily accessible (vs. difficult to access) than otherwise identical households with low bridging trust.

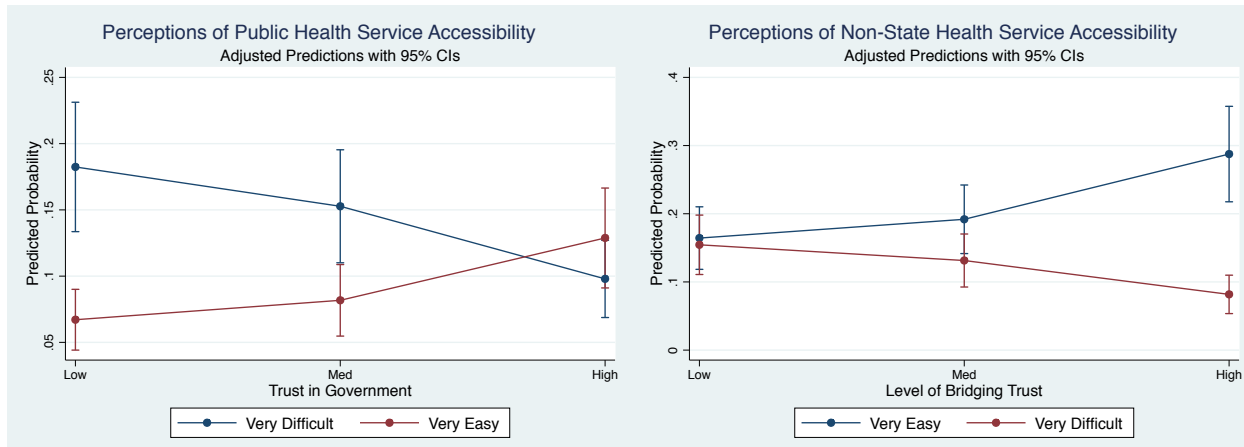
The addition of measures of institutional trust to the models (models 6 and 8) did not drastically affect the results for other explanatory variables, but trust in

government was strongly significant for both types of providers. Higher levels of trust in government increase the likelihood that households perceive public health services as easily accessible. Though the magnitude is not as large, trust in government has the opposite effect on perceptions of non-state service accessibility. High confidence in NGOs decreases perceived accessibility of public provision, but there is no significant corresponding positive effect of confidence in NGOs on non-state accessibility.

The effects of the most influential explanatory factors in each model—trust in government for public health access and bridging trust for non-state accessibility—are illustrated in the graphs of predicted probabilities in Figure 5.5. With all other covariates set at their means and education set at medium, the predicted probability of finding it very easy and very difficult to obtain treatment are plotted over low, medium, and high levels of trust. A cursory glance reveals that the effects of each variable are clearly stronger at one end of the spectrum. Households with low levels of trust in government are much more likely to perceive access to public health services as very difficult, but the difference in probability decreases for a medium level of trust and is no longer significant at a high level of trust. The change in probability between low and high levels of trust for both very difficult and very easy is large and significant: a high level of trust more than doubles the probability of perceiving services as very easily accessible compared to an otherwise identical household with a low level of trust in government.

The convergence in probability at one extreme is even more marked for bridging trust and perceptions of non-state health service accessibility. At a low level of bridging trust, the probability of viewing treatment from non-state services as very easy to access is indistinguishable from the probability for very difficult. As bridging trust increases, however, the predicted probabilities begin to diverge at a medium level of trust before separating completely; households with a high level of bridging trust are almost three times more likely to view obtaining treatment from NSPs as very easy than as very difficult.





**Figure 5.5** The predicted probability of viewing health services as very easy or very difficult to access. Estimates are based on models 6 and 8 in Table 5.7. Education is set at medium and all other covariates are set at their means.

Turning now to perceptions of access to state and non-state primary schools in Table 5.8, there are some similarities to the findings from health services and a few noticeable differences. Among the socio-demographic variables, relative lived poverty does not appear to be much of a factor. There is a very small and weak (significant at the 90 percent level) positive correlation between reductions in poverty and improved accessibility for public schools and a similarly positive, small, and weak association between decreases in asset poverty and access to non-state schools. In contrast to the health models, neither female respondents nor female headed households affect perceptions of accessibility, and the fixed effect for Kibera is insignificant for public schools. Kibera residents are still more likely to find it easier to enroll a child in a non-state school.

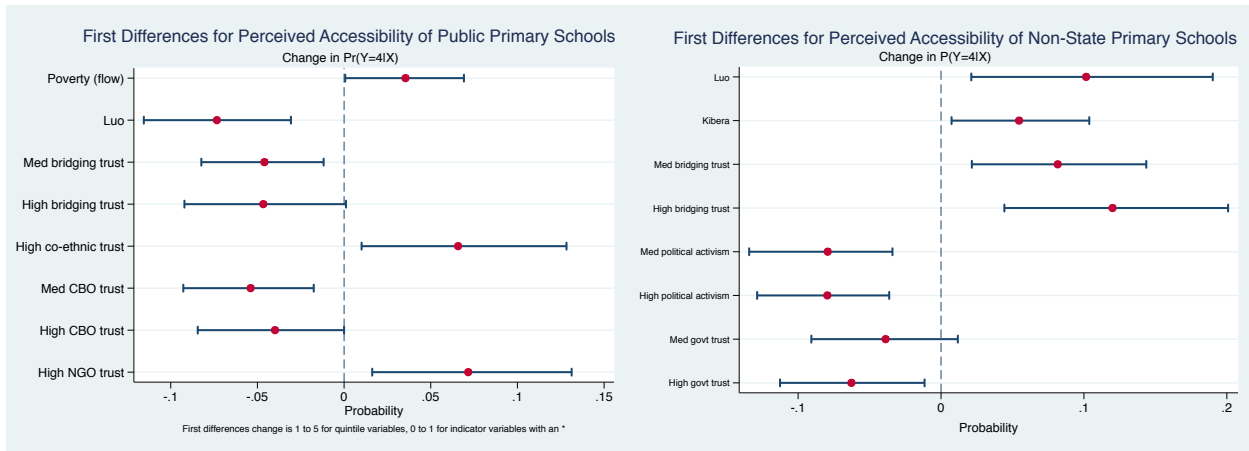
For the social proximity factors, some results resemble the findings for health. Both types of bonding trust are positively associated with public school accessibility, but the statistical significance decreases considerably compared to health models. As was the case with health, neither measure of bonding trust is significant for non-state provision, but the negative effect of community involvement on non-state health accessibility does not carry over into education.

**Table 5.8: Social Proximity and Perceptions of Primary School Accessibility**

|                         | Public Education Access    |                             | Non-State Education Access  |                             |
|-------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                         | Model 9<br>Exp ( $\beta$ ) | Model 10<br>Exp ( $\beta$ ) | Model 11<br>Exp ( $\beta$ ) | Model 12<br>Exp ( $\beta$ ) |
| Poverty (flow)          | 1.102**<br>(0.0510)        | 1.096*<br>(0.0565)          | 1.033<br>(0.0494)           | 1.044<br>(0.0544)           |
| Poverty (assets)        | 0.932<br>(0.0440)          | 0.952<br>(0.0490)           | 1.097**<br>(0.0517)         | 1.058<br>(0.0548)           |
| Female respondent       | 0.983<br>(0.145)           | 0.949<br>(0.156)            | 0.838<br>(0.118)            | 0.857<br>(0.137)            |
| Female HH               | 0.943<br>(0.155)           | 0.938<br>(0.169)            | 1.010<br>(0.178)            | 1.097<br>(0.208)            |
| Kibera                  | 1.189<br>(0.153)           | 1.182<br>(0.167)            | 1.361**<br>(0.184)          | 1.358**<br>(0.208)          |
| Med community inv.      | 1.213<br>(0.191)           | 1.106<br>(0.194)            | 0.963<br>(0.155)            | 0.905<br>(0.161)            |
| High community inv.     | 1.248<br>(0.201)           | 1.037<br>(0.176)            | 0.847<br>(0.141)            | 0.847<br>(0.152)            |
| Med bonding (rel)       | 1.104<br>(0.169)           | 0.976<br>(0.159)            | 1.016<br>(0.157)            | 1.075<br>(0.180)            |
| High bonding (rel)      | 1.387*<br>(0.235)          | 1.187<br>(0.223)            | 0.855<br>(0.143)            | 0.956<br>(0.181)            |
| Med co-ethnic trust     | 1.023<br>(0.176)           | 1.166<br>(0.213)            | 0.966<br>(0.165)            | 0.969<br>(0.176)            |
| High co-ethnic trust    | 1.229<br>(0.236)           | 1.490*<br>(0.312)           | 1.074<br>(0.210)            | 0.953<br>(0.204)            |
| Med political activism  | 1.234<br>(0.204)           | 1.257<br>(0.228)            | 0.661***<br>(0.103)         | 0.623***<br>(0.109)         |
| High political activism | 0.856<br>(0.126)           | 0.885<br>(0.140)            | 0.637***<br>(0.0989)        | 0.608***<br>(0.103)         |
| Med bridging            | 0.715**<br>(0.112)         | 0.697**<br>(0.119)          | 1.367**<br>(0.216)          | 1.492**<br>(0.254)          |
| High bridging           | 0.765<br>(0.151)           | 0.683*<br>(0.152)           | 1.395*<br>(0.272)           | 1.747***<br>(0.374)         |
| Med NGO                 |                            | 0.894<br>(0.152)            |                             | 1.275<br>(0.223)            |
| High NGO                |                            | 1.548**<br>(0.291)          |                             | 0.931<br>(0.176)            |
| Med CBO                 |                            | 0.652**<br>(0.117)          |                             | 1.091<br>(0.198)            |
| High CBO                |                            | 0.743<br>(0.137)            |                             | 1.314<br>(0.227)            |
| Med govt                |                            | 1.030<br>(0.182)            |                             | 0.803<br>(0.142)            |
| High govt               |                            | 1.170<br>(0.212)            |                             | 0.687**<br>(0.126)          |
| Constant cut1           | 0.135***                   | 0.106***                    | 0.237***                    | 0.244***                    |
| Constant cut2           | 0.936                      | 0.698                       | 1.026                       | 1.111                       |
| Constant cut3           | 7.231***                   | 5.844***                    | 6.617***                    | 6.499***                    |
| Wald $X^2$              | 42.68***                   | 53.84***                    | 45.50***                    | 48.29***                    |
| Observations            | 891                        | 758                         | 897                         | 762                         |

Robust standard errors in parentheses. Age, education, and ethnicity controls included but not shown.

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



**Figure 5.6** The predicted first differences, or the change in the probability of viewing places in schools as very easy to access given a change in the explanatory variables. The first differences are calculated from 0 to 1 for all dichotomous covariates and as a 1 standard deviation change for poverty status. Estimates are based on models 10 and 12 in Table 5.8. Education is set at medium and all other covariates are set at their means.

The importance of bridging trust for NSP accessibility is one finding that all four models in Table 5.8 have in common. The magnitude of the effect is not as large as it was for health, but it becomes larger and more significant when measures of institutional trust are included. Additionally, the coefficients for bridging trust are statistically significant in the public education models, particularly at the medium level. The effect resembles that for non-state schools in magnitude and significance, but it is—once again—in the opposite direction.

One of the most striking differences between health and education is the comparative effect of political activism. For education, high political activism significantly decreases perceptions of non-state school accessibility, but the relationship with government schools is not significant. This is somewhat surprising for two reasons. First, political activism is theoretically more influential in facilitating access to public facilities. Second, the benefits of social ties and network connections provided by political activity separate from its political context theoretically facilitates the transmission of information that could positively affect access to NSPs. At the same time, political activism may strengthen institutional trust in government that negatively affects trust in NGOs and other non-state actors. Though the correlation between the NGO and government factor variables is

strong (0.38) and highly significant across the entire sample ( $p=0.0000$ ), there is no correlation among respondents with above average levels of political activism. Plausibly, political activity could negatively affect perceptions of NGO and CBO competence and trustworthiness, which in turn would negatively affect perceptions of health and education services provided by non-state actors.<sup>42</sup>

High confidence in government is also negatively and significantly correlated with perceived accessibility of non-state schools, but the contrasting effects of trust in government and NGOs we saw in the health models—both between institutions in the same model and in the direction of the effects across service providers—is not replicated for primary schools. Instead, there is no statistically significant correlation between trust in government and access to public schools. Furthermore, as you can see in the plots of first differences in Figure 5.6, confidence in NGOs appears to have a fairly strong *positive* impact on perceptions of public school accessibility.

In order to provide a more substantive and coherent interpretation of the results of the regressions examining the effects of social proximity factors on perceptions of service accessibility, I have created two hypothetical households with disparate socio-demographic and sociopolitical characteristics. Household 1 is more impoverished than the median household in the sample. The household head is male, but a female member participated in the survey. The household head is 34 (the median age), has attained a medium level of education, is Kikuyu, and lives in Korogocho. Members of the household are highly involved in community groups and meetings and moderately politically active. The respondent expressed a high level of trust in relatives and close neighbors, a medium level of trust in other Kikuyus, and a low level of trust in members of other communities and people they do not know very well. They have average confidence in NGOs and a low level of confidence in CBOs, but reported a high level of trust and confidence in government.

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<sup>42</sup> This is purely speculation and cannot be examined further with this data. If strong negative correlations between political activism and access to non-state service providers are observed in other settings, however, it warrants further investigation.

Household 2, on the other hand, is among the least impoverished households in the sample; the respondent, who is also the household head, is male, 34, and has completed secondary school. The members of the household are Luo, reside in Kibera, and are moderately involved in community groups and meetings. Their level of political activism is low, and the respondent expressed a medium level of confidence in NGOs, CBOs, and government. The level of bonding trust with both close relations and co-ethnics is medium, and survey responses suggest a high level of bridging trust.

**Table 5.9: Characteristics of Hypothetical Households**

|                       | Household 1  | Household 2  |
|-----------------------|--------------|--------------|
| Poverty (flow)        | 2nd quintile | 5th quintile |
| Poverty (assets)      | 2nd quintile | 5th quintile |
| Age                   | median       | median       |
| Female                | respondent   | neither      |
| Education             | medium       | high         |
| Ethnicity             | Kikuyu       | Luo          |
| Settlement            | Korogocho    | Kibera       |
| Community involvement | high         | medium       |
| Political activism    | medium       | low          |
| Bonding (rel)         | high         | medium       |
| Co-ethnic trust       | medium       | medium       |
| Bridging trust        | low          | high         |
| Trust in NGOs         | medium       | medium       |
| Trust in CBOs         | low          | medium       |
| Trust in government   | high         | medium       |

To calculate predicted probabilities, I follow the estimation strategy designed by King, Tomz, and Wittenberg (2000) and run simulations to generate 1,000 predicted values for a household with the characteristics of each hypothetical household.<sup>43</sup> The mean values and standard errors for predicted probabilities are displayed in Table 5.10, and Figure 5.7 depicts scatter plots of all simulated values. Probabilities for non-state services are plotted on the *x* axis, probabilities for state services are plotted on the *y* axis, and the colors indicate the outcome value (orange represents the probability of finding accessibility very easy, green is easy, red is difficult, and blue is very difficult).

<sup>43</sup> I conducted the analysis using King, Tomz, and Wittenberg's CLARIFY package for Stata.

**Table 5.10: Predicted Probabilities for Hypothetical Households**

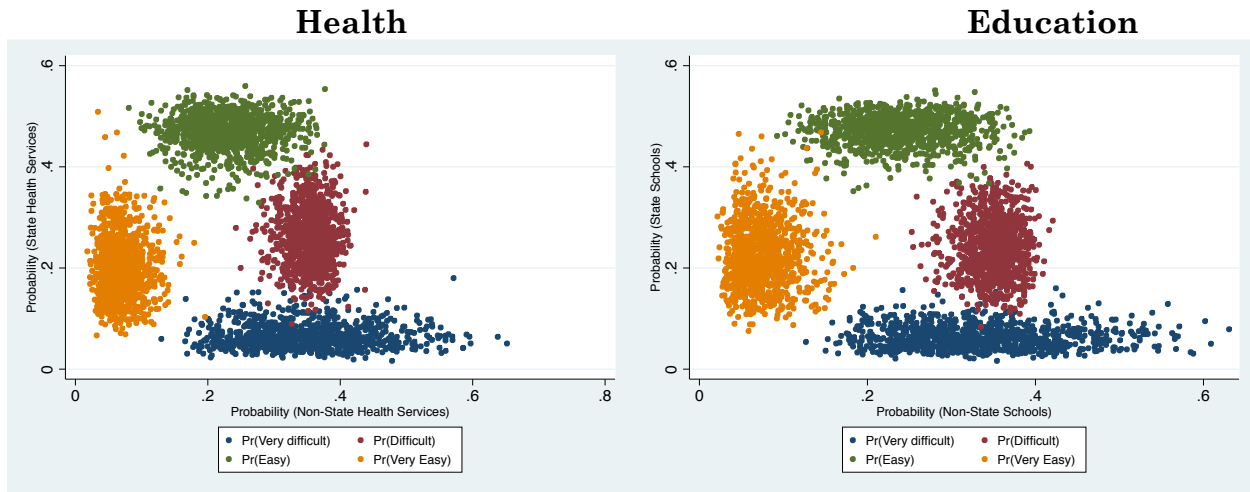
|             |                           | <b>Pr(Very<br/>Difficult)</b> | <b>Pr(Difficult)</b> | <b>Pr(Easy)</b> | <b>Pr(Very<br/>Easy)</b> |
|-------------|---------------------------|-------------------------------|----------------------|-----------------|--------------------------|
| Household 1 | State Health Services     | 0.07 (0.02)                   | 0.26 (0.06)          | 0.47 (0.04)     | 0.20 (0.06)              |
|             | Non-State Health Services | 0.35 (0.08)                   | 0.36 (0.03)          | 0.23 (0.05)     | 0.07 (0.03)              |
|             | Public Primary Schools    | 0.06 (0.02)                   | 0.24 (0.06)          | 0.47 (0.03)     | 0.22 (0.06)              |
|             | Non-State Primary Schools | 0.33 (0.09)                   | 0.35 (0.03)          | 0.24 (0.06)     | 0.08 (0.03)              |
| Household 2 | State Health Services     | 0.24 (0.08)                   | 0.44 (0.03)          | 0.26 (0.07)     | 0.05 (0.02)              |
|             | Non-State Health Services | 0.02 (0.01)                   | 0.07 (0.03)          | 0.27 (0.06)     | 0.64 (0.09)              |
|             | Public Primary Schools    | 0.23 (0.07)                   | 0.42 (0.04)          | 0.29 (0.07)     | 0.07 (0.03)              |
|             | Non-State Primary Schools | 0.03 (0.01)                   | 0.10 (0.03)          | 0.33 (0.05)     | 0.53 (0.09)              |

Average probabilities and standard errors (in parentheses) calculated based on 1,000 simulations.

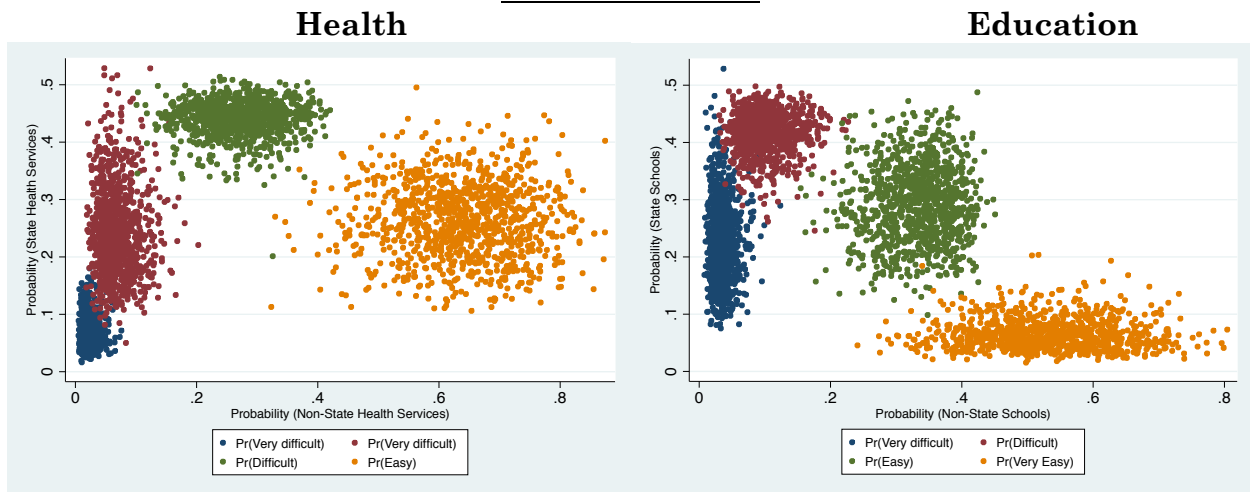
The predicted probabilities and the visual representations highlight several themes in the results for this section. First, the households’ perceptions of service accessibility vary more by provider type (i.e., state and non-state) than by service (i.e., health and education). Household 1 generally views public health and education services as easier to access and non-state services as more difficult, whereas non-state services are easier to obtain for household 2 and state services are more difficult.

Second, these differences are durable across values of the dependent variable for the hypothetical households, revealing an “either/or” pattern in which increases in perceptions of public service accessibility are matched by decreases in perceptions of the accessibility of non-state services. There is some convergence between perceived accessibility of state and non-state services at the “difficult” level for household 1 for both health and education and the “easy” level for household 2 for education, but differences are consistent across other outcomes. At a more basic level of analysis, simple pairwise correlations between the ordinal variables for perceived accessibility (*GovHealthAccess*, *NGOHealthAccess*, *GovEduAccess*, *NGOEduAccess*) show strong, highly significant ( $p < 0.0000$ ) negative correlations between perceptions of access to state and non-state services. For health services, the pairwise correlation is -0.41; for education the correlation is -0.40.

## HOUSEHOLD 1



## HOUSEHOLD 2



**Figure 5.7** Simulated predicted probabilities for the hypothetical households described in Table 5.9. Plots display 1,000 predicted values for each probability of interest in order to capture uncertainty. Health estimates are based on models 6 and 8 in Table 5.7. Education estimates are based on models 10 and 12 in Table 5.8.

## Social Proximity and Satisfaction with Services

In the final section of this chapter, I examine the relationship between social proximity factors and satisfaction with the health and education services utilized by members of the household. The perceptions of accessibility discussed in the previous section are key components of the micro-experience of social welfare provision because they help shape individuals' sense of agency, their confidence in their ability to meet their welfare needs, and their service-seeking behavior. Another key

component includes interaction with providers and past experiences with services. Research indicates that past experiences strongly influence future behavior; particularly in health care, negative experiences may dissuade individuals from seeking care in the future, and positive experiences generally promote repeated interactions (Ensor & Cooper, 2004; Haddad et al, 1998; Leonard, 2003; Martinez et al, 2012). Given the benefits—both collective and individual—of improved education and health outcomes, examining measures of satisfaction with specific aspects of service provision may provide insight into ways to improve the effectiveness of current programs and suggest targets for future interventions.

In the context of this study, measures of satisfaction also offer more measurable indicators of the micro-experience of service provision. As important as perceptions are to the process, they are individually held beliefs that may or may not reflect reality. Satisfaction is similarly subjective, but the survey questions used to construct the measures are very specific in nature and refer to single components of the technical quality, functional quality, and facilities (see Appendix A for a list of the questions and factor loadings). As such, the models in this section capture a different dimension of the micro-experience of service provision. The dependent variable, satisfaction with services, is divided into quintiles for both health and education. I use ordered logit models and the quintile versions of the social proximity factors in addition to socio-demographic controls. The results for health services are displayed in Table 5.11 and those for education appear in Table 5.12.<sup>44</sup>

Results from Chapter 4 showed that households that utilized public health providers reported significantly lower satisfaction with health services, and the addition of social proximity variables to the models did not affect that finding. As the first difference plots for the first, third, and fifth quintiles of satisfaction in Figure 5.8 illustrate, when all other covariates are set at their means, the predicted

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<sup>44</sup> I used the Brant test to confirm that the ordered logit models met the parallel regression assumption. The test indicated that the health model met the requirements but the education model did not. To address this problem, I employed a partial generalized ordered logit model for education satisfaction (described in more detail in Chapter 3). Covariates that meet the assumption still have one coefficient, and those that do not have four coefficients, one for each of the first four quintiles.



probability that a household will be in the lowest quintile increases by about 0.15 when the facility is operated by the government rather than a non-state actor. At the median quintile of satisfaction, a change from private to public decreases the probability by roughly 0.17; at the highest quintile, utilization of a public provider is expected to decrease the likelihood of falling within the quintile by 0.07. The magnitude of the negative effect of public providers on satisfaction is not as large for education, but it remains significant.

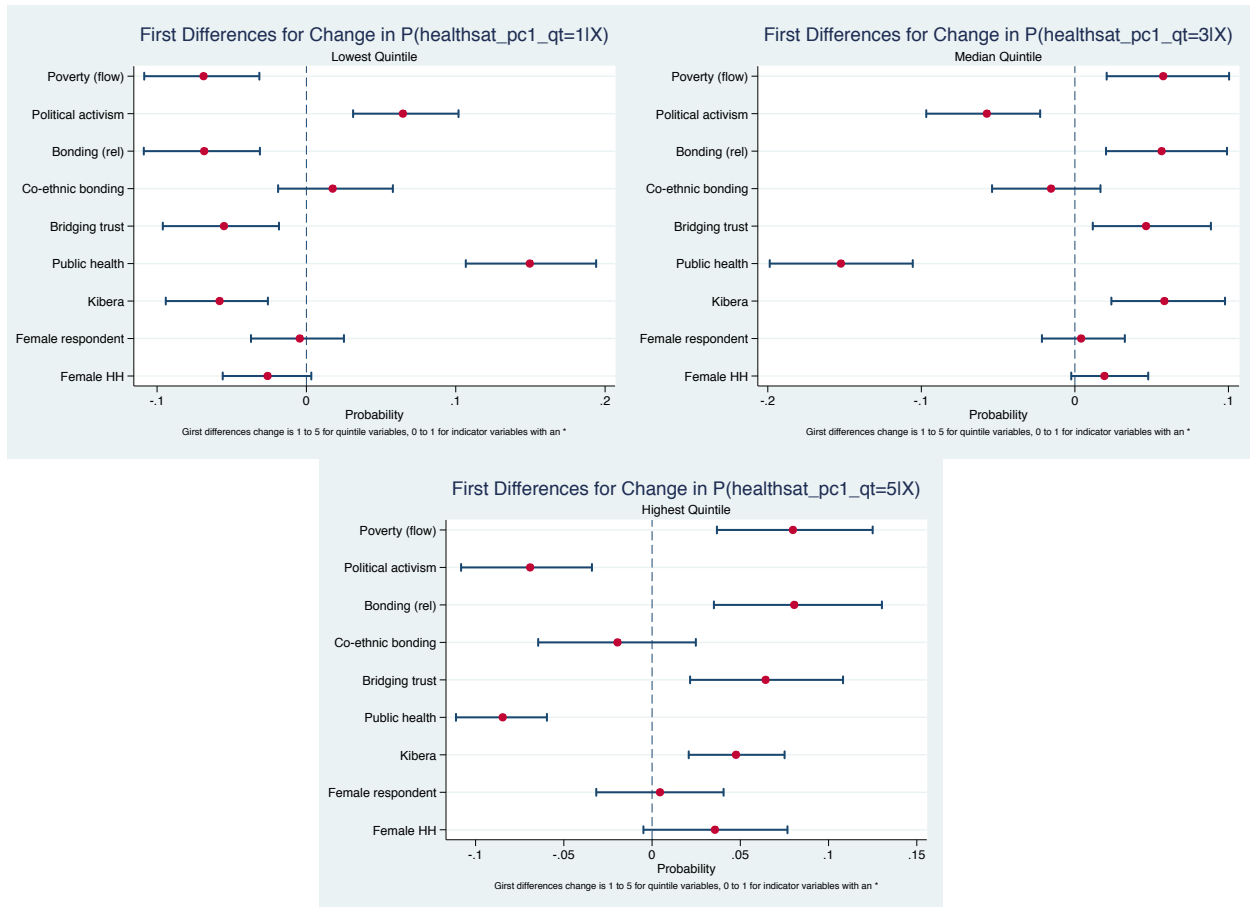
**Table 5.11: Relationship between Social Proximity and Health Service Satisfaction**

| <i>healthsat_pc1_qt</i> | Model 13  |           |
|-------------------------|-----------|-----------|
|                         | Exp (β)   | Robust SE |
| Public provider         | 0.370***  | 0.055     |
| Poverty (flow)          | 1.177***  | 0.061     |
| Poverty (assets)        | 0.946     | 0.046     |
| Female respondent       | 1.257     | 0.203     |
| Female HH               | 0.962     | 0.172     |
| Kibera                  | 1.589***  | 0.246     |
| Community               | 1.007     | 0.051     |
| Bonding (rel) trust     | 1.175***  | 0.062     |
| Co-ethnic trust         | 0.957     | 0.052     |
| Bridging trust          | 1.137**   | 0.059     |
| Political activism      | 0.867***  | 0.039     |
| Constant cut1           | -1.037**  | 0.479     |
| Constant cut2           | 0.173     | 0.478     |
| Constant cut3           | 2.748***  | 0.496     |
| Wald X <sup>2</sup>     | 108.60*** |           |
| Observations            | 811       |           |

Age, education, and ethnicity controls included in the model but not shown. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Another result that was unchanged by the addition of the social proximity variables is the magnitude and significance of the positive effect of reductions in lived poverty status on both health and education satisfaction. For education, however, poverty status failed to meet the parallel regression assumption for the ordered logit model. A partial generalized ordered logit model revealed that the estimated effect of a one quintile decrease in poverty on satisfaction with the school experience is insignificant at the lowest quintile of satisfaction and then increases steadily in magnitude and significance across the quintiles of satisfaction. The

estimated coefficients for each quintile are consistent even with the addition of social proximity variables. The final carryover from Chapter 4 is the positive and significant increase in satisfaction with health services associated with living in Kibera compared to Korogocho. Settlement remains inconsequential for education.



**Figure 5.8** The predicted first differences for the most influential explanatory variables for the lowest quintile of health satisfaction (top left), median quintile (top right), and highest quintile (bottom). The first differences are calculated from 0 to 1 for all dichotomous covariates and as a full range of change (quintile 1 to quintile 5) for poverty status. Estimates are based on model 13 and in Table 5.11 and derived from 1,000 simulations. Education is set at medium and all other covariates are set at their means.

Focusing now on the addition of the social proximity variables to the models, a quick glance at the results reveals several obvious changes. First, the larger set of covariates significantly increased the explanatory power of both the health and education models. Second, the addition of social proximity factors did not change the coefficients on the socio-demographic variables. This suggests that the

additional predictors help explain variation unaccounted for by socio-demographic characteristics. Third, the effects of several social proximity factors are statistically significant.

**Table 5.12: Relationship between Social Proximity Variables and Education Satisfaction**

| Model 14           | Quintile of Satisfaction with Education Services |           |                 |       |                 |       |                 |       |
|--------------------|--|-----------|-----------------|-------|-----------------|-------|-----------------|-------|
|                    | <i>satedu_pc1_qt</i>                             |           |                 |       |                 |       |                 |       |
|                    | (1)  |           | (2)             |       | (3)             |       | (4)             |       |
|                    | Exp ( $\beta$ )                                  | Robust SE | Exp ( $\beta$ ) | SE    | Exp ( $\beta$ ) | SE    | Exp ( $\beta$ ) | SE    |
| Public school pct. | 0.601**  | 0.127     |                 |       |                 |       |                 |       |
| Poverty (flow)     | 0.986  | 0.084     | 1.190**         | 0.088 | 1.344**         | 0.127 | 1.494***        | 0.143 |
| Poverty (assets)   | 1.087  | 0.074     |                 |       |                 |       |                 |       |
| Female resp.       | 0.682*   | 0.143     |                 |       |                 |       |                 |       |
| Female HH          | 0.837  | 0.189     |                 |       |                 |       |                 |       |
| Kibera             | 0.878  | 0.184     |                 |       |                 |       |                 |       |
| Community inv.     | 0.963  | 0.061     |                 |       |                 |       |                 |       |
| Political activism | 0.980  | 0.075     | 0.941           | 0.060 | 0.899           | 0.059 | 0.717***        | 0.068 |
| Bonding (rel)      | 1.098  | 0.070     |                 |       |                 |       |                 |       |
| Co-ethnic trust    | 1.20***  | 0.085     |                 |       |                 |       |                 |       |
| Bridging trust     | 0.965  | 0.071     |                 |       |                 |       |                 |       |
| Constant           | 7.500***   | 5.408     | 1.624           | 1.152 | 0.494           | 0.338 | 0.175**         | 0.128 |
| Wald $X^2$         | 69.24***   |           |                 |       |                 |       |                 |       |
| Observations       | 470  |           |                 |       |                 |       |                 |       |

Age, ethnicity, and education controls included but not shown.

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

Political activism is significant in both models, and increased activism is associated with a decrease in satisfaction. For health, the negative effect operates consistently and significantly at all values of the dependent variable. The predicted probabilities displayed in Table 5.13 illustrate how changes in quintile of political activism affect the probability of being among the most and least satisfied quintile for health services, disaggregated by provider type. When education is set at medium and all other covariates are set at their means, the likelihood of being in the lowest quintile of satisfaction at the lowest level of political activism is 0.26 for public providers and 0.11 for NSPs. At the highest level of political activism, the equivalent probabilities are 0.38 and 0.19; the change in probability over the full range of political activism is 0.12 for state services and 0.08 for non-state. The changes are smaller in magnitude at the highest quintile of satisfaction, but higher

political activism still significantly reduces the likelihood of being among the most satisfied with health services.

For education, the political activism factor violated the proportional odds assumption in the model and the negative effect is only significant at the fourth quintile of satisfaction. As evidenced by the predicted probabilities in Table 5.14, the estimated change in the probability of being in a particular quintile of satisfaction over a full range of change in political activism is insignificant at the first and fourth quintiles of satisfaction. At the fifth quintile, however, a household within the lowest quintile of political activism has a 0.22 chance of being among the most satisfied; at the highest level of activism, that probability decreases to 0.07.

**Table 5.13: Predicted Probabilities for Satisfaction with Health Services**

|  | Probability of being in the lowest quintile of satisfaction (1) |           | Probability of being in the highest quintile of satisfaction (5) |           | Change in probability (1-5) |           |
|--|---|-----------|--|-----------|-----------------------------|-----------|
|  | State   | Non-state | State  | Non-state | State                       | Non-state |
| <i>Provider Type</i>                           |   |           |  |           |                             |           |
| <b>Lowest quintile of interpersonal trust</b>  | 0.43  | 0.22      | 0.03   | 0.08      | -0.39***                    | -0.12***  |
| <b>Highest quintile of interpersonal trust</b> | 0.23  | 0.10      | 0.07   | 0.17      | -0.14***                    | 0.08***   |
| <i>Change in probability</i>                   | -0.20***  | -0.12***  | 0.04***  | 0.09***   |                             |           |
| <b>Lowest quintile of political activism</b>   | 0.26  | 0.11      | 0.06   | 0.14      | -0.20***                    | 0.03*     |
| <b>Highest quintile of political activism</b>  | 0.38  | 0.19      | 0.03   | 0.08      | -0.35***                    | -0.11***  |
| <i>Change in probability</i>                   | 0.12***   | 0.08***   | -0.03***   | -0.06***  |                             |           |

Education is set at medium and all other covariates are set at their means

\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

I ran a number of additional specifications of these models (not shown) to assess whether the factor for political activism could be capturing the effect of an omitted variable. All of the institutional trust factors were insignificant with and without political activism in the model, as were dichotomous indicators for affiliation with specific political parties, interactions between level of political activism and party affiliation, and measures of confidence in particular government

leaders and institutions.<sup>45</sup> The pairwise correlation between political activism and public provider is insignificant and negative, so the effect cannot be attributed to a higher level of utilization of government health facilities and the decrease in satisfaction reported by users.

Among the other social proximity factors, all of the measures of institutional trust were insignificant for both health and education, as was community involvement.<sup>46</sup> Interpersonal trust, however, appears much more influential. Both bonding trust with relatives and neighbors and bridging trust are positively and significantly associated with higher satisfaction with health services. For the predicted probabilities in Table 5.13, all three factors for interpersonal trust were set at the lowest and highest quintiles for the high/low estimates. The changes are significant for both provider types at both ends of the range of satisfaction.

At the lowest quintile of satisfaction, the effect of interpersonal trust is strongest for public health services. An average household with low interpersonal trust that seeks care at government operated facilities has a 43 percent chance of being in the lowest quintile of satisfaction, but that probability decreases to 23 percent at a high level of interpersonal trust. The equivalent probabilities for average households utilizing non-state provision are 22 percent at the lowest level of interpersonal trust and 10 percent at the highest. The effect of changes in interpersonal trust on satisfaction is not as large at the highest quintile of satisfaction, though it remains significant. Among households utilizing public health services, the probability of being among the most satisfied is 0.07 for those in the highest quintile of interpersonal trust and 0.03 for those in the lowest quintile;

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<sup>45</sup> In all specifications, the z statistics for each of the variables not shown in the current model were less than 1.0. The sole exception was for the indicator for affiliation with the Orange Democratic Movement (ODM) political party, and even then it was 1.02. I also added additional controls to the models, including self-reported health status, more specific indicators for education of the household head, and villages within the settlements. None were significant except for villages, but the addition of villages did not change the magnitude or significance of the coefficient on political activism.

<sup>46</sup> The institutional trust variables are excluded from the reported specifications due to their lack of significance and because doing so had no effect on the magnitude or significance of the coefficients for the other covariates.

for non-state provision the positive effect increases slightly to 0.17 for the highest quintile of trust and 0.08 for the lowest quintile.

**Table 5.14: Predicted Probabilities for Satisfaction with Education Services**

| <b>Probability by quintile of satisfaction with education services</b> |                                      |            |                                       |
|--|--------------------------------------|------------|---------------------------------------|
|  | <i>Lowest quintile</i><br><b>(1)</b> | <b>(4)</b> | <i>Highest quintile</i><br><b>(5)</b> |
| <b>Lowest quintile of bonding trust</b>                                | 0.26                                 | 0.18       | 0.09                                  |
| <b>Highest quintile of bonding trust</b>                               | 0.11                                 | 0.30       | 0.22                                  |
| <i>Change in probability</i>   | -0.15***                             | 0.12***    | 0.13***                               |
| <b>Lowest quintile of political activism</b>                           | 0.17                                 | 0.20       | 0.22                                  |
| <b>Highest quintile of political activism</b>                          | 0.18                                 | 0.25       | 0.07                                  |
| <i>Change in probability</i>   | 0.01                                 | 0.05       | -0.15***                              |

Education is set at medium and all other covariates are set at their means.

\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

In the education models, both measures of bonding trust (close relations and co-ethnic) were positively correlated with satisfaction, but the relationship is only significant for co-ethnic trust. The predicted probabilities in Table 5.14 indicate that the magnitude of the estimated change in satisfaction associated with a full range of change in bonding trust is similar at the first, fourth, and fifth quintiles of satisfaction. For the average household, a high level of bonding trust reduces the likelihood of being among the least satisfied to 11 percent from 26 percent at the lowest level of bonding trust. High bonding trust increases the probability of being in the fourth and fifth quintiles of satisfaction by 0.12 and 0.13, respectively.

## **Discussion and Conclusions**

The goal of this chapter was to examine the effects of household-level social proximity factors on three dimensions of the micro-experience of health and education provision: utilization, perceptions of accessibility, and satisfaction. I

outlined three potential mechanisms by which social proximity factors could conceivably facilitate improvements in the micro-experience of services, though the data can be used only to test relationships between the factors and outcomes of interest and not the mechanisms themselves. I argue that the effects of social proximity are highly dependent on context, but I expected to find some consistent patterns within the geographically constrained sample. In reality there was little consistency, but a brief review of the results from all three sections reveals several interesting findings.

First, community involvement—membership and activity in community organizations and groups, participation in community meetings, and contact with community leaders to address a problem—reduces the likelihood that members of a household are unable to receive medical treatment when needed and that age eligible members are not enrolled in school. It is the strongest and most significant predictor for non-enrollment and second only to lived poverty status for health service utilization. Additionally, in an ordered logit regression on the affordability of the fees at the most frequently visited health provider (not shown in earlier sections, but the results are provided in Appendix F), a high level of community involvement had a very strong positive effect on affordability. The estimated coefficient on community involvement was larger in both magnitude and significance than the coefficient on poverty status.

Strong community ties appear to facilitate utilization; however, community involvement had either a slightly negative or an insignificant effect on perceptions of accessibility, satisfaction, and perceptions of affordability. This suggests that, just as community involvement is a structural component of social proximity rather than a cognitive one, it plays more of a functional role in accessing services. Community involvement does not affect perceptions of access or affordability, and it does not affect satisfaction once individuals get in the door. Instead, households may rely on community connections to gain access to services, obtain financial resources in urgent situations, and/or receive information that helps them decide when services are necessary and where to go to receive them. The ability to draw on

these resources may not affect households' perceptions, but their utility is evident in the context of tangible access-related outcomes.

A second finding is the unexpected association between political activism and at least one outcome from all dimensions of the micro-experience. Political activism is also a structural component of social proximity, and the nature of politics within the settlements sometimes means that supporters of particular politicians or parties are rewarded—occasionally through preferential treatment or access to services (de Smedt, 2009). Within the survey sample, however, higher levels of political activity are associated with higher probabilities that members of the household are unable to receive medical treatment when needed, lower perceptions of non-state primary school accessibility, and lower satisfaction with both health and education services. This finding is robust to a number of alternative specifications, regardless of party affiliation.

One plausible explanation for the negative effects of political activism is that households are more likely to become politically active in response to negative experiences with health and education provision. Though entirely speculative, the negative association between perceptions of access to non-state schools and political activity could indicate that households' inability to meet their health and education needs through government or non-state provision provides one impetus for political activity. Since party affiliation does not appear to wield any influence, the motivation for greater involvement could be a general response to inadequate provision, not a desire to contribute to the efforts of one party in particular.

The third interesting finding is that there is widespread variation in the direction and significance of the factors for interpersonal and institutional trust. Trust is a cognitive component of social proximity, and the importance of the measures as a whole follow the opposite pattern from community involvement. Interpersonal trust factors are largely insignificant for utilization and affordability of the fees charged by the most frequently visited provider, but certain forms are highly significant predictors of perceptions of accessibility and satisfaction with services. Higher levels of bridging trust are associated with higher perceptions of



the accessibility of both health and education services provided by non-state actors, as well as increased satisfaction with health services.

Bridging trust has either no effect or a negative effect on perceptions of public service accessibility, and no effect on satisfaction with education. The coefficients on both forms of bonding trust vary in direction, magnitude, and significance across the models. The effects are strong and too large in some models to dismiss interpersonal trust as an irrelevant explanatory factor, but it is clear that patterns and the ways in which various forms of trust affect the micro-experience of service provision are complex. One could speculate as to why co-ethnic trust may be beneficial in one area and detrimental in another, for example, but I expect that, to the extent that observed variations are truly representative of patterns among all residents of Kibera and Korogocho, explanations depend on contextual factors and must be explored further.

Pairwise correlations indicate that trust in government and trust in NGOs are positively and significantly correlated across the entire sample, which suggests that institutional trust is not an either/or phenomenon. Perceptions of service accessibility do reflect an either/or relationship, however, as there is a very strong negative pairwise correlation between government and non-state accessibility: -0.41 for both health and education. It is impossible to explain this using solely micro-level data, because it could be stem entirely from the landscape of providers in the communities. Public clinics may be located in particular areas and non-state providers could be more concentrated in others.

Though some of the individual associations are intriguing, including the differences between the effects of structural and cognitive components of social proximity, a holistic look at the results is fairly inconclusive. The findings do tentatively support the assertion that social proximity matters, but how and why it matters remain unclear. Additionally, the persistent significance of the fixed effect for settlement of residence—even after controlling for household-level socio-demographic and sociopolitical characteristics—suggests that households' experiences also depend on community-level factors. In the next chapter I step back

from the focus on the micro level that has characterized the dissertation thus far and explore how community-level differences, both in the landscape of service providers operating within the communities and in collective measures of social proximity factors, may affect the micro-experience of service provision and explain observed variations among survey respondents.

## **Chapter 6**

### **Meso-Level Context: Community Sociopolitical Factors**

#### **Introduction**

In the previous two chapters, I explored the relationships between households' demographic, socioeconomic, and sociopolitical characteristics and their perceptions and experiences regarding access to, utilization of, and satisfaction with state and non-state health facilities and schools. Although several patterns emerged, there was less consistency across the various dimensions of the micro-experience than expected. Furthermore, the fixed effect for settlement of residence was large and highly significant in many of the models. Despite the similar socio-demographic composition of Kibera and Korogocho and the shared institutional context as informal settlement communities within Nairobi, household-level analyses frequently revealed distinct differences between slums and among villages within each settlement that could not be attributed to household characteristics.

Existing studies on the individual and household determinants of health-seeking behaviors suggest that the relationships between utilization and micro-level predictors vary across social and geographic settings (Babalola & Fatusi, 2009; Bashour et al, 2008; Navaneetham & Dharmalingam, 2002). Researchers have documented contrasting correlations (and effects of varying magnitudes and levels of statistical significance) between service utilization patterns and formal education (e.g., Goldman & Pebley, 1994; Kabakyenga et al, 2012; Raghupathy, 1996; Sakeah et al, 2014), socioeconomic status (e.g., Falkingham, 2003; Gleit & Goldman, 2000; Lepine & Le Nestour, 2012; Navaneetham & Dharmalingam, 2002; Say & Raine,

2007), religion (e.g., Gyima et al, 2006; Navaneetham & Dharmalingam, 2002), and a number of other micro-level characteristics. Many of these studies used data from national household surveys, and the differences are often attributed to macro-level institutional and policy contexts and broad cultural differences (Babalola & Fatusi, 2009; Bashour et al, 2008). However, the persistent significance of the fixed effect for settlement of residence in the preceding chapters suggests that local context is also important.

The aim of this chapter and the companion chapter that follows is to explore how and to what extent community-level factors affect the micro-experience of health service provision.<sup>47</sup> I begin by defining the meso-level context and explaining why it is important to examine the effects of these factors on households' experiences. The remainder of this chapter focuses solely on community-level sociopolitical factors, while Chapter 7 addresses organizational factors. After reviewing the mechanisms by which the aggregate nature of associational, political, and social networks and interactions within a community could affect household-level perceptions of, access to, and satisfaction with health services, I describe the construction of community-level indices and the multilevel modeling techniques used in the chapter. The fourth section examines descriptive statistical findings from the data, and the fifth reviews models on health service utilization, perceptions of accessibility, affordability, and satisfaction with services. The chapter concludes with a review of the findings.

## **What are meso-level factors and why are they important?**

In the June 2015 edition of the Kibera newspaper *The Ghetto Mirror*, a Kibera native and current staff member of an NGO founded in the community offered the following reflection:

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<sup>47</sup> The analysis that follows focuses solely on health service provision. As only 641 out of the 1054 households interviewed had at least one child of school age, the number of observations for the education data is smaller and does not permit robust analyses at the village level. Additionally, I was able to obtain access to secondary data on all health facilities located within Kibera and Korogocho but similar information was unavailable for schools.

Most informal settlements have organically grown economic, social, political and communal systems that closely imitate that of the rural villages they come from. These systems create a unique environment that incubates wellness by helping people survive amidst a reality of squalor, lack of services and poverty. (Mutua, 2015, p. 3)

The statement was part of an essay explaining why nearly all of the apartments constructed for Kibera residents as part of an upgrading program led by UN-Habitat and the Government of Kenya are now occupied by people from outside the slum. Mutua (2015) noted that these economic, social, political, and communal systems form a tightly woven “social fabric” where “life is based on social capital, bartering, and community support” (p. 3). Project beneficiaries quickly discovered that moving a short distance into the new apartments separated them from these systems on which their survival depends; they gave up their dwellings and returned to Kibera.

The systems that Mutua describes operate at the meso level. Many attempts to improve conditions in informal settlements and other low-income communities are designed and implemented around micro-level (household or individual) and macro-level (institutional context, regional and national government policies, etc.) considerations, and the failure to take meso-level factors into account has led to unsustainable projects, “band-aid” solutions that either do not address the underlying problem or ignore its multiple dimensions, and inequitable distributions of benefits that perpetuate vulnerability and exacerbate inequality (Abdenur, 2009; Botes & van Rensberg, 2000; Huchzermeyer & Karam, 2006; Kellet & Garnham, 1995).

The meso-level conditions, which I refer to as the community and organizational environments, include social, political, and cultural characteristics of the community and characteristics of the service providers—individually and as a holistic landscape of provision—operating within the community. On a theoretical level, the importance of context to health service provision and outcomes is widely acknowledged in existing literature on health and health service provision. Researchers study the individual- and household-level factors associated with

demand for and access to services. Others study service delivery and individual providers to identify sources of inefficiency, appropriate models of care, strategies for improving access and coverage, and other supply side variables. Epidemiologists and public health scholars investigate community-level characteristics in the context of health, though the majority of this research focuses on neighborhood effects and the social determinants of health. What is noticeably absent, however, is confluence of these contexts: the point at which the individual, community, and service provision contexts mutually and interactively shape the micro-experience of service provision.

Despite this gap in knowledge, community-level structures and processes have been introduced into practice as a critical component of development strategies (Chambers, 2005). After limited success with sweeping global campaigns like the Safe Motherhood Initiative was attributed to the “disjuncture between theory and everyday practice” (Berry, 2010, p. 163) and “context-specific individual factors [and] interactions between individual level and health service-related factors” (Say & Raine, 2007, p. 816), there has been a shift toward community-driven development. Kenya’s second National Health Sector Strategic Plan seeks to purposefully utilize the relationship between communities and providers to improve service delivery:

The overall thrust...is to involve the communities in addressing the downward spiral of deteriorating health status. The goal of reducing health inequities can only be achieved effectively by involving the population in decisions and in the mobilization and allocation of resources, and thereby promoting community ownership and control in the context in which they live their lives. This is a paradigm shift that requires a fundamental change in the way things are governed and managed, as well as in the way services are delivered. (Republic of Kenya, 2006, p. 4)

The risk of devolving responsibility and control to the community level, however, is that meso- and micro-level contexts vary widely and wield a great deal of influence over the micro-experience of service provision. Harnessing the power of households and communities to promote equitable, inclusive, and sustainable health service delivery requires more information about how community- and organizational-level

factors shape both the service environment and the micro-experience of accessing services than is currently available in existing theoretical and empirical literature.

## **Meso Level Sociopolitical Factors**

From a meso-level perspective, the key actors involved in health service provision within a community are the providers and the members of the community who depend on those providers for health services. Ignoring for now the individual and household levels and the diversity of providers, I consider the community as a collective entity and all of the providers operating within the community as the health system. The availability of accessible, quality healthcare depends on the characteristics of the health system, and the community's ability to ensure that the system meets their needs depends on their power to hold the health system accountable. As Rifkin (2003) notes in a discussion of community empowerment and health equity, "accountability is only possible when those affected by decisions have ways to ensure that their needs and concerns are dealt with fairly" (p. 176). When you disaggregate the community and health system into their constituent individuals, groups, and providers and consider their competing interests, the complexity of the fragmented landscape of providers, and the information asymmetries inherent in health provision, ensuring accountability becomes much more complicated. Theories and evidence from existing literature suggests that it is here, at the interface between the community and the health system, that community-level sociopolitical factors can play a role in shaping residents' experiences with health provision.

According to Putnam (1993, 2000), social capital—understood as the aggregate of trust relationships, non-hierarchical associative networks, and norms of reciprocity that exist in society—bridges hierarchical relations and permits the development of a civic-oriented culture shared by all groups. Associative contacts and trust reduce opportunistic behavior and promote collective action that can improve the accountability and performance of government and non-government organizations (Putnam, 2000). Some scholars argue that social capital is only

possessed at the aggregate level; individuals' social capital is derived from their membership in groups and networks, so it is the presence of the groups and networks and their activities that facilitate whatever advantages or disadvantages are attributed to social capital (Sretzer & Woolcock, 2004). According to this view, members of a community likely experience the same effects regardless of their level of participation and connections.

Narayan and Pritchett's study of the relationship between social capital and household incomes in rural Tanzania lends support to this assertion. Their analysis revealed a large, positive effect of a village's level of social capital on the incomes of all households in the village, while household level measures of social capital had no effect (Narayan & Pritchett, 1999). Existing research in epidemiology and public health also suggests that social capital, conceptualized as a collective attribute and measured at the community level, may wield influence over health behavior and outcomes (Hendryx et al, 2002; Islam et al, 2006; Kim et al, 2006; Mozumder & Marathe, 2007; Steinberg & Baxter, 1998).

### ***Potential Mechanisms***

If community-level sociopolitical factors have any effect on the micro-experience of health provision, they could do so by enhancing the micro-level mechanisms outlined in Chapter 5 and/or through additional mechanisms that operate only on the community level. For the former, it is not difficult to envision how increases in a community's level of associational activity, political connections, and interpersonal trust may amplify and strengthen the transmission of knowledge and information, material assistance, and direct facilitation of access to services households derive from their social proximity. As the breadth and depth of networks and associational activity, the frequency of interactions, and the strength of connections inside and outside of the community increase, households have more opportunities to obtain information and assistance to help them access quality health services.



If the enhancement of micro-level mechanisms is the primary way that community-level sociopolitical factors affect the micro-experience of health provision, then the benefits should only accrue to households with higher measures of social proximity. There should be no effect on households who do not participate in groups, form networks, or trust other members of the community. Several studies do suggest, however, that community-level factors have an independent effect on household-level outcomes (see, for example, Helliwell & Putnam, 2004; Kawachi et al, 1999; Kim & Kawachi, 2006; Lochner et al, 2003; Narayan & Pritchett, 1999; Wen et al, 2003; Wilkinson, 1996). The community-level effect is quite modest in several of these studies, and it is difficult to disentangle the effects of individual- and community-level factors. Other scholars have either found no community-level effects (e.g., Kennelly et al, 2003; Mohan et al, 2005; Veenstra, 2005) or conflicting or inconsistent effects (e.g., Franzini & Spears, 2003; Kelleher et al, 2002; Lynch et al, 2001; Milyo & Mellor, 2003).

Despite the mixed results, the public health and social capital literatures offer insight into how community-level sociopolitical factors may affect the micro-experience of health provision. Most existing research focuses on the role of social capital in creating and supporting mechanisms by which individuals and communities can hold providers accountable. Hendryx, Ahern, Lovrich, and McCurdy (2002) examined the relationship between self-reported access to health care and community social capital in 22 major cities in the United States and documented a consistent positive association. Individuals living in communities with higher levels of social capital reported significantly fewer problems accessing care. Although the study was not designed to test causality, the authors theorize that improvements in access result from accountability mechanisms facilitated by community social capital (Hendryx et al, 2002). Similar quantitative studies have documented a statistically significant association between community social capital and various health outcomes and cited accountability as a potential mechanism; however, they do not offer a detailed account of *how* higher levels of community social capital strengthen accountability and how enhanced accountability affects

experiences and outcomes at the household level (e.g., Kawachi et al, 1999; Kim & Kawachi, 2006; Wen et al, 2003; Wilkinson, 1996). Additionally, much of this research has focused on the United States and Western Europe. The structure of the health system is different across much of the globe, and many of the institutionalized channels for residents to hold service providers accountable are unavailable elsewhere.

In the development context, Berlan & Shiffman (2012) outline several mechanisms for holding health service providers accountable and highlight the structural and social components of the mechanisms. Structural factors include regulatory oversight, financing channels, and the nature of competition between providers. In the context of slum communities in Nairobi, these structural factors are difficult to strengthen. The government does not have the capacity to enforce existing regulations, so changes in the regulatory environment are unlikely in the near future (Muriithi, 2013). Furthermore, in low-income and developing areas the structural factors often involve accountability to entities other than consumers—most commonly governments and donors (Berlan & Shiffman, 2012; Brinkerhoff, 2004; Hanson et al, 2008). The majority of slum households have little effect on revenue at the facilities they frequent, and providers' decisions and the policies governing their operation are often shaped by the priorities and metrics of donor organizations and governments.<sup>48</sup> These priorities do not necessarily align with the preferences and needs of residents, but the community's power to induce change is limited. Residents with the resources to pay for higher quality care at clinics outside the settlements generally do so, leaving the lower-income residents to rely on subsidized government care, NGO and CBO clinics with no fees or sliding scales, or affordable chemists with little to no formal training (Adésinà, 2009; MacLean, 2011). Consumer accountability is generally more influential as fees increase, but

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<sup>48</sup> The low-cost private, for-profit health providers (largely chemists and practitioners lacking formal training and credentials) operating within informal settlements are an obvious exception to this, as neither the government nor donors are involved in their funding and oversight. As studies cited in previous chapters highlight, however, consumer accountability in the case of these providers has frequent negative consequences for individual and community health.

existing research highlights the trade-off between access and accountability (Berlan & Shiffman, 2012). The positive effects accrue only to the relatively high-income households.

The second category of mechanisms identified by Berlan and Shiffman (2012) involve social factors, including consumer power and provider norms, both of which depend on citizens' relationships with providers and their ability to hold providers accountable. According to the authors, empowering consumers and establishing provider norms that foster respect and responsiveness are more likely when there are official community participation mechanisms in the decentralization of health services, when consumers have widespread access to quality health information, and when community groups bring residents together to take action in support of service improvements (Berlan & Shiffman, 2012, p. 271). This is where community social capital could play an important role: community groups and social networks can assist with the transmission of information and facilitate collective action to exert influence on providers (Ensor & Cooper, 2004; Ogilvie, 2004; Steinberg & Baxter, 1998). Changes in a community's health system driven by collective action could affect households' micro-experience of services even if the individual household is not involved in the process. Findings from several studies illustrate how community collective action and information transmission have influenced service provision and health outcomes (Bhandari et al, 2003; Berlan & Shiffman, 2012; Desmet et al, 1999; Opiyo et al, 2007; Pandey et al, 2007). Mozumbder and Marathe's (2007) analysis of data from 70 countries, for example, showed that increases in the extent and strength of information and communication networks within a community are associated with a reduction in the probability of deaths of residents clinically identified as infected with malaria.

While we can acknowledge that community-level conditions and actions may influence providers, general prescriptions for "collective action" and "participation" gloss over the complex sociopolitical realities involved in these processes (Mansuri & Rao, 2004). Collective action and participation may facilitate changes in the health system or particular providers, but whether the changes benefit all—or even

a majority of—households within the community depends on the social, economic, and political context, the nature of the participatory mechanisms and the actors involved, and the characteristics of the health providers in the community.

Steinberg and Baxter (1998) began to consider the nature of change and the distribution of benefits in their examination of the relationship between community norms and values and health system change using qualitative case studies from twelve health markets in the United States. They observed situations in which communities were holding institutions accountable for health care costs, quality, and access and instances in which a lack of accountability was accompanied by escalating costs, deteriorating quality, and restricted accessibility. Defining community accountability as “the structures and processes communities use to make health system change consistent with local standards of behavior, shared values, or common goals” (Steinberg & Baxter, 1998, p. 149), they identify conditions under which shared values and goals exist and describe factors that both contribute to and detract from those structures and processes.

Among community-level sociopolitical factors, Steinberg and Baxter (1998) found that less accountability and a weakened sense of collective efficacy are more likely when the community’s population is fluid, either through rapid population growth or frequent immigration and outmigration, and when ethnic or cultural divisions are socially, economically, and/or politically salient. Following Easterly and Levine’s (1997) paper attributing “Africa’s growth tragedy” to the under-provision of public goods caused by ethnic fragmentation, a number of empirical studies have concluded that government failure associated with collective provision is more widespread in heterogeneous societies than their more homogenous counterparts. The incentive for public provision is the realization of economies of scale; in situations where fragments of society have different preferences, uniform provision becomes inefficient and the optimal level of public goods decreases (Alesina & Spolaore, 1997). Though most of the public goods literature examines state-based welfare provision (e.g., Alesina et al, 1999; Cutler et al, 1993; Easterly & Levine, 1997; McCarty, 1993; Miller, 1995), the mechanisms identified may

operate in ways that shape the landscape of non-state provision within the community. If groups do have different preferences for health services, different NSPs may provide services for different groups. If this is the case, such fragmentation limits the potential for community accountability and the realization of shared goals. Recent research on health programs in slum communities also suggests that geographically targeted programs may not distribute program resources effectively in heterogeneous urban slums (Montgomery & Ezeh, 2005).

## **Empirical Strategy**

### ***Community-Level Sociopolitical Variables***

I created community-level sociopolitical variables by aggregating responses from the household survey. The technique of constructing indicators of community-level or contextual social characteristics by summarizing specific characteristics of individuals or households within the meso-level unit of analysis has been employed in many multilevel studies and is considered a “derived variable” (Islam et al, 2006). The village-level variables used in this chapter measure associational activity through group membership, bridging and bonding trust, political involvement and activism, ethnic fragmentation, and a social capital index generated by summing all social proximity variables. Each concept is represented by a standardized continuous score for each village and a discrete indicator of the village’s score in comparison with other villages in the sample (e.g., high, medium, and low). Detailed descriptions of each variable are provided in Table 6.1 and descriptive statistics are presented in the next section.

**Table 6.1: Community-Level Sociopolitical Variables**

| <i>Variable</i>        | <i>Description</i>  |
|------------------------|---|
| zGroup <sub>v</sub>    | Continuous aggregate measure of associational activity in the village. Calculated by summing all of the group membership variables (which capture, group membership, level of activity, and leadership roles and frequency of attendance at community meetings) for each household across all households in the village and dividing by the number of households. The scores for each village were standardized with a mean of 0 and standard deviation of 1.   |
| Group <sub>v</sub>     | Discrete variable indicating a village's level of group membership and activity relative to other villages in the sample. 1 = low; 2 = medium; 3 = high   |
| zBridging <sub>v</sub> | Continuous aggregate measure of bridging trust in the village. Calculated by summing the indicators of bridging trust for each household (includes trust in other communities, acquaintances with whom they do not have a relationship, and willingness to seek assistance from individuals and organizations they do not know well or belong to) across all households in the village and dividing by the number of households. The scores for each village were standardized with a mean of 0 and standard deviation of 1.  |
| Bridging <sub>v</sub>  | Discrete variable indicating a village's level of bridging trust relative to other villages in the sample. 1 = low; 2 = medium; 3 = high  |
| zBonding <sub>v</sub>  | Continuous aggregate measure of bonding trust in the village. Calculated by summing the indicators of bonding trust for each household (includes trust in relatives, close neighbors, and co-ethnics) across all households in the village and dividing by the number of households. The scores for each village were standardized with a mean of 0 and standard deviation of 1.  |
| Bonding <sub>v</sub>   | Discrete variable indicating a village's level of bonding trust relative to other villages in the sample. 1 = low; 2 = medium; 3 = high   |
| zPCAv                  | Continuous aggregate measure of political involvement, contact with leaders, and activism in the village. These were combined due to high correlation between the components. Calculated by summing the indicators of political involvement (includes voting, working for a campaign, attending a rally, contact with political party officials, and identification with a particular political party), contact (frequency with which members of household contact elected representatives, community and religious leaders, NGO and CBO staff, and traditional authorities), and activism (participation in issue groups formed to address a problem/concern, demonstrations, rallies, use of force for a cause, refusal to pay a tax for a cause) for each household across all households in the village and dividing by the number of households. The scores for each village were standardized with a mean of 0 and standard deviation of 1. |
| PCAv                   | Discrete variable indicating a village's level of political involvement/contact/activism relative to other villages in the sample. 1 = low; 2 = medium; 3 = high  |
| SC <sub>v</sub>        | Discrete variable indicating a village's level of social proximity relative to other villages in the sample. Calculated by summing all of the standardized scores for group membership, bridging trust, bonding trust, and political/contact/activism for each village and dividing the villages according to total score. 1 = low; 2 = medium; 3 = high  |
| ELF                    | Continuous measure of ethnic fragmentation for each village. Calculated using the Hirschman-Herfindahl index of the form $1 - \sum_{i=1}^n p_i^2$ where $p_i$ is the fraction of the population belonging to tribe $i$ .  |

## ***Models***

In order to examine the extent to which household- and community-level factors affect various dimensions of the micro-experience of health provision, I employed multilevel mixed effects logistic and ordered logistic regression models. Multilevel regression analysis is regularly used in public health studies, as it enables researchers to include both individual and contextual factors and to determine how much of the variation in individual-level outcomes can be attributed to individual versus contextual characteristics (Islam et al, 2006; Kim & Kawachi, 2006). For this study, multilevel models allowed me to assess the degree to which community sociopolitical factors influence households' health service utilization, perceived accessibility, and satisfaction, either separately or in interaction with household characteristics.

In previous chapters, I used fixed effects to control for the settlement of residence. The coefficient on the fixed effect parameter estimated the extent to which variation in outcomes not explained by the household-level covariates may be attributed to location-specific factors. With the addition of village-level covariates, however, ignoring the nested structure and assuming that all observations are independent could lead to biased coefficient estimates and deflated standard errors (Hedeker & Gibbons, 1994; Larsen & Merlo, 2005; Subramanian, 2004). Mixed effects models improve estimation by accounting for correlations within clusters. They include fixed effects intended to describe variation in the full sample, while the random effects allow for varying intercepts and slopes across subgroups (Hamilton, 2013). The use of random effects provides an opportunity to examine how outcomes are distributed within and between settlements and villages (Islam et al, 2006). The random intercepts represent the combined effect of all omitted cluster-specific covariates that cause a change in the dependent variable, allowing us to model unobserved heterogeneity (Santos et al, 2008; Skrondal & Rabe-Hesketh, 2004).

In most cases, levels of the models included settlement, village, and ethnicity.<sup>49</sup> For each dependent variable, I generally tested three successive models: independent variables for the first were limited to the household level, the second included village-level sociopolitical variables, and the third added interactions between household and community sociopolitical factors. Versions with interactions are only reported when the interaction is significant. Household-level social proximity factors capture community involvement, political activism, bonding trust, and bridging trust. I separated each continuous factor into three quantiles—low, medium, and high—and generated dichotomous indicators for medium and high levels. Low levels became the reference category in the models. I included controls for socioeconomic status, age and education of household head, and gender of respondent and household head. I also ran separate regressions for each settlement and included the results when the findings suggested patterns not identified in the full sample results. Settlement-specific multilevel mixed effects models included random effects at the village and ethnicity levels, and I used standardized scores for village-level covariates rather than the quantile indicators employed in full sample regressions.

There is some correlation among the community-level sociopolitical variables, particularly given the small number of villages and the use of indicators for high, medium, and low levels rather than raw scores to facilitate substantive interpretation of regression results. Including all measures in the models leads to biased coefficient estimates due to multicollinearity, and using the overall measure of village-level social capital calculated by adding all of the factors together obscures variation in the effects of different sociopolitical factors. After running each model with various combinations, I chose which village-level measures to include in the

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<sup>49</sup> For models in which the dependent variable related to a specific health facility (e.g., satisfaction with services and affordability of fees at most frequently visited provider), a random effect was included for health facility.



results presented in the chapter based on existing theory and the explanatory power of the models.<sup>50</sup>

In the sections that follow, I examine the relationship between community-level sociopolitical factors and four dimensions of the micro-experience of health provision: utilization, perceived accessibility, affordability, and satisfaction with services. Utilization is measured by binary variables indicating whether one or more members of the household were unable to access health services last time treatment was needed (*no\_care*) and whether one or more members of the household have received treatment from a public health provider (*any\_gov\_health*) and a non-state provider (*any\_ngo\_health*) over the past year.

In the second and third sections, the dependent variables are perceptions of accessibility and affordability of state and non-state health services, all of which are measured on ordinal scales. Respondents were asked: “How easy or difficult is it to obtain treatment at a public/non-state clinic or hospital?” and chose between very difficult, difficult, easy, and very easy. For affordability, respondents were asked how often they encountered unaffordable fees for services at public/non-state health facilities and chose between never, once or twice, a few times, and often. Affordability is also examined in the context of the health facility most frequently visited by members of the household. Respondents were asked whether service fees are not affordable, somewhat affordable, or affordable, and the outcome is reported as an ordinal variable.

In the final section, two dependent variables capture different aspects of satisfaction with health services. The first measures the household’s satisfaction with the technical and functional quality and the facilities at the service provider most frequently visited by members of the household. Factor scores were separated into quintiles and the ordinal dependent variable indicates the household’s quintile of satisfaction. For the second ordinal measure, respondents were read the

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<sup>50</sup> If a particular village-level sociopolitical factor was expected to have a certain effect based on existing literatures and/or my hypotheses, it is included in at least one specification of the model regardless of the statistical significance of the findings.

statement, “I am satisfied with the quality of the medical care available to members of my household,” and chose between strongly disagree, disagree, agree, and strongly agree. Descriptions of all dependent variables and controls from the chapter are provided in Table 6.2.

**Table 6.2: Dependent and Independent Variables Used in the Models**

| <b>Variable</b><br><i>(Stata name)</i>                              | <b>Description</b>  |
|---|---|
| <b><i>Dependent Variables</i></b>                                   |   |
| No health care access<br><i>(no_care)</i>                           | Indicates whether the respondent or a member of the household was able to access health care services the last time he or she needed care. 0 = able to access care last time it was needed; 1 = unable to access care last time it was needed.  |
| Government health service accessibility<br><i>(GovHealthAccess)</i> | Ordinal indicator of perceived accessibility of public health services measured by response to “How easy or difficult is it to obtain medical treatment at a public clinic or hospital?” 1 = very difficult; 2 = difficult; 3 = easy; 4 = very easy.  |
| Non-state health service accessibility<br><i>(NGOHealthAccess)</i>  | Ordinal indicator of perceived accessibility of health services provided by non-state actors. Measured by response to “How easy or difficult is it to obtain medical treatment from non-government providers?” 1 = very difficult; 2 = difficult; 3 = easy; 4 = very easy.  |
| Experience with government providers<br><i>(any_gov_health)</i>     | Indicates whether any member of the household has sought treatment at a public health facility in the past year. 0 = no experience with government providers; 1 = a member of the household has visited at least one government provider.   |
| Experience with non-government providers<br><i>(any_ngo_health)</i> | Indicates whether any member of the household has sought treatment at a non-state health facility in the past year. 0 = no experience with non-state providers; 1 = a member of the household has visited at least one non-state provider.  |
| Affordability of fees<br><i>(fees)</i>                              | Indicates the affordability of service fees at the health provider most frequently visited by members of the household. 1 = not affordable; 2 = somewhat affordable; 3 = affordable.  |
| Affordability of public health<br><i>(gov_health_cost)</i>          | Indicates frequency of encountering fees for services that are too expensive at public health facilities over the past five years. 1 = never; 2 = once or twice; 3 = a few times; 4 = often.  |
| Affordability of non-state health<br><i>(ngo_health_cost)</i>       | Indicates frequency of encountering fees for services that are too expensive at non-state health facilities over the past five years. 1 = never; 2 = once or twice; 3 = a few times; 4 = often.   |
| Satisfaction with health services<br><i>(healthsat_pc_qt)</i>       | Quintiles of a factor variable measuring satisfaction with health services. If members of household visited more than one provider, responses relate to experiences with most frequently visited provider. Ranges from 1 = household is among the least satisfied to 5 = household among the most satisfied quintile. For additional details see Appendix A in Chapter 3. |

Health quality  
(*health\_qual\_sat*)

Ordinal variable indicating the degree to which respondents agree with the following statement: “I am satisfied with the quality of the medical care available to members of my household.” 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree.

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***Independent Variables***

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Poverty (flow)  
(*poverty\_f1\_qt*)

Quintiles of a factor variable measuring lived poverty in terms of daily experiences (income, frequency of going without food, water, etc.). Ranges from 1 = household is among the most impoverished quintile to 5 = household among the least impoverished quintile. For additional details see Appendix A in Chapter 3.

Poverty (stock)  
(*poverty\_f2\_qt*)

Quintiles of a factor variable measuring lived poverty in terms of assets (ownership of radio, bicycle, electricity, etc.). Ranges from 1 = household is among the most impoverished quintile to 5 = household among the least impoverished quintile. For additional details see Appendix A in Chapter 3.

Age of household head  
(*Age\_hh*)

Age of household head (measured in years).

Age squared  
(*Age\_hh2*)

Square of the age of the household head (in years). Controls for the curvilinear relationship between age and interaction with/need for health care services.

Female  
(*Female*)

Indicates the sex of the respondent and whether the household head is female. 0 = male respondent and household head; 1 = female respondent and male household head; 2 = female household head

Low education  
(*low\_ed*)

Indicates the level of education attained by the household head. 0 = no formal education or some primary school; 1 = completed primary school or higher.

Medium education  
(*med\_ed*)

Indicates the level of education attained by the household head. 0 = no formal education or only some primary school or completed secondary education or more; 1 = completely primary school up to some secondary education (but did not complete secondary education). Used as the control so it does not appear in the models.

High education  
(*high\_ed*)

Indicates the level of education attained by the household head. 0 = no formal education through some secondary education; 1 = completed secondary education or beyond.

Ethnicity  
(*ethnicity\_fewest*)

Categorical variable for ethnicity of respondent. 1 = Kamba; 2 = Kikuyu; 3 = Kisii; 4 = Luyha; 5 = Luo; 6 = other ethnicity.

Public health  
(*health\_public*)

Indicates the operational entity of the most frequently visited health provider. 0 = not operated by the government; 1 = operated by the government.

Health status  
(*health\_status\_qt*)

Quintiles of a continuous variable capturing the number of days members of the household are unable to participate in their regular activities due to poor health in an average month.

Household bonding trust  
(*bonding*)

Sum of two bonding factors. Factor 1 (factor loadings in parentheses): trust in family (0.88); trust in neighbors (0.47); trust in members of your own ethnic group/tribe (-0.09). Factor 2: trust in family (-0.69); trust in neighbors (-0.03); trust in members of your own ethnic group/tribe (0.73).

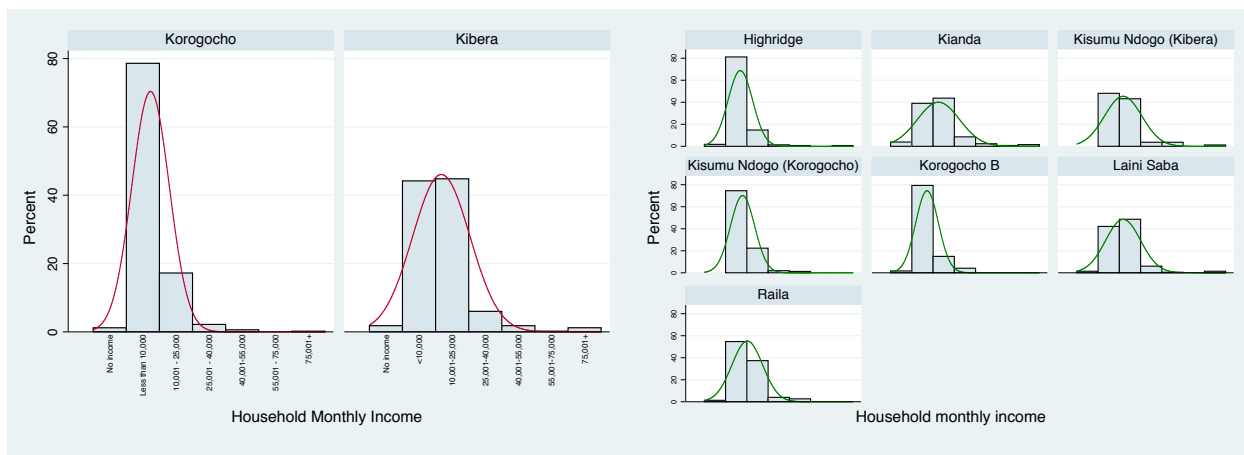
|   |  |
|---|--|
| Household bridging trust<br>( <i>bridging</i> )         | Factor variable indicating trust in acquaintances (0.71); trust in members of other ethnic groups/tribes (0.71).   |
| Household community involvement<br>( <i>comm_pc</i> )   | Sum of the 3 household-level community involvement factors. Factor 1: Membership and level of involvement in religious group that meets outside of worship (0.46); membership and level of involvement in savings group or merry-go-round (0.61); membership and involvement in a women's group (0.63). Factor 2: Frequency of contact with a staff member of an NGO or CBO (0.65); frequency of contact with a traditional leader, religious leader, or other community leader (0.70). Factor 3: Frequency of attending any community meeting (0.71); frequency of getting together with others to raise an issue (0.67). |
| Household political activism<br>( <i>political_pc</i> ) | Factor variable measuring: frequency of contacting a political party official (0.47); campaign meeting or rally attendance (0.49); tried to persuade others to vote for a particular candidate or party (0.53); worked for a candidate or party during the last election (0.52).   |

## Descriptive Statistics

Before examining any regression results, I briefly review community-level descriptive statistics to provide context for the analyses that follow. Table 6.3 displays the mean values for several socio-demographic characteristics by slum and village. Across the board, the average household in Korogocho is poorer, less educated, and more likely to be headed by a female than the average household in Kibera. Though the difference in average household income between Kibera and Korogocho is relatively small, the histograms in Figure 6.1 illustrate the noticeable difference in income distribution. By village and settlement, the distribution is more skewed toward the lower income categories in Korogocho.

**Table 6.3: Socio-Demographic Statistics by Slum and Village**

|                  | Poverty (Flow) |      | Poverty (Assets) |      | Low Education |      | High Education |      | % Female HH | Age of Household Head |      |
|------------------|----------------|------|------------------|------|---------------|------|----------------|------|-------------|-----------------------|------|
|                  | Mean           | SE   | Mean             | SE   | Mean          | SE   | Mean           | SE   |             | Mean                  | SE   |
| <b>Kibera</b>    | 3.44           | 0.04 | 0.19             | 0.02 | 0.12          | 0.01 | 0.45           | 0.02 | 18%         | 37.1                  | 0.52 |
| Kianda           | 3.49           | 0.07 | 0.22             | 0.03 | 0.11          | 0.03 | 0.45           | 0.04 | 18%         | 37.1                  | 1.08 |
| Kisumu Ndogo     | 3.52           | 0.08 | 0.11             | 0.04 | 0.14          | 0.04 | 0.45           | 0.05 | 17%         | 37.7                  | 1.48 |
| Laini Saba       | 3.45           | 0.06 | 0.20             | 0.02 | 0.11          | 0.02 | 0.45           | 0.03 | 17%         | 36.6                  | 0.74 |
| Raila            | 3.20           | 0.11 | 0.17             | 0.04 | 0.16          | 0.04 | 0.43           | 0.06 | 18%         | 37.9                  | 1.32 |
| <b>Korogocho</b> | 3.17           | 0.04 | 0.10             | 0.01 | 0.34          | 0.02 | 0.25           | 0.02 | 29%         | 36.1                  | 0.51 |
| Highridge        | 3.12           | 0.07 | 0.04             | 0.02 | 0.38          | 0.03 | 0.20           | 0.03 | 33%         | 36.6                  | 0.78 |
| Kisumu Ndogo     | 3.07           | 0.08 | 0.16             | 0.03 | 0.29          | 0.04 | 0.25           | 0.03 | 30%         | 35.7                  | 0.88 |
| Korogocho B      | 3.39           | 0.08 | 0.11             | 0.03 | 0.34          | 0.04 | 0.34           | 0.04 | 21%         | 35.6                  | 1.05 |



**Figure 6.1** The distribution of household monthly income by slum (left) and village (right).

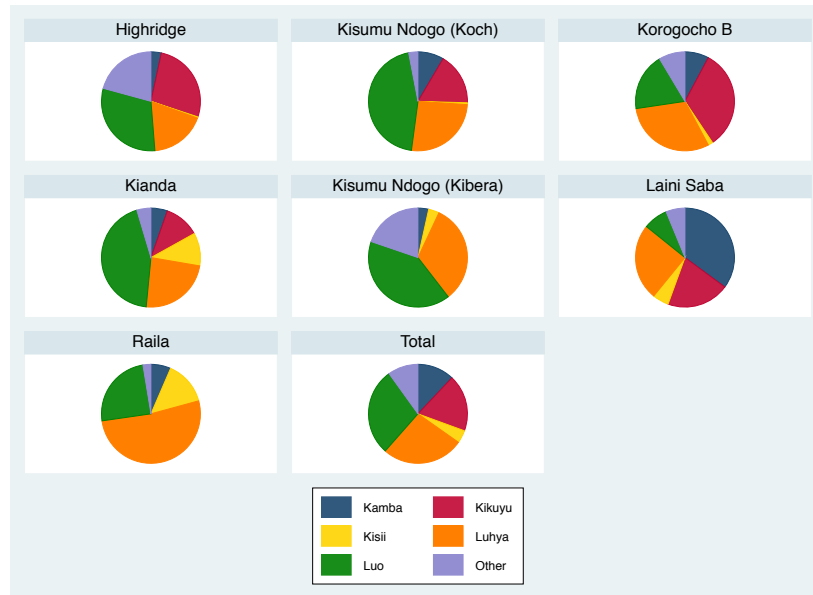
The factor scores for community-level sociopolitical factors are listed in Table 6.4, and several patterns are worth highlighting. First, although ethnolinguistic fractionalization (ELF) is not included in any of the models in the chapter, the correlation between fractionalization and other factors is interesting. Aggregate measures of group membership are higher when a particular ethnic group forms a majority or near majority. Looking at ELF scores and the visual representation of each village's ethnic distribution in the pie charts in Figure 6.2, it is clear that the villages within each settlement with the highest concentration of a single ethnic group have the highest levels of associational activity in the settlement. This pattern initially appears to confirm the argument that heterogeneity reduces cooperation and hinders public goods provision and community accountability (e.g., Alesina & Spolaore, 1997; Easterley & Levine, 1997; Montgomery & Ezech, 2005; Steinberg & Baxter, 1998). As analysis in Chapter 7 reveals, however, high levels of village associational activity are not correlated with perceptions of accessibility or satisfaction with services; in fact, the village with the highest level of group membership (Raila) has the lowest average score for health service satisfaction. This lends support to Seay's (2009) argument that, based on her study of CSOs and social service provision in the Democratic Republic of the Congo, ethnic heterogeneity can lead to successful social service organization.

Second—and somewhat surprisingly—neither high associational activity nor ethnic fractionalization are correlated with interpersonal trust. The village with the highest group membership, Raila, has the second to lowest score for bridging trust and overall interpersonal trust. Similarly, Kisumu Ndogo has the highest group membership in Korogocho and the lowest scores for both measures of interpersonal trust. This trend also reflects Seay’s (2009) observation that high levels of ethnic homogeneity were correlated with low levels of internal organizational cohesion. The correlation between group membership and political activism is also tenuous; some villages with high associational activity are also politically active (e.g., Raila, Kisumu Ndogo-Korogocho relative to other villages in Korogocho), others appear to have very low levels of activism (e.g., Kisumu Ndogo-Kibera).

Finally, comparing the factor scores for the various sociopolitical factors to the aggregate measures of social capital listed in the last column of Table 6.4 suggests that holistic assessments of social capital obscure key variations and reduce the utility of the concept. Since villages are not uniformly high in all categories, understanding how and to what extent community-level sociopolitical contexts affect outcomes requires a more nuanced account of the individual components.

**Table 6.4: Village Level Sociopolitical Factors**

|                  | ELF   | Group Membership | Political | PCA    | Bridging Trust | Interpersonal Trust | Institutional Trust | Social Capital |
|------------------|-------|------------------|-----------|--------|----------------|---------------------|---------------------|----------------|
| <b>Kibera</b>    |       |                  |           |        |                |                     |                     |                |
| Kianda           | 0.274 | 0.885            | 1.275     | 1.085  | 0.512          | 0.120               | -1.614              | 32.871         |
| Kisumu Ndogo     | 0.302 | 1.327            | -0.026    | 1.284  | 1.017          | 0.738               | 1.571               | 35.967         |
| Laini Saba       | 0.247 | 0.165            | -0.486    | -0.163 | 1.293          | 0.994               | 1.008               | 34.007         |
| Raila            | 0.356 | 2.280            | 2.367     | 1.797  | -0.979         | -1.176              | 1.247               | 35.759         |
| <b>Korogocho</b> |       |                  |           |        |                |                     |                     |                |
| Highridge        | 0.204 | -0.857           | -0.561    | -0.488 | -0.022         | 0.746               | -0.457              | 31.950         |
| Kisumu Ndogo     | 0.303 | -0.553           | 0.451     | 0.012  | -1.487         | -1.550              | -0.773              | 30.888         |
| Korogocho B      | 0.245 | -1.137           | -1.385    | -1.865 | -0.932         | -1.055              | -0.074              | 30.096         |



**Figure 6.2** The distribution of ethnic groups by village.

## Findings

### *Health Service Utilization*

#### *Ability to Access Health Services when Needed*

The results of multilevel logit models examining the effects of community-level sociopolitical factors on whether or not members of the household were able to access healthcare last time treatment was needed, disaggregated by slum, are displayed in Table 6.5. Both models include random effects for village and ethnicity, and the results reveal significant contrasts.<sup>51</sup> At the outset, the Wald chi-square statistics indicate that the model has far more explanatory power for Korogocho than for Kibera. The variance of the random intercepts for both village and ethnicity are larger for Kibera, signifying that the household-level covariates account for less of the variation in Kibera than in Korogocho. The magnitude and significance of the coefficient estimates for lived poverty status are similar, but the estimates for all other coefficients—including all those of statistical significance—are noticeably different. The decrease in difficulty accessing care associated with

<sup>51</sup> Ideally I would use the original multilevel model with the full sample and allow the coefficients of all fixed effects to vary by slum. Given the large number of independent variables, however, doing so is computationally challenging in Stata. Separate models are less efficient, but I acknowledge this from the outset and only include results when there is noticeable variation between settlements.

female respondents appearing in the results from the full sample in Chapter 5 appears to be driven by the Korogocho subsample; the magnitude and significance of the effect are larger in model 1, while there is no relationship between female respondents and utilization in model 2.

Similarly, the coefficient estimates for community involvement vary dramatically between settlements. One of the main findings regarding utilization from Chapter 5 was the association between community involvement and the ability to access health services when needed. Results appearing in Table 6.5 suggest, however, that the association is strong and significant in Korogocho and non-existent in Kibera. Coefficient estimates did not change when village-level associational activity and bridging trust scores were added and neither of the village-level variables had a significant effect in either slum (results not shown).

**Table 6.5: Health Service Utilization by Slum**

| DV: <i>no_care</i>         | Model 1          |           | Model 2         |           |
|----------------------------|------------------|-----------|-----------------|-----------|
|                            | <b>Korogocho</b> |           | <b>Kibera</b>   |           |
|                            | Exp( $\beta$ )   | SE        | Exp( $\beta$ )  | SE        |
| Poverty (flow)             | 0.588***         | 0.081     | 0.546***        | 0.084     |
| Poverty (assets)           | 1.163            | 0.168     | 1.040           | 0.143     |
| Age                        | 0.892            | 0.063     | 0.916           | 0.062     |
| Age <sup>2</sup>           | 1.001            | 0.001     | 1.001           | 0.001     |
| Female respondent          | 0.408**          | 0.176     | 1.002           | 0.389     |
| Female HH                  | 0.778            | 0.311     | 0.412           | 0.238     |
| Low education              | 1.966*           | 0.723     | 0.750           | 0.430     |
| High education             | 0.843            | 0.417     | 0.619           | 0.247     |
| Med political activism     | 0.820            | 0.382     | 2.430*          | 1.115     |
| High political activism    | 2.214**          | 0.806     | 1.713           | 0.807     |
| Med bridging trust         | 1.537            | 0.592     | 1.178           | 0.547     |
| High bridging trust        | 0.997            | 0.506     | 1.862           | 0.916     |
| Med bonding trust          | 0.372**          | 0.174     | 0.878           | 0.390     |
| High bonding trust         | 0.726            | 0.296     | 0.582           | 0.268     |
| Med community involvement  | 0.469*           | 0.183     | 2.006           | 0.965     |
| High community involvement | 0.367**          | 0.158     | 1.153           | 0.625     |
| Constant                   | 4.436            | 7.522     | 2.682           | 5.875     |
| <b>Random Intercepts</b>   | <b>Variance</b>  | <b>SE</b> | <b>Variance</b> | <b>SE</b> |
| Village                    | ≈0               | --        | 0.055           | 0.174     |
| Ethnicity                  | 0.026            | 0.130     | 0.352           | 0.475     |
| Wald $\chi^2$              | 44.40***         |           | 29.99**         |           |
| Observations               | 431              |           | 464             |           |

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



*Utilization of State and Non-State Health Services*

In the next set of models, utilization is indicated by interaction with state and non-state health providers. Though Table 6.6 only reports results from models with village-level sociopolitical variables, specifications with only household-level variables (not shown) explained little of the variation in outcomes and none of the coefficient estimates for social proximity factors are significant. The addition of aggregate measures of associational activity and bridging trust were similarly insignificant for utilization of public health services, but the magnitude and significance of all four village-level variables were large when the dependent variable indicated utilization of non-state health services.

**Table 6.6: Utilization of State and Non-State Health Facilities**

|                            | Model 3                      |           | Model 4                     |           |
|----------------------------|------------------------------|-----------|-----------------------------|-----------|
|                            | <u>Any Government Health</u> |           | <u>Any Non-State Health</u> |           |
|                            | Exp( $\beta$ )               | SE        | Exp( $\beta$ )              | SE        |
| Poverty (flow)             | 0.869***                     | 0.046     | 0.903*                      | 0.052     |
| Poverty (assets)           | 0.887**                      | 0.048     | 0.976                       | 0.057     |
| Age                        | 1.068**                      | 0.033     | 1.047                       | 0.033     |
| Age <sup>2</sup>           | 0.999                        | 0.0004    | 0.999                       | 0.0004    |
| Female respondent          | 1.515**                      | 0.248     | 1.443**                     | 0.262     |
| Female HH                  | 1.485**                      | 0.281     | 0.947                       | 0.190     |
| Low education              | 1.128                        | 0.213     | 0.744                       | 0.148     |
| High education             | 1.090                        | 0.185     | 0.757                       | 0.143     |
| Med community involvement  | 1.074                        | 0.187     | 0.980                       | 0.183     |
| High community involvement | 1.241                        | 0.227     | 1.203                       | 0.237     |
| Med political activism     | 0.854                        | 0.150     | 1.134                       | 0.219     |
| High political activism    | 0.861                        | 0.145     | 0.995                       | 0.182     |
| Med bonding trust          | 0.941                        | 0.166     | 1.274                       | 0.251     |
| High bonding trust         | 0.968                        | 0.177     | 0.894                       | 0.175     |
| Med bridging trust         | 1.217                        | 0.204     | 0.938                       | 0.171     |
| High bridging trust        | 1.282                        | 0.261     | 0.941                       | 0.210     |
| <b>Village Level</b>       |                              |           |                             |           |
| Med group <sub>v</sub>     | 1.096                        | 0.438     | 1.995***                    | 0.533     |
| High group <sub>v</sub>    | 0.821                        | 0.431     | 4.312***                    | 1.618     |
| Med bridging <sub>v</sub>  | 0.889                        | 0.383     | 2.188***                    | 0.631     |
| High bridging <sub>v</sub> | 0.598                        | 0.205     | 1.987***                    | 0.445     |
| Constant                   | 0.396                        | 0.331     | 0.486                       | 0.375     |
| <b>Random Intercepts</b>   | <b>Variance</b>              | <b>SE</b> | <b>Variance</b>             | <b>SE</b> |
| Slum ( $N=2$ )             | $\approx 0$                  | --        | $\approx 0$                 | --        |
| Village ( $N=7$ )          | 0.069                        | 0.061     | $\approx 0$                 | --        |
| Ethnicity ( $N=40$ )       | $\approx 0$                  | --        | 0.005                       | 0.040     |
| Wald $\chi^2$              | 41.73***                     |           | 46.40***                    |           |
| Observations               | 896                          |           | 895                         |           |

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

The predicted probabilities displayed in Table 6.7 provide a more substantive interpretation of the effect. When all other covariates are set at their means, the probability of having sought treatment from a non-state health provider for households in villages with a low level of associational activity is 0.595. That probability increases to 0.719 for households in villages with a medium level of associational activity and 0.832 for households in villages with a high level. The changes in probability are statistically significant at all levels, and the full range of change means that an average household in a high level village is 24 percent more likely to interact with non-state providers than an otherwise identical household in a village with low group membership.

**Table 6.7: Predicted Probabilities from Model 4**

|                               | Probability of having utilized non-state health services | Change in probability            |
|-------------------------------|--|----------------------------------|
| Low village group membership  | 0.595  | <i>Med vs. low:</i><br>0.124***  |
| Med village group membership  | 0.719  | <i>High vs. med:</i><br>0.113*** |
| High village group membership | 0.832  | <i>High vs. low:</i><br>0.237*** |

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

All other covariates are set at their means.

Another notable observation from the results of model 4 is the fact that the community characteristics are far more influential than any of the household characteristics for non-state provision. Lived poverty status is barely significant (and the magnitude of the estimated effect is small) and the only other statistically significant association is the increased likelihood of utilization among female respondents. The insignificance of household-level variables and the strong significance of village-level associational activity and bridging trust suggest that access to health services provided by non-state actors—operationalized functionally rather than perceptually—is primarily a function of community-level factors. What the regression results cannot convey, however, is the degree to which the characteristics of the community create an atmosphere conducive to the broad-based provision of health services by non-state actors. It could be that the presence

and activity of non-state providers (or certain types of non-state providers) encourage associational activity and strengthen bridging trust, or feedback effects may mean that the observed association can be attributed to both mechanisms.

### ***Perceptions of Health Service Accessibility***

The dependent variable in this section is an ordinal measure of the degree of difficulty or ease with which respondents are able to obtain health services from state and non-state providers. Unlike the indicators for utilization in the previous section, this is not an objective measure of access; respondents were given an opportunity to answer regardless of whether or not they had successfully accessed providers of either type. Beginning with public provision, the first specification depicted in Table 6.8 includes only household-level factors and the second introduces village-level bonding trust and political activism.<sup>52</sup> The addition of village-level factors does not appreciably change the effects of household-level variables. The variances of the random intercepts at the slum and village level are small in model 5 (which includes only household-level variables) but become effectively zero with the addition of village-level variables in model 6, suggesting that the covariates for aggregate bonding trust and political activism account for the location-specific random effects in the previous model. Furthermore, the Wald chi-square statistic is 42.59 for model 6 and only 29.36 for model 5; the addition of village-level sociopolitical factors improves the explanatory power of the model considerably.

Somewhat surprisingly, bonding trust measured at the household level likely increases perceived accessibility, but the estimated coefficient on the village-level measure of bonding trust implies that higher levels of bonding trust at the village level correlate with decreases in perceived accessibility. The effect of bonding trust is not linear for either the household or community levels; the largest positive effect

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<sup>52</sup> As I mentioned in the methods section, the selection of village-level covariates is based on theory and the explanatory power of the models. Existing literature suggests that political involvement and connections may facilitate access to public health services (see, for example, Chen & Cammett, 2012), and bonding trust is a significant household-level predictor. Different combinations did not suggest the importance of other village-level sociopolitical factors.

of household bonding trust on accessibility occurs at the medium level, and the largest negative effect occurs at the medium level for community-wide bonding trust.

**Table 6.8: Perceptions of Public Health Service Accessibility**

| <i>GovHealthAccess</i>       | Model 5                |           | Model 6                       |           |
|------------------------------|------------------------|-----------|-------------------------------|-----------|
|                              | <b>Household Level</b> |           | <b>Village Social Capital</b> |           |
|                              | Exp(B)                 | SE        | Exp(B)                        | SE        |
| Poverty (flow)               | 0.989                  | 0.047     | 0.983                         | 0.047     |
| Poverty (assets)             | 0.911*                 | 0.044     | 0.912*                        | 0.044     |
| Age                          | 0.990*                 | 0.006     | 0.990*                        | 0.005     |
| Female respondent            | 1.542***               | 0.227     | 1.493***                      | 0.219     |
| Female HH                    | 1.440**                | 0.284     | 1.408**                       | 0.242     |
| Low education                | 1.112                  | 0.189     | 1.063                         | 0.180     |
| High education               | 1.067                  | 0.163     | 1.077                         | 0.164     |
| <b>Community Involvement</b> |                        |           |                               |           |
| Med community involvement    | 0.797                  | 0.125     | 0.802                         | 0.125     |
| High community involvement   | 0.947                  | 0.158     | 0.961                         | 0.157     |
| <b>Political Activism</b>    |                        |           |                               |           |
| Med political activism       | 1.138                  | 0.180     | 1.144                         | 0.181     |
| High political activism      | 0.949                  | 0.143     | 0.936                         | 0.141     |
| <b>Bonding Trust</b>         |                        |           |                               |           |
| Med bonding trust            | 1.448**                | 0.229     | 1.448**                       | 0.229     |
| High bonding trust           | 1.438**                | 0.140     | 1.423**                       | 0.239     |
| <b>Bridging Trust</b>        |                        |           |                               |           |
| Med bridging trust           | 0.997                  | 0.150     | 1.016                         | 0.153     |
| High bridging trust          | 0.940                  | 0.175     | 0.982                         | 0.182     |
| <b>Village Level</b>         |                        |           |                               |           |
| Med bonding <sub>v</sub>     |                        |           | 0.648**                       | 0.135     |
| High bonding <sub>v</sub>    |                        |           | 0.844                         | 0.136     |
| Med PCA <sub>v</sub>         |                        |           | 0.751*                        | 0.120     |
| High PCA <sub>v</sub>        |                        |           | 0.878                         | 0.213     |
| Constant cut1                | -2.160***              | 0.373     | -2.452***                     | 0.381     |
| Constant cut2                | -0.191                 | 0.364     | -0.482                        | 0.369     |
| Constant cut3                | 2.016***               | 0.374     | 1.726***                      | 0.377     |
| <b>Random Intercepts</b>     |                        |           |                               |           |
|                              | <b>Variance</b>        | <b>SE</b> | <b>Variance</b>               | <b>SE</b> |
| Slum ( <i>N</i> =2)          | 0.012                  | 0.025     | ≈0                            | --        |
| Village ( <i>N</i> =7)       | 0.002                  | 0.037     | ≈0                            | --        |
| Ethnicity ( <i>N</i> =40)    | 0.037                  | 0.054     | 0.010                         | 0.039     |
| Wald $\chi^2$                | 29.36**                |           | 42.59***                      |           |
| Observations                 | 895                    |           | 895                           |           |

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

Turning now to perceptions of non-state health service accessibility, the regression results in Table 6.9 reveal a number of interesting findings. First, the significance and direction of the effects of covariates are almost opposite those for public health accessibility in Table 6.8; it appears that the conditions that promote

accessibility vary by provider type. Second, as has been the case in the previous models, the addition of village-level covariates to the model did not alter the coefficient estimates for the household-level variables. Aside from reductions in lived poverty status, bridging trust at both the household and community level are the only independent variables positively associated with increases in perceived accessibility. The odds ratios are much larger for bridging trust than for poverty status, signifying that bridging trust may be more influential than poverty. Additionally, the strong and significant positive effect of village-level bridging trust operates over and above the household-level association.

**Table 6.9: Perceptions of Non-State Health Service Accessibility**

|   | Model 7                |       | Model 8                       |       | Model 9             |       |
|---|------------------------|-------|-------------------------------|-------|---------------------|-------|
|   | <b>Household level</b> |       | <b>Village social capital</b> |       | <b>Interactions</b> |       |
| <i>NGOHealthAccess</i>                  | Exp(β)                 | SE    | Exp(β)                        | SE    | Exp(β)              | SE    |
| Poverty (flow)                          | 1.154***               | 0.055 | 1.147***                      | 0.055 | 1.122**             | 0.053 |
| Poverty (assets)                        | 1.157***               | 0.055 | 1.156***                      | 0.055 | 1.158***            | 0.055 |
| Female respondent                       | 0.749**                | 0.109 | 0.760*                        | 0.110 | 0.741**             | 0.108 |
| Female HH                               | 1.077                  | 0.183 | 1.114                         | 0.189 | 1.071               | 0.181 |
| <b>Community Involvement</b>            |                        |       |                               |       |                     |       |
| Med community involvement               | 0.788                  | 0.123 | 0.774                         | 0.121 |                     |       |
| High community involvement              | 0.719**                | 0.117 | 0.709**                       | 0.115 |                     |       |
| Low com.inv. × low group <sub>v</sub>   |                        |       |                               |       | <i>ref</i>          |       |
| Low com.inv. × high group <sub>v</sub>  |                        |       |                               |       | 0.401**             | 0.174 |
| Med com.inv. × low group <sub>v</sub>   |                        |       |                               |       | 0.658**             | 0.111 |
| Med com.inv. × high group <sub>v</sub>  |                        |       |                               |       | 1.018               | 0.297 |
| High com.inv. × low group <sub>v</sub>  |                        |       |                               |       | 0.645**             | 0.111 |
| High com.inv. × high group <sub>v</sub> |                        |       |                               |       | 0.727               | 0.210 |
| <b>Political Activism</b>               |                        |       |                               |       |                     |       |
| Med political activism                  | 0.816                  | 0.129 | 0.804                         | 0.127 |                     |       |
| High political activism                 | 0.843                  | 0.125 | 0.841                         | 0.125 |                     |       |
| Low pol.act. × low PCA <sub>v</sub>     |                        |       |                               |       | <i>ref</i>          |       |
| Low pol.act. × high PCA <sub>v</sub>    |                        |       |                               |       | 1.425               | 0.398 |
| Med pol.act. × low PCA <sub>v</sub>     |                        |       |                               |       | 0.867               | 0.153 |
| Med pol.act. × high PCA <sub>v</sub>    |                        |       |                               |       | 1.126               | 0.345 |
| High pol.act. × low PCA <sub>v</sub>    |                        |       |                               |       | 0.946               | 0.160 |
| High pol.act. × high PCA <sub>v</sub>   |                        |       |                               |       | 1.045               | 0.268 |
| <b>Bonding Trust</b>                    |                        |       |                               |       |                     |       |
| Med bonding trust                       | 0.814                  | 0.127 | 0.809                         | 0.127 |                     |       |
| High bonding trust                      | 0.698**                | 0.114 | 0.698**                       | 0.115 |                     |       |
| Low bonding × low bond <sub>v</sub>     |                        |       |                               |       | <i>ref</i>          |       |
| Low bonding × high bond <sub>v</sub>    |                        |       |                               |       | 0.708               | 0.169 |
| Med bonding × low bond <sub>v</sub>     |                        |       |                               |       | 0.628**             | 0.129 |
| Med bonding × high bond <sub>v</sub>    |                        |       |                               |       | 0.890               | 0.222 |
| High bonding × low bond <sub>v</sub>    |                        |       |                               |       | 0.531***            | 0.114 |
| High bonding × high bond <sub>v</sub>   |                        |       |                               |       | 0.756               | 0.179 |

| <b>Bridging Trust</b>                    |                 |           |                 |           |                 |           |
|--|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| Med bridging trust                       | 1.192           | 0.178     | 1.170           | 0.175     |                 |           |
| High bridging trust                      | 1.679***        | 0.308     | 1.636***        | 0.299     |                 |           |
| Low bridging × low bridge <sub>v</sub>   |                 |           |                 |           | <i>ref</i>      |           |
| Low bridging × high bridge <sub>v</sub>  |                 |           |                 |           | 1.297           | 0.351     |
| Med bridging × low bridge <sub>v</sub>   |                 |           |                 |           | 1.149           | 0.201     |
| Med bridging × high bridge <sub>v</sub>  |                 |           |                 |           | 1.833**         | 0.451     |
| High bridging × low bridge <sub>v</sub>  |                 |           |                 |           | 1.395           | 0.308     |
| High bridging × high bridge <sub>v</sub> |                 |           |                 |           | 2.656***        | 0.716     |
| <b>Village Level</b>                     |                 |           |                 |           |                 |           |
| Med group <sub>v</sub>                   |                 |           | 1.177           | 0.260     |                 |           |
| High group <sub>v</sub>                  |                 |           | 1.486           | 0.442     |                 |           |
| Med bridging <sub>v</sub>                |                 |           | 1.681**         | 0.389     |                 |           |
| High bridging <sub>v</sub>               |                 |           | 1.988***        | 0.358     |                 |           |
| Constant cut1                            | -1.324***       | 0.410     | -0.768*         | 0.441     | -1.481***       | 0.373     |
| Constant cut2                            | 0.175           | 0.406     | 0.738*          | 0.440     | 0.034           | 0.369     |
| Constant cut3                            | 2.029***        | 0.413     | 2.601***        | 0.449     | 1.906***        | 0.375     |
| <b>Random Intercepts</b>                 | <b>Variance</b> | <b>SE</b> | <b>Variance</b> | <b>SE</b> | <b>Variance</b> | <b>SE</b> |
| Slum (N=2)                               | ≈0              | --        | ≈0              | --        | ≈0              | --        |
| Village (N=7)                            | 0.045           | 0.045     | ≈0              | --        | ≈0              | --        |
| Ethnicity (N=40)                         | ≈0              | --        | ≈0              | --        | ≈0              | --        |
| Wald $\chi^2$                            | 41.92***        |           | 61.00***        |           | 67.04***        |           |
| Observations                             | 892             |           | 892             |           | 892             |           |

Age and education controls included in models but not shown.

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

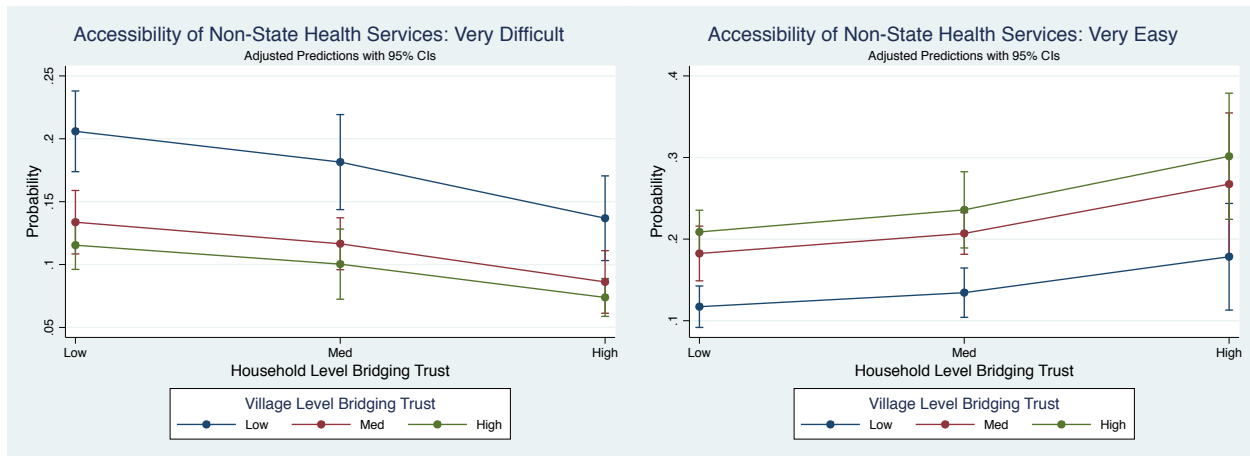
In order to provide a more substantive interpretation of the results from model 8, I calculated the predicted probabilities of finding it very difficult and very easy to access services provided by non-state actors at low, medium, and high levels of individual and village bridging trust (shown in Table 6.10). The probability of perceiving non-state services as very easily accessible for an otherwise average household with low bridging trust residing in a village with low bridging trust is 0.117. If an otherwise average household has a high level of bridging trust and is located in a village with high bridging trust, the probability nearly triples to 0.301. The full range of change for the probability of viewing services as very difficult to access is also large, decreasing from 0.206 at low levels of bridging trust to 0.074 at high levels.

**Table 6.10: Predicted Probabilities from Model 8**

|                     |      | Village Bridging Trust |                |                |                |                |                |
|---------------------|------|------------------------|----------------|----------------|----------------|----------------|----------------|
|                     |      | Low                    |                | Med            |                | High           |                |
|                     |      | <i>Pr</i> (VD)         | <i>Pr</i> (VE) | <i>Pr</i> (VD) | <i>Pr</i> (VE) | <i>Pr</i> (VD) | <i>Pr</i> (VE) |
| Individual bridging | Low  | 0.206                  | 0.117          | 0.134          | 0.182          | 0.115          | 0.209          |
|                     | Med  | 0.181                  | 0.134          | 0.117          | 0.207          | 0.100          | 0.236          |
|                     | High | 0.137                  | 0.178          | 0.086          | 0.267          | 0.074          | 0.301          |

All other covariates are set at their means.  
 \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

The graphs in Figure 6.3 illustrate the changes in probability attributed to both household- and village-level bridging trust with confidence intervals. The distance between the lines delineating levels of village bridging trust highlight the importance of this meso-level factor, particularly at the juncture between low and medium levels.



**Figure 6.3** Predicted probability of finding it very difficult and very easy to receive treatment at non-state health facilities by household- and village-level bridging trust with 95 percent confidence intervals.

Returning to the regression results in Table 6.9, model 9 includes interactions between household- and community-level sociopolitical factors. The interactions for bridging trust do not significantly change the predicted probabilities from model 8, but the interactions for bonding trust and community involvement suggest that contextual sociopolitical factors may modify the effects of household-level factors on perceptions of accessibility. The statistically significant negative effects of community involvement observed in Chapter 5 and in the first two models

above challenge the theory that associational involvement facilitates access. Based on the strong correlation between community involvement and service utilization and affordability, I suggested that group membership may have a functional rather than cognitive effect on households' experience of health provision. It may not affect perceptions, but membership and the social interactions it promotes allow households to access resources—information, material assistance, or a direct connection—that households' can draw upon when needed. This theory might explain why community involvement does not affect perceived accessibility, but it offers no account for why it appears to have a negative effect.

The interactions in model 9 place household-level community involvement in context and suggest a more nuanced relationship between group membership and perceived accessibility. The negative effect associated with higher levels of household involvement is only statistically significant when community-level associational activity is low. In this situation, low levels of aggregate involvement in the village mean that the pool of information and other resources made available by group membership is smaller, thereby attenuating the potential benefits of membership. It could even be that existing groups were formed with the goal of improving service provision; in this case, negative perceptions of accessibility would be expected among group members. Furthermore, when the level of household-level involvement is medium or high and there is a high level of associational activity in the village, the significance of the effect disappears.

A similar pattern occurs with bonding trust. The models without interactions suggest a strong and statistically significant negative effect of high household-level bonding trust on the perceived accessibility of non-state services. The results produced by the addition of interaction terms, however, imply that the association is only significant when village-level bonding trust is low.

Separate regressions for Kibera and Korogocho on perceived accessibility show divergent effects, particularly in relation to perceptions of non-state service accessibility. Results from models 12 and 13 in Table 6.11 show that household- and community-level sociopolitical variables appear to wield much greater influence



over perceptions of NSP accessibility in Kibera than in Korogocho. The covariates also explain far more of the observed variation in perceptions for Kibera than Korogocho; this is reflected in the Wald chi-square statistics and is also the case, to a lesser extent, when public health accessibility is the dependent variable.

**Table 6.11: Perceptions of State and Non-State Health Service Accessibility by Slum**

|                          | Public Health Accessibility |           |                |           | Non-State Health Accessibility |           |                |           |
|--------------------------|-----------------------------|-----------|----------------|-----------|--------------------------------|-----------|----------------|-----------|
|                          | Model 10                    |           | Model 11       |           | Model 12                       |           | Model 13       |           |
|                          | Korogocho                   |           | Kibera         |           | Korogocho                      |           | Kibera         |           |
|                          | Exp( $\beta$ )              | SE        | Exp( $\beta$ ) | SE        | Exp( $\beta$ )                 | SE        | Exp( $\beta$ ) | SE        |
| Poverty (flow)           | 0.964                       | 0.064     | 0.992          | 0.069     | 1.101                          | 0.071     | 1.183**        | 0.083     |
| Poverty (assets)         | 0.906                       | 0.063     | 0.919          | 0.063     | 1.128*                         | 0.076     | 1.227***       | 0.086     |
| Age                      | 1.000                       | 0.008     | 0.978***       | 0.008     | 0.996                          | 0.008     | 1.008          | 0.008     |
| Low education            | 1.103                       | 0.231     | 1.222          | 0.357     | 0.828                          | 0.171     | 0.979          | 0.289     |
| High education           | 1.640**                     | 0.403     | 0.778          | 0.155     | 0.838                          | 0.202     | 1.427*         | 0.281     |
| Female respondent        | 1.625**                     | 0.354     | 1.439*         | 0.290     | 0.732                          | 0.156     | 0.749          | 0.152     |
| Female HH                | 1.537*                      | 0.368     | 1.338          | 0.344     | 0.976                          | 0.225     | 1.155          | 0.295     |
| Med community inv.       | 0.838                       | 0.184     | 0.784          | 0.178     | 0.699*                         | 0.151     | 0.905          | 0.211     |
| High community inv.      | 1.223                       | 0.276     | 0.800          | 0.199     | 0.640**                        | 0.140     | 0.750          | 0.186     |
| Med political activism   | 1.068                       | 0.244     | 1.096          | 0.245     | 0.892                          | 0.202     | 0.804          | 0.180     |
| High political activism  | 0.814                       | 0.175     | 1.088          | 0.233     | 0.740                          | 0.156     | 1.033          | 0.221     |
| Med bonding trust        | 1.378                       | 0.318     | 1.460*         | 0.321     | 1.040                          | 0.236     | 0.623**        | 0.138     |
| High bonding trust       | 1.546*                      | 0.374     | 1.289          | 0.301     | 0.916                          | 0.217     | 0.509***       | 0.119     |
| Med bridging trust       | 1.271                       | 0.268     | 0.777          | 0.169     | 0.893                          | 0.186     | 1.605**        | 0.351     |
| High bridging trust      | 0.999                       | 0.275     | 0.963          | 0.245     | 1.169                          | 0.314     | 2.291***       | 0.588     |
| zGroupv                  | 0.449*                      | 0.190     | 0.595*         | 0.161     | 1.080                          | 0.454     | 1.580*         | 0.422     |
| zBridgingv               | 0.917                       | 0.084     | 0.618*         | 0.165     | 1.124                          | 0.101     | 1.916**        | 0.502     |
| Constant cut1            | -0.854                      | 0.609     | -3.556***      | 0.638     | -1.879***                      | 0.604     | -0.374         | 0.618     |
| Constant cut2            | 0.949                       | 0.668     | -1.390**       | 0.616     | -0.434                         | 0.597     | 1.260**        | 0.614     |
| Constant cut3            | 3.107***                    | 0.624     | 0.944          | 0.628     | 1.103*                         | 0.600     | 3.469***       | 0.634     |
| <b>Random Intercepts</b> | <b>Var.</b>                 | <b>SE</b> | <b>Var.</b>    | <b>SE</b> | <b>Var.</b>                    | <b>SE</b> | <b>Var.</b>    | <b>SE</b> |
| Village                  | ≈0                          | --        | ≈0             | --        | ≈0                             | --        | ≈0             | --        |
| Ethnicity                | ≈0                          | --        | ≈0             | --        | ≈0                             | --        | ≈0             | --        |
| Wald $\chi^2$            | 24.08                       |           | 29.66**        |           | 16.18                          |           | 44.18***       |           |
| Observations             | 433                         |           | 462            |           | 431                            |           | 641            |           |

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

The differences between the two communities become even more striking when you look at odds ratio estimates for statistically significant independent variables, particularly for non-state accessibility (models 12 and 13). A one-quintile decrease in poverty significantly increases perceived accessibility of health services provided by non-state actors in Kibera, but the association is only weakly significant for asset poverty and inconsequential for lived poverty in Korogocho.

Among the household-level sociopolitical factors, the results diverge further. Higher levels of community involvement are associated with decreases in perceived accessibility in Korogocho, while the relationship is inconclusive for Kibera. Perceived accessibility decreases at medium and high levels of bonding trust in Kibera, but the results imply no relationship for Korogocho.

The most significant household-level difference between the settlements is the effect of bridging trust. Neither medium nor high levels of bridging trust affect perceived accessibility in Korogocho, but there is a large and highly significant association in Kibera. The estimated odds ratios are 1.605 for the medium level and 2.291 for the high level; of all of the covariates in the model, bridging trust is the most influential. At the community level, the effects associated with increases in village-level associational activity and bridging trust are statistically significant for Kibera and insignificant for Korogocho. A one-standard deviation increase in both factors increases perceived accessibility of services provided by non-state actors.

Overall, disaggregating the sample by settlement highlights the importance of meso-level factors and lends support to the theory that meso-level effects on micro-level outcomes depend on both community-level sociopolitical and organizational factors. There is less diversity in organizational factors among public health providers, and there are relatively few differences between settlements in the estimated effects of the independent variables included in the models on public service accessibility. The contrasts in the magnitude and significance of household- and community-level sociopolitical factors in the two settlements in the non-state models, on the other hand, suggest that organizational factors may shape the relationship between sociopolitical characteristics and various dimensions of the micro-experience of non-state health provision. Features of the individual service providers and the health system created by the organizational landscape may increase the utility of some characteristics and decrease that of others. The processes for identifying potential facilities and accessing and paying for treatment are determined in part by the organizations directly and indirectly providing care,

so it makes sense that the tools and resources necessary to successfully navigate the system vary across service environments.

## ***Health Service Affordability***

### *Perceptions of Financial Accessibility*

In order to further explore the distinction between the functional and cognitive effects of social proximity and the extent to which household- and community-level sociopolitical factors contribute to both, I investigate the financial dimension of the micro-experience of health provision. Approaching the concept from multiple dimensions allows me to test the robustness of findings and provide a more nuanced account of the experience. The first dependent variable measures perceptions of financial accessibility. The ordinal variable indicates the frequency with which households encounter unaffordable fees at state and non-state health facilities. Like the accessibility measures in the previous models, the question was posed to all respondents regardless of their interaction with providers of each type, so it is a perceptual measure. This question, however, is more specific. Whereas a general difficulty accessing services could be attributed to any number of factors (e.g., awareness of services, distance to facility, waiting times, opening hours, etc.), responses should reflect perceptions of affordability only.<sup>53</sup>

The regressions in Table 6.12 estimate the effects of sociopolitical factors on perceptions of the affordability of services provided by non-state actors. A review of the results yields several interesting findings. First, the addition of village-level covariates drastically improves the utility of the model; the Wald chi-square statistic increases from 25.21 to 80.16. Second, poverty status is not significantly associated with affordability. Decreases in poverty are correlated with increases in the affordability of public health services (results provided in Table G.2 in Appendix G), but the lack of significance for non-state affordability suggests that financial

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<sup>53</sup> I limit the discussion to the models on non-state health service affordability in the interest of brevity and relevance to the overall contributions of the chapter. The results for similar models where the dependent variable is public health affordability are displayed in Table G.2 in Appendix G.

circumstances play a smaller role in financial accessibility for non-state services. There is a major caveat to this statement, however, because the non-state health sector includes providers ranging from a traditional healer or a local chemist to a clinic run by an international NGO or a private hospital. The fees charged by these and other providers vary widely, and the response does not convey the type of provider(s) on which respondents based their assessment.

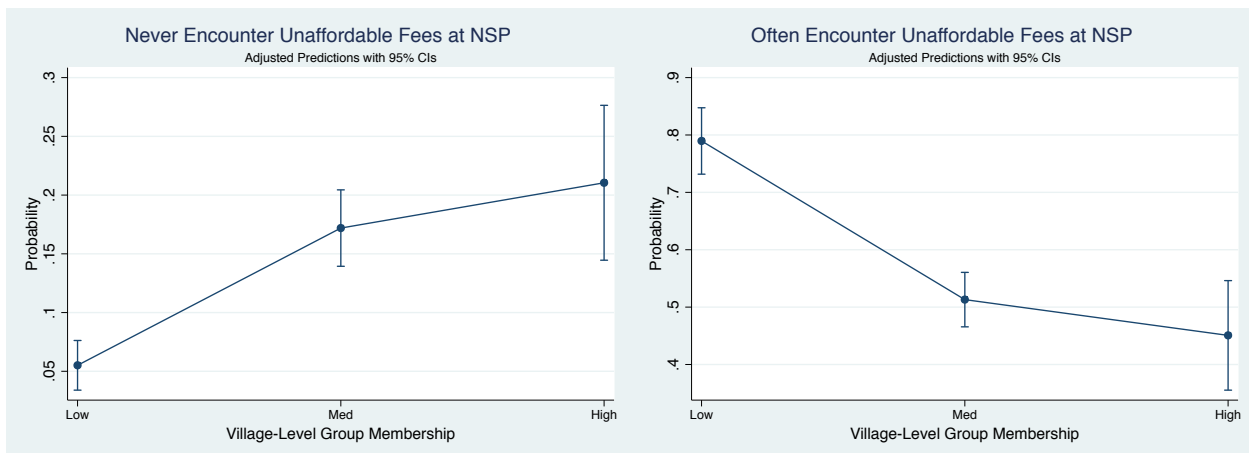
**Table 6.12: Non-State Health Service Affordability**

|                              | Model 14        |           | Model 15               |           |
|------------------------------|-----------------|-----------|------------------------|-----------|
|                              | Household Level |           | Village Social Capital |           |
|                              | Exp( $\beta$ )  | Robust SE | Exp( $\beta$ )         | Robust SE |
| Poverty (flow)               | 1.018           | 0.053     | 1.013                  | 0.053     |
| Poverty(assets)              | 1.054           | 0.055     | 1.047                  | 0.056     |
| Age                          | 0.997           | 0.006     | 0.996                  | 0.006     |
| Female respondent            | 0.609***        | 0.098     | 0.626***               | 0.101     |
| Female HH                    | 0.822           | 0.151     | 0.822                  | 0.151     |
| Low education                | 0.900           | 0.172     | 0.926                  | 0.178     |
| High education               | 0.890           | 0.146     | 0.918                  | 0.150     |
| <b>Community Involvement</b> |                 |           |                        |           |
| Med community involvement    | 0.972           | 0.168     | 0.981                  | 0.170     |
| High community involvement   | 1.003           | 0.179     | 0.998                  | 0.179     |
| <b>Political Activism</b>    |                 |           |                        |           |
| Med political activism       | 1.034           | 0.182     | 1.059                  | 0.187     |
| High political activism      | 1.444**         | 0.235     | 1.475**                | 0.240     |
| <b>Bonding Trust</b>         |                 |           |                        |           |
| Med bonding trust            | 1.096           | 0.188     | 1.095                  | 0.188     |
| High bonding trust           | 0.804           | 0.146     | 0.829                  | 0.151     |
| <b>Bridging Trust</b>        |                 |           |                        |           |
| Med bridging trust           | 1.167           | 0.194     | 1.165                  | 0.194     |
| High bridging trust          | 0.921           | 0.185     | 0.916                  | 0.186     |
| <b>Village Level</b>         |                 |           |                        |           |
| Med group <sub>v</sub>       |                 |           | 3.659***               | 0.846     |
| High group <sub>v</sub>      |                 |           | 4.776***               | 1.457     |
| Med bridging <sub>v</sub>    |                 |           | 2.195***               | 0.526     |
| High bridging <sub>v</sub>   |                 |           | 1.661***               | 0.314     |
| Constant cut1                | 0.360           | 0.524     | 1.779**                | 0.441     |
| Constant cut2                | 1.021*          | 0.525     | 2.442***               | 0.445     |
| Constant cut3                | 1.889***        | 0.529     | 3.312***               | 0.452     |
| <b>Random Intercepts</b>     |                 |           |                        |           |
|                              | <b>Variance</b> | <b>SE</b> | <b>Variance</b>        | <b>SE</b> |
| Slum ( $N=2$ )               | 0.245           | 0.256     | $\approx 0$            | --        |
| Village ( $N=7$ )            | $\approx 0$     | --        | $\approx 0$            | --        |
| Ethnicity ( $N=40$ )         | $\approx 0$     | --        | $\approx 0$            | --        |
| Wald $\chi^2$                | 25.21**         |           | 80.16***               |           |
| Observations                 | 873             |           | 873                    |           |

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

The third notable finding is the apparent unimportance of most household-level factors. Female respondents are more likely to encounter unaffordable fees for services and households with a high level of political activism are less likely to report financial barriers. No other micro-level covariates are significant in either specification.

The last and most interesting takeaways from the regressions on non-state health service affordability are the large and statistically significant associations between affordability and village-level group membership and bridging trust. The estimated odds ratios are very large, especially for medium and high levels of group membership. The graphs in Figure 6.4 illustrate the predicted probabilities of encountering unaffordable fees by frequency and village-level group membership. The largest change occurs between low and medium levels of village associational activity; the model predicts that an average household residing in a village with low group membership has a 0.06 chance of never encountering unaffordable fees, while the same probability for otherwise identical household in a village with high group membership is 0.21. At the opposite extreme, the probability of often encountering financial barriers in a village with low associational activity is 0.79. That probability decreases to 0.45 in a village with high activity.



**Figure 6.4** Predicted probability of never and often encountering unaffordable fees at non-state health facilities by village-level group membership. All other covariates are set at their means. Predictions include 95 percent confidence intervals.

The results in Table 6.12 suggest that the financial accessibility of non-state health services is largely a function of meso-level characteristics. It is important to note, however, that the strength and significance of the effects of community-level associational activity and bridging trust do not imply causation. A village's sociopolitical characteristics may help strengthen accountability mechanisms and promote a collective culture that keeps out-of-pocket costs down. Conversely, the providers operating within the community could independently prioritize affordability and/or engage in activities that increase group membership and bridging trust. Additionally, both mechanisms may contribute to the observed correlation.<sup>54</sup>

#### *Affordability of Fees at Most Frequently Visited Health Provider*

The second dependent variable in this section is an ordinal indicator of the affordability of fees at the health provider most frequently visited by members of the household. I included it to ascertain if the effects of the independent variables change when affordability is based on interaction with a specific health provider. The data set also includes the name of the provider, so I was able to include a random effect for each health facility and explore the degree to which affordability of fees at particular facilities varies by village and ethnicity.

Results from three successive models are displayed in Table 6.13. The addition of village-level sociopolitical factors in model 17 and interactions between household- and village-level factors in model 18 both improve the explanatory power of the model and offer further insight into the nature of the effects. In model 16, the only significant micro-level variables are poverty status and community involvement; decreases in poverty and a high level of community involvement increase the probability of finding fees affordable. Household-level community involvement did not have a significant effect on perceived affordability in the models in Table 6.12, and the fact that it became significant when the dependent

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<sup>54</sup> It is also possible that the association may be either coincidental or a consequence of another factor entirely. This survey included 7 communities in 2 settlements, so more research over a larger number of communities is necessary to confidently establish the association.

variable shifted from a perception to a specific experience mirrors earlier findings regarding utilization and perceived accessibility. Group membership is a structural form of social capital (Harpham, et al, 2002), and it appears to have a greater effect on more objective outcomes.<sup>55</sup> Membership may play a functional role by helping households navigate the system and collect the resources to pay for services when needed, but it does not necessarily change households' perceptions of health service provision within the community.

**Table 6.13: Affordability of Fees at Most Frequently Visited Health Provider**

| <i>fees</i>                                    | Model 16<br>Household Level |       | Model 17<br>Village Social<br>Capital |       | Model 18<br>Interactions |       |
|--|-----------------------------|-------|---------------------------------------|-------|--------------------------|-------|
|  | Exp( $\beta$ )              | SE    | Exp( $\beta$ )                        | SE    | Exp( $\beta$ )           | SE    |
| Public health provider                         | 1.330                       | 0.482 | 1.662                                 | 0.605 | 1.744                    | 0.658 |
| Poverty (flow)                                 | 1.202***                    | 0.079 | 1.198***                              | 0.076 | 1.208***                 | 0.078 |
| Poverty(assets)                                | 0.999                       | 0.065 | 1.010                                 | 0.065 | 0.995                    | 0.066 |
| Age  | 1.001                       | 0.008 | 0.999                                 | 0.007 | 0.997                    | 0.007 |
| Low education                                  | 1.075                       | 0.238 | 1.073                                 | 0.233 | 1.089                    | 0.241 |
| High education                                 | 1.155                       | 0.240 | 1.127                                 | 0.230 | 1.131                    | 0.234 |
| Female respondent                              | 0.825                       | 0.166 | 0.863                                 | 0.171 | 0.863                    | 0.174 |
| Female HH                                      | 0.807                       | 0.190 | 0.856                                 | 0.197 | 0.808                    | 0.189 |
| <b>Community Involvement</b>                   |                             |       |                                       |       |                          |       |
| Med community inv.                             | 1.329                       | 0.277 | 1.240                                 | 0.253 |                          |       |
| High community inv.                            | 1.718**                     | 0.377 | 1.619**                               | 0.349 |                          |       |
| Low com.inv. $\times$ low group <sub>v</sub>   |                             |       |                                       |       | <i>ref</i>               |       |
| Low com.inv. $\times$ high group <sub>v</sub>  |                             |       |                                       |       | 0.880                    | 0.501 |
| Med com.inv. $\times$ low group <sub>v</sub>   |                             |       |                                       |       | 1.115                    | 0.239 |
| Med com.inv. $\times$ high group <sub>v</sub>  |                             |       |                                       |       | 8.430***                 | 5.289 |
| High com.inv. $\times$ low group <sub>v</sub>  |                             |       |                                       |       | 1.456*                   | 0.329 |
| High com.inv. $\times$ high group <sub>v</sub> |                             |       |                                       |       | 9.499***                 | 5.487 |
| <b>Political Activism</b>                      |                             |       |                                       |       |                          |       |
| Med political activism                         | 1.188                       | 0.259 | 1.158                                 | 0.247 |                          |       |
| High political activism                        | 0.768                       | 0.154 | 0.757                                 | 0.150 |                          |       |
| Low pol.act. $\times$ low PCA <sub>v</sub>     |                             |       |                                       |       | <i>ref</i>               |       |
| Low pol.act. $\times$ high PCA <sub>v</sub>    |                             |       |                                       |       | 0.628                    | 0.259 |
| Med pol.act. $\times$ low PCA <sub>v</sub>     |                             |       |                                       |       | 1.069                    | 0.253 |
| Med pol.act. $\times$ high PCA <sub>v</sub>    |                             |       |                                       |       | 1.624                    | 0.821 |
| High pol.act. $\times$ low PCA <sub>v</sub>    |                             |       |                                       |       | 0.562**                  | 0.126 |
| High pol.act. $\times$ high PCA <sub>v</sub>   |                             |       |                                       |       | 1.667                    | 0.710 |

<sup>55</sup> There is still some subjectivity in this dependent variable, but the specificity of the question and the connection with a particular service experience conceivably reduce the degree of subjectivity in comparison with general perception questions targeting an entire sector of providers.

|  |             |           |             |           |             |           |
|--|-------------|-----------|-------------|-----------|-------------|-----------|
| <b>Bonding Trust</b>                     |             |           |             |           |             |           |
| Med bonding trust                        | 0.847       | 0.182     | 0.867       | 0.181     |             |           |
| High bonding trust                       | 1.029       | 0.229     | 1.011       | 0.221     |             |           |
| Low bonding × low bond <sub>v</sub>      |             |           |             |           | <i>ref</i>  |           |
| Low bonding × high bond <sub>v</sub>     |             |           |             |           | 1.763*      | 0.571     |
| Med bonding × low bond <sub>v</sub>      |             |           |             |           | 1.125       | 0.329     |
| Med bonding × high bond <sub>v</sub>     |             |           |             |           | 1.159       | 0.386     |
| High bonding × low bond <sub>v</sub>     |             |           |             |           | 1.142       | 0.344     |
| High bonding × high bond <sub>v</sub>    |             |           |             |           | 1.648       | 0.538     |
| <b>Bridging Trust</b>                    |             |           |             |           |             |           |
| Med bridging trust                       | 0.815       | 0.170     | 0.816       | 0.166     |             |           |
| High bridging trust                      | 0.746       | 0.184     | 0.761       | 0.183     |             |           |
| Low bridging × low bridge <sub>v</sub>   |             |           |             |           | <i>ref</i>  |           |
| Low bridging × high bridge <sub>v</sub>  |             |           |             |           | 0.578       | 0.252     |
| Med bridging × low bridge <sub>v</sub>   |             |           |             |           | 0.758       | 0.181     |
| Med bridging × high bridge <sub>v</sub>  |             |           |             |           | 0.662       | 0.271     |
| High bridging × low bridge <sub>v</sub>  |             |           |             |           | 0.510**     | 0.147     |
| High bridging × high bridge <sub>v</sub> |             |           |             |           | 0.892       | 0.391     |
| <b>Village Level</b>                     |             |           |             |           |             |           |
| Med group <sub>v</sub>                   |             |           | 1.025       | 0.329     |             |           |
| High group <sub>v</sub>                  |             |           | 3.918***    | 2.009     |             |           |
| Med bridging <sub>v</sub>                |             |           | 1.501       | 0.498     |             |           |
| High bridging <sub>v</sub>               |             |           | 1.273       | 0.385     |             |           |
| Constant cut1                            | -1.997***   | 0.509     | -1.604**    | 0.623     | -1.98***    | 0.554     |
| Constant cut2                            | -0.156      | 0.505     | 0.210       | 0.621     | -0.123      | 0.550     |
| <b>Random Intercepts</b>                 | <b>Var.</b> | <b>SE</b> | <b>Var.</b> | <b>SE</b> | <b>Var.</b> | <b>SE</b> |
| Slum ( <i>N</i> =2)                      | ≈0          | --        | ≈0          | --        | ≈0          | --        |
| Health facility ( <i>N</i> =156)         | 1.020       | 0.428     | 0.868       | 0.375     | 0.972       | 0.416     |
| Village ( <i>N</i> =222)                 | 0.069       | 0.134     | ≈0          | --        | ≈0          | --        |
| Ethnicity ( <i>N</i> =375)               | 0.096       | 0.193     | ≈0          | --        | ≈0          | --        |
| Wald $\chi^2$                            | 23.04       |           | 38.37***    |           | 54.14***    |           |
| Observations                             | 829         |           | 829         |           | 829         |           |

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

The variance of the random intercepts in model 16 is nonzero at all levels except between slums, and the variance of health facility random effects is very large. The nested structure of the random effects means that the variance at the village level describes a random effect for village of residence on affordability at a single health facility. This variance is reduced to zero by the addition of village-level sociopolitical factors.

The addition of village level sociopolitical factors in model 17 did not produce appreciable changes in the coefficient estimates for household-level variables. High village-level group membership is the only significant meso-level covariate, and the

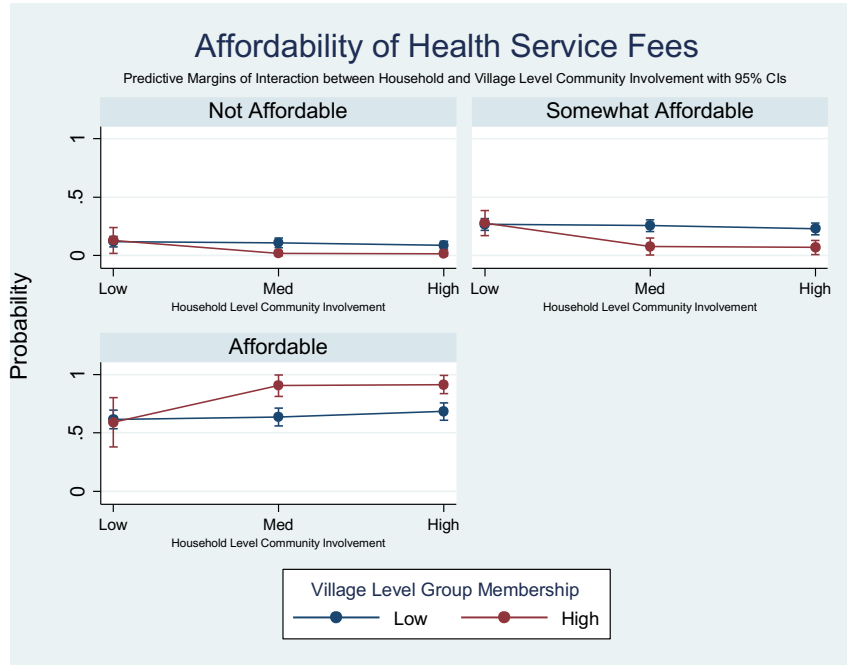


magnitude of the estimated effect is more than double that of household-level group membership and more statistically significant.

When household-level sociopolitical variables are interacted with their community-level counterparts in model 18, the estimated odds ratios shed light on the connections between meso- and micro-level contexts. The strongest and most significant effect of household-level community involvement occurs when the village-level associational activity is high. The graphs in Figure 6.5 plot the predicted probabilities at each value of the dependent variable over household-level community involvement (on the  $x$  axis) and village-level group membership (represented by the different lines). When household involvement is low the level of village group membership has no effect on the predicted probability, but the lines diverge as household involvement increases.<sup>56</sup> The benefits associated with higher levels of village associational activity accrue mainly to households that are more involved, and the benefits of community involvement at the household level are greater for residents of villages with high associational activity.

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<sup>56</sup> Though it is difficult to see in the graphs due to the size and the scale on the probability axis, the village-level lines in the 'not affordable' graph diverge such that there is no overlap in the confidence interval. The portion of the sample that reported unaffordable fees is low, as is the probability. Nevertheless, the interaction between household- and village-level community involvement does produce significantly different predicted probabilities.



**Figure 6.5** Predicted probabilities for affordability of health service fees at the health facility most frequently visited by members of the household by household and village levels of community involvement. Estimates generated from model 18 in Table 6.13 when all other covariates are set at their mean values. Each prediction is displayed with a 95 percent confidence interval.

The addition of interaction terms also changed the estimated effects of household-level political activism, bonding trust, and bridging trust. For each of these, there is one combination of household and village levels that is statistically significant. A high level of household political activism is associated with a decrease in affordability when village-level activism is low. Ignoring statistical significance for a moment, the odds ratio for high activism at both the household and village levels is greater than one; high political activism may have a positive effect on affordability when the household is located in a politically active village, but the opposite is true in villages with low activity. Similarly, high household-level bridging trust is correlated with decreased affordability when village bridging trust is low. Estimates also suggest that low household bonding trust increases affordability when village-level bonding trust is high, but the effect is weakly significant. Though these three associations are tenuous and it would be imprudent

to draw conclusions based on these results, they do imply that the effects of micro-level characteristics can be shaped by meso-level factors.

**Table 6.14: Affordability of Fees at Most Frequently Visited Health Provider by Slum**

| <i>fees</i>              | <b>Korogocho</b> |           |                |           | <b>Kibera</b>  |           |                |           |
|--------------------------|------------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|
|                          | Model 19         |           | Model 20       |           | Model 21       |           | Model 22       |           |
|                          | Exp( $\beta$ )   | SE        | Exp( $\beta$ ) | SE        | Exp( $\beta$ ) | SE        | Exp( $\beta$ ) | SE        |
| Public Health provider   | 1.467            | 0.448     | 1.446          | 0.390     | 1.302          | 0.803     | 1.352          | 0.808     |
| Poverty (flow)           | 1.276***         | 0.112     | 1.262***       | 0.111     | 1.103          | 0.112     | 1.097          | 0.113     |
| Poverty (assets)         | 0.992            | 0.085     | 1.000          | 0.084     | 0.983          | 0.100     | 1.016          | 0.106     |
| Age                      | 0.989            | 0.010     | 0.988          | 0.010     | 1.017          | 0.012     | 1.018          | 0.013     |
| Low education            | 1.152            | 0.298     | 1.146          | 0.292     | 0.849          | 0.383     | 0.802          | 0.363     |
| High education           | 1.230            | 0.395     | 1.235          | 0.392     | 1.145          | 0.324     | 1.125          | 0.319     |
| Female respondent        | 0.768            | 0.216     | 0.783          | 0.217     | 0.887          | 0.257     | 0.910          | 0.265     |
| Female HH                | 0.838            | 0.263     | 0.835          | 0.258     | 0.748          | 0.279     | 0.750          | 0.281     |
| Med community inv.       | 0.906            | 0.247     | 0.898          | 0.240     | 1.916**        | 0.623     | 1.810*         | 0.590     |
| High community inv.      | 1.523            | 0.444     | 1.480          | 0.423     | 1.704          | 0.577     | 1.453          | 0.496     |
| Med political activism   | 1.011            | 0.297     | 0.996          | 0.289     | 1.401          | 0.466     | 1.511          | 0.505     |
| High political activism  | 0.695            | 0.188     | 0.673          | 0.181     | 0.997          | 0.299     | 1.023          | 0.312     |
| Med bonding trust        | 1.342            | 0.406     | 1.331          | 0.402     | 0.536**        | 0.170     | 0.525**        | 0.168     |
| High bonding trust       | 1.253            | 0.366     | 1.189          | 0.349     | 0.863          | 0.298     | 0.776          | 0.270     |
| Med bridging trust       | 0.650            | 0.177     | 0.654          | 0.176     | 1.175          | 0.381     | 1.241          | 0.404     |
| High bridging trust      | 0.544*           | 0.186     | 0.559*         | 0.191     | 1.125          | 0.410     | 1.257          | 0.460     |
| zGroup <sub>v</sub>      |                  |           | 1.033          | 0.795     |                |           | 4.463***       | 2.407     |
| zBridging <sub>v</sub>   |                  |           | 1.320          | 0.295     |                |           | 2.496*         | 1.290     |
| Constant cut1            | -2.453***        | 0.655     | -2.759***      | 0.887     | -1.584**       | 0.800     | 0.374          | 1.150     |
| Constant cut2            | -0.478           | 0.642     | -0.816         | 0.857     | 0.120          | 0.799     | 2.079*         | 1.157     |
| <b>Random Intercepts</b> | <b>Var.</b>      | <b>SE</b> | <b>Var.</b>    | <b>SE</b> | <b>Var.</b>    | <b>SE</b> | <b>Var.</b>    | <b>SE</b> |
| Health Facility          | ≈0               | --        | ≈0             | --        | 1.582          | 0.777     | 1.369          | 0.703     |
| Village                  | 0.224            | 0.301     | 0.058          | 0.231     | ≈0             | --        | ≈0             | --        |
| Ethnicity                | ≈0               | --        | ≈0             | --        | 0.204          | 0.346     | 0.242          | 0.338     |
| Wald $\chi^2$            | 22.21            |           | 24.34          |           | 13.94          |           | 23.00          |           |
| Observations             | 391              |           | 462            |           | 438            |           | 438            |           |

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

As was the case when the dependent variable measured perceptions of accessibility, running separate multilevel regressions for Kibera and Korogocho on affordability produced disparate results. It is important to note at the outset that none of the models in Table 6.14 explain a significant portion of the variation in outcomes, but I include them in this section for two reasons. First, the standardized scores for village-level associational activity and bridging trust are only significant in Kibera, and increased associational activity is strongly and significantly associated with affordability. Table 6.15 displays the predicted probabilities for

encountering not affordable, somewhat affordable, and affordable fees in a village with an average group membership score and at one standard deviation above and below the mean. The changes in probability are large: an average household residing in a village with below average associational activity has a 0.235 chance of encountering affordable fees at the health facility they most frequently visit, while the same probability for an otherwise identical household in a village with above average activity is 0.755. There is a dramatic difference between these probabilities, and a slightly smaller, but still significant, change occurs when the outcome is not affordable.

**Table 6.15: Predicted Probabilities for Model 22  
Averaged Over Random Effects**

|                                   | Not Affordable | Somewhat Affordable | Affordable |
|-----------------------------------|----------------|---------------------|------------|
| Low village group membership (-1) | 0.461          | 0.304               | 0.235      |
| Med village group membership (0)  | 0.211          | 0.295               | 0.494      |
| High village group membership (1) | 0.071          | 0.174               | 0.755      |
| Change in probability             | -0.391**       | -0.130**            | 0.520***   |

Note: Range of change in values of  $z_{Group_v}$  is smaller than actual range in Kibera.  
All other covariates set at their means.

The fact that the association between village-level group membership and affordability is limited to Kibera reinforces the importance of contextual factors. There may be something about the nature of associational activity or the activities of particular groups that facilitates affordability in Kibera that does not exist in Korogocho, or it could have something to do with the service providers in Kibera.

The second reason I included the subsample models in the discussion further highlights the importance of meso-level organizational factors. I nested the levels of the models such that the health facilities comprise the top level; any variance at that level indicates differences between the effects of specific facilities. The variance in both Kibera models is very large, as I would expect given the diverse facilities represented and the wide range of service fees among them. By contrast, there is no health facility random effect in the Korogocho models. This suggests that specific health facilities do not independently affect affordability in a way that cannot be accounted for by the covariates in the model.

There is variance among the random intercepts at the village level for Korogocho, however, implying that affordability of fees at a particular facility varies by village of residence. To translate this into context, I calculated the random effects for model 20 and averaged the values by village for the three most widely utilized health facilities in Korogocho (displayed in Table 6.16). Household-level socioeconomic and sociopolitical factors and village-level sociopolitical factors have been accounted for, so the observed effects should not reflect systematic variations in these characteristics between villages. The relative random effects of the villages are not the same across all three facilities; in other words, one village is not consistently associated with the largest decrease in affordability. The three facilities include a public health center and two clinics run by a domestic and an international NGO, and the largest change in effect among villages occurs at the public health center.

A similar variance among random effects occurs in Kibera among ethnicities, within villages, within a health facility. None of these effects can be explained by the framework of household- and village-level predictors employed thus far, and all affirm the need for the addition of organizational factors to the analysis.

**Table 6.16: Average Random Effects for Village within Health Facilities in Korogocho**

|              | <b>Korogocho Health Center<br/>(public)</b> | <b>Tumaini Clinic<br/>(domestic NGO)</b> | <b>Provide International<br/>(international NGO)</b> |
|--------------|---|--|--|
| Highridge    | 0.191                                       | 0.394                                    | 0.266  |
| Kisumu Ndogo | -0.392                                      | 0.273                                    | -0.026   |
| Korogocho B  | 0.335                                       | 0.025                                    | -0.159   |

## Health Service Satisfaction

### *Satisfaction with Service Experience*

The next set of models examines households' satisfaction with health services at the facility most frequently visited by members of the household. The survey questions used to generate the dependent variable capture respondents' assessments of the technical and functional quality of the services and the adequacy

of the facilities, and the factor scores generated using principal component analysis are divided into quintiles.<sup>57</sup> Table 6.17 presents results for two models: model 23 includes village-level bridging trust and activism and model 24 adds interactions between household- and village-level sociopolitical factors.

In model 23, higher political activism at the household level is associated with a decrease in satisfaction, while high village activism appears to wield a positive influence on satisfaction. Both household- and village-level bridging trust are significantly correlated with higher satisfaction, but the village-level effect is strongest at the medium level. As has been the case in previous sections, the interaction terms in model 24 are instructive: the negative effects of high household-level political activism only occur when village-level activism is low, and the magnitude and significance of the positive effect of higher household-level bridging trust are larger at higher levels of village bridging trust.

**Table 6.17: Satisfaction with Health Services**

|  | Model 23               |           | Model 24       |           |
|--|------------------------|-----------|----------------|-----------|
|  | Village Social Capital |           | Interactions   |           |
|  | Exp( $\beta$ )         | Robust SE | Exp( $\beta$ ) | Robust SE |
| Public facility                                | 0.372***               | 0.069     | 0.363***       | 0.069     |
| Health status                                  | 1.169***               | 0.061     | 1.168***       | 0.061     |
| Poverty (flow)                                 | 1.212***               | 0.064     | 1.204***       | 0.064     |
| Poverty (assets)                               | 0.936                  | 0.049     | 0.932          | 0.050     |
| Female respondent                              | 1.238                  | 0.200     | 1.220          | 0.198     |
| Female HH                                      | 0.942                  | 0.178     | 0.930          | 0.177     |
| <b>Community Involvement</b>                   |                        |           |                |           |
| Med community involvement                      | 1.217                  | 0.211     |                |           |
| High community involvement                     | 1.012                  | 0.179     |                |           |
| Low com.inv. $\times$ low group <sub>v</sub>   |                        |           | <i>ref</i>     |           |
| Low com.inv. $\times$ high group <sub>v</sub>  |                        |           | 0.650          | 0.319     |
| Med com.inv. $\times$ low group <sub>v</sub>   |                        |           | 1.153          | 0.217     |
| Med com.inv. $\times$ high group <sub>v</sub>  |                        |           | 0.951          | 0.329     |
| High com.inv. $\times$ low group <sub>v</sub>  |                        |           | 1.049          | 0.199     |
| High com.inv. $\times$ high group <sub>v</sub> |                        |           | 0.599          | 0.199     |
| <b>Political Activism</b>                      |                        |           |                |           |
| Med political activism                         | 0.751*                 | 0.129     |                |           |
| High political activism                        | 0.537***               | 0.090     |                |           |
| Low pol.act. $\times$ low PCA <sub>v</sub>     |                        |           | <i>ref</i>     |           |
| Low pol.act. $\times$ high PCA <sub>v</sub>    |                        |           | 1.382          | 0.456     |
| Med pol.act. $\times$ low PCA <sub>v</sub>     |                        |           | 0.692*         | 0.132     |
| Med pol.act. $\times$ high PCA <sub>v</sub>    |                        |           | 1.369          | 0.487     |

<sup>57</sup> The survey questions and factor loadings are described in detail in Appendix A.

|  |             |           |             |           |
|--|-------------|-----------|-------------|-----------|
| High pol.act. × low PCA <sub>v</sub>     |             |           | 0.520***    | 0.099     |
| High pol.act. × high PCA <sub>v</sub>    |             |           | 0.956       | 0.288     |
| <b>Bonding Trust</b>                     |             |           |             |           |
| Med bonding trust                        | 1.226       | 0.211     |             |           |
| High bonding trust                       | 1.258       | 0.222     |             |           |
| Low bonding × low bond <sub>v</sub>      |             |           | <i>ref</i>  |           |
| Low bonding × high bond <sub>v</sub>     |             |           | 0.787       | 0.212     |
| Med bonding × low bond <sub>v</sub>      |             |           | 1.126       | 0.257     |
| Med bonding × high bond <sub>v</sub>     |             |           | 1.092       | 0.305     |
| High bonding × low bond <sub>v</sub>     |             |           | 1.357       | 0.319     |
| High bonding × high bond <sub>v</sub>    |             |           | 0.922       | 0.247     |
| <b>Bridging Trust</b>                    |             |           |             |           |
| Med bridging trust                       | 1.419**     | 0.232     |             |           |
| High bridging trust                      | 1.485**     | 0.295     |             |           |
| Low bridging × low bridge <sub>v</sub>   |             |           | <i>ref</i>  |           |
| Low bridging × med bridge <sub>v</sub>   |             |           | 1.735*      | 0.518     |
| Low bridging × high bridge <sub>v</sub>  |             |           | 2.785***    | 1.044     |
| Med bridging × low bridge <sub>v</sub>   |             |           | 1.376       | 0.444     |
| Med bridging × med bridge <sub>v</sub>   |             |           | 3.098***    | 0.929     |
| Med bridging × high bridge <sub>v</sub>  |             |           | 2.765***    | 0.966     |
| High bridging × low bridge <sub>v</sub>  |             |           | 1.330       | 0.568     |
| High bridging × med bridge <sub>v</sub>  |             |           | 2.345**     | 0.806     |
| High bridging × high bridge <sub>v</sub> |             |           | 4.129***    | 1.503     |
| <b>Village Level</b>                     |             |           |             |           |
| Med Bridging <sub>v</sub>                | 2.869***    | 0.931     |             |           |
| High Bridging <sub>v</sub>               | 1.888**     | 0.472     |             |           |
| Med PCA <sub>v</sub>                     | 1.722       | 0.687     |             |           |
| High PCA <sub>v</sub>                    | 1.982***    | 0.503     |             |           |
| Constant cut1                            | -0.074      | 0.526     | -0.784      | 0.493     |
| Constant cut2                            | 1.189**     | 0.526     | 0.488       | 0.491     |
| Constant cut3                            | 3.882***    | 0.546     | 3.192***    | 0.501     |
| <b>Random Intercepts</b>                 |             |           |             |           |
|  | <b>Var.</b> | <b>SE</b> | <b>Var.</b> | <b>SE</b> |
| Slum (N=2)                               | ≈0          | --        | ≈0          | --        |
| Health facility (N=153)                  | 0.051       | 0.066     | 0.056       | 0.071     |
| Village (N=219)                          | ≈0          | --        | ≈0          | --        |
| Ethnicity (N=370)                        | 0.078       | 0.129     | 0.075       | 0.092     |
| Wald $\chi^2$                            | 96.60***    |           | 105.35***   |           |
| Observations                             | 811         |           | 811         |           |

Age and education controls included in models but not shown.  
\* p<0.1, \*\* p<0.05, \*\*\* p<0.01

The predicted probabilities in Table 6.18 provide a more substantive interpretation of the interactions in model 24. The probabilities are averaged over the random effects at all levels, so they capture the fixed effects and the average random effects. A household with a low level of bridging trust living in a village with low bridging trust has a 0.321—or slightly less than one in three—chance of being in the lowest quintile of satisfaction. For an otherwise identical household with a high level of bridging trust residing in a village with high bridging trust, the

same probability is just under one in nine (0.116). Disaggregating that change by village and household level reveals that changes at each level do not produce identical effects. Within in a low bridging village, the probability of being among the least satisfied decreases from 0.321 for a low bridging household to 0.269 for a high bridging household. If the low bridging household resides in a high bridging village, however, the probability decreases to 0.159.

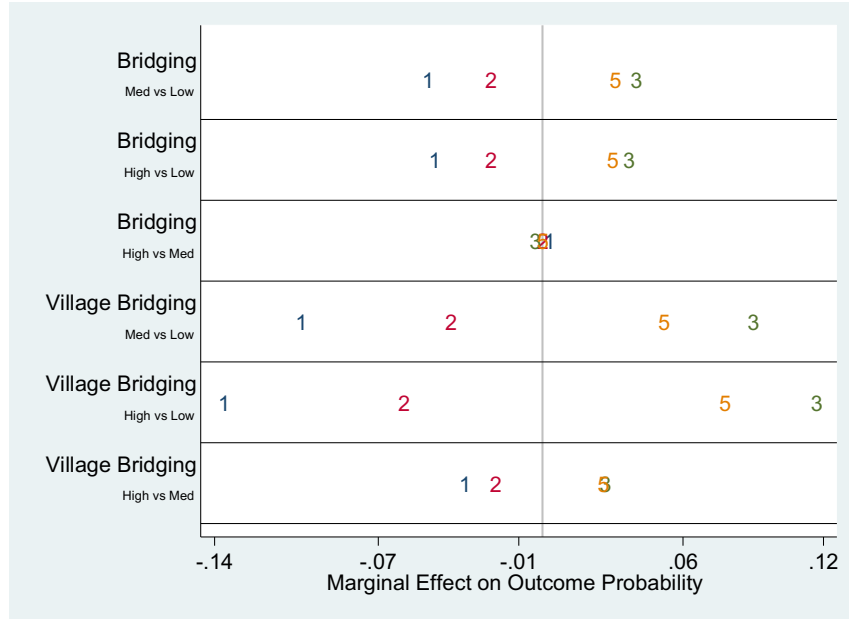
**Table 6.18: Predicted Probabilities for Model 24  
Averaged Over Random Effects**

|   |             | Village Bridging Trust |                 |                 |                 |                 |                 |                 |                 |                 |
|---|-------------|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|   |             | Low                    |                 |                 | Med             |                 |                 | High            |                 |                 |
| Quintile of satisfaction with health services (low to high) |             | 1 <sup>st</sup>        | 3 <sup>rd</sup> | 5 <sup>th</sup> | 1 <sup>st</sup> | 3 <sup>rd</sup> | 5 <sup>th</sup> | 1 <sup>st</sup> | 3 <sup>rd</sup> | 5 <sup>th</sup> |
| <b>Household</b>  | <b>Low</b>  | 0.321                  | 0.355           | 0.055           | 0.225           | 0.440           | 0.090           | 0.159           | 0.497           | 0.133           |
| <b>Bridging</b>   | <b>Med</b>  | 0.263                  | 0.406           | 0.073           | 0.146           | 0.507           | 0.145           | 0.160           | 0.496           | 0.132           |
| <b>Trust</b>  | <b>High</b> | 0.269                  | 0.401           | 0.071           | 0.181           | 0.479           | 0.116           | 0.116           | 0.526           | 0.181           |

All other covariates are set at their means.

The plot of marginal effects in Figure 6.6 illustrates the comparative consequences of changes in household- and village-level bridging trust on the probability of falling within particular quintiles of satisfaction. The visual representation reveals how much of the interacted effect can be attributed to each component. The marginal effects are smallest for both variables between the high and medium levels, but the magnitude of the effects for village-level bridging trust are larger than those for household-level bridging trust across all comparisons. Though bridging trust is significant at both levels, the community-level measure appears to be a more influential determinant of satisfaction.





**Figure 6.6** Marginal effects of changes in household- and village-level bridging trust on the probability of being in the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> quintiles of satisfaction with health services at the facility most frequently visited by members of the household. Estimates of marginal effects are based on Model 24 in Table 6.17 and are averaged over random effects. The numbers refer to the quintile of satisfaction.

### *Satisfaction with Quality of Health Services in the Community*

The final dependent variable in this chapter is an ordinal variable indicating the extent to which respondents are satisfied with the quality of the medical care available to members of their household. The first specification includes household-level covariates only, and the most significant effects are associated with lived poverty status and bridging trust. Both decreases in poverty and increases in bridging trust appear to increase the probability of satisfaction. Female respondents also have a higher probability of satisfaction.

When village-level measures of associational activity and bridging trust are added to the model, the estimated odds ratios indicate that high group membership and medium and high bridging trust (at the village level) are significantly associated with increases in satisfaction. Household-level community involvement remains insignificant, suggesting that village-level associational activity may improve satisfaction regardless of households' participation. The effect of village-

level bridging trust is largest and most statistically significant at the medium level. The effects of household-level covariates are generally consistent with results from the previous specification, but the magnitude and significance of the coefficients on both female respondents and female-headed households increase.

**Table 6.19: Satisfaction with the Quality of Health Services Available to Members of the Household**

| <i>health_qual_sat</i>             | Model 25        |       | Model 26               |       |
|------------------------------------|-----------------|-------|------------------------|-------|
|                                    | Household Level |       | Village Social Capital |       |
|                                    | Exp( $\beta$ )  | SE    | Exp( $\beta$ )         | SE    |
| Poverty (flow)                     | 1.268***        | 0.062 | 1.260***               | 0.062 |
| Poverty(assets)                    | 1.032           | 0.050 | 1.038                  | 0.051 |
| Age                                | 0.990*          | 0.006 | 0.989**                | 0.006 |
| Female respondent                  | 1.453**         | 0.216 | 1.484***               | 0.224 |
| Female HH                          | 1.172           | 0.200 | 1.801***               | 0.320 |
| Low education                      | 0.977           | 0.172 | 1.015                  | 0.176 |
| High education                     | 0.953           | 0.148 | 0.926                  | 0.144 |
| <b>Village Social Capital</b>      |                 |       |                        |       |
| Med group membership <sub>v</sub>  |                 |       | 1.325                  | 0.293 |
| High group membership <sub>v</sub> |                 |       | 1.974**                | 0.582 |
| Med bridging <sub>v</sub>          |                 |       | 1.669**                | 0.396 |
| High bridging <sub>v</sub>         |                 |       | 1.413*                 | 0.254 |
| <b>Community Involvement</b>       |                 |       |                        |       |
| Med community involvement          | 0.860           | 0.138 | 0.828                  | 0.133 |
| High community involvement         | 0.964           | 0.162 | 0.925                  | 0.157 |
| <b>Political Activism</b>          |                 |       |                        |       |
| Med political activism             | 0.978           | 0.160 | 0.963                  | 0.157 |
| High political activism            | 0.781           | 0.121 | 0.775                  | 0.121 |
| <b>Bonding Trust</b>               |                 |       |                        |       |
| Med bonding trust                  | 0.825           | 0.135 | 0.826                  | 0.136 |
| High bonding trust                 | 0.983           | 0.165 | 0.978                  | 0.164 |
| <b>Bridging Trust</b>              |                 |       |                        |       |
| Med bridging trust                 | 1.501***        | 0.234 | 1.496***               | 0.233 |
| High bridging trust                | 1.878***        | 0.353 | 1.815***               | 0.341 |
| Constant cut1                      | -2.445***       | 0.391 | -1.952***              | 0.440 |
| Constant cut2                      | 0.015           | 0.361 | 0.520                  | 0.418 |
| Constant cut3                      | 2.558***        | 0.373 | 3.080***               | 0.432 |
| <b>Random Intercepts</b>           |                 |       |                        |       |
| Slum ( <i>N</i> =2)                | 0.003           | 0.012 | ≈0                     | --    |
| Village ( <i>N</i> =7)             | ≈0              | --    | ≈0                     | --    |
| Ethnicity ( <i>N</i> =40)          | ≈0              | --    | ≈0                     | --    |
| Wald $\chi^2$                      | 50.84***        |       | 59.13***               |       |
| Observations                       | 898             |       | 898                    |       |

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

To see if the coefficient estimates vary between Kibera and Korogocho, I reran the models on settlement subsamples. Ignoring model 28 for a moment, the

results for Kibera and Korogocho reveal several contrasts. The effect of poverty status is similar and high household-level bridging trust is significant in both models, but the magnitude and statistical significance of the effect is larger in Kibera. Furthermore, medium household-level bridging trust is also associated with increased satisfaction in Kibera.

**Table 6.20: Satisfaction with the Quality of Health Services Available to Members of the Household by Slum**

|  | Satisfaction with Quality of Health Services in Community |       |                               |       |                    |       |
|--|---|-------|-------------------------------|-------|--------------------|-------|
|  | Model 27<br>Korogocho                                     |       | Model 28<br>Koch Interactions |       | Model 29<br>Kibera |       |
|  | Exp(β)  | SE    | Exp(β)                        | SE    | Exp(β)             | SE    |
| Poverty (flow)                         | 1.229***  | 0.084 | 1.234***                      | 0.085 | 1.285***           | 0.094 |
| Poverty(assets)                        | 1.097   | 0.077 | 1.105                         | 0.078 | 0.994              | 0.071 |
| Age                                    | 0.981**   | 0.008 | 0.982**                       | 0.008 | 0.998              | 0.008 |
| Female respondent                      | 1.213   | 0.262 | 1.234                         | 0.268 | 1.815***           | 0.390 |
| Female HH                              | 1.083   | 0.240 | 1.105                         | 0.246 | 1.303              | 0.359 |
| Low education                          | 1.087   | 0.232 | 1.071                         | 0.230 | 0.859              | 0.260 |
| High education                         | 1.037   | 0.258 | 1.050                         | 0.261 | 0.899              | 0.204 |
| <b>Community Involvement</b>           |   |       |                               |       |                    |       |
| Med community involvement              | 0.663*  | 0.147 | 0.615**                       | 0.139 | 0.974              | 0.235 |
| High community involvement             | 0.939   | 0.217 | 0.941                         | 0.144 | 0.786              | 0.204 |
| <b>Political Activism</b>              |   |       |                               |       |                    |       |
| Med political activism                 | 0.938   | 0.218 | 0.909                         | 0.212 | 1.033              | 0.246 |
| High political activism                | 0.647**   | 0.143 | 0.652*                        | 0.144 | 1.037              | 0.235 |
| <b>Bonding Trust</b>                   |   |       |                               |       |                    |       |
| Med bonding trust                      | 1.148   | 0.268 | 1.171                         | 0.277 | 0.587**            | 0.139 |
| High bonding trust                     | 1.220   | 0.293 | 1.259                         | 0.305 | 0.775              | 0.189 |
| <b>Bridging Trust</b>                  |   |       |                               |       |                    |       |
| Med bridging trust                     | 1.375   | 0.293 | 1.487                         | 0.472 | 1.640**            | 0.384 |
| High bridging trust                    | 1.692*  | 0.467 | 2.697***                      | 1.021 | 2.188***           | 0.587 |
| <b>Village Social Capital</b>          |   |       |                               |       |                    |       |
| zBridging trust <sub>v</sub>           | 1.102   | 0.177 | 0.908                         | 0.223 | 2.116***           | 0.605 |
| zGroup membership <sub>v</sub>         | 0.999   | 0.461 | 0.988                         | 0.456 | 2.097**            | 0.629 |
| Med bridging × zbridging <sub>v</sub>  |   |       | 1.115                         | 0.361 |                    |       |
| High bridging × zbridging <sub>v</sub> |   |       | 2.067*                        | 0.827 |                    |       |
| Constant cut1                          | -2.626***   | 0.691 | -2.422***                     | 0.711 | -1.445**           | 0.738 |
| Constant cut2                          | -0.237  | 0.667 | -0.030                        | 0.689 | 1.228*             | 0.694 |
| Constant cut3                          | 1.108***  | 0.674 | 2.199***                      | 0.698 | 4.220***           | 0.728 |
| <b>Random Intercepts</b>               |   |       |                               |       |                    |       |
| Village                                | ≈0  | --    | ≈0                            | --    | ≈0                 | --    |
| Ethnicity                              | ≈0  | --    | ≈0                            | --    | ≈0                 | --    |
| Wald χ <sup>2</sup>                    | 31.93**   |       | 35.28**                       |       | 41.87***           |       |
| Observations                           | 433   |       | 433                           |       | 465                |       |

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

The results reveal additional contrasting effects for other household-level variables, but the most intriguing disparity occurs at the village level. The estimated odds ratios for village bridging trust and group membership are large and significant in Kibera, while neither variable appears to be related to satisfaction with the quality of services in Korogocho.

The addition of interaction terms to the model, however, produces intriguing results. Coefficient estimates for the other covariates were mostly unchanged, but the magnitude and significance of high household-level bridging trust increased substantially; the odds ratio went from 1.692 to 2.967. The estimated odds ratio for the interaction between high household-level bridging trust and a one standard deviation increase in the village-level bridging score is 2.067. The addition of interactions did not affect the results in models 26 and 28, but there is clearly a greater degree of interdependence between the effects of household- and village-level bridging trust on satisfaction in Korogocho.

## **Summary and Conclusions**

This chapter examined the effects of both household- and community-level factors on multiple dimensions of the micro-experience of state and non-state health provision. There were several common themes that emerged, particularly related to the role of structural forms of social capital, differences between the contributions of social capital to experiences with state and non-state services, the persistent importance of bridging trust, and the different effects of independent variables in models disaggregated by slum.

In the first section, we saw that community-level factors did not appear to independently affect households' ability to access health services when treatment was needed. When utilization was operationalized as receipt of services from state and non-state health providers, the effects of community-level sociopolitical factors were highly dependent on provider type. None of the household-level social proximity variables were significant in either model, and none of the community-level factors were associated with use of public health providers. Conversely, higher

levels of village associational activity and bridging trust both strongly and significantly increase the likelihood of household interaction with non-state providers. Based on all indicators of utilization, it appears that both household-level community involvement and community-level associational activity play a functional role in facilitating access to services. The unimportance of both levels of community involvement to the perceived accessibility of services—and the negative association observed in some cases—suggests that, just as it is a structural rather than cognitive form of social proximity, it has a largely functional effect rather than a perceptual one.

When the dependent variable measured affordability of health services, the contrasting utility of cognitive and structural forms of social capital largely continued. Both high village-level associational activity and household-level community involvement are significantly associated with households' ability to pay fees at the most frequently visited health provider, and no cognitive forms of social capital were significant at either level. When affordability indicated the frequency with which households encounter unaffordable fees at non-state providers—and included responses regardless of whether the household had experience with non-state provision—household-level community involvement was no longer significant. Village-level associational activity remained positively associated with affordability, but neither household- nor village-level community involvement was significant in any subsequent sections.

The second identifiable theme is the particular importance of community-level sociopolitical factors in the context of non-state provision. No village-level measures were significantly associated with access to or the affordability of government health services, and the significance and magnitude of the effects of community-level sociopolitical factors were larger when the dependent variable was only applicable to non-state services. This could be a reflection of the greater diversity in organizational factors among non-state providers, but additional research is necessary to establish a relationship. If sociopolitical factors measured at either level are more relevant in the context of non-state provision, this may

account for some of the observed variation in the results for Kibera and Korogocho. Village-level factors are often more influential in Kibera, but the portion of households citing non-state facilities as their most frequently visited provider is much higher there. The pattern suggests that accessibility and affordability of health services provided by the state are less dependent on households' social positionality and communities' sociopolitical context. If this is the case, efforts to improve equity should focus on strengthening and expanding public provision rather than supporting a fragmented system of NSPs. Furthermore, if micro- and meso-level sociopolitical contexts wield more influence over access, results suggest that the effects of specific factors vary by community; developing a generalizable strategy to promote access to NSPs may be problematic.

The third conclusion from this chapter is the persistent importance of bridging trust to many dimensions of the micro-experience. Explaining the variation in its significance and in the size of the effect, however, is more complicated. Trust is a cognitive form of social capital, and it does seem to be particularly important when the dependent variable captures a subjective or perceptual dimension of households' experience with health provision. In the context of Kibera and Korogocho, neither household- nor village-level bridging trust appear to significantly influence households' ability to access health services when treatment is needed or to comfortably pay the fees at the most frequently visited provider. Bridging trust is particularly irrelevant for government health services, as household- and village-level measures have no effect on utilization of public health facilities or on perceptions of accessibility and affordability.

Shifting the focus to non-state services, however, we begin to see an increase in the importance of bridging trust, particularly at the village level. Households in villages with higher levels of bridging trust are much more likely to have interacted with NSPs and to encounter unaffordable fees at non-state facilities with less frequency. In both of these cases, household-level bridging trust has no effect. Village-level bridging trust is also positively associated with perceived accessibility of non-state services, and the inclusion of interaction terms in the model reveals

that the positive effect of higher levels of household bridging trust is only significant when village-level trust is high.

Household-level bridging trust begins to have an independent effect on outcomes when the dependent variables relate to satisfaction with services. For satisfaction with the technical and functional quality and the facilities at the most frequently visited health provider, measures of bridging trust at both levels are positively associated with satisfaction. Though the magnitude of the effect is not as large, the results are similar when the dependent variable measures satisfaction with the quality of health services available to members of the household.

These findings suggest that a village's level of bridging trust is related to the accessibility and affordability of non-state health services and that higher levels of both household and village bridging trust increase a household's likelihood of being satisfied with specific health services and with the quality of care available to them. Public health and social capital research suggests that bridging trust facilitates cooperation and collective action that may increase the accountability of NSPs to the community and reduce opportunistic behavior among providers to support community well-being. Community accountability mechanisms can promote accessibility and affordability as well as improvements in service quality, and the observed relationship between village-level bridging trust and these dimensions of the micro-experience may reflect gains from accountability (Hendryx et al, 2002; Steinberg & Baxter, 1998). The centrality of provider-patient relationships and interactions to individuals' and households' satisfaction with service experiences is also well documented in the literature, as is the potential for household-level bridging trust to enhance that relationship and to improve health outcomes by increasing the likelihood that patients will follow providers' instructions and modify unhealthy behaviors (Gilson, 2003). This may explain why household-level bridging trust plays a larger (positive) role in shaping households' satisfaction with service experiences and the overall quality of services available.

While bridging trust is often positively associated with desirable outcomes, the mechanisms invoked in existing literature are generally vague and difficult to

assess. Reductions in opportunistic behavior and the promotion of collective action are useful mechanisms on a conceptual level, but if the goal of research is to facilitate tangible improvements in service provision, documenting the association as I have done in this chapter is inadequate. Are certain levels of bridging trust sufficient (i.e., will directing resources to fostering bridging trust promote the desired outcomes)? Is bridging trust actually a proxy for something else—something that can more easily be measured? Does the utility of bridging trust depend on organizational factors, and can organizational factors promote bridging trust? The concluding chapter explores the role of organizational factors in shaping the micro-experience of health provision in Kibera and Korogocho.

Finally, this chapter highlighted the importance of a multi-level approach to research, policy, and interventions on social service provision. Results suggests that meso-level sociopolitical factors have an independent effect on households' experiences with health services, but these factors also condition the impact of household-level factors. The characteristics and resources that help individuals access quality services in one community may be irrelevant in other contexts, and the strategies for targeting un- and under-served households and groups may need to be adjusted accordingly. Just as previous chapters identified the utility of expanding conceptualizations of access to include perceptions and affirmed the relevance of both social and economic demand factors, these findings establish a role for meso-level considerations to be added to the micro- and macro-level variables routinely employed in existing studies.

At the same time, the variations in the effects of both village- and household-level sociopolitical characteristics across the settlements raise the issue of generalizability. Is it possible to conduct a systematic multi-level analysis, much less develop prescriptions for a multi-level approach that can be employed in different contexts? In the next chapter I explore the community-level organizational contexts and suggest that, rather than focus on specific measurable indicators at the community level, multi-level approaches should be informed by an



understanding of the key meso-level mechanisms that affect households' experiences with service provision.

## **Chapter 7**

### **Meso-Level Context: Community Organizational Factors**

#### **Introduction**

This chapter builds on the meso-level analysis in Chapter 6 by exploring how organizational factors may interact with community-level sociopolitical factors to shape the micro-experience of health provision for residents of the community. In a systematic review of studies on medical care utilization, Phillips, Morrison, Anderson, and Aday (1998) found that very few included specific characteristics of the healthcare system or the constituent service providers. To explain why such factors are often neglected, the authors identified three key challenges that limit the inclusion of provider-related variables: lack of data, analytical difficulties such as feedback loops, and poor conceptualization. Advances in multilevel modeling techniques and the incorporation of such models into mainstream statistical programs like Stata have helped with the second issue, but appropriate data can only be collected after the relationships and mechanisms have been conceptualized and operationalized.

Existing studies that do incorporate provider-related variables at the community level generally employ objective indicators such as the number of providers in the target area, the number of beds or medical professionals, the ratio of residents to primary care facilities, and other aggregate measures (Babalola & Fatusi, 2009; Lepine & Le Nestour, 2012; Phillips et al, 1998). As this dissertation has argued from the outset, however, these measures are not adequate proxies for accessibility; such supply side factors ignore the role of perceptions and social

factors in shaping health-seeking behaviors. In a study of the demand for primary care services in rural Senegal, Lepine and Le Nestour (2012) include a number of household- and provider-level variables in a multi-level model. The authors discovered that the likelihood of utilizing a public health facility was very high despite the widespread poverty in the area, and they attributed the results to the accessibility of the facilities, the fact that most survey respondents reported that either they, a member of the household, or someone they knew were cured after the first visit, and the low service fees (Lepine & Le Nestour, 2012). These findings reinforce the importance of perceptions and suggest that organizational factors (e.g., quality, fees) and other community-level processes (e.g., the transmission of information about positive experiences) may mutually and interactively affect households' experiences and health outcomes.

It is beyond the scope of this dissertation and the household data to thoroughly document the organizational context of Kibera and Korogocho and examine the degree to which various organizational factors affect both outcomes and the effects of other meso- and micro-level variables. Instead, I descriptively compare insights from the household survey and secondary data on civil society organizations and health service providers to identify organizational factors that may explain some of the observed differences between the communities. Drawing on findings from previous chapters and existing research, my goal is to identify key processes that operate on the meso level that affect households' experiences with service provision and to examine the organizational factors that shape the processes.

One of the challenges I identified in Chapter 6 is the issue of generalizability. Meso-level sociopolitical factors independently affect households' experiences with health services and condition the impact of household-level factors, but the effects of both village- and household-level sociopolitical characteristics vary across the settlements. How can meso-level factors be incorporated into policy and practice if nothing is generalizable? In an attempt to address this issue, I focus less on the statistical associations themselves and more on the dynamics and processes that

may generate observed associations. I explore the “how” and the “why” of the interaction between micro- and meso-level factors. In taking this approach, I hope to address the conceptual challenges identified by Phillips and colleagues (1998) and suggest four areas for further research on the role of the meso-level context and the interaction between micro- and meso-level factors.

The remainder of the chapter proceeds as follows: I begin by outlining meso-level organizational factors gleaned from existing literature, followed by a description of the secondary data used in the analysis. The third section details community-level differences in households’ experiences and the community-level variations in the effects of independent variables in the results from previous chapters. Then, I provide a detailed overview of the organizational contexts in Kibera and Korogocho, weaving in explanations as to how the contexts may explain the differences documented in the preceding section. The chapter concludes by suggesting four meso-level processes for further research.

## **Meso-Level Organizational Factors**

Not much has changed in the years since Phillips and colleagues (1998) highlighted the absence of important meso-level factors in studies on health and health service provision. Though multi-level models increasingly include community-level measures, a comprehensive theoretical framework for meso-level factors and effects remains unavailable. In this section, I draw on public health and international development research to outline meso-level factors and conditions under which community accountability mechanisms are likely to promote responsive, affordable service provision that meets the needs of residents.

### ***Characteristics of Service Providers***

The type of organizations comprising the health system in the community is the first of the organizational components. The theoretical advantages and disadvantages of different types of providers (e.g., public, NGO, CBO, private for-profit, etc.) and case studies of each organizational type pervade the literature, but

most scholars agree that effectiveness is also highly dependent on contextual factors (Teamey & McLoughlin, 2009). Nested operations and increasingly blurred boundaries between organizations have become the norm in many developing countries, making it even more difficult to disentangle the effects of singular types (Brass, 2010). To the extent that it is possible to document the types of organizations and the nested relationships present within the community, however, such an account may offer important insights. The organizational distribution may reveal information about the capacity of providers, sources of funding, and motivations for providing services.

Viewing repeated historical failures to improve service provision across much of the developing world through the lens of the principal agent problem, Pritchett and Woolcock (2004) propose five elements of service provision that must be examined in order to structure the incentives of actors in a way that promotes equitable, sustainable provision. These elements—resources, information, decision-making, delivery mechanisms, and accountability—are not prescriptive conditions or institutional arrangements but rather factors that must be considered in context before developing any policy, program, or practice to promote effective service provision.

### *Sources of Funding*

Service providers' source of revenue has implications for accountability to patients and the community; as providers' dependence on resources obtained from or allocated by the community decreases, so does the community's ability to hold providers accountable (Berlan & Shiffman, 2012; Brinkerhoff, 2004; Hanson et al, 2008). When most of an organization's funding comes from the government and/or external donors, funders' priorities are more likely to guide the organization's activities. In addition to the sources of funding, however, the level at which the budget is controlled and the amount of discretion permitted at the point of service also affect providers' responsiveness to local needs and priorities (Pritchett & Woolcock, 2004). If the community and facility staff have a say over how externally allocated funds are spent, there may be more accountability.

### *Decision-Making*

A second organizational characteristic is the decision-making authority and process. Pritchett and Woolcock (2004) note that the nature of decision-making involves the *de jure* structures and procedures prescribed by policies and the *de facto* process by which decisions are actually made. If, for example, a community health committee is supposed to oversee the operation of a local clinic and participate in planning at the district level but neither the clinic staff nor the district officials incorporate feedback into decisions, community accountability is limited. In their study in the U.S., Steinberg and Baxter (1998) observed weakened accountability and responsiveness when the health system is characterized by what they refer to as the “branch office phenomenon,” where health providers are headquartered in other areas and there is less interdependence and integration into the sociopolitical fabric of the community. Similarly, accountability is also reduced when the health system is dominated by providers that serve a population that is not geographically defined (Steinberg & Baxter, 1998). In general, services are more likely to be responsive when the decision-making process is inclusive and decisions are made at the community level.

### *Target Population*

The degree to which providers target specific populations likely affects both the potential for community accountability and collective action and the inclusiveness of the health system. Non-state actors do not face the same expectations of universality and equity as states providing citizen-based welfare services (Bebbington, 2004; Brinkerhoff, 2002; Douglas, 1987; Salamon, 1987). Some NSPs explicitly or implicitly favor some potential users over others, targeting beneficiaries based on class, gender, ethnicity, religion, partisanship, or some other form of social stratification (MacLean & Cammett, 2014). As the percentage and scale of NSPs operating within the community that either target certain demographic groups or require membership in order to access services rises, access to services for individuals and groups positioned outside the target demographics is likely to decrease.

## ***Stability***

Shifting away from characteristics of specific health facilities, the remaining meso-level organizational factors capture aspects of the health system formed by all of the providers serving the community.<sup>58</sup> The first of these, stability, refers to the durability over time of the providers operating within the community. At the meso level, Steinberg and Baxter (1998) observed that community accountability is strengthened when the health system is largely comprised of stable, established service providers with consistency in leadership and relatively infrequent staff turnover. Though they do not propose indicators for stability or suggest how much stability is required, they focus on the role of stability in facilitating mechanisms for community participation in decision-making and provider responsiveness.

From the household perspective, constant turnover makes it difficult for citizens to navigate the system and establish a relationship with providers. Research on service provision suggests that health and education outcomes improve when there is an ongoing relationship between the individual and provider, and that continued interaction reduces the individuals' perceived risk in assessing service quality (Berry et al, 2004). Gilson (2003) highlights the relational nature of health provision and focuses on the potential for interpersonal trust to promote responsiveness. She notes that most health policy analyses only tangentially address the role of human behavior and relationships and asserts that building and re-building trust within a health system can offer benefits to both providers and patients (Gilson, 2003). Health outcomes depend on both the services provided and the patients' willingness to trust the diagnosis, follow post-care instructions, and modify unhealthy behaviors (Cahn, 1997). Stability among service providers and staff facilitates the development of relationships between patients and providers; patients may be more likely to trust providers with whom they have relationships,

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<sup>58</sup> Though the characteristics of service providers must be collected at the facility level, the meso-level variables (or qualitative assessments) would indicate the degree of inclusivity, localized and/or discretionary decision-making, and the sources of funding among all providers (giving extra weight to the facilities that serve larger portions of the population).

and the mutual cooperation and respect could improve health outcomes and lead to higher satisfaction with services and assessments of quality.

### ***Fragmentation***

The last three meso-level organizational factors are interrelated—both with one another and with community sociopolitical characteristics. The first of these is the degree of fragmentation within the health system, as measured by the number and scale of providers operating within the community. MacLean and Cammett (2014) incorporate fragmentation into their theoretical framework for the political consequences of non-state provision as a dimension of the NSP-citizen relationship. They argue that greater fragmentation, or a larger number of smaller-scale NSPs, leads to a complicated service environment in which citizens' ability to navigate the system and gain access to the appropriate services are reduced. Studies cited in previous chapters highlight the challenges facing residents of informal settlements and other low-income communities, as low levels of health literacy, the lack of regulation and institutionalized mechanisms to help consumers assess quality, and the diversity, opacity, and fragmentation of the health system make accessing quality care difficult (Baru et al, 2010; Barua & Singh, 2003; Kamat 2001; Michielson et al, 2011). Furthermore, the fragmentation created by the growing concentration of low-cost, private for-profit providers and the accompanying competition for patients has negative consequences for individual and community health. Brugha and Zwi (1998) cite a plethora of studies revealing that, particularly when providers lack proper training and technical knowledge, catering to consumers with limited knowledge leads to the dispensation of unnecessary (and sometimes harmful) drugs and the repeated and inefficient treatment of symptoms rather than underlying causes (also Pritchett & Woolcock, 2004).

### ***Strong Leadership and Organization around Health Issues***

The next meso-level organizational factor, strong organization and leadership around health issues, can involve both service providers and civil society organizations. Nearly every theory and study related to health service provision



cites the paramount importance of information to health-seeking behaviors and healthcare provision (e.g., Berlan & Shiffman, 2012; Cavill & Sohail, 2003; Fotso & Mukiira, 2012; Gilson, 2003; Muriithi, 2013; Pritchett & Woolcock; Steinberg & Baxter, 1998). Ideally, the transmission of health-related information occurs at many levels: information flows between service providers and external supervisory and advisory entities, among providers in the community, between community members and groups and service providers, and among households in the community (just to name a few). In reality, the transmission of information that could promote health literacy and improve service accessibility and quality is limited, particularly in the organizational and service environments common in informal settlements.

Steinberg and Baxter (1998) argue that community accountability is more likely when there is strong leadership and organization around health issues, either within the public sphere or civil society. What this meant in the U.S. context of their study is slightly different than its application in places like Kibera and Korogocho, particularly since government is not directly involved in the provision of health services and the capacity of government to regulate and enforce non-state providers is much greater.<sup>59</sup> Leadership and organization around health issues can and does occur in the public sphere in Nairobi, but civil society organizations and cooperation between providers are particularly important.

Studies on the role of NGOs in development efforts highlight that the small scale, localized focus, and funding limitations of most NGOs can lead to fragmented interventions plagued by duplication of efforts, wasted resources, insufficient coordination, and lack of sustainability (DiMuzio, 2008; Gulyani & Bassett, 2007; Koppenjam & Enserink, 2009; Omenya & Huchzermeyer, 2006; Lizarralde & Massyn, 2008; Otiso, 2000, 2003; Post & Mwangi, 2009). Strengthening collaboration between fragmented providers is crucial to avoiding these problems, and the impetus for cooperation can come from the providers themselves or the

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<sup>59</sup> While the U.S. government is directly involved in health service provision in some contexts (e.g., veterans, public health departments, etc.) is it not the predominant provider in most communities.

community. Communities can organize around health issues and hold providers accountable, or the providers can form networks and improve effectiveness. Gilson emphasizes the centrality of networks to the nature of service provision within a community:

The way the networks function determines not only whether individual providers have the range of resources necessary to provide care, such as drugs, equipment and access to referral services, but also the way they provide care, the range of services they offer and the people they seek to serve. (Gilson, 2003, p. 1460)

The benefits associated with strong leadership and organization around health issues highlight the interrelated nature of meso-level factors, as both organizational factors and community-level sociopolitical characteristics can contribute to its development, and the cooperation it fosters can minimize the negative effects of highly fragmented health systems.

### ***Social Embeddedness/Integration of Health Services***

The final interrelated organizational factor is more conceptual. Alternately referred to as social embeddedness and the integration of health services into community life, it seeks to capture the extent to which the health system and the services it provides are socially embedded within the community. MacLean and Cammett (2014) employ the concept as an indicator of sustainability, stating that non-state provision is socially embedded when “communities and citizens have some ownership in the delivery process and are invested in the future” (p. 32). Steinberg and Baxter (1998) include a similar concept but articulate it differently, arguing that community accountability and health system responsiveness are more likely when there is widespread acknowledgement of the interdependencies between health services and other sectors and functions within the community—in other words, when health provision is part of the sociopolitical fabric of the community.

At the household level, when the system of health provision is socially embedded within the community, residents are more likely to be aware of providers and the services they offer and have some connection with staff—either from service utilization, social interaction within the community, or perhaps through

involvement in decisions regarding services. All of these connections are likely to engender trust, reduce perceptions of risk, and improve residents' experiences of non-state provision. At the community level, the integration of health services and providers into the sociopolitical fabric of the community can facilitate greater communication and cooperation between providers comprising the health system and between the health system and other service providers and community organizations, enhance mechanisms for community participation and accountability in decisions regarding health provision, increase health literacy among the population and disseminate information to help them navigate the system, and promote community engagement and organization around health issues.

### ***Feedback Effects***

Complicating meso-level analyses further, disentangling the effects of sociopolitical and organizational factors can be difficult given likely feedback effects. Community accountability can cause changes in the health system, but changes within the health system can also strengthen accountability mechanisms, disseminate quality health information, promote interpersonal trust, and launch associational activity (Berlan & Shiffman, 2012; Gilson, 2003; Steinberg & Baxter, 1998). Anecdotal evidence from my fieldwork in Kibera provides a good example of this. The U.S. Centers for Disease Control (CDC) and the Kenya Medical Research Institute (KEMRI) operate a clinic and demographic surveillance system in two villages in Kibera. For the approximately 28,500 persons enrolled in the study, basic health services are free at the CDC/KEMRI clinic (Njuguna et al, 2013). Additionally, the clinic, like several others in Kibera operated by NGOs, is very active in both the dissemination of health information and in efforts to organize the community around health issues. They hold regular community meetings and information and training sessions at the clinic, and staff members engage in outreach activities ranging from passing out fliers to going door to door to administer vaccinations (Njuguna et al, 2013). When I asked people I encountered while in Kibera where they get their health information or for sources of

trustworthy information, a large portion cited the CDC/KEMRI clinic even though none of them lived near the facility or participated in the surveillance system. Most of them had never received services from the clinic<sup>60</sup> but they utilized the information to make decisions regarding their health.

Though this experience is purely anecdotal, it does highlight one potential role for service providers to not only shape the micro-experience of health provision but also to contribute to the development of interpersonal and institutional trust, associational activity, and other aspects of social capital. While the CDC/KEMRI efforts appear to be inclusive and broad-based, other organizations may exert influence that is either intentionally or unintentionally inequitable or otherwise detrimental to the overall health of the community. In a study tracing the historical development of primary education provision in Madagascar, for example, Wietzke (2014) describes how the early predominance of missionary schools significantly contributed to current inequalities in educational outcomes, uneven patterns of state provision, and group-based inequalities along ethnolinguistic and religious lines.

Consequently, the centrality of the health system—both the individual service providers and the system as a whole, however fragmented and complex it may be—to the micro-experience is not adequately addressed in existing literature on the accessibility, quality, and equity of state and non-state provision in developing countries. Scholars certainly acknowledge the importance of the organizational environment, but the difficulty inherent in accounting for the plethora of formal and informal service providers operating within a defined area, the connections between them, and their effects on household-level experiences has made it much easier to focus on individual providers or a subset of providers. As Gilson (2003) noted in her work on health care as a social institution, however, “future analysis and policy development must recognize that health systems are

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<sup>60</sup> Some said it was too expensive or too far away, others cited high demand, and others said that, while they trust the information provided by the clinic they prefer to go to the chemist unless they have a major health problem.

complex sociopolitical institutions and not merely delivery points for bio-medical interventions” (p. 1463).

## **Data**

In addition to the household survey, this chapter draws on data from the African Population and Health Research Center’s “Partnership for a Healthy Nairobi” study (2013). Recognizing that the delivery of primary health care to urban slum residents has been largely unsuccessful due the absence of government provision and inadequate partnerships among private sector actors, APHRC, with assistance from the Kenyan government and several other NGOs, designed the study to examine the feasibility and cost-effectiveness of strengthening public-private partnerships to provide integrated primary care in these settings. The study areas included both Kibera and Korogocho. Researchers collected extensive data on all identifiable civil society organizations in the communities, all health facilities (including chemists), and midwives and traditional birth attendants. The majority of the interviews were conducted between 2008 and 2010. Though the organizational landscape has changed over the past several years, having access to the data allowed me to make some broad characterizations of the health providers and community groups in the slums and villages selected for the household survey. I will review the descriptive statistics in the next section, but Table 7.1 lists the variables of interest from the data set and the factor variables employed in the analyses. The third column of the table lists the organizational or sociopolitical factor(s) related to the variable.<sup>61</sup>

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<sup>61</sup> Though individual variables are unable to fully capture the factors as roughly conceptualized in the previous section, they may offer insight into particular dimensions.

**Table 7.1: Organizational Variables**

**Civil Society Organizations (CSOs)**

*For each variable below, there are two values for each village and settlement. The first includes all CSOs regardless of the organization's activities. The second includes only the subset of CSOs whose main focus is health.*

| <b>Variable</b>         | <b>Description</b>  | <b>Indicator</b>                                     |
|-------------------------|---|--|
| Number of CSOs          | The data set included the location of each organization by slum and village. I tabulated the number for each slum and each village.   | Associational activity                               |
| Number of partners      | Each organization was asked to name all other organizations with whom the organization has worked with in implementing its activities. I calculated the mean number of partners for CSOs in each village and slum and the percentage of CSOs in each location that have partners.   | Cooperation, organization around health              |
| Network membership      | Each organization was asked whether it is member of a formal network or association within the slum or in the larger city. I tabulated the number and percentage of CSOs in networks by location.   | Networks, cooperation, organization around health    |
| Representation          | The community health committees, divisional health stakeholder forums, and district health stakeholder forums offer a formal mechanism for civil society groups and service providers to gather and jointly plan and review progress on health initiatives and goals. Each CSO was asked whether someone associated with the organization participates on the committee at each level. I calculated the number and percentage of organizations with representation. | Integration/embeddedness, organization around health |
| Community advocacy      | Indicates the number and percent of CSOs that reported undertaking advocacy activities directed at the community to support its activities.   | Social embeddedness, information transmission        |
| Decision maker advocacy | Indicates the number and percent of CSOs that carry out advocacy activities to influence those in decision-making affecting their activities.   | Organization around health                           |
| Donor funding           | Indicates the number and percentage of CSOs that received funding from an external donor in the previous five years.  | Capacity, integration                                |
| Technical support       | Indicates the number and percentage of CSOs that reported receiving technical assistance or support from another organization.  | Cooperation  |

**Health Service Providers**

|                     |   |                            |
|---------------------|---|----------------------------|
| Number of providers | Count of all health service providers operating within each slum and village at the time of the study | Organization around health |
| Electricity         | Number and percentage of providers in each location with electricity                                  | Quality of facilities      |

|   |  |  |
|---|--|--|
| Inpatient care                          | Number and percentage of providers that offer inpatient care or overnight observation  | Availability of services                       |
| Immunization                            | Number and percentage of providers that offer routine immunizations  | Availability of services                       |
| Fees                                    | Number and percentage of providers that charge fees for services   | Organizational type                            |
| Posted fees                             | Of the providers that charge fees, the portion that had information about fees available for prospective patients  | Transparency, information, organizational type |
| Uniformity of fees                      | Of the providers that charge fees, the portion that applies those fees uniformly across all patients   | Organizational type                            |
| Fee adjustments based on ability to pay | Of the providers that charge fees that are not uniformly applied across the population, the portion that cited patients' financial situation, socioeconomic status, ability to pay, or poverty level as criteria for determining how much patients are charged | Organizational Type                            |

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### Factor Variables

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|                |  |                                      |
|----------------|--|--------------------------------------|
| Representation | Factor variable measuring CSO representation. Components, with factor loadings in parentheses, include: percent of CSOs represented on community health committee (0.23); percent of CSOs represented in divisional health stakeholder forum (0.16); percent of CSOs represented in district health stakeholder forum (0.49); number of CSOs with a focus on health (0.36).  | Integration, networks, collaboration |
| Health CSOs    | Factor variable measuring integration of health CSOs in the community. Components, with factor loadings in parentheses, include the number of health CSOs that partner with other health organizations and providers in the community (1.17); percent of health CSOs represented on community health committee (0.64).   | Organization around health           |
| Fee            | Factor variable measuring the fee structure of service providers in the community. Low values indicate fewer fees and more flexibility to accommodate patients who cannot afford fees. Components, with factor loadings in parentheses: percent of providers that charge fees for services (0.48); percent of fee-charging providers that post fees (0.06); percent of fee-charging providers that apply fees uniformly (-0.50); percent of non-uniform fee-charging providers that take financial situation into consideration (-0.03). | Organizational type/characteristics  |

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|          |  |   |
|----------|--|---|
| Advocacy | Factor variable measuring the advocacy efforts of CSOs and health CSOs. Components, with factor loadings in parentheses, include the percent of CSOs engaged in advocacy in the community (0.10); percent of CSOs that direct advocacy efforts towards decision makers (0.17); percent of health CSOs engaged in community advocacy (0.30); percent of health CSOs that direct advocacy toward decision makers (0.62). | Organization and leadership around health |
| Services | Factor variable measuring availability of services in the community. Components, with factor loadings in parentheses, include the percent of providers with electricity (0.35); percent of providers that offer inpatient care (0.84); percent of providers that offer immunizations (0.40); number of providers in the community (0.10).  | Organizational characteristics            |

## Community-Level Differences in the Micro-Experience

### *Aggregate Experiences of Health Services*

The most noticeable pattern in the descriptive statistics in this section is that, on average, residents of Kibera view health services as more accessible and of higher quality than residents of Korogocho, and they report greater satisfaction with their experiences and fewer problems obtaining necessary treatment. Additionally, while there are clearly differences between villages, the magnitude of the variations is relatively small. Table 7.2 displays the average values of variables measuring respondents' perceptions of health provision by settlement and village.<sup>62</sup> At the slum level, Korogocho residents report, on average, fewer feasible options for service providers, more difficulty accessing non-state services, lower quality provision by both state and non-state actors, lower satisfaction with the quality of health services in the community, and lower confidence that most people in the community are able to access quality services. The largest difference occurs for the accessibility of non-state services, but the perceived accessibility of public health services is higher in Korogocho. At the village level, Raila generally has the lowest or one of the lowest scores among villages in Kibera across the table. This is

<sup>62</sup> Additional descriptive statistics on perceptions and assessments of service provision by village are listed in Appendix H.



particularly true for the quality of public health provision and satisfaction with the quality of services available in the community.

**Table 7.2: Health Perception Descriptive Statistics by Slum and Village**

|                  | Number of Health Provider Options |             | Accessibility of Public Providers <sup>a</sup> |             | Accessibility of Non-State Providers <sup>a</sup> |             | Quality of Public Health Provision <sup>b</sup> |             | Quality of Non-State Provision <sup>b</sup> |             |
|------------------|-----------------------------------|-------------|--|-------------|---|-------------|---|-------------|---|-------------|
|                  | Mean                              | SE          | Mean   | SE          | Mean  | SE          | Mean  | SE          | Mean  | SE          |
| <b>Kibera</b>    | <b>1.58</b>                       | <b>0.07</b> | <b>2.34</b>                                    | <b>0.04</b> | <b>2.82</b>                                       | <b>0.04</b> | <b>5.42</b>                                     | <b>0.08</b> | <b>8.20</b>                                 | <b>0.04</b> |
| Kianda           | 1.68                              | 0.25        | 2.35   | 0.07        | 2.81  | 0.09        | 5.74  | 0.18        | 8.28  | 0.08        |
| Kisumu Ndogo     | 1.58                              | 0.09        | 2.20   | 0.09        | 2.91  | 0.09        | 5.18  | 0.18        | 8.27  | 0.09        |
| Laini Saba       | 1.54                              | 0.06        | 2.40   | 0.05        | 2.86  | 0.06        | 5.54  | 0.11        | 8.17  | 0.07        |
| Raila            | 1.55                              | 0.08        | 2.33   | 0.11        | 2.61  | 0.09        | 4.88  | 0.18        | 8.10  | 0.12        |
| <b>Korogocho</b> | <b>1.49</b>                       | <b>0.04</b> | <b>2.52</b>                                    | <b>0.04</b> | <b>2.58</b>                                       | <b>0.04</b> | <b>5.27</b>                                     | <b>0.07</b> | <b>8.04</b>                                 | <b>0.05</b> |
| Highridge        | 1.52                              | 0.05        | 2.50   | 0.06        | 2.61  | 0.07        | 5.22  | 0.11        | 7.95  | 0.08        |
| Kisumu Ndogo     | 1.54                              | 0.08        | 2.45   | 0.06        | 2.54  | 0.08        | 5.36  | 0.13        | 7.83  | 0.11        |
| Korogocho B      | 1.40                              | 0.06        | 2.63   | 0.07        | 2.59  | 0.09        | 5.25  | 0.14        | 8.48  | 0.07        |

<sup>a</sup> Measured on a scale of 1 to 4, where one is the least accessible and 4 is the most accessible.

<sup>b</sup> Factor scores, where min≈2 and max≈9.

|                  | Satisfaction with Quality of Health Services |             | Community-wide Access to Health Services |             |
|------------------|--|-------------|--|-------------|
|                  | Mean   | SE          | Mean                                     | SE          |
| <b>Kibera</b>    | <b>2.83</b>                                  | <b>0.03</b> | <b>2.62</b>                              | <b>0.03</b> |
| Kianda           | 2.85   | 0.06        | 2.68                                     | 0.07        |
| Kisumu Ndogo     | 3.00   | 0.07        | 2.58                                     | 0.08        |
| Laini Saba       | 2.80   | 0.04        | 2.59                                     | 0.05        |
| Raila            | 2.69   | 0.07        | 2.63                                     | 0.10        |
| <b>Korogocho</b> | <b>2.73</b>                                  | <b>0.03</b> | <b>2.44</b>                              | <b>0.04</b> |
| Highridge        | 2.76   | 0.05        | 2.46                                     | 0.06        |
| Kisumu Ndogo     | 2.69   | 0.06        | 2.33                                     | 0.06        |
| Korogocho B      | 2.70   | 0.07        | 2.53                                     | 0.07        |

Satisfaction and access are measured from lowest to highest on a scale of 1 to 4

Table 7.3 provides average values for measures of utilization and satisfaction. On average, residents of Korogocho were less able to access services last time treatment was needed, visited fewer facilities, relied on public providers for most of their health services, reported fewer interactions with non-state providers, and were less satisfied with services at the facility most frequently visited by members of the household. The percentage of respondents that had experience with public health providers was the same in both Kibera and Korogocho. At the village level, satisfaction with services was noticeably lower in Raila than in other villages in

Kibera. Households in Raila are more likely to utilize public services, however, and they frequent government health centers. By contrast, most of the public facilities visited by households from other villages are district and national hospitals, where average satisfaction scores are higher than government health centers. The experiences of Raila residents more closely resemble households from Korogocho, where most respondents that interacted with government providers utilized public health centers and few visited hospitals.

**Table 7.3: Health Service Utilization and Satisfaction Statistics by Village and Slum**

|                  | No Care     |             | Number of Facilities Visited |             | Any Non-State Health |             | Any Public Health |             | Public Provider |             | Satisfaction with Health Services |             |
|------------------|-------------|-------------|------------------------------|-------------|----------------------|-------------|-------------------|-------------|-----------------|-------------|-----------------------------------|-------------|
|                  | Avg.        | SE          | Avg.                         | SE          | Avg.                 | SE          | Avg.              | SE          | Avg.            | SE          | Avg.                              | SE          |
| <b>Kibera</b>    | <b>0.09</b> | <b>0.01</b> | <b>2.03</b>                  | <b>0.05</b> | <b>0.77</b>          | <b>0.02</b> | <b>0.51</b>       | <b>0.02</b> | <b>0.32</b>     | <b>0.02</b> | <b>6.93</b>                       | <b>0.03</b> |
| Kianda           | 0.13        | 0.25        | 1.95                         | 0.10        | 0.75                 | 0.04        | 0.55              | 0.04        | 0.38            | 0.04        | 7.04                              | 0.04        |
| Kisumu Ndogo     | 0.07        | 0.09        | 2.10                         | 0.13        | 0.61                 | 0.04        | 0.29              | 0.05        | 0.15            | 0.04        | 7.05                              | 0.06        |
| Laini Saba       | 0.07        | 0.06        | 1.93                         | 0.07        | 0.75                 | 0.03        | 0.53              | 0.03        | 0.33            | 0.03        | 6.90                              | 0.04        |
| Raila            | 0.09        | 0.08        | 2.36                         | 0.16        | 0.75                 | 0.05        | 0.64              | 0.06        | 0.39            | 0.06        | 6.65                              | 0.10        |
| <b>Korogocho</b> | <b>0.14</b> | <b>0.02</b> | <b>1.65</b>                  | <b>0.05</b> | <b>0.60</b>          | <b>0.02</b> | <b>0.51</b>       | <b>0.02</b> | <b>0.47</b>     | <b>0.02</b> | <b>6.63</b>                       | <b>0.04</b> |
| Highridge        | 0.15        | 0.05        | 1.71                         | 0.07        | 0.63                 | 0.03        | 0.49              | 0.03        | 0.43            | 0.03        | 6.67                              | 0.06        |
| Kisumu Ndogo     | 0.15        | 0.08        | 1.69                         | 0.09        | 0.86                 | 0.04        | 0.50              | 0.04        | 0.48            | 0.04        | 6.57                              | 0.07        |
| Korogocho B      | 0.13        | 0.06        | 1.47                         | 0.07        | 0.52                 | 0.04        | 0.58              | 0.04        | 0.52            | 0.05        | 6.65                              | 0.09        |

### *Differences in Regression Results from Chapter 5*

In addition to the comparatively favorable perceptions and experiences of households in Kibera, results from multilevel mixed effects models in Chapter 5 suggest that the effects of household- and community-level sociopolitical characteristics on the micro-experience of health provision vary by settlement. When the dependent variable indicated whether the household was able to access services last time treatment was needed, higher household-level community involvement correlated with decreases in the probability of being unable to receive care in Korogocho, but the sociopolitical variables were not significant for the Kibera subsample. For all other dependent variables, however, sociopolitical factors at both the household and village levels wielded much greater influence over outcomes in Kibera. Household-level bridging trust and village-level bridging trust

and associational activity were all significantly and positively associated with perceived accessibility of non-state health services in Kibera. For Korogocho, household-level community involvement was the only statistically significant association, and higher levels of involvement were negatively associated with accessibility. The last dependent variable for which separate models revealed disparate results was the affordability of fees at the service provider most frequently visited by members of the household. Village-level associational activity and bridging trust were both positively associated with affordability in Kibera, but neither was significant in Korogocho.

### **Community-Level Differences: Organizational Context**

The differences highlighted above and the limited ability of the household-level factors and community-level sociopolitical variables from previous chapters to fully explain observed variations in the micro-experience of health services suggest that other meso-level factors shape households' capacity to access quality services. According to existing research, the availability of accessible, equitable, quality healthcare depends on the characteristics of the health system, and the community's ability to ensure that the system meets their needs depends on their power to hold the health system accountable (Berlan & Shiffman, 2012; Rifkin, 2003). Therefore, in addition to the organizational factors related to the providers and health system, the prospects for accountability depend on characteristics of civil society organizations and the relationships between service providers and community groups and organizations.

#### ***Health Service Providers***

The APHRC data on health service providers operating in Kibera and Korogocho offer limited insight into the service environment. Facility names were excluded from the microdata, so I am unable to compare service indicators with households' experiences. Furthermore, the study focused on factors related to staffing, availability of equipment and supplies, and services offered. Though this

information can be used to assess the technical capacity of providers, it offers no indication of providers' target population, cooperation with other providers, participation in formal and informal networks, governance and oversight procedures, length of time in operation, staff turnover, relationship with community organizations and the government, and other characteristics that affect households' experiences.<sup>63</sup>

**Table 7.4: Health Facilities by Managing Authority**

|                  | Government | FBO | NGO | CBO | Private for-profit | Total |
|------------------|------------|-----|-----|-----|--------------------|-------|
| <b>Kibera</b>    | 2          | 9   | 13  | 5   | 149                | 178   |
| Kianda           | 0          | 0   | 0   | 0   | 1                  | 2     |
| Kisumu Ndogo     | 0          | 0   | 2   | 1   | 1                  | 4     |
| Laini Saba       | 0          | 1   | 2   | 1   | 35                 | 39    |
| Raila            | 0          | 0   | 1   | 0   | 1                  | 2     |
| <b>Korogocho</b> | 2          | 7   | 10  | 8   | 157                | 184   |
| Highridge        | 0          | 2   | 0   | 0   | 1                  | 3     |
| Kisumu Ndogo     | 0          | 0   | 0   | 0   | 3                  | 3     |
| Korogocho B      | 0          | 0   | 1   | 1   | 2                  | 4     |

*Source: APHRC, 2013*

In spite of the limitations, available measures provide a general overview of the providers operating within the communities.<sup>64</sup> Table 7.4 lists the number of health facilities (excluding chemists and pharmacies) operating in each settlement and village by managing authority.<sup>65</sup> Some of the providers are not located within the boundaries of Kibera and Korogocho but are included because they serve residents of the settlements.<sup>66</sup> Given the perceptual and experiential differences highlighted above, it is surprising that the number of providers in each slum is

<sup>63</sup> The civil society data includes some of this information for a limited number of NSPs operated by NGOs and CBOs, so I address some of these factors in subsequent sections.

<sup>64</sup> Additional statistics on health providers can be found in Appendix H.

<sup>65</sup> The numbers are not current as the data was collected in 2009, but the table portrays a more accurate picture of the service landscape than the Master Facility List disseminated by the Ministry of Health. A large number of providers are not registered and do not appear on formal lists, but all facilities were included in the APHRC data.

<sup>66</sup> This is particularly true for government facilities. The data was collected before the public Korogocho Health Center opened in 2014, so both government providers connected with the settlement are located in nearby communities (Kariobangi and Babadogo). The situation is similar in Kibera; the DO Health Center is located at the chief's compound at the entrance to the slum, but the other (Langata Health Center) is a short distance south of Raila.

roughly equal—particularly since the population of Kibera is much larger. With the exception of Laini Saba, the number of providers located in each village is small.

The characteristics of the service providers in Table 7.5 show few differences at the slum level. The portion of facilities with electricity and that offer inpatient and immunization services is higher in Korogocho, but the availability of both immunizations and inpatient care is low across both settlements. There is more variation at the village level; service availability is not evenly distributed geographically in either slum.

**Table 7.5: Characteristics of Health Service Providers**

|                  | Percent with electricity | Continuous electricity <sup>a</sup> | Obtains drugs from Ministry of Health | Inpatient  | Immunizations |
|------------------|--------------------------|-------------------------------------|---------------------------------------|------------|---------------|
| <b>Kibera</b>    | <b>83%</b>               | <b>43%</b>                          | <b>12%</b>                            | <b>9%</b>  | <b>16%</b>    |
| Kianda           | 100%                     | 0%                                  | 0%                                    | 0%         | 0%            |
| Kisumu Ndogo     | 75%                      | 50%                                 | 50%                                   | 25%        | 75%           |
| Laini Saba       | 82%                      | 54%                                 | 3%                                    | 13%        | 10%           |
| Raila            | 50%                      | 0%                                  | 50%                                   | 0%         | 50%           |
| <b>Korogocho</b> | <b>89%</b>               | <b>58%</b>                          | <b>14%</b>                            | <b>17%</b> | <b>20%</b>    |
| Highbidge        | 100%                     | 100%                                | 0%                                    | 33%        | 33%           |
| Kisumu Ndogo     | 100%                     | 67%                                 | 0%                                    | 0%         | 0%            |
| Korogocho B      | 50%                      | 50%                                 | 0%                                    | 0%         | 25%           |

<sup>a</sup> Electricity was continuous if there were no major disruptions in service during the week prior to the interview.

Source: APHRC, 2013

Table 7.6 displays an overview of the services offered by health providers in Kibera and Korogocho. The total number of facilities is 178 in Kibera and 184 in Korogocho, but the low number of providers offering many services reveals some of the inadequacies of the health system in both communities. The official populations of Kibera and Korogocho are approximately 200,000 and 50,000 respectively, and the median number of rooms among all facilities is 3 (total number of rooms, not just exam rooms). With only one or two providers offer common services like assisted delivery and x-rays, households' ability to access these services is likely limited.

**Table 7.6: Services Offered at Clinics and Health Facilities**

|  | <b>Kibera</b> | <b>Korogocho</b> |
|--|---------------|------------------|
| Offers TB diagnosis  | 20            | 25               |
| Offers TB treatment  | 13            | 9                |
| Offers immunizations   | 29            | 36               |
| Offers HIV testing   | 64            | 77               |
| Offers antiretroviral therapy  | 13            | 8                |
| Offers treatment of opportunistic infections                           | 86            | 78               |
| Offers minor surgery and wound care                                    | 69            | 131              |
| Offers assisted delivery   | 1             | 2                |
| Offers caesarian section   | 1             | 0                |
| Offers oral health care  | 93            | 57               |
| Offers inpatient care  | 16            | 32               |
| Offers ultrasound  | 1             | 0                |
| Offers x-ray   | 1             | 0                |
| Offers CT scan or MRI  | 1             | 0                |
| Offers blood transfusion   | 1             | 0                |
| Offers oxygen  | 1             | 0                |
| Operating theater available  | 1             | 0                |
| Offers trauma surgery  | 1             | 1                |
| Facility has a clinical officer and either an RN or registered midwife | 33            | 47               |
| Facility has a clinical officer only                                   | 36            | 25               |
| Facility has either a registered nurse or registered midwife only      | 47            | 66               |
| Facility does not have a CO, RN, or RM                                 | 62            | 46               |

*Source: APHRC, 2013*

One set of questions included in the APHRC service assessment instrument captures information about service fees, providing insight into the financial dimension of the micro-experience. Table 7.7 lists the percentage of facilities that charge fees for health services, as well as the portion of fee-charging facilities that post or furnish a list of fees, apply fees uniformly across all patients, and consider financial situation when adjusting fees. Fewer facilities in Kibera collect fees, but more fee-charging facilities in Korogocho adjust fees based on patients' ability to pay.

**Table 7.7: Indicators of Service Fees by Village and Slum**

|                  | <b>Charges fees for services</b> | <b>Fees posted</b><br>(% of those that charge) | <b>Fees uniformly applied</b> | <b>Non-uniform fees depend on financial situation</b><br>(% of those without uniform fees) |
|------------------|----------------------------------|--|-------------------------------|--|
| <b>Kibera</b>    | 89%                              | 51%  | 60%                           | 31%  |
| Kianda           | 50%                              | 0%   | 100%                          | --   |
| Kisumu Ndogo     | 50%                              | 50%  | 50%                           | 100%   |
| Laini Saba       | 95%                              | 49%  | 49%                           | 21%  |
| Raila            | 100%                             | 50%  | 50%                           | 0%   |
| <b>Korogocho</b> | 96%                              | 21%  | 23%                           | 23%  |
| Highridge        | 100%                             | 33%  | 0%                            | 33%  |
| Kisumu Ndogo     | 100%                             | 0%   | 0%                            | 33%  |
| Korogocho B      | 75%                              | 100%   | 0%                            | 33%  |

*Source: APHRC, 2013*

## ***Civil Society***

### *Organizations*

Within the APHRC data on civil society organizations located in Kibera and Korogocho, there are several variables that relate to meso-level sociopolitical and organizational conditions that may affect households' micro-experience of health provision. Table 7.8 displays the number of civil society organizations (CSOs) operating in each village and slum when the data was collected in 2009. Given the population differences across settlements and villages, the distribution of CSOs by location does not offer much insight. Even after accounting for population, however, the large number of CSOs in Korogocho B is initially puzzling. Based on the household survey, Korogocho B has the lowest level of associational activity out of all villages in the sample. This discrepancy highlights the danger in using singular measures such as the number of organizations to represent a factor like associational activity when the theoretical concept and mechanisms depend on the depth and breadth of the interactions facilitated by group membership. The village is located at the center of Korogocho, and a closer look at the organizations listed for Korogocho B shows that the majority of these CSOs do not promote associational activity within the village. Several are non-formal schools, others are external NGOs with operations in the slum, and some are service providers that do not involve group membership or activities.

Though not conveyed in any of the quantitative indicators in the tables in this section, a review of the mission statements of all CSOs yielded a noticeable difference in the nature of associations in the settlements. Of the 259 organizations in Korogocho, 86 are inwardly focused; their mission statements reference “members,” and goals are limited to securing benefits for members. The most common activities include providing financial assistance to members in need and supporting one another. Among the 317 CSOs in Kibera, only 16 expressed an inward focus; an additional 11 included references to both members and the larger community.

The relative concentration of membership-focused organizations in Korogocho and community-focused organizations in Kibera may partially account for several of the differences noted in the previous section. First, the number of CSOs that provide support to members in Korogocho could explain why higher household-level community involvement is associated with a decrease in the probability of being unable to access care when treatment was needed. In Kibera, where fewer formalized channels for assistance exist, community involvement has no effect on access. Second, the larger share of CSOs targeting community-wide improvements and support in Kibera may explain why village-level associational activity is positively and significantly associated with the accessibility of non-state services and the affordability of fees at the facility most frequently visited by household members. Steinberg and Baxter (1998) argue that community accountability promotes affordability and access, and effective mechanisms for accountability require collective action and organization around health concerns. Though the presence of organizations working for community-wide changes is an insufficient proxy for accountability, it may indicate greater potential for effective accountability compared to communities without such organizations.

### *Partnerships and Networks*

As a possible indicator of the extent of cooperation among groups and the strength of networks, I calculated the average number of partners the organizations reported working with in implementing their activities. Both the average number of



partners and the percent of all CSOs with partners are higher in Kibera. Comparing the average number of partners by village in Kibera to some of the village-level sociopolitical factors from Chapter 6 (in Table 6.4), the relative values of average partners correlate perfectly (and positively) with group membership but not with bridging trust. One of the consistent findings from previous chapters was the difference between the effects of structural forms of social capital (e.g., group membership) and the cognitive forms (e.g., bridging trust). The correlation between organizational partnerships and group membership may suggest a similar pattern at the organizational level.<sup>67</sup>

**Table 7.8: Civil Society Organizations and Partnerships by Slum and Village**

|                  | Number of CSOs | Mean Number of Partners | St. Dev.    | Min      | Max      | Percent of all organizations with partners |
|------------------|----------------|-------------------------|-------------|----------|----------|--|
| <b>Kibera</b>    | <b>317</b>     | <b>2.21</b>             | <b>2.11</b> | <b>0</b> | <b>9</b> | <b>73%</b>                                 |
| Kianda           | 19             | 2.11                    | 2.23        | 0        | 7        | 68%  |
| Kisumu Ndogo     | 9              | 2.78                    | 2.59        | 0        | 7        | 78%  |
| Laini Saba       | 42             | 1.88                    | 2.11        | 0        | 9        | 74%  |
| Raila            | 7              | 3.86                    | 2.54        | 0        | 7        | 86%  |
| <b>Korogocho</b> | <b>259</b>     | <b>1.42</b>             | <b>1.71</b> | <b>0</b> | <b>6</b> | <b>54%</b>                                 |
| Highridge        | 18             | 1.22                    | 1.77        | 0        | 5        | 44%  |
| Kisumu Ndogo     | 12             | 1.17                    | 1.59        | 0        | 5        | 50%  |
| Korogocho B      | 40             | 1.68                    | 1.54        | 0        | 5        | 70%  |

*Source:* APHRC, 2013

The percentages reported in Table 7.9 provide additional information about the organizational context. The portion of CSOs in each location that belong to formal networks closely mirrors the data on partnerships, though fewer organizations participate in networks. One component of Kenya's second National Health Sector Strategic Plan and its focus on community empowerment was the creation of committees and forums at the community, division, and district levels to

<sup>67</sup> A high level of interpersonal trust among households within a community may not be necessary for the formation of organizational partnerships. Since the effectiveness of partnerships is likely what matters in the context of health and education provision, however, interpersonal trust may still be a crucial determinant of effectiveness. Though purely speculative and based on a small sample, these observations once again caution against the use of indicators that are insufficient proxies for the concept of interest.

bring together community groups, civil society organizations, and government officials to jointly review progress toward health targets and give the public opportunities to help shape policies and programs (Luoma et al, 2010). The portion of CSOs with representation on the community health committee, divisional health stakeholder forum, and district health stakeholder forum may be indicators of both cooperation among organizations and the integration of health services into community life. The focus of the vast majority of these CSOs is not health, but their participation in committees designed to facilitate coordination and cooperation and improve health outcomes may be indicative of broad-based organization and collaboration around health concerns and service provision. To the extent that health service providers in the community also actively participate in these committees, there may be greater emphasis on the interdependence of health provision and other areas of community activity and providers may be more socially embedded in the communities. The significantly higher share of CSOs represented at all levels in Kibera may contribute to the differences in the micro-experience between the settlements.

**Table 7.9: Civil Society Organizations and Representation by Slum and Village**

|                  | Percent of CSOs in networks | Percent represented in community health committee | Percent represented in divisional health stakeholder forum | Percent represented in district health stakeholder forum |
|------------------|-----------------------------|---|--|--|
| <b>Kibera</b>    | <b>62%</b>                  | <b>66%</b>  | <b>46%</b>   | <b>33%</b>   |
| Kianda           | 26%                         | 58%   | 37%  | 26%  |
| Kisumu Ndogo     | 33%                         | 56%   | 44%  | 33%  |
| Laini Saba       | 48%                         | 86%   | 64%  | 40%  |
| Raila            | 43%                         | 43%   | 29%  | 14%  |
| <b>Korogocho</b> | <b>53%</b>                  | <b>49%</b>  | <b>17%</b>   | <b>14%</b>   |
| Highridge        | 61%                         | 56%   | 17%  | 11%  |
| Kisumu Ndogo     | 17%                         | 42%   | 8%   | 17%  |
| Korogocho B      | 58%                         | 40%   | 18%  | 15%  |

Source: APHRC, 2013

### *Health Partnerships*

Whereas statistics in Tables 7.8 and 7.9 include all CSOs operating within each settlement and village, the figures displayed in Table 7.10 are limited to CSOs whose main focus is health. Partnerships with other health organizations may be

indicative of cooperation and coordination, and organizations that undertake advocacy activities directed toward the community may increase engagement and social embeddedness. Advocacy activities directed at decision makers and representation in the area stakeholder forums could signal strong organization and leadership around health, service coordination, and mechanisms for community participation. Additionally, public officials and health providers are generally involved in the community, divisional, and district forums; high levels of participation by NSPs and health organizations may strengthen ties between the public and private sectors. Research on the relationship between non-state providers and the state suggests that the extent and nature of linkages between the state and NSPs have important implications for access, equity, and sustainability (Brinkerhoff, 2002; Cammett & MacLean, 2011; Mercer, 1999, 2002; Teamey & McLoughlin, 2009).

A quick glance at the table is instructive. According to the community-level sociopolitical scores in Table 6.4, Raila has the highest level of associational activity and political activism of all the villages. At the same time, average satisfaction with service experiences, satisfaction with the quality of services available in the community, and perceptions of the quality of both state and non-state services are among the lowest in the sample (see Tables 7.2 and 7.3). This is surprising given the theorized role of associational activity and activism in promoting accountability and accessibility, but data from Tables 7.9 and 7.10 indicate that there is very little organization within the village around health concerns. Among all CSOs in the village, representation on community, district, and divisional committees is the lowest in Kibera. There are no CSOs with a health focus, and no groups appear to be engaging community members and leaders in dialog or efforts to improve health service provision.

At the household level, group membership and community involvement may facilitate the transmission of information and resources to help navigate the health system and access services, and the level of associational activity within the village likely enhances these mechanisms by providing more opportunities for involvement

and a larger base of knowledge and experiences to draw from. For these mechanisms, the purposes of the groups and the goals they seek to accomplish could be irrelevant. At the community level, however, the independent effects of associational activity on the micro-experience of service provision may depend on the nature of the informal and formal organizations. Strong organization and leadership around health issues is a condition specified in the theoretical framework, and its importance is heightened in contexts like informal settlements where the service environment is fragmented, regulatory mechanisms are weak or non-existent, and health literacy is low. CSOs and community groups can play a major role in disseminating health information, promoting cooperation and coordination among providers, and establishing and strengthening accountability mechanisms.

**Table 7.10: Characteristics of Civil Society Organizations with a Health Focus**

|                  | Number of CSOs | Have health partners | Community advocacy | Decision maker advocacy | Community Committee | Divisional Forum | District Forum |
|------------------|----------------|----------------------|--------------------|-------------------------|---------------------|------------------|----------------|
| <b>Kibera</b>    | <b>49</b>      | <b>26</b>            | <b>46</b>          | <b>41</b>               | <b>40</b>           | <b>36</b>        | <b>32</b>      |
| Kianda           | 4              | 2                    | 4                  | 3                       | 4                   | 3                | 3              |
| Kisumu Ndogo     | 1              | 1                    | 1                  | 1                       | 1                   | 1                | 1              |
| Laini Saba       | 6              | 1                    | 5                  | 5                       | 5                   | 5                | 4              |
| Raila            | 0              | 0                    | 0                  | 0                       | 0                   | 0                | 0              |
| <b>Korogocho</b> | <b>24</b>      | <b>10</b>            | <b>20</b>          | <b>16</b>               | <b>16</b>           | <b>11</b>        | <b>9</b>       |
| Highridge        | 1              | 0                    | 0                  | 0                       | 0                   | 0                | 0              |
| Kisumu Ndogo     | 0              | 0                    | 0                  | 0                       | 0                   | 0                | 0              |
| Korogocho B      | 5              | 4                    | 5                  | 4                       | 3                   | 2                | 1              |

*Source: APHRC, 2013*

As is often the case, going beyond the number of partnerships and exploring the nature of the partnerships reveals additional organizational-level differences. One of the key conditions outlined in the first section is the integration or embeddedness of health issues and health services into the sociopolitical fabric of the community. In Kibera, 64 CSOs have at least one partner that is either a health service provider or an organization formed to promote improvements in health provision and community health. Only 26 of these CSOs are primarily focused on

health; the fact that 38 non-health organizations have health partners signals some level of integration and embeddedness. The situation is different in Korogocho, where only 27 CSOs report partnerships with health organizations. Ten of these are health-focused organizations, and the most-frequently cited health partner is APHRC, an external policy research organization with an office in the settlement. While APHRC does promote improvements in health service provision in Korogocho, it is unlikely that external leadership and organization around health concerns engenders strong community accountability—unless and until the community takes ownership of externally imposed efforts (Bose, 1983, Otieno, 2012; Steinberg & Baxter, 1998).

Looking even more closely at the individual partnerships and organizations involved further accentuates the contrast between Kibera and Korogocho. CSOs in Kibera that either directly provide health services or focus on improving health outcomes and/or service provision frequently partner with schools, self-help groups, youth groups, and other organizations concentrating on sanitation, public safety, and community development. Table 7.11 describes some of these partnerships and comparable relationships in Korogocho. Although the data does not indicate the nature of the partnerships or the activities involved, the breadth of the relationships between service providers and CSOs suggests a significantly higher level of social embeddedness of health provision in Kibera than in Korogocho. Involvement in community development, sanitation, and safety efforts fosters integration between health and other sectors. Furthermore, the dissemination of information is a key component of accountability mechanisms, broad-based accessibility, and other conditions on which the micro-experience of services depend. By interacting with schools and youth groups, service providers have opportunities to promote health literacy and preventative care from an early age.

**Table 7.11: Partnerships between CSOs and Health Service Providers**

|                  | Kibera  | Korogocho  |
|------------------|---|--|
| Schools          | <b>20</b> CSO schools in Kibera cited at least one CSO health service provider within the community as a partner.   | No partnerships documented.  |
| Self-Help Groups | <b>65</b> self-help groups work with at least one CSO health service provider within the community. 12 of these 65 self-help groups focus on HIV/AIDS.                                  | <b>5</b> self-help groups partner with CSO service providers. 2 of the groups focus on HIV/AIDS, and one group supports “mentally handicapped” residents and partners with Mathari Hospital, the government mental health care facility in Nairobi (located outside Korogocho).        |
| Youth Groups     | <b>6</b> youth groups have a partnership with at least one CSO health service provider in Kibera. 1 of these groups focuses on sports, and 1 is organized by a health facility (AMREF). | No partnerships documented.  |
| Other CSOs       | <b>4</b> additional partnerships: 1 is a community policing CBO, 1 is a sanitation CBO that organizes garbage collection, and 2 are community development organizations.                | <b>5</b> additional partnerships: 4 AIDS NGOs, two of which are located outside of Korogocho in Kariobangi, partner with CSO and public health service providers. APHRC (external policy research organization with office in Korogocho) partners with 2 CSO health service providers. |

*Source:* Author’s analysis of APHRC data (2013)

In addition to offering insight into the social embeddedness of the health system, data on partnerships between non-state service providers may present one indication of the level of cooperation and coordination within the service environment. Since the data only includes NGOs, FBOs, and CBOs and similar information is unavailable for public health facilities and the plethora of private for-profit providers, insight into cooperation and coordination is limited. Nevertheless, contrasts are immediately apparent. Chemi Chemi ya Uzima is a small but heavily utilized faith-based clinic in Kibera, and its partners include a nearby NGO service provider, a private for-profit clinic, the nearest public health center, and Kenyatta National Hospital. Chemi Chemi ya Uzima is also in a formal network with another public health center and is represented in stakeholder forums at the community, division, and district levels. Similarly, Frepals Community Nursing Home, an NGO clinic in Kibera, partners with the Ministry of Health and a number of other NGO and private for-profit service providers in the settlement, belongs to a formal network of health facilities, and is represented at the community and divisional

levels. Of the 14 CSO service providers in Kibera, 10 list at least one other health service provider in the community as a partner.

In Korogocho, however, such partnerships are rare. Service providers may have partners, but the partner organizations do not provide health services and are often external groups. Makwak, a CBO clinic in Korogocho B utilized by a number of respondents, cites Nairobi City Council and the international organization World Vision as partners. It does not participate in any networks and is not represented in health committees at any level. Vision Peoples in Mission is a faith-based provider frequently visited by survey participants, and its only partner is the Christian Health Association of Kenya (CHAK), a national umbrella organization for faith-based health organizations. The sole partner of one organization whose mission is “to advise the community on health issues” is the National AIDS Control Council, and the CSO is not represented beyond the community health committee and does not belong to any networks. Of the 14 CSO health service providers in Korogocho, 4 report partnerships with other providers, and all of the services available at 2 of these CSOs are intended for patients with HIV/AIDS.

Another example that relates to both coordination and social embeddedness is the divergent organizational characteristics of community health workers (CHWs) in Kibera and Korogocho. Though the role and activities of CHWs vary by location, utilizing community members to assist with basic health services is central to Kenya’s health strategy to address the shortage of health professionals and to empower communities to take ownership and responsibility for health services (Otieno, 2012). Three of the CSOs in the APHRC data set are associations of CHWs; two are located in Kibera and one is in Korogocho. The Korogocho Community Health Workers are represented on the community health committee, but not at the district or division forums. The group does not participate in any networks, and it has no partnerships with service providers or organizations in Korogocho. A more recent in-depth study of CHWs in Korogocho noted that only 35 of 400 CHWs are active, and there is little coordination among them (Otieno, 2012). In Kibera, both CHW organizations are represented at the community, division, and district levels

and partner with service providers and other CSOs located inside and outside the settlement.

In general, there appears to be far less coordination and cooperation between service providers in Korogocho than in Kibera, and service providers are much less likely to participate in stakeholder forums. A number of external organizations do partner with individual providers. This may improve capacity or promote higher quality services, but such partnerships can contribute to fragmentation rather than coordination.

### ***Additional Observations***

Before concluding the review of the organizational contexts in Kibera and Korogocho there are two additional observations of note. The first is the potentially outsized role of individual organizations in fostering and sustaining the integration, embeddedness, cooperation, coordination, and accountability mechanisms associated with improvements in health service provision. Many—if not most—of the partnerships between service providers and CSOs in Kibera include clinics operated by the African Medical and Research Foundation (AMREF) and Médecins Sans Frontières (MSF). The AMREF facility is located in Laini Saba, while MSF runs clinics in Kisumu Ndogo and Olympic. Both of these international NGOs receive significant external funding, both have been working in the slum for many years, and community engagement and health promotion are central to the activities of both organizations. Though examining the contributions of AMREF and MSF and assessing the degree to which they are primarily responsible for existing contextual features is not possible without additional research, it warrants further investigation. Experiences cited in existing literature suggest that externally imposed organization and mobilization are ineffective, particularly in empowering communities to hold health service providers accountable (Bose, 1983; Otieno, 2012; Pritchett & Woolcock, 2004; Steinberg & Baxter, 1998). If partnerships and organization around health within civil society facilitate accessible, equitable, and sustainable service provision, understanding if, how, and under what conditions



individual providers and external organizations can initiate effective partnerships is crucial.

The second lingering issue is the role of community-level bridging trust. One of the key findings from Chapter 6 is the persistent significance of community-level bridging trust, particularly in the context of non-state provision. However, a statistical association offers little insight into the mechanism or mechanisms by which trust facilitates improvements in health service utilization and satisfaction. As communities and community organizations play an increasing role in public health policies and development strategies, applied research must offer more than vague invocations of collective action and accountability. Though the sample size is small, exploring the relationship between village-level bridging trust and other meso-level factors suggests possible areas for further research.

**Table 7.12: Correlations Between Village-Level Variables**

| <i>N</i> =7           | Health Sat | Rep    | Health CSO | Advocacy | Fee   | Services | ELF    | Group   | PCA  | Bridging |
|-----------------------|------------|--------|------------|----------|-------|----------|--------|---------|------|----------|
| <b>Avg. HealthSat</b> | 1.00       |        |            |          |       |          |        |         |      |          |
| <b>Representation</b> | 0.61       | 1.00   |            |          |       |          |        |         |      |          |
| <b>Health CSO</b>     | 0.21       | 0.01   | 1.00       |          |       |          |        |         |      |          |
| <b>Advocacy</b>       | 0.46       | 0.52   | 0.83**     | 1.00     |       |          |        |         |      |          |
| <b>Fee</b>            | -0.90***   | -0.33  | -0.22      | -0.33    | 1.00  |          |        |         |      |          |
| <b>Services</b>       | 0.31       | 0.21   | -0.28      | -0.20    | 0.01  | 1.00     |        |         |      |          |
| <b>ELF</b>            | -0.02      | -0.14  | -0.51      | -0.35    | -0.22 | -0.40    | 1.00   |         |      |          |
| <b>Group mem.</b>     | 0.43       | 0.14   | -0.41      | -0.15    | -0.54 | -0.03    | 0.78** | 1.00    |      |          |
| <b>PCA</b>            | 0.43       | 0.14   | -0.62      | -0.39    | -0.54 | 0.10     | 0.73*  | 0.93*** | 1.00 |          |
| <b>Bridging trust</b> | 0.87***    | 0.78** | 0.18       | 0.52     | -0.58 | 0.56     | -0.31  | 0.23    | 0.22 | 1.00     |

The Pearson correlation coefficients displayed in Table 7.12 reveal several notable correlations. As implied by regression coefficient estimates in previous chapters, the correlation of 0.87 between village-level bridging trust and the average health satisfaction score among households in the village is strong, positive, and highly significant. Bridging trust is also positively correlated with the factor scores for integration of health CSOs into the community, CSO advocacy activities, available services, associational activity, and political activism. It is negatively correlated with service fees and ethnolinguistic fragmentation. What is most interesting, however, is the strong, positive, statistically significant correlation

between bridging trust and the factor score for representation of both general CSOs and health CSOs on the community, division, and district health committees.

The relationship makes sense on a theoretical level: bridging trust may contribute to the existence of CSOs focused on community-wide issues and improvements, encourage cooperation among CSOs, and promote involvement in internal and external efforts to strengthen health provision within and beyond the community. Health committees and stakeholder forums provide an institutionalized channel for community members and organizations to offer feedback, shape policy, and potentially hold public and private sector actors accountable to the needs of the community. To the extent that bridging trust promotes more inclusive associational activity and cultivates CSOs and community leaders that seek to represent the entire population, the benefits of representation may be more equitably distributed when bridging trust is higher. Though the relationships between bridging trust, inclusivity, and equity cannot be ascertained from data available for the dissertation, future research examining the nature of health-related associational activity, partnerships, representation, and organizational-level factors in communities with varying levels of bridging trust may help clarify the mechanisms involved in the association between bridging trust and the micro-experience of health services.

## **Conclusion**

Through a qualitative comparison of the meso-level organizational contexts in Kibera and Korogocho, this chapter explored two puzzles. First, secondary data on health service providers in the two settlements offered no evidence of significant differences in the capacity or technical quality of provision between settlements, but indicators across the dimensions of the micro-experience were consistently more favorable in Kibera than in Korogocho. Furthermore, multi-level models including household socio-demographic characteristics and household- and community-level sociopolitical factors revealed differences in the effects if these explanatory variables between the two slums. Given the shared macro-level and institutional

contexts as informal settlements in Nairobi, what community-level factors account for the observed differences? The second puzzle is more conceptual and methodological. If meso-level sociopolitical and organizational contexts shape households' access to, utilization of, and satisfaction with health services, how can meso-level factors be incorporated into research and policy development?

To address these questions, I compared patterns from the household survey and the data on CSOs and CSO service providers through the lens of several meso-level organizational factors found in existing literature. The qualitative examination yielded several findings relevant to the both puzzles, but two offer guidance for the theoretical and methodological challenges. First, many of the quantitative indicators proved to be inadequate proxies for the concepts. The numbers were occasionally misleading, and the most valuable insights came from reviews of organizational mission statements and partnerships.

The second finding follows from the first; rather than relying on quantitative indicators, this analysis suggests that research on the meso-level context should focus on several key processes that operate on the meso level and affect households' experiences with health services. Derived from existing literature and the analysis in this chapter, these processes are: 1) the transmission of information; 2) the integration or social embeddedness of services into the sociopolitical fabric of the community; 3) strong organization around health issues; and 4) representation in the decision-making processes. I will review each of these in more detail in Chapter 8 and suggest questions for further research to generate an understanding of how the mechanisms operate in different contexts and the degree to which they explain household-level outcomes.

## **Chapter 8**

### **Implications for Policy and Practice**

This dissertation set out to explore how the increase in non-state social welfare provision and the ceding of what is traditionally viewed as the responsibility of the state to a diverse group of actors has affected poor households' access to services. In seeking to answer this question, my research deviated from conventional theoretical and empirical approaches employed in studies on state retrenchment and non-state provision in developing countries in several ways. First, I adopted a multi-dimensional conceptualization of access that expands on standard indicators of spatial proximity and service quantity and includes perceptions of accessibility and quality, preferences, utilization, and satisfaction with services. Second, rather than focusing on a particular sector or organization, I gathered information about the full range of state and non-state health and education providers operating in the communities. I wanted to know how and to what extent the entire landscape of service providers meets the needs of community residents. Finally, I explored the relational and contextual nature of service provision through a multi-level analysis that included micro- and meso-level sociopolitical factors and meso-level organizational factors. All three of these deviations from the conventional approach yielded findings relevant to both policy and practice for service provision in low-income urban communities.

## **Key Findings and Implications**

### ***Perceptions Matter***

Social welfare service delivery is widely viewed as a technical exercise, and concerns with the quantity and technical quality of services and providers guide most research, policy, and interventions designed to improve provision and health and education outcomes in developing countries. While these supply side factors are important, outcomes also depend on individuals' service-seeking behaviors. These behaviors are strongly affected by perceptions and preferences; service provision is deeply relational, and slum dwellers make decisions about service utilization based on past experiences, preconceived notions, and a combination of information and misinformation (Bazant et al, 2009; Tooley & Dixon, 2006). Perceptions directly and indirectly affect outcomes, and interventions must either: a) be informed by and responsive to the perceptions of intended beneficiaries; or b) actively work to change perceptions, dispel misinformation, and widely disseminate information to help residents make informed decisions.

### ***Bring the State Back In***

A key finding facilitated by the inclusion of perceptions and preferences in the analysis is the continued credibility of the state as a health provider. Despite regularly encountering problems related to inadequate staffing and drug and other supply shortages, the majority of surveyed households would choose to visit a public health facility even if they had the means to go elsewhere. Even among the most secure households, 46 percent prefer government providers. Households that view government health providers as accessible are less likely to under-utilize health services or to not utilize services at all. Furthermore, while multi-level models in Chapters 6 and 7 revealed that household- and community-level sociopolitical factors affect perceptions, utilization, and satisfaction in the context of non-state health provision, I did not find similar associations for outcomes related to public provision. The fact that experiences with state providers depend less on households' social positionality and the community sociopolitical context suggests that

improvements in equity and universal access to basic health care are more likely to occur under state provision. Rather than continuing to divert aid and donor support to non-state providers, I argue, based on this research, for refocusing on the role of the state in service provision and redirecting efforts toward improving state capacity and service quality.

My argument for reconsidering the role of the state was buttressed by the picture of the non-state sector gleaned from literature reviews, secondary data, and personal observations and experiences from the field. The high-quality, efficient, responsive system of private health providers described in the theoretical and ideological literature promoting the shift toward non-state service provision does not reflect the reality on the ground in Kibera, Korogocho, and many other low-income urban communities across the developing world. The non-state sector is increasingly populated by small-scale, low cost, private for-profit providers catering to the poor. This sector is unregulated, and information about the facilities and the quality of services they provide is generally unavailable. What research has been done suggests that the combination of untrained staff and the incentives created by profit motives and accountability to generally uninformed consumers leads to the over prescription of drugs, repeated treatment of symptoms rather than the underlying causes, and poor health outcomes. Though wealthier citizens may benefit from access to quality services provided by non-state actors, the non-state sector available to poor households looks very different.

### ***Need for a Multi-Level Approach***

Through the addition of household- and community-level sociopolitical variables to the analyses and the use of multi-level models, I highlighted the importance of the meso-level context in shaping the demand for, access to, and effective use of services. The immediate challenge posed by these findings, however, is the problem of generalizability; variables at the different levels condition the effects of variables at other levels. The vague notions of “participation” and “empowerment” at the community level mentioned over and over again in the

development literature and manuals of best practices offer little guidance for how to incorporate the meso level into research and practice. By qualitatively exploring the meso-level organizational context in the two settlements and examining how this context could explain observed variations at both the household and community level, I identified key meso-level processes that affect households' experiences with health services: 1) the transmission of information; 2) the integration or social embeddedness of services into the sociopolitical fabric of the community; 3) strong organization around health issues; and 4) representation in the decision-making processes. Though further research is necessary to generate an understanding of how these mechanisms operate in different contexts and the degree to which they explain household-level outcomes, I provide a theoretical framework for future studies in the next section.

Collectively, empirical findings from this dissertation suggest that any effort to improve health outcomes in low-income urban communities must adopt a multi-level approach that addresses factors affecting service accessibility and utilization at various levels. Health literacy in these communities is low, and misinformation is rampant. Perceptions affect actions, and community sociopolitical and organizational contexts affect perceptions. In particular, interventions, programs, and service providers working at the community level should focus on the integration of health services into the sociopolitical fabric of the community and on the widespread and equitable dissemination of health and health service information.

## **Areas for Further Research**

Throughout this dissertation, a recurring theme has been the limited utility of mainstream models of health and education service utilization to explain observed variations in households' perceptions and experiences. The number of service providers and the availability of specific services did not indicate significant differences in the capacity or technical quality of provision between settlements, but outcomes were consistently more favorable in Kibera than in Korogocho. Even after

models were expanded to include household- and community-level sociopolitical factors, the effects of explanatory variables differed by provider type and settlement. Each successive chapter carved out a greater role for meso-level contextual factors and highlighted the potential for context to condition the effects of micro-level factors and to shape the micro-experience and the strategies and resources on which households rely to access services. Comprehensive conditions and characteristics at the meso level are routinely omitted from research and consideration during the policymaking process, but the dissertation suggests that doing so creates a significant gap in knowledge and leads to a myriad of unintended consequences and ineffective interventions.

A second theme that emerged was the inadequacy of available quantitative measures to characterize the concepts and mechanisms of theoretical and practical interest. An understanding of the complex sociopolitical conditions, relationships, and organizational environments cannot be gleaned from the standard quantitative measures customarily employed in research on service provision in developing countries. Furthermore, the reliance on large data sets and regression models—including those in the preceding chapters—limits our knowledge to statistical associations without providing insight into the mechanisms that produce the associations. If we hope to develop strategies to improve the accessibility, equity, and sustainability of service provision in diverse low-income communities like Kibera and Korogocho, we have to understand the mechanisms.

Insights from this dissertation and existing literature suggest that centrally conceived large-scale, technocratic policies and programs are probably not the answer to problems with service delivery. Rather than developing universal manuals of best practices and policy imperatives that suggest formulaic steps to improve access to quality services, the goal should be to develop an understanding of the most relevant processes and key relationships and interactions at the confluence of the individual, community, organizational, and institutional contexts. To that end, I offer four interrelated areas for future research.



## ***Information***

Many of the micro- and meso-level mechanisms associated with improvements in health service provision and households' ability to access appropriate care relate in some way to the dissemination and receipt of information. Individuals need to know when, where, and how to seek quality treatment. Service providers need to know how to provide effective care for patients, both technically and relationally. Community members, groups, and CSOs need to know how to evaluate available services, how to advocate for improvements, and how to hold providers accountable. Some of the inequalities in service utilization and health outcomes stem from an inequitable distribution of information. Information plays an important role at all levels, and many of the variables used throughout the dissertation capture potential mechanisms or conditions for transmission (e.g., education and age of the household head, household- and village-level community involvement and political activism, trust, etc.).

Many existing studies ask individuals where they go for health-related information and what sources they trust, but the micro-level focus doesn't provide a clear picture of the flow of information in the community. Furthermore, it cannot help identify successful strategies for transmitting important information to everyone, including the most vulnerable and difficult to reach. Can external organizations facilitate this process? Are particular types of community groups or service providers more effective under certain conditions? Do formal partnerships between service providers and schools, self-help groups, or other organizations play a particular role? What about links between both community groups and service providers and external networks? Research that seeks to answer these questions may provide invaluable insight for future efforts to improve access and equity.

## ***Coordination and Cooperation***

The experiences of surveyed households, secondary data on service provision in Kibera and Korogocho, and existing research on service provision in informal settlements depict fragmented service environments populated by many small- and

medium-scale providers offering limited services. The absence of consistent regulation and oversight eliminates one institutionalized channel for cooperation and coordination between service providers, and evidence suggests that effective provider- and community-initiated mechanisms for collaboration are exceptions rather than the norm. Under these conditions, however, communication and cooperation at all levels maximizes efficiency in the use of resources, promotes broad accessibility, enhances the flow of information, and strengthens accountability.

In order to better understand the role of coordination in facilitating improvements in service provision and households' experiences, additional research must explore the meso-level organizational context and identify the incentives and mechanisms that promote coordination. Stability within the service environment is likely an important factor, as the relationships and trust required to establish and sustain effective partnerships require repeated interaction and demonstrated commitment among actors. Beyond that, are formal, institutionalized channels for cooperation (like the community health committees) most effective, or do informal partnerships appear conducive to more organic efforts that better align with the priorities of providers and the community? Is coordination more successful when initiated by service providers or community groups and organizations? To what extent can external networks and NGOs provide a framework for sustained coordination? Evidence from Kibera and Korogocho suggests that the levels of coordination and the role of individual service providers in promoting coordination are very different, so interviews with the CSOs and service providers identified in the dissertation may help to answer some of these questions.

### ***Integration/Social Embeddedness***

Health systems research from the U.S. identifies the integration of health provision with other types of services and economic sectors as a condition for community accountability and provider responsiveness. Due to the technical nature of medical care, the legacy of centralized provision, and past models of service

delivery, health services are not integrated or embedded by default. In the context of informal settlements like Kibera and Korogocho, however, integrated and socially embedded health services may be even more critical for service accessibility, utilization, and the overall health of the community. As expressed in an op-ed in Kibera's *Ghetto Mirror* newspaper, the organically grown, highly interdependent economic, social, political, and communal systems in these communities form a tightly woven social fabric where social capital, bartering, and community support are central to slum dwellers' livelihood strategies (Mutua, 2015). Embeddedness increases providers' awareness of households' needs and the constraints they face in seeking care. The interaction between providers and community members and groups also helps build the trust and relationships on which responsiveness, cooperation between providers and patients, and positive health outcomes depend. When health services, health promotion, and the transmission of health-related information are not embedded in this fabric and integrated into these systems, however, the prospects for community accountability and effective provision diminish. Siloed health systems exist outside the context of households' lives, and the tools and resources on which they rely to meet other needs may not be relevant. Under these conditions, accessing services from trusted providers is far more difficult.

The extent and nature of integration is a key component of the meso-level context, and further research is needed to understand the micro-level effects of integration and document the conditions under which service provision is socially embedded. Strong leadership and organization around health is likely important, but is this organization initiated by providers or community groups (or both)? Are certain types of networks, partnerships, or providers particularly successful at facilitating integration? What strategies may promote integration when services are not socially embedded?

## ***Representation***

Finally, one of the notable observations from the organizational comparisons in Chapter 7 is the apparent correlation between bridging trust and the formal representation of CSOs in committees and stakeholder forums at higher administrative levels. Representation is related to the previous areas: it provides opportunities for the transmission of information, for improved coordination, and for the integration of services into the sociopolitical fabric of the community. The potential benefits of representation extend beyond those functions, however, as formal channels for representation should enhance accountability and give communities and constituent households a greater role in the decision-making processes that govern service provision.

Like the transmission of information, the nature and extent of representation is relevant at multiple levels. Evidence from Kibera and Korogocho suggests that the representation of CSOs and health service providers on community, divisional, and district health committees may increase coordination and give actors with contextual knowledge a say in policies and strategies developed externally but implemented internally. One of the components of community health initiatives in Kenya and other developing countries is the creation of committees at the facility level to involve community members in the governance and oversight of public health providers (Luoma et al, 2010). To the extent that these committees are inclusive and actively involved in decision-making, formal mechanisms for representation like the committees may be very beneficial for accountability, coordination, and integration.

Additional research is needed to examine institutionalized systems of representation at the meso level. How do governing committees at the facility level function, and do similar mechanisms exist among non-state providers? Under what conditions are representatives and channels for representation likely to include all of the diverse interests in the community or to perpetuate the exclusion of vulnerable groups? Do higher levels of bridging trust facilitate representation that is more likely to improve households' experiences of service provision? As

responsibility and ownership is increasingly devolved and the task of improving equity and accessibility is placed on communities, an understanding of the institutional and sociopolitical mechanisms that facilitate equity and accountability may help to avoid repeating the failures of the past.

## **Conclusion**

Meeting the health and education needs of poor households in slums and other disadvantaged urban communities has proven challenging for governments, NGOs, and other actors involved in service provision. Improvements in outcomes have been slow and uneven. In spite of the challenges, ensuring access to and utilization of quality health and education services for these populations is crucial. Empirical evidence indicates that the provision of social welfare services has important effects on poverty, democracy, economic growth, political stability, and social cohesion. Though this research was conducted in two informal settlements in Nairobi, similar trends in urbanization and the provision of health and education services are evident in many developing countries. Current events suggest that the need for accessible, equitable, and sustainable health and education services in poor urban communities will only intensify in the future. It is my hope that this dissertation contributes to a reframing of the state vs. non-state debate that is informed by households' perceptions and experiences, without which we cannot understand how to improve both the technical and functional quality of services and the accessibility and utilization on which outcomes also depend.

## **Appendices**

## Appendix A: Factor Variables

**Table A.1: Descriptive Statistics for Factor Variables**

| Factor<br><i>(Stata name)</i>                         | Components and Loadings  | Obs.   | Mean | St.<br>Dev. | Min   | Max  |
|---|--|--|------|-------------|-------|------|
| <b>Lived Poverty</b>                                  |  | <i>Factor analysis with polychoric correlation<br/>(2 factors explain 99% of variance)</i>               |      |             |       |      |
| Poverty (flow)<br><i>(poverty_f1)</i>                 | Monthly income (0.31); frequency of going without food (0.73); frequency of going without water (0.58); frequency of going without medical treatment/medicines (0.68); frequency of going without fuel for cooking (0.78); frequency of going without a cash income (0.60) | 997  | 3.30 | 0.93        | 0.32  | 4.86 |
| Poverty (assets/stock)<br><i>(poverty_f2)</i>         | Monthly income (0.46); radio ownership (0.44); television ownership (0.71); motorcycle ownership (0.40); bicycle ownership (0.33); electricity (0.62)  | 997  | 0.14 | 0.34        | -0.75 | 2.00 |
| <b>Community Involvement</b>                          |  | <i>Principal component analysis with polychoric correlation<br/>(3 factors explain 75% of variation)</i> |      |             |       |      |
| Community group membership<br><i>(comm_pc1)</i>       | Membership and level of involvement in religious group that meets outside of worship (0.46); membership and level of involvement in savings group or merry-go-round (0.61); membership and involvement in a women's group (0.63)   | 1006   | 1.42 | 1.24        | -0.35 | 5.28 |
| Contact with leaders<br><i>(comm_pc2)</i>             | Frequency of contact with a staff member of an NGO or CBO (0.65); frequency of contact with a traditional leader, religious leader, or other community leader (0.70)   | 1006   | 0.97 | 1.11        | -0.39 | 4.83 |
| Attendance at community meetings<br><i>(comm_pc3)</i> | Frequency of attending any community meeting (0.71); frequency of getting together with others to raise an issue (0.67)  | 1006   | 2.23 | 1.48        | -0.44 | 5.83 |

|  |  |  |      |      |        |       |
|--|--|--|------|------|--------|-------|
| Community involvement<br>( <i>comm_pc</i> )        | Sum of the 3 community involvement factors. This summary factor was created to resolve multicollinearity problems when the individual factors were used in models.   | 1006   | 4.62 | 2.71 | 0      | 13.35 |
| <b>Interpersonal Trust</b>                         |  | <i>Bonding: principal component analysis with polychoric correlation<br/>(2 factors explain 83% of variation)</i>                      |      |      |        |       |
| Bonding: close relations<br>( <i>bonding_rel</i> ) | Trust in family (0.88); trust in neighbors (0.47); trust in members of your own ethnic group/tribe (-0.09)   | 1043   | 2.62 | 1.07 | -0.26  | 4.04  |
| Bonding: co-ethnic<br>( <i>bonding_ethnic</i> )    | Trust in family (-0.69); trust in neighbors (-0.03); trust in members of your own ethnic group/tribe (0.73)  | 1043   | 1.82 | 1.07 | -0.35  | 3.91  |
| Bonding<br>( <i>bonding</i> )                      | Sum of two bonding factors. This single measure of bonding trust was created for use when effects of the two factors were strongly correlated.   | 1043   | 4.44 | 1.79 | 0      | 7.34  |
|  |  | <i>Bridging: principal component analysis with polychoric correlation<br/>(1 factor explains 77% of variation)</i>                     |      |      |        |       |
| Bridging<br>( <i>bridging</i> )                    | Trust in acquaintances (0.71); trust in members of other ethnic groups/tribes (0.71)   | 1018   | 2.36 | 1.11 | 0.21   | 5.39  |
| <b>Institutional Trust</b>                         |  | <i>Principal component analysis with polychoric correlation<br/>(3 factors explain 81% of variation)</i>                               |      |      |        |       |
| Government<br>( <i>confidence_gov</i> )            | Confidence in the President (0.48); Prime Minister (0.39); Parliament (0.57); Local government council (0.55)  | 886  | 2.52 | 1.55 | -0.16  | 6.47  |
| NGO<br>( <i>confidence_ngo</i> )                   | Confidence in Kenyan NGOs (0.71); confidence in international NGOs (0.71)  | 886  | 2.60 | 1.46 | -0.41  | 5.49  |
| Community<br>( <i>confidence_cbo</i> )             | Confidence in CBOs (0.71); confidence in traditional leaders (0.71)  | 886  | 0.65 | 1.12 | -1.84  | 3.85  |
| <b>Political Involvement</b>                       |  | <i>Principal component analysis with polychoric correlation<br/>(2 factors explain 75% of variation)</i>                               |      |      |        |       |
| Political Activism<br>( <i>political_pc1</i> )     | Frequency of contacting a political party official (0.47); campaign meeting or rally attendance (0.49); tried to persuade others to vote for a particular candidate or party (0.53); worked for a candidate or party during the last election (0.52) | 1032   | 0.48 | 0.60 | -0.003 | 1.73  |
| Voting<br>( <i>political_pc2</i> )                 | Voted in the last election (0.99)  | 1032   | 0.84 | 0.34 | -0.12  | 1.12  |
| <b>Perceptions of Services</b>                     |  | <i>Principal component analysis with polychoric correlation<br/>(1 factor explains 76% of variation for non-state, 68% for public)</i> |      |      |        |       |



|  |   |  |      |      |       |      |
|--|---|--|------|------|-------|------|
| Quality of government health services<br>( <i>govhealthqual_pc</i> )     | Frequency of encountering: lack of medicines and other supplies (0.45); rude and/or unhelpful staff (0.49); absent doctors (0.49); long waiting times (0.44); dirty facilities (0.35)   | 990  | 5.34 | 1.66 | 2.22  | 8.88 |
| Quality of non-government health services<br>( <i>ngohealthqual_pc</i> ) | Frequency of encountering: lack of medicines and other supplies (0.43); rude and/or unhelpful staff (0.44); absent doctors (0.47); long waiting times (0.42); dirty facilities (0.47)   | 983  | 8.12 | 1.08 | 2.23  | 8.93 |
| <b>Satisfaction with Services</b>  |   | <i>Principal component analysis with polychoric correlation<br/>(1 factor explains 84% of variation for edu, 69% for health)</i> |      |      |       |      |
| Satisfaction with health services<br>( <i>healthsat_pc</i> )             | Satisfaction with: opening hours of facility (0.36); availability of staff (0.43); capability of staff (0.41); respectfulness of staff (0.44); adequacy of equipment and other supplies (0.40); recovery of patients treated by provider (0.41)   | 931  | 6.78 | 0.79 | 3.20  | 7.33 |
| Satisfaction with education services<br>( <i>satedu_pc</i> )             | Degree to which the following are a problem at the school: insufficient number of teachers (0.31); poor performance on exams (0.35); poor quality of school buildings or facilities (0.32); classroom overcrowding (0.32); students unsafe in school building (0.35); school is located in unsafe area (0.34); students are not being taught (0.36); not enough textbooks (0.33); corruption with finances (0.32) | 527  | 6.96 | 1.82 | 3.00  | 8.99 |
| <b>Village-Level Organizational Factors</b>                              |   |  |      |      |       |      |
| Representation<br>( <i>rep</i> )   | Factor variable measuring CSO representation. Components, with factor loadings in parentheses, include: percent of CSOs represented on community health committee (0.23); percent of CSOs represented in divisional health stakeholder forum (0.16); percent of CSOs represented in district health stakeholder forum (0.49); number of CSOs with a focus on health (0.36).                                       | 7  | 0    | 0.99 | -0.90 | 1.96 |

|                                      |  |   |   |      |       |      |
|--------------------------------------|--|---|---|------|-------|------|
| Health CSOs<br>( <i>health_cso</i> ) | Factor variable measuring integration of health CSOs in the community. Components, with factor loadings in parentheses, include the number of health CSOs that partner with other health organizations and providers in the community (1.17); percent of health CSOs represented on community health committee (0.64).   | 7 | 0 | 0.99 | -1.12 | 1.80 |
| Fee<br>( <i>fee</i> )                | Factor variable measuring the fee structure of service providers in the community. Low values indicate fewer fees and more flexibility to accommodate patients who cannot afford fees. Components, with factor loadings in parentheses: percent of providers that charge fees for services (0.48); percent of fee-charging providers that post fees (0.06); percent of fee-charging providers that apply fees uniformly (-0.50); percent of non-uniform fee-charging providers that take financial situation into consideration (-0.03). | 7 | 0 | 0.89 | -1.54 | 0.84 |
| Advocacy<br>( <i>advocacy</i> )      | Factor variable measuring the advocacy efforts of CSOs and health CSOs. Components, with factor loadings in parentheses, include the percent of CSOs engaged in advocacy in the community (0.10); percent of CSOs that direct advocacy efforts towards decision makers (0.17); percent of health CSOs engaged in community advocacy (0.30); percent of health CSOs that direct advocacy toward decision makers (0.62).   | 7 | 0 | 0.99 | -1.16 | 1.30 |
| Services<br>( <i>sevices</i> )       | Factor variable measuring availability of services in the community. Components, with factor loadings in parentheses, include the percent of providers with electricity (0.35); percent of providers that offer inpatient care (0.84); percent of providers that offer immunizations (0.40); number of providers in the community (0.10).  | 7 | 0 | 1.25 | -1.56 | 1.29 |

## Appendix B: Descriptive Statistics

**Table B.1: Descriptive Statistics**

| <b>Variable</b><br><i>(Stata name)</i>  | <b>Obs.</b> | <b>Mean</b> | <b>St. Dev.</b> | <b>Min</b> | <b>Max</b> |
|---|-------------|-------------|-----------------|------------|------------|
| No health care utilization<br><i>(no_health)</i>                                | 1054        | 0.088       | 0.284           | 0          | 1          |
| No health care access<br><i>(no_care)</i>                                       | 1043        | 0.116       | 0.320           | 0          | 1          |
| Experience with government providers<br><i>(any_gov_health)</i>                 | 1045        | 0.512       | 0.500           | 0          | 1          |
| Experience with non-government providers<br><i>(any_ngo_health)</i>             | 1044        | 0.684       | 0.465           | 0          | 1          |
| Not enrolled in school<br><i>(not_enrolled)</i>                                 | 639         | 0.094       | 0.292           | 0          | 1          |
| Low enrollment percentage<br><i>(low_enroll)</i>                                | 639         | 0.282       | 0.450           | 0          | 1          |
| Experience with public schools<br><i>(any_public_school)</i>                    | 641         | 0.409       | 0.492           | 0          | 1          |
| Experience with non-state schools<br><i>(any_ngo_school and any_ngo_school)</i> | 641         | 0.803       | 0.398           | 0          | 1          |
| Satisfaction with health services<br><i>(healthsat_pc_qt)</i>                   | 931         | 2.585       | 1.143           | 1          | 5          |
| Satisfaction with education services<br><i>(satedu_pc_qt)</i>                   | 527         | 2.981       | 1.399           | 1          | 5          |
| Poverty (flow)<br><i>(poverty_f1_qt)</i>  | 997         | 2.998       | 1.415           | 1          | 5          |
| Poverty (assets)<br><i>(poverty_f2_qt)</i>                                      | 997         | 2.986       | 1.417           | 1          | 5          |
| Age of household head<br><i>(Age_hh)</i>  | 1054        | 36.595      | 11.877          | 18         | 100        |
| Age squared<br><i>(Age_hh2)</i>   | 1054        | 1480.12     | 1028.87         | 324        | 10000      |
| Female respondent<br><i>(Female = 1)</i>  | 1054        | 0.373       | 0.484           | 0          | 1          |
| Female household head<br><i>(Female = 2)</i>                                    | 1054        | 0.226       | 0.418           | 0          | 1          |

|  |      |       |       |       |        |
|--|------|-------|-------|-------|--------|
| Low education<br>( <i>low_ed</i> )   | 1054 | 0.233 | 0.423 | 0     | 1      |
| Medium education<br>( <i>med_ed</i> )  | 1054 | 0.419 | 0.494 | 0     | 1      |
| High education<br>( <i>high_ed</i> )   | 1054 | 0.347 | 0.476 | 0     | 1      |
| Kibera<br>( <i>kibera</i> )  | 1054 | 0.493 | 0.500 | 0     | 1      |
| Public health<br>( <i>health_public</i> )  | 951  | 0.391 | 0.488 | 0     | 1      |
| Public school enrollment<br>( <i>pub_sch_pct</i> )                                     | 641  | 0.300 | 0.404 | 0     | 1      |
| Perception of government health quality<br>( <i>qualgovhealth_pc</i> )                 | 990  | 5.345 | 1.659 | 2.221 | 8.883  |
| Perception of non-state health quality<br>( <i>ngohealthqual_pc</i> )                  | 983  | 8.119 | 1.084 | 2.233 | 8.934  |
| Perception of government health service<br>accessibility<br>( <i>GovHealthAccess</i> ) | 1043 | 2.430 | 0.842 | 1     | 4      |
| Perception of non-state health service<br>accessibility<br>( <i>NGOHealthAccess</i> )  | 1039 | 2.700 | 0.934 | 1     | 4      |
| Perception of government health service<br>affordability<br>( <i>gov_health_cost</i> ) | 1005 | 3.157 | 1.058 | 1     | 4      |
| Perception of non-state health service<br>affordability<br>( <i>ngo_health_cost</i> )  | 1018 | 1.846 | 1.139 | 1     | 4      |
| Perception of public school accessibility<br>( <i>GovEduAccess</i> )                   | 1037 | 2.515 | 0.858 | 1     | 4      |
| Perception of public school quality<br>( <i>qualgovedu_pc</i> )                        | 904  | 6.496 | 2.044 | 2.640 | 10.559 |
| Perception of non-state school<br>accessibility<br>( <i>NGOEduAccess</i> )             | 1045 | 2.707 | 0.933 | 1     | 4      |
| Perception of public school affordability<br>( <i>gov_edu_cost</i> )                   | 983  | 3.231 | 1.027 | 1     | 4      |
| Perception of non-state school<br>affordability<br>( <i>ngo_edu_cost</i> )             | 936  | 2.345 | 0.721 | 1     | 4      |
| Health status<br>( <i>healthstatus_qt</i> )  | 1054 | 2.950 | 1.432 | 1     | 5      |
| Affordability of health service fees<br>( <i>fees</i> )                                | 960  | 2.621 | 0.633 | 1     | 3      |
| Health quality<br>( <i>health_qual_sat</i> )   | 1047 | 2.777 | 0.740 | 1     | 4      |

## Appendix C: Supplemental Tables for Chapter 4

**Table C.1: Correlation Matrix for Independent Variables in Chapter 4**

|  | poverty_f1_qt | poverty_f2_qt | Age_hh | Age_hh2 | no_ed  | high_ed | Female | kibera | pub_sch_pct | health_public | govhealthqual_pc | ngohealth_qual_pc |
|--|---------------|---------------|--------|---------|--------|---------|--------|--------|-------------|---------------|------------------|-------------------|
| Poverty (flow)<br>( <i>poverty_f1_qt</i> )               | 1.000         |               |        |         |        |         |        |        |             |               |                  |                   |
| Poverty (stock)<br>( <i>poverty_f2_qt</i> )              | -0.150        | 1.000         |        |         |        |         |        |        |             |               |                  |                   |
| Age of household head<br>( <i>Age_hh</i> )               | 0.012         | 0.067         | 1.000  |         |        |         |        |        |             |               |                  |                   |
| Age <sup>2</sup><br>( <i>Age_hh2</i> )                   | 0.012         | 0.053         | 0.980  | 1.000   |        |         |        |        |             |               |                  |                   |
| No formal education<br>( <i>no_ed</i> )                  | -0.107        | -0.064        | 0.114  | 0.100   | 1.000  |         |        |        |             |               |                  |                   |
| High education<br>( <i>high_ed</i> )                     | 0.175         | 0.219         | -0.016 | -0.023  | -0.150 | 1.000   |        |        |             |               |                  |                   |
| Female<br>( <i>female</i> )                              | -0.178        | -0.188        | -0.117 | -0.107  | 0.154  | -0.152  | 1.000  |        |             |               |                  |                   |
| Kibera<br>( <i>kibera</i> )                              | 0.100         | 0.175         | 0.049  | 0.046   | -0.139 | 0.272   | -0.191 | 1.000  |             |               |                  |                   |
| Public school enrollment<br>( <i>pub_sch_pct</i> )       | -0.032        | 0.032         | 0.178  | 0.144   | 0.054  | -0.039  | -0.018 | 0.034  | 1.000       |               |                  |                   |
| Public health utilization<br>( <i>health_public</i> )    | -0.018        | -0.095        | 0.058  | 0.061   | 0.042  | -0.022  | 0.085  | -0.194 | 0.032       | 1.000         |                  |                   |
| Government health quality<br>( <i>govhealthqual_pc</i> ) | 0.149         | -0.086        | -0.101 | -0.087  | -0.022 | 0.008   | 0.110  | 0.039  | -0.061      | 0.082         | 1.000            |                   |
| Non-state health quality<br>( <i>qualngohealth_pc</i> )  | 0.133         | -0.026        | -0.033 | -0.016  | -0.043 | 0.047   | -0.045 | 0.041  | -0.040      | -0.076        | 0.044            | 1.000             |

**Table C.2: Average Satisfaction Score by Health Facility**

| <b>Health Facility</b>           | <b>Mean</b> | <b>SE</b> | <b>Health Facility</b>         | <b>Mean</b> | <b>SE</b> |
|----------------------------------|-------------|-----------|--------------------------------|-------------|-----------|
| Neema Hospital                   | 7.329       | 0.001     | Comboni Sisters                | 6.691       | 0.224     |
| Yes 2 Kids                       | 7.329       | 0.001     | Mama Lucy Kibaki Hospital      | 6.690       | 0.399     |
| Empire                           | 7.328       | 0.001     | Kariobangi North Health Center | 6.607       | 0.303     |
| Siaya District Hospital          | 7.328       | 0.001     | Catholic Dispensary            | 6.526       | 0.398     |
| St John                          | 7.328       | 0.001     | Korogocho Dispensary           | 6.518       | 0.468     |
| Coptic                           | 7.226       | 0.102     | Chemist                        | 6.486       | 0.345     |
| Kibera Health Center             | 7.211       | 0.075     | Wema Clinic                    | 6.372       | 0.186     |
| Frepals                          | 7.192       | 0.135     | Olympic Health Center          | 6.369       | 0.959     |
| Kawanga                          | 7.161       | 0.041     | Huruma                         | 6.335       | 0.343     |
| St Mark's Hospital               | 7.130       | 0.200     | Langata/Otiende                | 6.316       | 0.190     |
| Ushirika Health                  | 7.126       | 0.109     | Kariobangi Medical Clinic      | 6.310       | 1.017     |
| Swap                             | 7.123       | 0.204     | Korogocho Health Center        | 6.290       | 0.084     |
| Jamii Clinic                     | 7.099       | 0.130     | Kariogangi Health Centre       | 6.222       | 0.338     |
| Kibera DO Health Center          | 7.052       | 0.118     | Korogocho Community Dispensary | 6.189       | 0.109     |
| Private                          | 7.051       | 0.278     | Makwak                         | 6.145       | 1.182     |
| Shofco Health Center             | 7.049       | 0.173     | Babadogo Health Centre         | 6.097       | 0.441     |
| St Mary Hospital                 | 6.988       | 0.090     | Kakamega General Hospital      | 4.658       | 0.257     |
| Provide Health Centre            | 6.969       | 0.162     |                                |             |           |
| Tumaini Clinic/Hospital          | 6.958       | 0.064     |                                |             |           |
| Kibera South Health Center       | 6.956       | 0.082     | <b>KEY</b>                     |             |           |
| Nairobi West                     | 6.956       | 0.221     | Public Hospital                |             |           |
| Empire                           | 6.934       | 0.393     | Public Health Center           |             |           |
| Saola Health Center              | 6.931       | 0.126     | NGO/CBO                        |             |           |
| Kariobangi Hospital              | 6.927       | 0.273     | FBO                            |             |           |
| Rosade Clinic                    | 6.921       | 0.406     | Private for-profit             |             |           |
| Vision Peoples in Mission        | 6.919       | 0.178     |                                |             |           |
| Kariobangi Mission Dispensary    | 6.914       | 0.252     |                                |             |           |
| Chemichemi Clinic                | 6.852       | 0.119     |                                |             |           |
| CDC Health Centre                | 6.846       | 0.481     |                                |             |           |
| AMREF Health Centre              | 6.793       | 0.094     |                                |             |           |
| Nazareth Mission Hospital Kiambu | 6.771       | 0.560     |                                |             |           |
| Mbagathi District Hospital       | 6.762       | 0.101     |                                |             |           |
| St Mark                          | 6.752       | 0.221     |                                |             |           |
| Kenyatta National Hospital       | 6.743       | 0.097     |                                |             |           |
| Korogocho City Council           | 6.700       | 0.628     |                                |             |           |
| Marura Nursing Home              | 6.696       | 0.450     |                                |             |           |

## **Appendix D: Theoretical Background on Social Capital**

### **Definitions of Social Capital**

Though the exact origins of the concept of social capital are disputed, the importance of social cohesion, trust, and other facets of social structure to democratization, consolidation, economic growth and development, conflict, and other macro-level processes is historically pervasive across the social science disciplines. Beginning in the 1970s, sociologist Pierre Bourdieu (1986) described the social relations that an individual (or group) can mobilize to his or her benefit as a form of cultural capital, introducing the idea that social structures and inequalities are produced and reproduced by more than the traditional forms of economic, physical, and human capital.

In the field of economics, social stratification and exclusion approaches have sought to re-introduce culture into the study of economic mobility. Defined as the unequal distribution of resources over identifiable status groups and cohesion among members of such groups, social stratification acknowledges the critical role played by social and cultural resources in the production and reproduction of inequality (Hoffman, 2006). Highlighting the challenges racial and ethnic divisions and social exclusion pose for economies, Loury (2009) contends that “each individual is socially situated, and one’s location within the network of social affiliations substantially affects one’s access to various resources” (p. 102).

In *Making Democracy Work*, Robert Putnam and colleagues (1993) employed an institutional and essentially macro version of social capital theory to account for differences in democratic and economic performance in Italy. According to their model, social capital—understood as the aggregate of trust relationships, non-hierarchical associative networks, and norms of reciprocity that exist in society—

bridges hierarchical relations and permits the development of a civic-oriented culture shared by all groups. Associative contacts and trust reduce opportunistic behavior and promote collective action. This culture and the coordination it facilitates provide the fuel for more efficient public administration, better governance, and superior economic performance. Tracing political cultures of northern and southern Italy back for centuries, Putnam (1993) finds a very durable pattern of culture and a connection between social capital and economic growth.

By contrast, James Coleman (1990) skips the institutional intermediary and employs a more direct and micro-level interpretation of the concept. Forms of social capital, he asserts, “consist of some aspect of social structure and they facilitate certain actions of individuals who are within the structure” (p. 302). In Coleman’s (1988; 1990) view, social capital has the capacity to foster reciprocal expectations and obligations, reduce transaction costs for private agents, facilitate the circulation of information, and establish norms of cooperation that resolve prisoner’s dilemmas. Coleman’s micro-level perspective is more popular among development scholars, and a strand of literature has emerged that emphasizes the role of social capital in fostering cooperative behavior, easing coordination problems, and reducing the vulnerability of the poor by enabling them to better cope with uncertainty and risk (Bowles & Gintis, 2002; Edelman & Mitra, 2006; Krishna, 2004; Nyangena, 2008; Putnam, 2000).

As some scholars have noted, however, many definitions and theorized effects of social capital do not clearly delineate whether it is an individual attribute or a collective characteristic (Islam et al, 2006). The exception is sociologist Alejandro Portes, who contends that social capital

...refers to the capacity of individuals to command scarce resources by virtue of their membership in networks or broader social structure...to possess social capital, a person must be related to others, and it is these others, not himself, who are the actual source of his or her advantage. (1998, p. 12)

The nature of the social structure and the existence and extent of networks depend on collective characteristics of the community or society in which the individuals



reside, but their positions within them and the benefits they are able to draw from those positions constitute the individuals' social capital.

Regardless of the level at which it operates, treatments of social capital have generally taken one of two forms. Some authors stress its structural features, as evident in the range of formal and informal associations in a community and the extent to which residents participate in them. Others emphasize the cognitive aspects: the feelings of mutual trust and collective efficacy that are fostered by robust and vibrant local associations (Harpham, et al, 2002; Montgomery & Ezeh, 2005; Uphoff, 2000).

## **Critiques of Social Capital Research**

Criticisms of social capital explanations are numerous and varied. The ambiguity of the concept, the lack of consensus on both the definition of social capital and its empirical operationalization, and the purported utility of social capital (in its many forms) in explaining a wide range of social, political, and economic processes and outcomes lead some scholars to dismiss social capital as a rather useless analytical concept invoked to account for outcomes that theories and models fail to explain (Englebert, 2002; Lin, 2001; Ogilvie, 2005; Portes & Landholt, 2000; Schuller et al, 2000). For example, in research evaluating the effects of social capital on economic development, the World Bank defines social capital as “the institutions, relations, attitudes, and values that govern exchanges among people in society and contribute to economic and social development” (Grootaert & van Bastelaer, 2001, p. 4). By equating social capital with institutions, it becomes impossible to examine the effects of the elements of social capital on the institutions. Furthermore, by limiting the definition of social capital to only include those institutions and values that effectively contribute to economic and social development, the effect is guaranteed by the cause.

Similarly, in much of the literature social capital is regarded as an unequivocally positive attribute. Critics of Putnam's theory that associative life generates relations of trust and reciprocity that promote collective action and

democracy countered with the existence of criminal associative networks and exclusive groups that polarize social relations and are anemic to both collective action and democracy. In response, Putnam accounted for the contradiction by distinguishing between different types of social capital. “Bonding” associative activity reinforces existing groups, while “bridging” activities bring distinct groups together. Putnam (2000) acknowledges that bonding can have negative consequences at the macro level while simultaneously benefiting its members at the micro level. This creates an ex post distinction based on the effects rather than on the intrinsic characteristics of social capital, however, and reduces the analytical utility of the concept.

Aside from conceptual and methodological concerns, there are important implications for development practice. Policymakers increasingly promote investments in social capital and social networks as opposed to efforts to strengthen state capacity or address other institutional problems, particularly in developing countries (Brett, 1996; Coleman, 1988; Ogilvie, 2005; Putnam, 1993; UNDP, 1993; World Bank, 2001). Conceptualized at the community or societal level, however, social capital is about the articulation and promotion of collective interests. For participatory mechanisms to function in this way, communities must be devoid of hierarchies, social, political, and economic schisms, inequitable distributions of power, and other forces that create conflicting interests, elevate some residents’ interests above others, or impede collective coordination and cohesion (Mitlin, 2001; Post & Mwangi, 2009). However, many communities—particularly the informal settlements on which this study is focused—are often stratified by income, ethnicity, religion, language, or other cleavages, all of which can be socially, politically, and/or economically salient and divisive (Dagdevrin & Robertson, 2009; K’Akumu & Olima, 2007; Kellet & Garnham, 1995; Mitlin, 2001; Otiso, 2003; Post & Mwangi, 2009; Wit & Berner, 2009; Yap & De Wandeler, 2010). In this context, there are critical obstacles to establishing an organizational structure that equitably represents the diversity of interests, promotes collective action, and functions effectively.

First, fieldwork has revealed that social interaction, reciprocal relationships, and collective action in slums occur more often within the subgroups created by these cleavages than at the ‘community’ level (Beall, 2000). Many welfare organizations and CBOs are based on ethnic or religious affiliations and are only supported by part of the community, facilitating the exclusion or marginalization of other identity groups from the intervention process (Jha et al, 2007; McFarlane, 2008; Mitlin, 2001; Post & Mwangi, 2009; Rakodi et al, 2000). Furthermore, the scarcity of resources available often creates competition both among subgroups and within the community at large; this competition leads individuals and groups to pursue patronage rather than collective mobilization as a means to achieving their desired outcome (Benjamin, 2000; Botes & van Rensburg, 2000; Edelman & Mitra, 2006; Ward, 1990; Wit & Berner, 2009). As Ogilvie’s historical research into pre-industrial guilds suggests, the ‘particularized and differential trust’ engendered by subgroup associative activity does not facilitate collective action, reduce inequality, or strengthen institutional capacity. Instead, the particularization is remarkably durable and actively impedes the development of the ‘generalized and uniform trust’ on which the positive macro-level effects of social capital depend (Ogilvie, 2005).

Second, several dynamics within CBOs often limit their representativeness. Patterns of participation in CBO activities often reveal the exclusion of women and other minority groups. As an investigation into the membership composition of services-oriented CBOs in Nakuru, Kenya, attests, youth and younger adults are largely excluded from membership, and women’s participation is limited to subordinate roles that provide few opportunities to help shape policies and programs or establish connections with external partners (Post & Mwangi, 2009). According to Post and Mwangi’s literature review, the “disempowering impact of women’s participation in collective action” in informal settlements is widespread (2009, p. 677). Participation also tends to be higher among households with higher incomes and more education, leaving the most vulnerable residents without a voice (Asthana, 1994; Berner & Phillips, 2005; Jha et al, 2007; Jenkins et al, 2010; Lizarralde, 2010; Mitlin, 2001; Otiso, 2003; Vakil, 1996; Yap & De Wandeler, 2010).

In some cases, membership in CBOs is restricted to residents who can pay dues, and benefits are allocated exclusively to members (Otiso, 2003; Vakil, 1996). Based on research in Asia, Wit and Berner contend that:

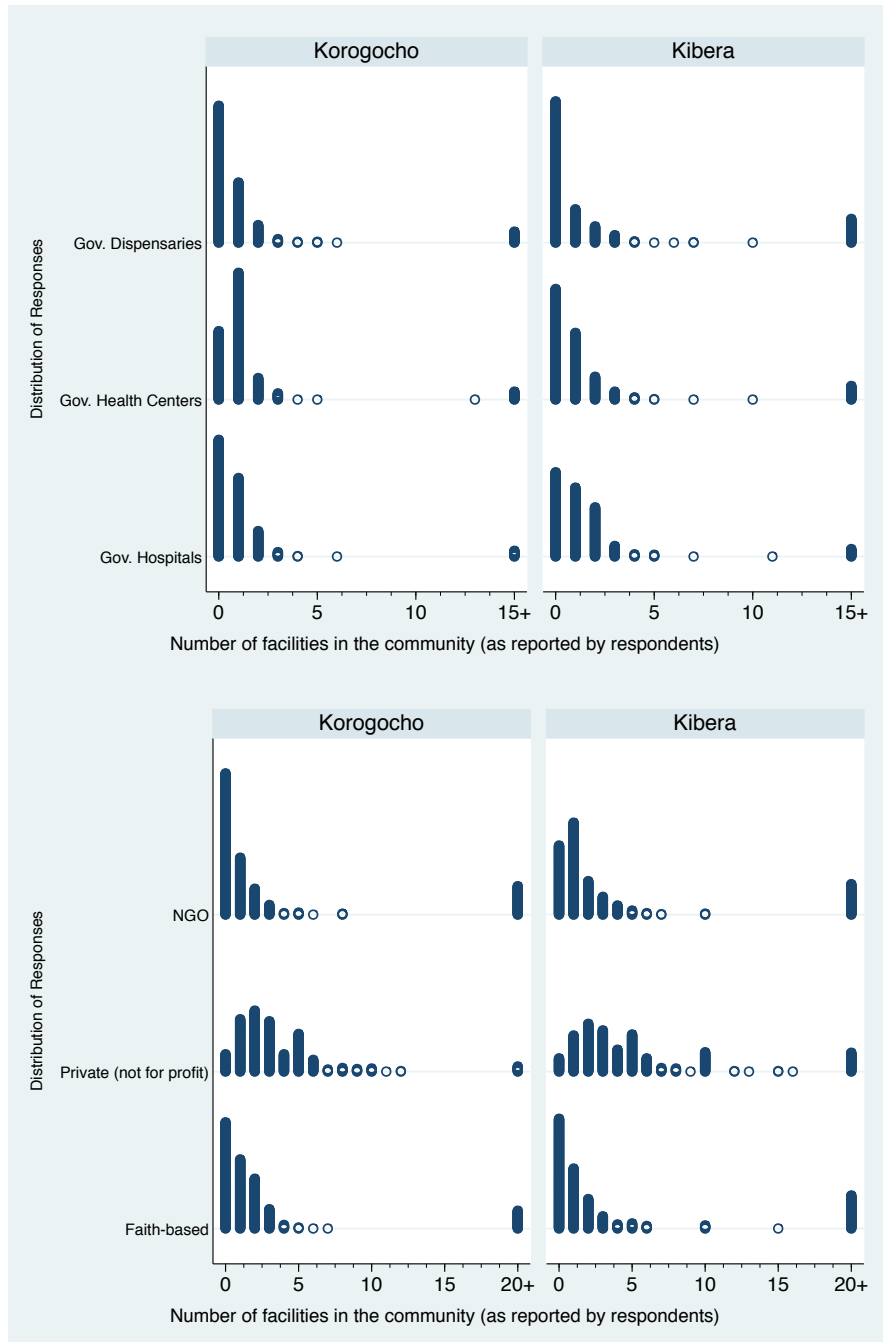
Collective action and slum-wide organizations inevitably reflect local divisions and inequalities and tend to be controlled by local elites...we show [using case studies from India] that in many cases the CBO label is used by a clique of a few shrewd entrepreneurs to obtain benefits which are not widely shared, be it in terms of money or information. (2009, p. 936)

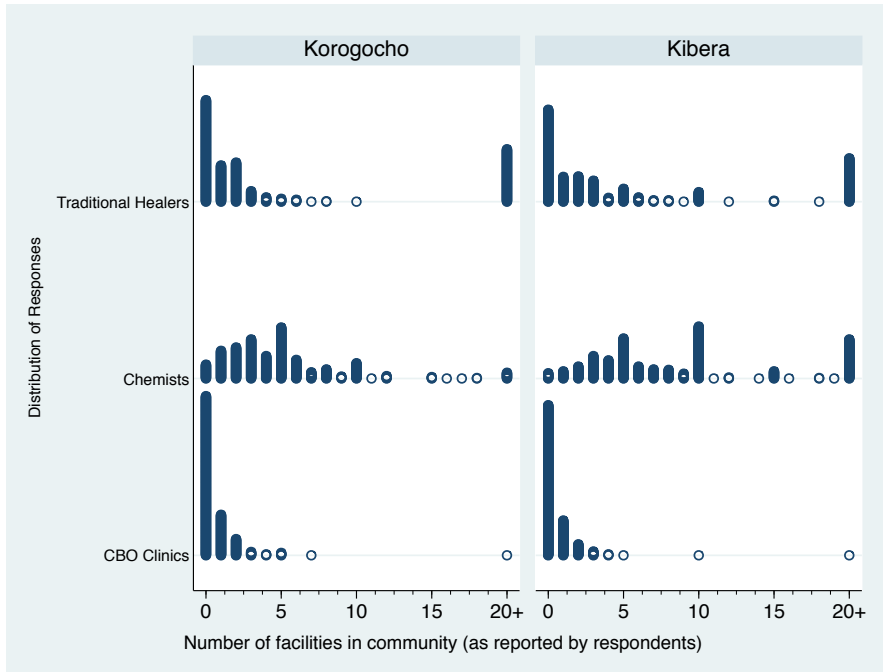
Assuming that the benefits of a community's social capital and the collective action it facilitates are widely distributed is problematic; micro-level examinations of the components of social capital and the effects across the population are critical to understanding the role of socio-cultural factors in social welfare provision (Asthana, 1994; Berner & Phillips, 2005; Botes & van Rensburg, 2000; Jha et al, 2007; Mitlin, 2001; Post & Mwangi, 2009).

As a consequence, the analyses in Chapter 5 do not employ a collective or community level conceptualization of social capital, nor do they view the households' social characteristics as a form of capital that individuals can possess and utilize in some tangible way (see critique by Bowles & Gintis, 2002). Instead, I seek to examine plausible mechanisms by which households' social connections, relationships, and levels of interpersonal and institutional trust affect the micro-experience of service provision. I view these factors as intervening variables whose effects are likely dependent on a number of contextual variables. Within a particular institutional and structural context, elements of social proximity may explain the ways in which people act. Assuming that the rules, norms, and constraints imposed by the institutional and social structures permit a variety of options, social proximity may shape the way in which the actors perceive their options and the costs and benefits associated with each choice. Social factors are probabilistic and will not determine the choices people ultimately make, but social proximity likely affects the lens through which they assess the opportunities, identify possibilities, and evaluate options.

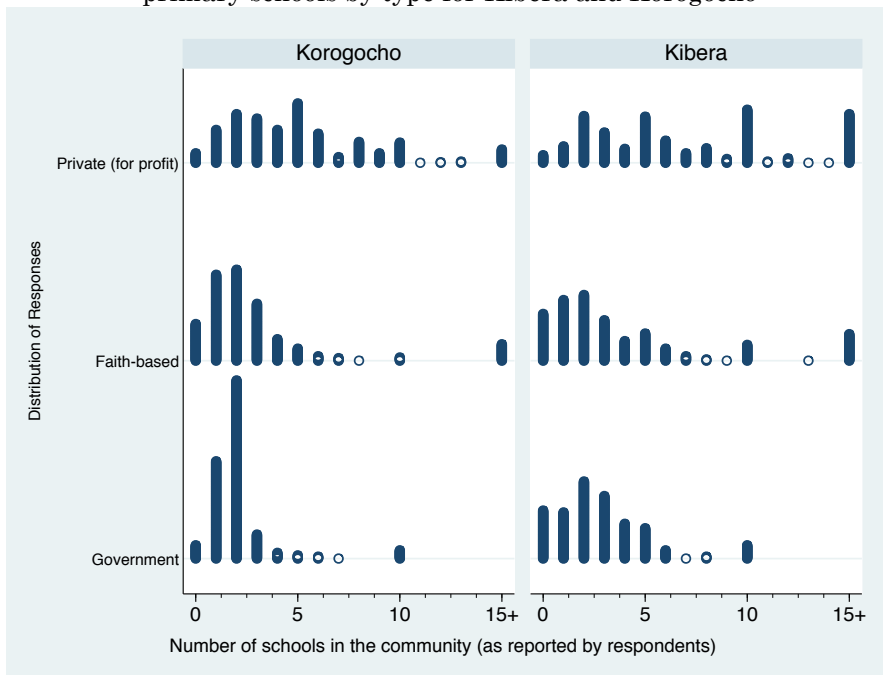
## Appendix E: Awareness of Service Providers

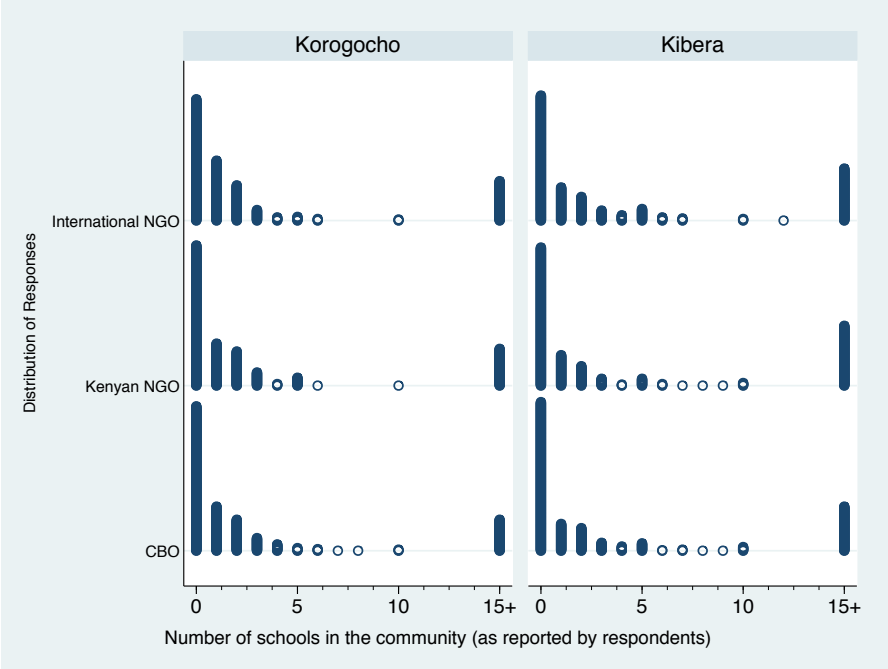
**Figure E.1** Distribution plots depicting respondents' awareness of health providers by type for Kibera and Korogocho





**Figure E.2** Distribution plots depicting respondents' awareness of primary schools by type for Kibera and Korogocho





## Appendix F: Supplemental Tables for Chapter 5

Table F.1: Correlation Matrices for Covariates

|                    | poverty_f1_qt | poverty_f2_qt | Age_hh | Female | low_ed | high_ed | kibera | comm_inv | political | bonding_ethnic | bonding_rel | bridging | confidence_gov | confidence_ngo | confidence_cbo | health_public | pub_sch_pct |
|--------------------|---------------|---------------|--------|--------|--------|---------|--------|----------|-----------|----------------|-------------|----------|----------------|----------------|----------------|---------------|-------------|
| poverty_f1_qt      | 1.00          |               |        |        |        |         |        |          |           |                |             |          |                |                |                |               |             |
| poverty_f2_qt      | -0.14         | 1.00          |        |        |        |         |        |          |           |                |             |          |                |                |                |               |             |
| Age_hh             | -0.11         | 0.09          | 1.00   |        |        |         |        |          |           |                |             |          |                |                |                |               |             |
| Female             | -0.17         | -0.10         | 0.02   | 1.00   |        |         |        |          |           |                |             |          |                |                |                |               |             |
| low_ed             | -0.17         | -0.11         | 0.22   | 0.14   | 1.00   |         |        |          |           |                |             |          |                |                |                |               |             |
| high_ed            | 0.23          | 0.18          | -0.20  | -0.19  | -0.40  | 1.00    |        |          |           |                |             |          |                |                |                |               |             |
| kibera             | 0.13          | 0.12          | 0.04   | -0.21  | -0.26  | 0.21    | 1.00   |          |           |                |             |          |                |                |                |               |             |
| community inv.     | -0.01         | 0.14          | 0.10   | -0.12  | -0.12  | 0.14    | 0.13   | 1.00     |           |                |             |          |                |                |                |               |             |
| political activism | 0.00          | 0.10          | -0.04  | -0.04  | -0.07  | 0.08    | 0.09   | 0.21     | 1.00      |                |             |          |                |                |                |               |             |
| co-ethnic bonding  | -0.04         | -0.10         | 0.04   | -0.01  | 0.08   | -0.09   | 0.01   | 0.03     | 0.01      | 1.00           |             |          |                |                |                |               |             |
| bonding trust      | -0.01         | -0.09         | 0.04   | -0.08  | 0.07   | -0.08   | -0.05  | -0.01    | -0.10     | 0.42           | 1.00        |          |                |                |                |               |             |
| Bridging trust     | -0.06         | 0.00          | 0.06   | -0.07  | 0.02   | -0.04   | 0.12   | 0.04     | 0.01      | 0.45           | 0.28        | 1.00     |                |                |                |               |             |
| confidence_gov     | 0.01          | -0.05         | 0.06   | -0.01  | 0.06   | -0.03   | -0.03  | 0.05     | 0.03      | 0.21           | 0.17        | 0.15     | 1.00           |                |                |               |             |
| confidence_ngo     | 0.02          | 0.04          | -0.00  | -0.07  | -0.08  | 0.10    | 0.13   | 0.10     | 0.04      | 0.11           | 0.13        | 0.17     | 0.27           | 1.00           |                |               |             |
| confidence_cbo     | -0.00         | 0.03          | 0.04   | -0.03  | 0.01   | -0.04   | 0.07   | 0.11     | 0.05      | 0.08           | 0.02        | 0.08     | 0.20           | 0.25           | 1.00           |               |             |
| health_public      | -0.01         | -0.09         | 0.08   | 0.07   | 0.14   | -0.05   | -0.16  | -0.02    | -0.05     | 0.06           | 0.00        | 0.00     | 0.07           | 0.01           | 0.07           | 1.00          |             |
| pub_sch_pct        | -0.04         | -0.05         | 0.19   | 0.01   | 0.05   | -0.00   | 0.04   | 0.16     | 0.14      | -0.00          | 0.05        | 0.05     | 0.01           | 0.08           | 0.05           | 0.05          | 1.00        |



**Table F.2: Affordability of Fees at Most Frequently Visited Health Provider**

| <b>Dependent Variable</b>   |  |           |
|---|--|-----------|
| Affordability of fees at most frequently visited health provider<br><i>(fees)</i> | Response to “The fees charged by [name of facility] for services are...”<br>1 = not affordable; 2 = somewhat affordable; 3 = affordable. |           |
| <i>fees</i>   | <b>Affordability</b>   |           |
|   | Exp ( $\beta$ )  | Robust SE |
| <b>SOCIO-DEMOGRAPHIC</b>  |  |           |
| Public health   | 0.956  | (0.151)   |
| Poverty (flow)  | 1.125**  | (0.067)   |
| Poverty (assets)  | 0.921  | (0.053)   |
| Female respondent   | 0.840  | (0.155)   |
| Female HH   | 0.954  | (0.206)   |
| Kikuyu  | 1.470  | (0.415)   |
| Kisii   | 2.137*   | (0.948)   |
| Luyha   | 1.758**  | (0.474)   |
| Luo   | 1.867**  | (0.505)   |
| Other ethnicity   | 1.365  | (0.442)   |
| Kibera  | 1.280  | (0.215)   |
| <b>SOCIAL PROXIMITY</b>   |  |           |
| High community involvement  | 1.527***   | (0.241)   |
| High bonding (rel)  | 1.118  | (0.176)   |
| High bonding (co-ethnic)  | 1.009  | (0.171)   |
| High political activism   | 1.006  | (0.159)   |
| High bridging trust   | 0.733*   | (0.126)   |
| Constant cut1   | 0.159***   | (0.075)   |
| Constant cut2   | 0.831  | (0.378)   |
| Wald $X^2$  |  | 29.08**   |
| Observations  |  | 829       |

Reference ethnicity is Kamba. Age and education controls included but not shown.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix G: Supplemental Tables for Chapter 6

Table G.1: Health Service Utilization

| DV: <i>no_care</i>         | Model 1:<br>Household Level |           | Model 2:<br>Village Social<br>Capital |           |
|----------------------------|-----------------------------|-----------|---------------------------------------|-----------|
|                            | Exp( $\beta$ )              | SE        | Exp( $\beta$ )                        | SE        |
| Poverty (flow)             | 0.572***                    | 0.056     | 0.564***                              | 0.056     |
| Poverty (assets)           | 1.134                       | 0.097     | 1.120                                 | 0.090     |
| Age                        | 0.915**                     | 0.040     | 0.914**                               | 0.040     |
| Age <sup>2</sup>           | 1.001*                      | 0.0005    | 1.001*                                | 0.0005    |
| Female respondent          | 0.613*                      | 0.171     | 0.609*                                | 0.170     |
| Female HH                  | 0.625                       | 0.191     | 0.622                                 | 0.190     |
| Low education              | 1.383                       | 0.391     | 1.400                                 | 0.403     |
| High education             | 0.727                       | 0.219     | 0.718                                 | 0.218     |
| Med political activism     | 1.453                       | 0.436     | 1.439                                 | 0.433     |
| High political activism    | 1.882**                     | 0.522     | 1.832**                               | 0.511     |
| Med bridging trust         | 1.447                       | 0.413     | 1.495                                 | 0.427     |
| High bridging trust        | 1.543                       | 0.515     | 1.547                                 | 0.513     |
| Med bonding trust          | 0.555*                      | 0.170     | 0.540**                               | 0.166     |
| High bonding trust         | 0.647                       | 0.189     | 0.640                                 | 0.187     |
| Med community involvement  | 0.829                       | 0.226     | 0.846                                 | 0.233     |
| High community involvement | 0.497**                     | 0.155     | 0.513**                               | 0.161     |
| <b>Village Level</b>       |                             |           |                                       |           |
| Med group <sub>v</sub>     |                             |           | 1.938                                 | 0.876     |
| High group <sub>v</sub>    |                             |           | 2.029                                 | 1.304     |
| Med bridging <sub>v</sub>  |                             |           | 2.108                                 | 1.120     |
| High bridging <sub>v</sub> |                             |           | 0.830                                 | 0.352     |
| Constant                   | 3.209                       | 3.261     | 1.662                                 | 1.847     |
| <b>Random Intercepts</b>   | <b>Var.</b>                 | <b>SE</b> | <b>Var.</b>                           | <b>SE</b> |
| Slum ( <i>N</i> =2)        | ≈0                          | --        | ≈0                                    | --        |
| Village ( <i>N</i> =7)     | ≈0                          | --        | ≈0                                    | --        |
| Ethnicity ( <i>N</i> =40)  | 0.190                       | 0.213     | 0.180                                 | 0.192     |
| Wald $\chi^2$              | 56.31***                    |           | 58.29***                              |           |
| Observations               | 895                         |           | 895                                   |           |

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

**Table G.2: Public Health Service Affordability**

|                              | <b>Household Level</b> |           | <b>Village Social Capital</b> |           |
|------------------------------|------------------------|-----------|-------------------------------|-----------|
|                              | Exp( $\beta$ )         | SE        | Exp( $\beta$ )                | SE        |
| Poverty (flow)               | 1.203***               | 0.063     | 1.197***                      | 0.062     |
| Poverty(assets)              | 0.972                  | 0.050     | 0.973                         | 0.049     |
| Age                          | 0.989*                 | 0.006     | 0.989*                        | 0.006     |
| Low education                | 1.054                  | 0.192     | 1.027                         | 0.185     |
| High education               | 1.088                  | 0.179     | 1.110                         | 0.180     |
| Female respondent            | 1.520***               | 0.239     | 1.491**                       | 0.231     |
| Female HH                    | 1.684***               | 0.312     | 1.698***                      | 0.312     |
| <b>Community Involvement</b> |                        |           |                               |           |
| Med community involvement    | 0.769                  | 0.132     | 0.773                         | 0.132     |
| High community involvement   | 0.544***               | 0.097     | 0.561***                      | 0.098     |
| <b>Political Activism</b>    |                        |           |                               |           |
| Med political activism       | 1.289                  | 0.222     | 1.252                         | 0.214     |
| High political activism      | 1.397**                | 0.227     | 1.366*                        | 0.220     |
| <b>Bonding Trust</b>         |                        |           |                               |           |
| Med bonding trust            | 0.849                  | 0.145     | 0.841                         | 0.143     |
| High bonding trust           | 0.749*                 | 0.130     | 0.742*                        | 0.128     |
| <b>Bridging Trust</b>        |                        |           |                               |           |
| Med bridging trust           | 0.639***               | 0.105     | 0.650***                      | 0.107     |
| High bridging trust          | 0.562***               | 0.110     | 0.588***                      | 0.114     |
| <b>Village Level</b>         |                        |           |                               |           |
| Med PCA <sub>v</sub>         |                        |           | 0.537*                        | 0.198     |
| High PCA <sub>v</sub>        |                        |           | 0.484***                      | 0.127     |
| Med bridging <sub>v</sub>    |                        |           | 0.790                         | 0.234     |
| High bridging <sub>v</sub>   |                        |           | 0.624**                       | 0.145     |
| Constant cut1                | -2.448***              | 0.447     | -3.094***                     | 0.495     |
| Constant cut2                | -1.550***              | 0.440     | -2.204***                     | 0.488     |
| Constant cut3                | -0.360                 | 0.437     | -1.024                        | 0.482     |
| <b>Random Intercepts</b>     |                        |           |                               |           |
|                              | <b>Var.</b>            | <b>SE</b> | <b>Var.</b>                   | <b>SE</b> |
| Slum ( $N=2$ )               | 0.077                  | 0.966     | $\approx 0$                   | --        |
| Village ( $N=7$ )            | $\approx 0$            | --        | $\approx 0$                   | --        |
| Ethnicity ( $N=40$ )         | 0.116                  | 0.088     | 0.015                         | 0.038     |
| Wald $\chi^2$                | 68.93***               |           | 86.96***                      |           |
| Observations                 | 864                    |           | 864                           |           |

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

## Appendix H: Supplemental Tables for Chapter 7

**Table H.1: Preferred Health Provider by Slum and Village**

|                  | Government | NGO | CBO | FBO | Private Company | Chemist | Traditional Healer | Don't Know |
|------------------|------------|-----|-----|-----|-----------------|---------|--------------------|------------|
| <b>Kibera</b>    | 44%        | 17% | 1%  | 2%  | 36%             | <1%     | --                 | --         |
| Kianda           | 44%        | 13% | --  | 3%  | 40%             | --      | --                 | --         |
| Kisumu Ndogo     | 27%        | 23% | --  | 2%  | 48%             | --      | --                 | --         |
| Laini Saba       | 51%        | 19% | 1%  | <1% | 27%             | <1%     | --                 | <1%        |
| Raila            | 39%        | 13% | 3%  | 2%  | 43%             | --      | --                 | --         |
| <b>Korogocho</b> | 61%        | 5%  | <1% | 3%  | 28%             | <1%     | <1%                | <1%        |
| Highridge        | 62%        | 6%  | --  | 3%  | 28%             | <1%     | --                 | <1%        |
| Kisumu Ndogo     | 60%        | 4%  | 1%  | 2%  | 32%             | --      | <1%                | <1%        |
| Korogocho B      | 62%        | 5%  | 1%  | 5%  | 26%             | --      | --                 | 1%         |

**Table H.2: Community-Wide Health Service Accessibility**

| <b>Most people in this community are able to get adequate medical treatment.</b> |                          |                 |              |                       |
|--|--------------------------|-----------------|--------------|-----------------------|
|  | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Agree</i> | <i>Strongly Agree</i> |
| <b>Kibera</b>  | 7%                       | 31%             | 54%          | 8%                    |
| Kianda   | 8%                       | 27%             | 54%          | 11%                   |
| Kisumu Ndogo   | 6%                       | 36%             | 52%          | 6%                    |
| Laini Saba   | 7%                       | 31%             | 58%          | 4%                    |
| Raila  | 11%                      | 30%             | 45%          | 14%                   |
| <b>Korogocho</b>   | 14%                      | 37%             | 41%          | 8%                    |
| Highridge  | 15%                      | 34%             | 41%          | 10%                   |
| Kisumu Ndogo   | 17%                      | 38%             | 41%          | 4%                    |
| Korogocho B  | 8%                       | 40%             | 42%          | 10%                   |

**Table H.3: Role of Financial Resources in Facilitating Access to Care**

| <b>Adequate medical treatment is available in this community but only for those with money.</b> |                          |                 |              |                       |
|---|--------------------------|-----------------|--------------|-----------------------|
|   | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Agree</i> | <i>Strongly Agree</i> |
| <b>Kibera</b>   | 1%                       | 15%             | 62%          | 22%                   |
| Kianda  | 3%                       | 17%             | 61%          | 19%                   |
| Kisumu Ndogo  | 2%                       | 18%             | 52%          | 28%                   |
| Laini Saba  | 0%                       | 13%             | 70%          | 17%                   |
| Raila   | 3%                       | 13%             | 52%          | 32%                   |
| <b>Korogocho</b>  | 2%                       | 14%             | 51%          | 33%                   |
| Highridge   | 3%                       | 15%             | 49%          | 33%                   |
| Kisumu Ndogo  | <1%                      | 10%             | 52%          | 38%                   |
| Korogocho B   | 2%                       | 15%             | 56%          | 27%                   |

**Table H.4: Role of Information in Facilitating Access to Care**

| <b>Many people are not able to get adequate medical care because they do not know where to go when they need treatment.</b> |                          |                 |              |                       |
|---|--------------------------|-----------------|--------------|-----------------------|
|   | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Agree</i> | <i>Strongly Agree</i> |
| <b>Kibera</b>   | <b>14%</b>               | <b>47%</b>      | <b>35%</b>   | <b>4%</b>             |
| Kianda  | 14%                      | 45%             | 36%          | 5%                    |
| Kisumu Ndogo  | 19%                      | 45%             | 30%          | 6%                    |
| Laini Saba  | 12%                      | 51%             | 34%          | 3%                    |
| Raila   | 13%                      | 40%             | 42%          | 6%                    |
| <b>Korogocho</b>  | <b>13%</b>               | <b>40%</b>      | <b>37%</b>   | <b>10%</b>            |
| Highridge   | 14%                      | 36%             | 39%          | 11%                   |
| Kisumu Ndogo  | 11%                      | 43%             | 37%          | 9%                    |
| Korogocho B   | 14%                      | 43%             | 34%          | 9%                    |

**Table H.5: Community Leaders and Health Service Accessibility**

| <b>Being a community leader or having connections with a community leader makes it easier to get adequate health care.</b> |                          |                 |              |                       |
|--|--------------------------|-----------------|--------------|-----------------------|
|  | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Agree</i> | <i>Strongly Agree</i> |
| <b>Kibera</b>  | <b>8%</b>                | <b>30%</b>      | <b>49%</b>   | <b>13%</b>            |
| Kianda   | 13%                      | 32%             | 45%          | 10%                   |
| Kisumu Ndogo   | 10%                      | 33%             | 34%          | 23%                   |
| Laini Saba   | 5%                       | 33%             | 52%          | 10%                   |
| Raila  | 4%                       | 18%             | 66%          | 12%                   |
| <b>Korogocho</b>   | <b>8%</b>                | <b>35%</b>      | <b>47%</b>   | <b>10%</b>            |
| Highridge  | 8%                       | 33%             | 50%          | 9%                    |
| Kisumu Ndogo   | 7%                       | 37%             | 43%          | 13%                   |
| Korogocho B  | 10%                      | 35%             | 49%          | 6%                    |

**Table H.6: Community Involvement and Health Service Accessibility**

| <b>Being a member of a community organization makes it easier to get adequate health care.</b> |                          |                 |              |                       |
|--|--------------------------|-----------------|--------------|-----------------------|
|  | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Agree</i> | <i>Strongly Agree</i> |
| <b>Kibera</b>  | <b>8%</b>                | <b>33%</b>      | <b>49%</b>   | <b>10%</b>            |
| Kianda   | 13%                      | 36%             | 43%          | 8%                    |
| Kisumu Ndogo   | 5%                       | 27%             | 48%          | 20%                   |
| Laini Saba   | 5%                       | 38%             | 47%          | 10%                   |
| Raila  | 9%                       | 23%             | 61%          | 7%                    |
| <b>Korogocho</b>   | <b>9%</b>                | <b>37%</b>      | <b>49%</b>   | <b>5%</b>             |
| Highridge  | 9%                       | 36%             | 51%          | 4%                    |
| Kisumu Ndogo   | 12%                      | 34%             | 45%          | 9%                    |
| Korogocho B  | 7%                       | 43%             | 48%          | 2%                    |

**Table H.7: Views on Government Health Provision**

| <b>The government does a good job providing health services.</b> |                          |                 |              |                       |
|--|--------------------------|-----------------|--------------|-----------------------|
|  | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Agree</i> | <i>Strongly Agree</i> |
| <b>Kibera</b>  | <b>8%</b>                | <b>30%</b>      | <b>51%</b>   | <b>11%</b>            |
| Kianda   | 8%                       | 30%             | 50%          | 12%                   |
| Kisumu Ndogo   | 14%                      | 20%             | 50%          | 16%                   |
| Laini Saba   | 6%                       | 34%             | 52%          | 8%                    |
| Raila  | 5%                       | 29%             | 53%          | 13%                   |
| <b>Korogocho</b>   | <b>7%</b>                | <b>25%</b>      | <b>53%</b>   | <b>15%</b>            |
| Highridge  | 9%                       | 22%             | 52%          | 17%                   |
| Kisumu Ndogo   | 6%                       | 28%             | 52%          | 14%                   |
| Korogocho B  | 6%                       | 25%             | 54%          | 15%                   |

**Table H.8: Views on Health Provision by International NGOs**

| <b>International NGOs do a good job providing health services.</b> |                          |                 |              |                       |                   |
|--|--------------------------|-----------------|--------------|-----------------------|-------------------|
|  | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Agree</i> | <i>Strongly Agree</i> | <i>Don't Know</i> |
| <b>Kibera</b>  | <b>2%</b>                | <b>13%</b>      | <b>59%</b>   | <b>20%</b>            | <b>6%</b>         |
| Kianda   | 0%                       | 17%             | 56%          | 19%                   | 8%                |
| Kisumu Ndogo   | 2%                       | 3%              | 48%          | 41%                   | 6%                |
| Laini Saba   | 2%                       | 15%             | 64%          | 14%                   | 5%                |
| Raila  | 5%                       | 8%              | 61%          | 18%                   | 8%                |
| <b>Korogocho</b>   | <b>3%</b>                | <b>19%</b>      | <b>58%</b>   | <b>12%</b>            | <b>8%</b>         |
| Highridge  | 4%                       | 21%             | 53%          | 16%                   | 6%                |
| Kisumu Ndogo   | 1%                       | 19%             | 64%          | 9%                    | 7%                |
| Korogocho B  | 2%                       | 17%             | 61%          | 10%                   | 10%               |

**Table H.9: Views on Health Provision by Kenyan NGOs**

| <b>Kenyan NGOs do a good job providing health care services.</b> |                          |                 |              |                       |                   |
|--|--------------------------|-----------------|--------------|-----------------------|-------------------|
|  | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Agree</i> | <i>Strongly Agree</i> | <i>Don't Know</i> |
| <b>Kibera</b>  | <b>2%</b>                | <b>15%</b>      | <b>63%</b>   | <b>12%</b>            | <b>8%</b>         |
| Kianda   | 2%                       | 19%             | 61%          | 7%                    | 11%               |
| Kisumu Ndogo   | 2%                       | 7%              | 55%          | 29%                   | 7%                |
| Laini Saba   | 1%                       | 17%             | 69%          | 7%                    | 6%                |
| Raila  | 3%                       | 14%             | 56%          | 14%                   | 13%               |
| <b>Korogocho</b>   | <b>3%</b>                | <b>24%</b>      | <b>51%</b>   | <b>12%</b>            | <b>10%</b>        |
| Highridge  | 5%                       | 24%             | 48%          | 14%                   | 9%                |
| Kisumu Ndogo   | 0%                       | 27%             | 52%          | 12%                   | 9%                |
| Korogocho B  | 2%                       | 23%             | 55%          | 8%                    | 12%               |

**Table H.10: Views on Health Provision by CBOs**

| <b>Community groups and organizations do a good job providing health care.</b> |                          |                 |              |                       |                   |
|--|--------------------------|-----------------|--------------|-----------------------|-------------------|
|  | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Agree</i> | <i>Strongly Agree</i> | <i>Don't Know</i> |
| <b>Kibera</b>  | <b>5%</b>                | <b>23%</b>      | <b>51%</b>   | <b>10%</b>            | <b>11%</b>        |
| Kianda   | 5%                       | 24%             | 56%          | 6%                    | 9%                |
| Kisumu Ndogo   | 4%                       | 12%             | 52%          | 22%                   | 10%               |
| Laini Saba   | 5%                       | 28%             | 47%          | 7%                    | 13%               |
| Raila  | 6%                       | 17%             | 55%          | 12%                   | 10%               |
| <b>Korogocho</b>   | <b>4%</b>                | <b>31%</b>      | <b>44%</b>   | <b>6%</b>             | <b>15%</b>        |
| Highridge  | 4%                       | 31%             | 46%          | 7%                    | 12%               |
| Kisumu Ndogo   | 2%                       | 33%             | 46%          | 7%                    | 12%               |
| Korogocho B  | 5%                       | 28%             | 39%          | 4%                    | 24%               |

**Table H.11: Health Facilities by Level of Care**

|                  | <b>Health Center</b> | <b>Clinic</b> | <b>Health Post</b> | <b>Dispensary</b> | <b>Maternity Home</b> | <b>Nursing Home</b> | <b>Hospital</b> | <b>Other</b> | <b>Total</b> |
|------------------|----------------------|---------------|--------------------|-------------------|-----------------------|---------------------|-----------------|--------------|--------------|
| <b>Kibera</b>    | 9                    | 123           | 5                  | 36                | 1                     | 0                   | 1               | 3            | 178          |
| Kianda           | 0                    | 2             | 0                  | 0                 | 0                     | 0                   | 0               | 0            | 2            |
| Kisumu Ndogo     | 2                    | 1             | 1                  | 0                 | 0                     | 0                   | 0               | 0            | 4            |
| Laini Saba       | 2                    | 24            | 1                  | 10                | 1                     | 0                   | 0               | 1            | 39           |
| Raila            | 0                    | 2             | 0                  | 0                 | 0                     | 0                   | 0               | 0            | 2            |
| <b>Korogocho</b> | 8                    | 153           | 4                  | 3                 | 5                     | 7                   | 2               | 2            | 184          |
| Highridge        | 1                    | 2             | 0                  | 0                 | 0                     | 0                   | 0               | 0            | 3            |
| Kisumu Ndogo     | 0                    | 2             | 1                  | 0                 | 0                     | 0                   | 0               | 0            | 3            |
| Koch B           | 0                    | 3             | 0                  | 0                 | 0                     | 0                   | 0               | 1            | 4            |

Source: APHRC, 2013

**Table H.12: Characteristics of Chemists and Pharmacies by Slum**

|   | <b>Kibera</b> |     |         | <b>Korogocho</b> |     |         |
|---|---------------|-----|---------|------------------|-----|---------|
|   | Yes           | No  | Missing | Yes              | No  | Missing |
| Registered by Pharmacy & Poison Board         | 76            | 90  | 4       | 41               | 86  | 2       |
| Licensed by Nairobi City Council              | 111           | 52  | 7       | 83               | 45  | 1       |
| Inspected by Kenya Pharmacy & Poison Board    | 49            | 117 | 4       | 49               | 77  | 3       |
| Facility has access to water source           | 100           | 68  | 3       | 102              | 26  | 1       |
| Facility has access to running water          | 76            | 92  | 2       | 80               | 48  | 1       |
| Dispenses non-OTC medicines                   | 109           | 61  | 0       | 70               | 58  | 1       |
| Facility has a list of registered drugs       | 32            | 132 | 6       | 4                | 122 | 3       |
| Prescribes for minor acute ailments           | 161           | 9   | 0       | 100              | 28  | 1       |
| Prescribes for chronic ailments               | 22            | 148 | 0       | 14               | 114 | 1       |
| All basic infectious disease drugs available  | 56            | 114 | 0       | 17               | 112 | 0       |
| All basic malaria medicines available         | 6             | 164 | 0       | 2                | 126 | 1       |
| All basic pain relief drugs available         | 169           | 1   | 0       | 123              | 5   | 1       |
| All basic cardiovascular drugs available      | 12            | 124 | 34      | 1                | 89  | 39      |
| All basic parasitic infection drugs available | 108           | 61  | 1       | 59               | 69  | 1       |
| Has a systematic patient recording system     | 82            | 88  | 0       | 31               | 96  | 2       |
| Patient records seen                          | 51            | 29  | 90      | 13               | 17  | 99      |
| Dispensing room at least 10x10                | 109           | 59  | 2       | 49               | 78  | 2       |
| Has a refrigerator                            | 23            | 145 | 2       | 14               | 114 | 1       |
| Has a measuring cylinder                      | 20            | 148 | 2       | 16               | 112 | 1       |

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