

A Baseline Analysis of the Katanga Slums:

Informing Urban Public Policy In Kampala, Uganda

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Abstract

Context/Background: Although almost 25 percent of Ugandans live under the national poverty line, little is known about the residents of the Kampala slums, especially pertaining to how conditions compare to other global baselines and how existing conditions affect public policy and service delivery.

Methods: To better understand these conditions, this baseline analysis evaluates a pilot study and three years of cumulative data, involving 452 records from the Katanga slums collected from 2012 to 2015. The data draw from a representative sample of residents and offer an overview of residents' conditions. The analysis evaluates access to health care, access to electricity, access to technology/cell phones, and educational levels to determine how people living in the Katanga slums compare to the global literature.

Results: 78.6 percent report having access to a doctor, 62.4 percent report having access to food, and 87.4 percent report having access to clean water. Subjects resided in the slums on average for eight years with 46 percent immigrating from rural villages to Kampala. Household sizes were between 4-5 persons and respondents reported higher than expected rates of health care access and higher than expected rates of primary and secondary education. Among conditions in the community, respondents reported food security (9.6 percent), money (20.6 percent), theft (8.2 percent), and access to medication (8.2 percent) as daily challenges. Over two-thirds of the respondents reported access to cell phone technology and 70 percent having access to some form of electricity.

Conclusion: The results are useful as a way to inform public policy and guide service delivery from public and nonprofit providers working with people in the slums to more strategically and efficiently target their resources and interventions. More importantly, this study speaks to the importance of establishing baseline studies in other similar settings as a way to gauge impact of public health and community development programs and to better understand and target the needs of people living in slum conditions. This research also sets the stage for more informed and sophisticated analysis of the Katanga slum.

Keywords: Katanga, slum, Uganda, international development, education, public health

Introduction

The spread of urban slums and their growing number of inhabitants creates a challenge for both policy makers and service providers in delivering resources more strategically and efficiently. While a variety of definitions and criteria of what constitutes a slum, the terms commonly relates to an urban congested region that contains inadequate shelter, limited access to basic utilities such as water and/or sanitation, healthcare, and an overall poor quality of living conditions. A challenge to service delivery in slum areas is the lack of information regarding household demographics and conditions of area residents.

However, only a limited body of research on the urban slums in Uganda, and globally for that matter, evaluates the demographics and conditions of the people who live there. The service providers, including both public and nonprofit organizations that work in the slums largely operate on anecdotal information.

Uganda is a Sub-Saharan country in Africa with a total population of over 39 million people (World Bank, 2015). As of 2016, it had gross domestic product (GDP) of \$21.48 billion and is considered low-income. The life expectancy at birth is 59 years and 24.5 percent of its population lives at the national

poverty line. In Uganda, 60 percent of the urban population lives in slum dweller communities and the capital city Kampala is home to approximately 1.7 million people. The 20-year old Katanga slum, centrally located two kilometers from Kampala City Center, is set in a valley between Makerere University and Mulago Hospital. Katanga is one of multiple slums in the Kampala City Center and is the basis for this benchmark analysis.

The purpose of this study is to provide baseline conditions of the Katanga residents as they relate to health care access, access to electricity, access to technology/cell phones, and education levels. These baseline data are compared to recent global data to inform public policy and service providers on key issues for persons living in an urban slum in Kampala. Data were collected from residents of the Katanga slum over a four-year period to assess their home environment, access to health and technology, and education levels. These data formed the baseline for this secondary analysis to provide a more detailed examination of the assessed benchmark.

Literature review & theoretical framework

Currently, over half of the world's population lives in an urban area; this number is growing annually and this influx of urbanization has led to an increasing number of individuals residing in informal settlements commonly known as slums (United Nations, 2014). The 2011 Indian Census estimates that 17.4 percent of urban Indian households live in slums, or over 200 million people (Census of India, 2011). Other developing countries report similar statistics where research has been conducted on existing slums:

- Ciudad Nezahualcóyotl (Mexico) ~1.1 Million People
- Orangi Town (Pakistan) - ~2.4 Million People
- Dharavi (India) - ~1 Million People
- Khayelitsha (South Africa) - ~2.4 Million People

Over time with better data and research, policies can evolve that ultimately affect how policy makers and service providers respond to the conditions in the slums. Like any other complex social living community, slums can be fragile and complex ecosystems that constantly adapt and change over time due to current regional affairs and internal conditions. Understanding these conditions is critical to good policy formation and implementation.

Available evidence indicates that the private sector plays a major role in the progression of developing countries, especially those services that are not subject to market failures such as curative care and family planning. However, there are concerns about the quality of services provided given the diverse

nature of the private and nonprofit sector in these settings (Berman and Rose, 1996). A systematic review of the literature further showed that services provided by the private sector might not be accessible to the poor (Patouillard, 2007). For example, in the context of abortion, perceived high costs of services in private health facilities might lead economically disadvantaged women to resort to unsafe abortions with the attendant morbidity and mortality risks (Mohamed, 2015).

Few studies provided evidence on the impact of private sector interventions on quality and/or utilization of care by the poor. It is, however, evident that many interventions have worked successfully in poor communities and positive equity impacts can be inferred from interventions that work with types of providers predominantly used by poor people. Better evidence of the equity impact of interventions working with the private sector is needed for more robust conclusions to be drawn.

The private sector is a crucial source of care for disadvantaged groups within low and middle income countries. In Guatemala, about 45 percent of the population in the low to medium income sector sought care in the private sector. In South Africa, the number was over 33 percent of the population. The case in Nepal showed that the private sector provided care to more than a third of the lowest income population areas. A review of Demographic Health Survey (DHS) data from 38 countries found heightened levels of private sector activity by those in the lowest socioeconomic regions for childhood diarrhea (34–96% of children) and acute respiratory infections (37–99% of children). In the search to expand coverage of priority interventions, there are vast and effective advantages to working with pre-existing as well as self-sustaining outlets that are used by a variety target populations. For these reasons in particular, the private sector represents a crucial role in the future of extensive health care coverage and intervention among low and middle-income regions (Basu, 2014).

This framework presented is intended to serve as a guide for planning a strategic approach to enhancing the use of survey data in policymaking in the context of low resources:

“The most effective ways of supporting this process include using data to inform policymakers about the scope of a problem, highlighting a lack of access to health services or products, supporting advocacy efforts, and even catalyzing high level political will leading to policy formation and revision. To bring this about, we argue that it is advisable to partner with local institutions trained in survey and statistical methods during survey development, data collection, and dissemination to ensure relevance.

High quality and timely data collection are similarly important, and can drastically improve the efficiency and efficacy of public health policies by facilitating their monitoring and evaluation” (African Population Studies, 2017).

The developmental goals of this analysis are to gather the necessary information and prepare an overall assessment of usefulness for immediate action, ultimately bringing public attention to the issues that are apparent. The research provided can be utilized at city, state, and federal levels of government as well as the NGO and private sector community as applicable, to further address and respond to the current objectives. The further information provided can also be beneficial to the nonprofit sector as well. With access to the pertaining information, nonprofits whose goals are relative to similar circumstances can provide hands-on support to local communities and implement aid even further. The provision of this analysis could spur service delivery opportunities within the health and energy sectors, not only in Uganda, but in other developing areas across the globe.

Health care access

According to the World Health Organization, over 400 million people do not have access to standard health care services across the globe (World Health Organization, 2015). In Africa, the lack of health workers significantly impacts access. Sub-Saharan African averages around 1.15 healthcare workers for every 1,000 citizens. Today, conflicts continue to rise on the issue of mental health. Living in a slum puts major stress on the lives of individuals, through population congestion, pollution, noise, and lack of clean water (Ballesteros, 2010). Cardiovascular diseases are the leading cause of death globally, killing 17.5 million people per year and 80% of deaths from these diseases occur in low- and middle-income countries. Evidence suggests that the main drivers of the global cardiovascular disease epidemic are urbanization and industrialization, which lead to an increase in sedentary lifestyles, unhealthy dietary patterns, tobacco consumption and increased alcohol consumption (World Health Organization, 2015). In Malawi, over 50,000 people die annually from disease. The current HIV/AIDS epidemic continues to impact mortality rates in Eastern and Southern Africa, with estimates that one out of every ten adults are infected with HIV/AIDS. The current status estimates that 19 million individuals live with HIV in this region and 10 percent are denied access to health care services for pre-existing conditions (UNAIDS, 2015). It has been reported that upon young individuals, the correlation between health and sexual activity are of major concern. “The idea that

material deprivation and health behavior are related is well established, several studies on high-income countries have found a strong association between material deprivation and health behavior” (Kamndaya, 2014). Without proper health care implementation of these areas, the environment will continue to dissipate.

Access to electricity

Over 1.6 billion people live without access to electricity with an estimated 600 million in sub-Saharan Africa alone (Global Energy Architecture Performance Index Report, 2016). The Energy Poverty Action initiative of the World Economic Forum estimates that 51 million out of the 54 million individuals (94.7 percent) living in Liberia, South Sudan, Central African Republic, Chad, Sierra Leone and Malawi do not have electricity. (International Energy Agency, 2016). According to the Africa Energy Outlook, there has been an increase in effort to establish electrical stability, yet the average residential electricity consumption per capita is still equivalent to around half the average level of China or one-fifth of Europe. Another raising concern is nearly 730 million individuals rely on the traditional use of solid biomass for cooking. On a yearly basis, nearly 600,000 premature deaths in Africa can be attributed to household air pollution resulting from the traditional use of solid fuels, such as fuelwood and charcoal. Although Africa is rich in energy resources, the energy supply is critically poor. Making reliable and affordable energy widely available is detrimental to the development of a region that accounts for over 13% of the world’s population, but still maintains only 4% of its energy demand (International Energy Agency, 2014).

There are signs of improvement as the World Bank is playing a role in guiding small governments towards more efficient and stabilized energy sources. In Rwanda, electrical access leaped from 6 percent in 2009 to 22 percent in 2015; Tanzania increased from 2.5 percent in 2010 to 24 percent in 2014; and Kenya increased from 23 percent in 2009 to 50 percent in 2016 (Feinstein, 2016). The attempt to reform energy policy in these regions is still one of the most complex issues to date, and due to unprecedented population growth in Africa, the United Nations has made electricity access a developmental priority. One proposal mentioned by the Asian Development Bank Institute in 2016 promotes the construction of energy-efficient houses which can help reduce electricity consumption and greenhouse gas emissions. Housing policies can thus become a vector to achieve environmental objectives. Another example is a housing policy that requires that all dwellings fulfill certain safety and quality standards.

This promotes health and prevents substandard housing. (Yoshino and Helble, 2016).

Access to technology/cell phones

Global access to technology is one of the greatest influences on political, social, and economic impact. Yet, the African continent still lacks most of the essential technological services. Only 47 percent of the world's population is using the Internet, with an estimated 81 percent of users residing in the developed world. The use of technological devices to access the Internet appears to be on the rise. Therefore the development of these long-term infrastructures in Africa become crucial in shaping and stabilizing national economies (United Nations, 2015). Currently, 66 percent of Ugandans have access to a cell phone while 90 percent of persons in South Africa report they do (Pew Global, 2015).

Education levels

Although global education has improved within the past ten years, keeping children in an academic environment remains a global challenge. In sub-Saharan African, over 11 million children drop out of school before completing their primary education. In Asia, that number is estimated to exceed 13.5 million children. According to the Center for Public Information on Population Research (CPIPR), Africa has less than a 50 percent literacy rate among children under-18 years of age (CPIPR, 2014). Correlation between the education of women and poverty reduction play a very specific role in the distribution of the socio-economic and demographic determinants of antenatal care. In rural areas, women's education is significantly associated with antenatal care use (African Population Studies, 2014).

Data & methods

This paper uses the existing literature to establish a baseline of key indicators as a comparison for the data generated from the Katanga residents to inform public policy and service delivery.

Participants

A total of 452 participants were recruited via convenience sampling in the Katanga slums from 2012 to 2015. The mean age of the respondents was 30.8 years with an average of 2.71 children and 2.5 adults in the household. The average respondent had resided in Katanga for 9.6 years.

Survey design

The Katanga Needs Assessment Survey captures information on the living conditions and lifestyles of the Katanga residents. These include demographic, home environment, health and behavior,

environmental safety, and community development priorities of Katanga residents.

An original survey was piloted in 2012. This pilot informed the next round of data collection as the survey was revised, expanded, and re-administered over three years, from 2013 to 2015 the revised survey includes a more in-depth examination of the residents' current health status, access to resources, and education. The final survey included 35 questions prepared in both English and Lugandan (the local and most common language in the region).

Survey administration

Faculty and students from the University of Colorado, along with the Global Livingston Institute, administered the surveys each spring by unpaid student and nonprofit volunteers. Each team of American and Ugandan volunteers was trained in the administration of the survey instrument, overseen by a project leader throughout the data collection process. Trainings, daily progress management, and debrief sessions provided survey consistency and additional project management support. Prior to survey administration, the Katanga slum was mapped and geographically subdivided; the subdivisions were allocated to survey teams, to ensure representative geographical coverage.

Each year, five teams of two or three student volunteers—comprised of local Ugandan survey administrators and American data recorders—visited designated coverage areas to administer these surveys. The entire area was covered through this survey collection approach. Each team was responsible for collecting 20 surveys from its assigned sections on the map and each team had the capacity to conduct the survey in both English and Lugandan. The survey teams conducted interviews between 10:00 AM and 4:00 PM each day. Participants were selected through convenience sampling and each household representative/ participant received a paper copy of the instrument and was asked to complete it either in writing or orally. A household representative was defined as an individual 17 years or older, consenting to represent his/her household at that time.

Data analysis

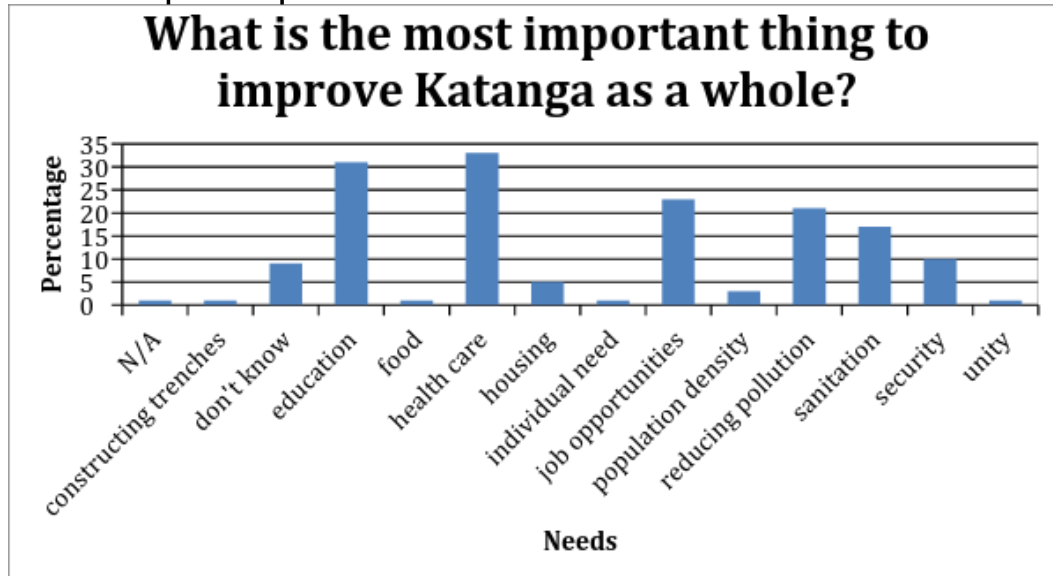
The collected data were coded and entered into an Excel spreadsheet, and then transferred to a statistical processing software, SPSS, for analysis. The longitudinal data were analyzed to examine descriptive statistics, correlations, and measures of association. Finally, the results serve as a baseline for both future research and as a comparison with the existing international data.

Results

In a broad stroke, data revealed that subjects resided in the slums on average for eight years in small (100 square foot) rented homes (82 percent). Of those immigrating to the Katanga slum, 46 percent were

from rural villages in Uganda and 38 percent from elsewhere in Kampala. The average number of people living in each household was between four and five people. Chart 1 shows the distribution of overarching community concerns.

Chart 1: Respondent priorities

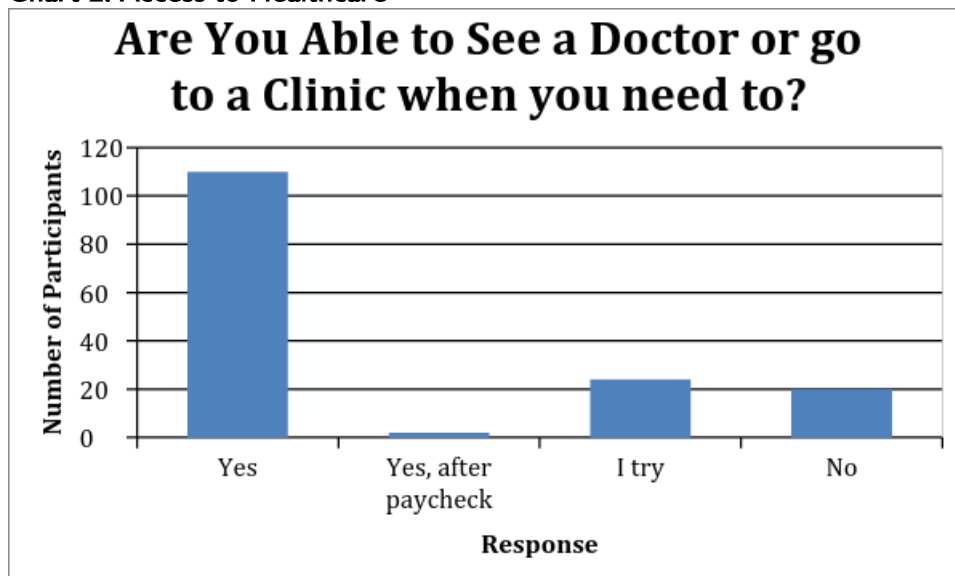


Among conditions in the community, respondents reported food security (9.6 percent), money (20.6 percent), theft (8.2 percent), and access to medication (8.2 percent) as daily challenges. Over half of the sample size identified energy access and sanitation as the predominant issues for the

community (52.1 percent) with respondents reporting electricity (48.3 percent) and medication (31.4 percent) as key priorities.

The data obtained from the Katanga slums provide an overview of the conditions in the slum specifically as they relate to access to health care, electricity and technology, as well as education levels.

Chart 2: Access to Healthcare



Access to Health Care

With Mulago Hospital less than 2 km away, 70.0 percent of residents reported they could access a doctor when necessary while 15.4 percent tried without success; 12.8 percent report that they are

unable to access medical services at all. Chart 2 shows these results. Residents access health services with relative frequency with 74 percent receiving medical attention in the past year. Conversely, nearly 70 percent of participants had never seen a dentist.

Over half of the residents (57.7 percent) reported having mosquito net(s) in their homes and 82 percent of participants report that they wash their hands more than 5 times per day; 99.4 percent intentionally wash before eating.

Despite high rates of medical access, only half of the residents reported feeling healthy at the moment with 55 percent believing that their children were in good health. 67.3 percent reported having some sort of chronic health problem, including but not limited

to skeletal infractions, stomach pains, heart issues, and breathing restrictions. While 82.1 percent had been tested for HIV, 9.6 percent reported a positive test and 16.7 percent did not know their status. Of the sample, 69.9 percent reported having some other type of infectious disease; 21.2 percent reported having malaria, and 4.5 percent reported having tuberculosis. Charts 3 and 4 illustrate these results.

Chart 3: Participant Health Status

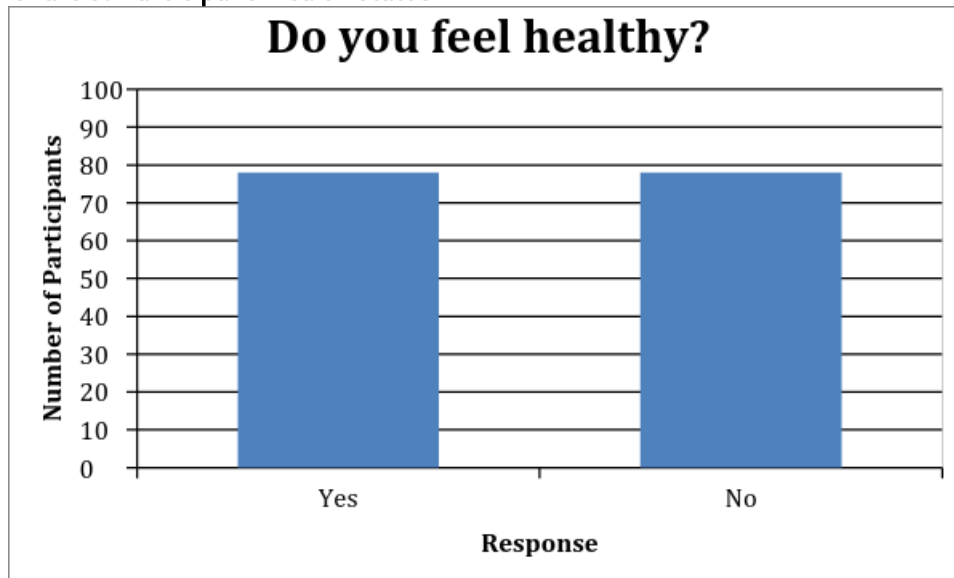
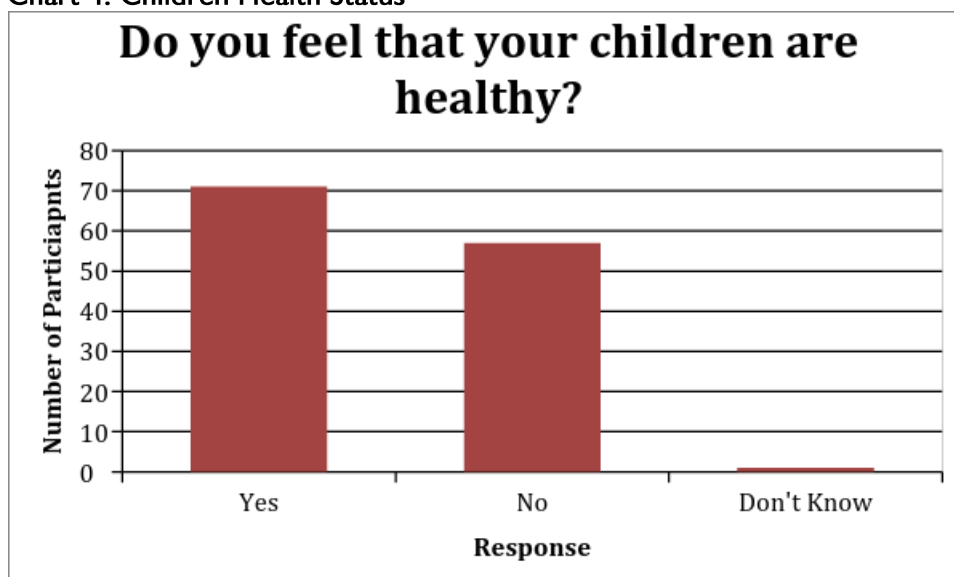


Chart 4: Children Health Status

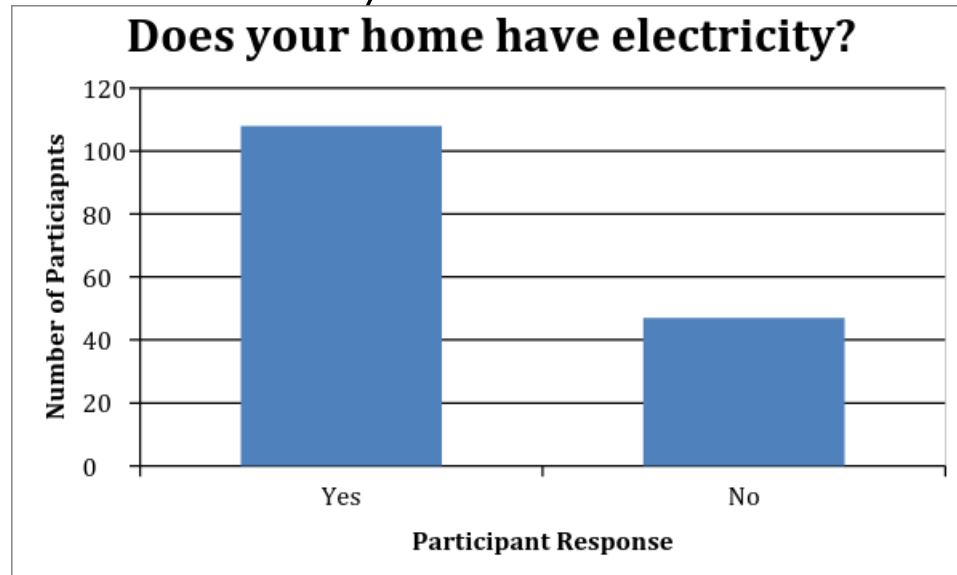


Access to Electricity, Cell Phones & Technology

As illustrated in Chart 5, nearly 70 percent of homes in Katanga reported having electricity and 66 percent of participants reported having a cell phone; 54

percent of those without phones stated that there was at least one in their home. Twelve percent reported using their phones for texting and less than 2 percent had access to regular Internet services on their phones; 33 percent of respondents reported using their phones for business purposes.

Chart 5: Access to Electricity



Education levels

In terms of education levels, 62.5 percent of the respondents had completed schooling up to secondary school. Only 6.17% reported attending university, 3.4% percent reported vocational training, and 12.7% percent reported no school enrollment at all.

Discussion & limitations

These data provide a more complete and formal assessment of the conditions of persons living in the Katanga slums than has previously existed. While this study provides only baseline data, it is important as a means to informing policy and guiding future research. Both NGOs and public sector officials should use this descriptive data as a foundation to inform both policy makers and service providers on their approach to reaching persons in the slums with the appropriate interventions. Consistent with the literature, public health and safety issues are pervasive and education levels are low; although not as severe as the literature suggests. Respondents identified health care, education and job opportunities as high priorities in their community. This baseline sets the state for a strategic framework in which to begin targeting finite resources to have maximum impact in improving public health outcomes. Furthermore, such a baseline is critical to measure efficacy of future interventions and to assess changes in conditions over time.

With limited resources and targeted interventions, information included in this baseline study allows service providers to determine how to better target their resources and employ new interventions and merits additional research and evaluation to measure impact. More specifically, public health providers should take a closer look at the responses related to

clean water and access to a doctor and dentist. While a majority report having access to both there is a need to further understand what discrepancies may exist in reporting and to what extent persons in Katanga actually have access to a doctor or dentist who can provide quality health care.

Although 87 percent of respondents reported having access to potable water, they also identified pollution and sanitation as areas of concern. To the extent that access to potable water and sanitation is a problem, policy makers should better understand the constraints and consider how the different sectors can alter clean water delivery arrangements. The nature of pollution issues should also be further assessed, to understand if they are due to sources external to Katanga, such as factory waste, or to sources internal, such as inadequate trash collection, poor stove fuel, or vehicle exhaust. Improving access to potable water and sanitation and reducing pollution in slum communities will not only improve the quality of life of residents by reducing health consequences of dirty water, it will also improve attainment of sustainable development goals (Adams et al 2015).

Education levels, especially secondary education, exceed the levels that the literature would predict. Yet, very few persons in the slums have access to job training and skills development. Given that one of the priorities for people in Katanga are job opportunities, it is likely that the education and training people are receiving in the slums are not providing people with the skills that they need for entry or basic level employment. As such, policy makers can explore the options for training programs, which might entail understanding the employment needs of the private sector and leveraging the NGO community to prepare and deliver stylized training programs. This

information is critical for both public health and job training interventions that policy makers and service providers might employ in providing services to this slum population.

A positive finding in the data is the extensive use of cellular technology. Contrary to some of the literature on urban slums and poverty in the developing world, over two-thirds of the respondents reported access to cell phone technology. This is consistent with existing research by Pew (2014) where 66 percent of the population in Uganda have access to cellular technology but lower than South Africa where 90 percent report having access, which could speak to the socioeconomic differences between the two countries. Seventy percent of those surveyed report access to some form of electricity compared to fewer than 25 percent in Rwanda and Tanzania and approximately half in Kenya. However the literature suggests that these numbers are changing rapidly (Tanzania moved from 2.5 percent to 24 percent) and merits additional research before parallel comparisons can be made. Recent evidence suggests that cellular technology has a pro-poor bias (James 2016) that can be leveraged for improved individual and community-level educational, employment, and health outcomes.

While it would be difficult to generalize these data beyond the Katanga slums, there are two key conclusions to draw from this study. First, there is a limited amount of literature referencing baseline data on slums such as Katanga that can inform service providers and policy makers on strategies to engage specific to that specific community. Second, while the literature points to overarching disparities in access to health care, technology, and education, these disparities will likely vary by the context of the slum. In this case, the geographic location of Katanga between a major public hospital and a major urban academic institution may explain why access to health care and education levels are higher than might otherwise be expected, while higher rates of cell phone access in South Africa may be related to higher socioeconomic status.

Future research

A benchmark analysis of slum data using this baseline study could better inform service delivery and policy making to improve the way finite resources are deployed and targeted in slum communities both in East Africa and around the globe. As previously stated, this study is not generalizable but is important setting a baseline for future research and analysis both in this slum and other similar urban settings in developing countries.

These data are unique in that they were generated with a certain degree of consistency in

training and collection. However, this research was not initiated as a longitudinal study and there are discrepancies in how the regions were identified throughout the slum and how data collection took place each year to ensure a representative sample. While the methodology was informed by a pilot study, followed by three years of data collection, there are a series of imprecise and inconsistent collection techniques. For example, estimating square footage involved a fair amount of oddly shaped properties that were difficult to judge. The de-identified data were collected over a period of three years using various research teams creating new limitations that challenge the reliability of the study over time; however, all of the research teams were trained by the same researcher and provided with similar instruction over the course of the three years of data collection.

Future research should work to build a more sophisticated data analysis to benchmark changes in slum conditions over time based on interventions employed by the public, private and NGO sectors and should assess best practices that have positive social impact in improving quality of life variables for persons living in urban slums such as Katanga.

This effort would entail taking this baseline data and determine discrepancies between reporting and actual conditions in the slums.

This research should assess the degree to which the public, private, and nonprofit sectors serve the slum community. Where private markets fail, research should explore the effectiveness of public and nonprofit service provision and work to measure what impact, if any, the NGO community that is operating in this slum is having on the overall public health and economic well-being of the persons who live there. These assessments could be attained with more advanced longitudinal panel study, or through deeper ethnographic study. Ethnographic study would provide a deeper understanding of the impact of service provision, and may also help in advancing knowledge of the residents living in poor, underdeveloped communities.

Conclusion

As service providers and policy makers target communities such as the Katanga slums, it is important to understand the population being served in order to be more responsive and strategic operationally. The unique aspects of the Katanga slum where respondents reported higher than expected rates of health care access as well as higher than expected rates of primary and secondary education should impact both the approach policy makers and services providers take to the Katanga slums. This approach might look completely different with a slum

in another country or even another district of Kampala and future research should allow for benchmark analyses that will further inform impact that various interventions and changing community dynamics may be having on the slum. The survey data presented here should also provide a platform to conduct similar baseline research assessments in similar urban slum settings to set the stage for more advanced and sophisticated policy-making and targeted interventions of public, private, and nonprofit organizations. Even baseline data in areas of highly concentrated poverty can significantly improve the policy decisions and interventions targeting these communities.

This analysis provides both a baseline analysis of the persons living in the Katanga slums and offers some general insight to how this data compares to other international data. More importantly this data sets the stage for more advanced research in the Katanga slum and provides a strategic framework for both NGOs and policy makers to make informed decisions as it relates to public health interventions.

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