# Rural Political Economy Effects of Urban Access: Evidence from the D.R.C.*

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## 1 Introduction

Africa is the most rapidly urbanizing continent on earth. Yet, how rapid urbanization is transforming the structures of power and accountability in rural villages remains poorly understood. This project seeks to provide causal evidence about the impacts of access to cities in Africa on the political economy of rural villages.

We study the randomized rollout of a program promoting urban access in rural villages in the Democratic Republic of the Congo (DRC). Implemented by a local NGO called Congo Helping Hands (CHH), this 'City Access Program' (CAP) provides regular weekly transportation by motorbike taxi to the city of Kananga to individuals living in rural villages surrounding the city. CHH's City Access Program has two different components, which form the treatment arms of our study. In a first 'market' arm, CHH provides weekly transportation directly to Kananga's central market, allowing villagers to sell produce and buy goods there as they please. In a second 'social' treatment arm, CHH provides villagers weekly transportation to the city along with an invitation to attend a church group. Churches are the main hub of social networks in Kananga and many African cities. Our project studies the effects of CHH's programs on the leadership of village chiefs and citizens' efforts to hold them to account.

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## 2 Background and Setting

The study takes place in the city of Kananga, in the Kasaï Central Province of the Democratic Republic of Congo (DRC). Kananga, a city of roughly 1.6 million (the fourth largest in Congo), is the seat of the Provincial Government of Kasai Central. Transport infrastructure in Kasaï Central is in severe disrepair, due to heavy rain and a lack of maintenance. As a result, transportation in rural areas is difficult even for 4x4 vehicles. Traveling 50 kilometers out of the city can take up to 4 hours on a motorbike. But most villages are unable to afford motorbikes or other forms of transport, and so they spend days walking to reach the city, or they simply remain in their villages. Congo Helping Hands' City Access Program was designed to help solve this problem.

## 3 Data

### 3.1 Research Design

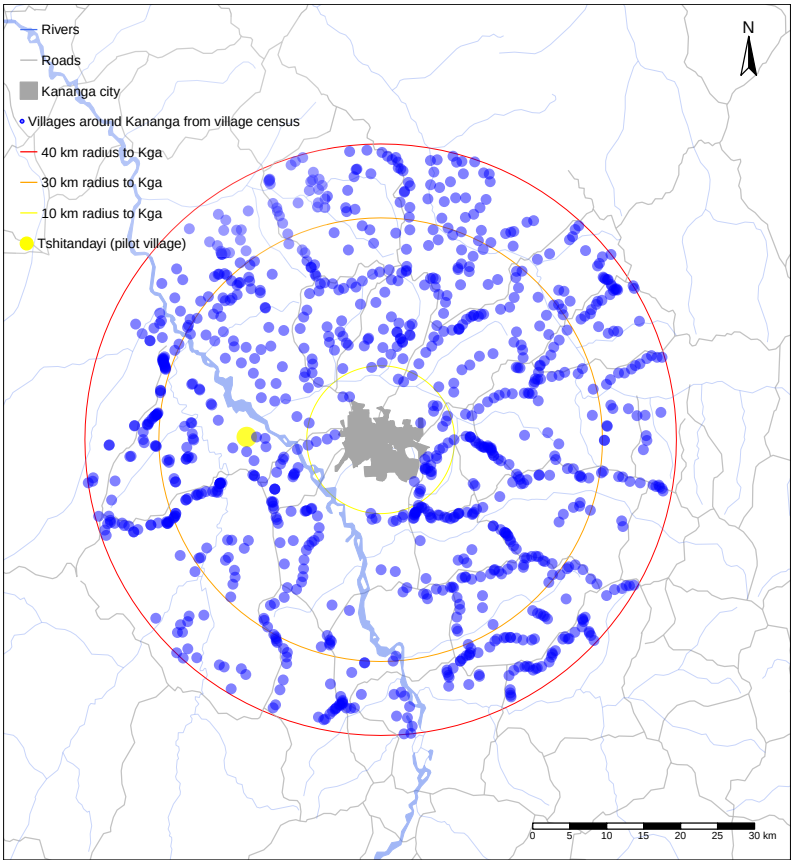
We study Congo Helping Hands' City Access Program, which aims to increase access of rural villages to Kananga. The program provides personalized round-trip transportation to and from Kananga for individuals living in rural villages around the city.[1] The City Access Program has both 'market' and 'social' components. Individuals in the market arm receive transportation directly to Kananga's central market and are invited to transport goods if they like, or to buy products they could resell in the village. Individuals in the social arm receive transportation along with an invitation to join an urban church congregation.

CHH agreed to randomize villages into the 'market' or 'social' arms of their program or to a control group of otherwise similar villages. We collaborated with CHH to achieve a randomization that will enable an impact evaluation of the program. Sampling of respondents and random assignment of villages into the treatment arms occurs in several steps. First, using satellite data and driving time data, we identified all villages that are less than a 3-hour drive from the city's limits. We conducted a village census to collect basic information such as village size and accessibility (Figure 1). We then worked with CHH to identify a set of 300 villages that would be eligible for their program according to the following criteria: (*i*) accessibility by motorbike, (*ii*) a population of fewer than 300 families (where access to services found in cities is especially limited), and (*iii*) continual settlement all year round (rather than only during harvest season, e.g.). We selected the 300 villages that are closest to Kananga by straight line distance, but further than 10 km from the city centre, that fulfilled these criteria.

Second, in all eligible villages, our enumerators randomly sample households and invite

[1] The treatments are similar to the transport subsidy analyzed by Abebe et al. (2021), with the key difference that we study rural-to-urban transport rather than transport within cities.

## Figure 1: Map of village census around Kananga




This map shows the 988 villages mapped in our village census.

them to participate in a baseline survey. Enumerators follow a village-specific house skip pattern to conduct a screening survey. Based on the screening survey, we randomly select main respondents for the baseline survey. Since the CHH program works with couples, we randomly select three couples, i.e. six main respondents per village.[2]

To enable estimation of spillovers, our enumerators also conduct a shorter baseline survey with additional individuals with and without connections to the main respondents. They interview (*i*) one close friend of the main respondents, as revealed in a social network module, and (*ii*) two additional randomly sampled individuals without connections to the main respondents in each village.[3] The survey will enable us to estimate spillover effects on non-participating individuals connected through social networks to participating individuals as well as more generalized spillover effects on individuals sampled randomly in the village.

[2] Note that this sampling approach generates random variation in the share of the population that is treated. We will use this random variation to explore if treatment and spillover effects are more pronounced if a larger share of the village is treated.

[3] All of these surveys occur before villages are assigned to treatment or control, allaying concerns that enumerators' sampling or respondents' availability could be endogenous to treatment.

Third, we randomly assign villages to the two treatments or to control. We stratify the randomization on (*i*) distance from Kananga, and (*ii*) village size.[4] Once the treatments are randomly assigned at the village level, CHH staff invite the main respondents to participate in their program. Table 1 summarizes the numbers of participants across all treatment arms. There are 100 villages in the each of the three treatment groups (including control). In each village, there are six main respondents, or 600 total participants. With six main respondents, up to six network respondents, and two pure control respondents in each village, we expect a full sample size of around 4,200.

The villages in the 'social' arm are randomly assigned to one of 30 churches that CHH works with, which are broadly representative of the landscape of churches throughout Kananga.[5] CHH works with the largest churches in Kananga of different denominations, such as Pentecostal, Protestant, Neo-Apostolic, and Kimbangu. We see this natural heterogeneity of denominations, doctrines, and practices as an asset to our investigation of the program. We plan to examine heterogeneous treatment effects of this treatment as we describe in more detail below (see Section 3.2).

**Table 1: Allocation of units across treatment groups**

| | **Urban social treatment** | **Urban market treatment** | **Pure control** |
|---|---|---|---|
| **Main Respondents** | 600 | 600 | 600 |
| **Network Respondents** | 600 | 600 | 600 |
| **Non-Network Respondents** | 200 | 200 | 200 |
| **Total Respondents** | 1,400 | 1,400 | 1,400 |
| **Villages (clusters)** | 100 | 100 | 100 |

Finally, we plan to collect an endline survey in all villages with the same set of 4,200 respondents sampled at baseline, as well as the village chiefs. These surveys will be conducted roughly six months after the conclusion of the CHH programs (in treatment villages and nearby control villages).

### 3.2 Other Data

We collect additional data to study mechanisms and alternative hypotheses:

[4] Note that this generates geographical variation in distance to other treated and control villages. We will use this random variation to explore spillover effects across villages.

[5] The one exception is that CHH does not work with the Catholic Church because of logistical problems: there are only Catholic services in Tshiluba—the only language understood by most rural residents—at 7 am on Sundays, which is too early for the villagers to arrive on time. Later services are conducted in French without Tshiluba translation.

1. Administrative data on the City Access Program collected by Congo Helping Hands staff in both the market and social arms. These include weekly data on attendance and other details on participation (e.g., the goods bought and sold).
2. Village census around Kananga. Collected by our enumerators, these data provide information about the location and amenities in villages around Kananga.
3. Chief village survey. Collected by our enumerators, these surveys ask the chief about the village and its history.
4. Church census in Kananga. Collected by our enumerators, these data provide basic information about the size and denomination of all houses of worship in the city.
5. Pastor surveys. Collected by our enumerators at a subset of the largest churches in the city and in all villages, this survey focuses on doctrine and congregant details.
6. Church service recordings and surveys. We also collect audio recordings of church services to enable text analysis of their content. Enumerators also record the elements and proceedings of services.

# 4 Analysis

The project's goal is to study the causal effects of access to cities on rural political economy of Congolese villages. Chiefs have enduring importance in sub-Saharan Africa (Baldwin, 2016; Acemoglu et al., 2014). This customary institution has not simply withered away, as modernization theory might have predicted. Rather, in many African countries, chiefs continue to play key roles in politics (Baldwin, 2016), the resolution of conflicts (Gluckman, 2013; Sandefur and Siddiqi, 2013), the allocation of land (Goldstein and Udry, 2008), the provision of public goods (Acemoglu et al., 2014) and public subsidies (Basurto et al., 2019), and the preservation of tradition. That said, like all political leaders, chiefs still must work to gain the support of their people, and their legitimacy is under threat from several sources in contemporary Africa.

First, chiefs thrive primarily in rural areas, where the formal state has less presence (e.g., Logan, 2013). In cities, customary chiefs are typically more ceremonial; they are consulted less frequently by citizens and are viewed as having less legitimacy. However, past work on this urban-rural gap in chiefs' activities and citizens' views of them cannot easily distinguish selection from causal effects of cities. Because it is difficult to find exogenous variation in exposure to urban areas, any observed differences could simply arise from the sorting of those more skeptical of chiefs sorting differentially into cities, while those who are more convinced of chiefs' authority stay in rural areas. The random assignment of Congo Helping Hands' City Access Program can help fill this gap. By comparing participants in treated and control villages, we can bring experimental evidence to bear on these claims about the impacts of cities on village governance and attitudes toward traditional authorities. Crucially, we can

examine how chiefs respond, perhaps by increasing the quality of their leadership.[6]

If the CAP erodes the legitimacy of customary chiefs, a natural mechanism would be that it changes the locus of political engagement from the village level to the provincial or national level. Citizens might be thought to substitute to the formal state and government in lieu of the chief. Our survey includes questions to examine this possibility. Moreover, work from other parts of Africa has argued that churches can have impacts on politics by direct campaigning — i.e., when churches advocate a particular candidate who is sympathetic to the church — or by promoting a set of beliefs that emphasize the importance of good political leadership (McClendon and Riedl, 2019).

Second, much of chiefs' legitimacy hinges on their ability to act as intermediaries between the living and the spirits of their ancestors (Gluckman, 2013; Vansina, 1990). This spiritual legitimacy is under threat by the rapid increase in religiosity registered on the African continent since the 1990s. In particular, since the arrival of Christian missionaries in the 19th century, church leaders have tried to challenge customary beliefs and hierarchies and to supplant them with Christian ones (Douglas, 2013). This has often targeted ancestor worship and related supernatural beliefs (witchcraft, black magic, etc). Overall, this literature would predict that citizens in the social arm would shift away from similar customary supernatural beliefs in favor of Christian ones.

That said, churches are heterogeneous in the degree to which they renounce witchcraft and ancestral spirits. Pentecostal churches, in particular, are often more open to the importance of these customary beliefs. Rather than denying the existence of witchcraft, for example, Pentecostal preachers often address it directly as a threat to welfare and propose solutions for countering it, such as spiritual healing. We will therefore study heterogeneity among the churches participating in the CAP based on the stance they take on customary beliefs and traditional religion, as elicited in our data on sermons and church proceedings and our pastor surveys.

## 5 Heterogeneity

We plan to investigate the following as sources of heterogeneity in the impact of the CAP on outcomes:

1. *Distance to Kananga.* The City Access Program is more of a shock to villagers' access to Kananga in more remote villages. We therefore anticipate larger treatment effects farther from Kananga.

[6] An increase in leadership quality would be predicted by work on political competition (e.g., Besley et al., 2010; Ferraz and Finan, 2011).

2. *Market landscape in the village.* Participants vary in their baseline access to markets. We expect more pronounced treatment effects of the market arm where participants had less access to markets before the CAP. We will use data from our initial village census as well as baseline surveys to measure market access.

3. *Religious landscape in the village.* Participants vary in their baseline access to churches and religiosity. We expect more pronounced treatment effects in villages with less prior exposure to Christian churches, especially Pentecostal churches (which remain predominantly an urban phenomenon). We will use baseline data on participants' religiosity as well as data from the village census and chief survey to estimate access to churches, including mission stations. We will also explore how treatment effects vary by specific types of religious beliefs held by participants. Generally, there may be two countervailing forces at play: those with prior beliefs more concordant with those espoused at the urban church might be more inclined to participate every week, which would magnify effects; but, at the same time, the treatment would also be less novel for this subgroup and likely have a smaller effect. Which of these effects dominates is an empirical question we hope to explore using program administrative data on attendance and a combination of baseline and endline data on beliefs.

4. *Urban church doctrine and practices.* The 30 churches participating in the CAP are heterogeneous in their doctrines, practices, and social networks. As noted throughout, we therefore anticipate studying heterogeneity by different types of beliefs, practices, and other church characteristics. We will use detailed data from surveys with pastors as well as recordings of sermons and church service proceedings to characterize this variation and study its heterogeneous impacts on outcomes.

5. *Agricultural productivity.* Among the villages participating in the CAP, there are different climatic zones with variable suitability for different crops that can be sold in Kananga. We have natural variation in these crop suitabilities and the seasons during which the CAP was running. We can use this variation to study whether villages in zones with suitabilities for more lucrative crops conditional on the season exhibit more pronounced treatment effects.

6. *Exposure to Kamuina Nsapu.* A recent violent conflict, known as the Kamuina Nsapu insurgency, triggered large-scale displacement and claimed thousands of lives. We expect impacts of the program on welfare to be more pronounced in areas that were more affected by this violent conflict.

7. *Time gap before endline survey.* Because of the staggered rollout of the intervention and endline survey, there will be natural variation in the time gap between the two. We will use this variation to study whether treatment effects decay or persist over time.

8. *Duration and frequency of attendance.* We expect stronger effects where participation was exogenously higher. Although participation may often be endogenous, we will explore exogenous shocks like weather, pregnancy, and family deaths as exogenous shifters of participation to obtain variation in treatment intensity.

9. *Village size.* We have natural variation in the size of villages and thus the share of the village that is treated by the CAP. We can use this variation to study spillovers to non-participants in the treatment village. For instance, we can assess whether such spillovers are larger when a larger share of the village is treated, and whether we find evidence for tipping-point effects.

10. *Age.* Research often finds that children and young adults are more plastic in their beliefs than the elderly. Although we do not have children or young adults in our sample, we will examine whether younger participants are similarly more responsive when examining belief outcomes.

11. *Gender.* Women and men often have distinct economic roles. For instance, in focus groups, we learned that some agricultural products are typically sold by women, while others are typically sold by men. This means that the market arm might have differential effects by gender — if for instance the type of customers with whom men and women interact in the city different because of the products they sell (or for some other reason). Similarly, churches often discuss gender and family issues extensively in sermons, and these discussions might impact the sexes differently. Some churches have gender segregated seating or activities. We will therefore explore gender heterogeneity.

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