

# Demographic and Spatial Disparities in Labor Market Outcomes within the Kinshasa Urban Landscape

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## Abstract

This paper examines the labor market and jobs in urban Kinshasa, by drawing on a recently collected household survey and other data sets. It particularly focuses on labor supply and employment patterns, job characteristics, and their spatial nexus. The analysis first shows that female and young workers are more likely to experience unemployment and underemployment than other workers in Kinshasa.

Second, the availability of good quality jobs is still limited in Kinshasa. Third, in addition to the scarcity of good jobs, which are concentrated in the city core, poor accessibility due to the limited connective infrastructure and transport system further reduces job opportunities for people living in the outskirts.

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## 1. Introduction

The Democratic Republic of Congo (DRC) has been in the seemingly paradoxical situation of being a fast-growing economy with a slow pace of poverty reduction and an increasing number of poor. As peace and security have been gradually restored after years of civil war and violence, the DRC has undergone impressive economic progress. The rate of economic growth ranged from 5.6 percent to 6.2 percent between 2002 and 2008, with a period of decline during the financial crisis in 2009. It picked up once again, registering an average growth rate of 7.5 percent in 2010–2015.

This impressive growth, however, has not translated into much benefit for the poor. Poverty incidence (that is, the population's share of poor people) is declining, but by less than 1 percentage point a year (the poverty rate fell from 69 to 64 percent between 2005 and 2012). Fast population growth driven by a high fertility rate (6.6 per woman in 2014) has resulted in an increase in the number of poor and has added pressure on the DRC's already low human development. If current demographic and economic trends continue, the number of poor may increase by 8 million by 2030.

A lack of job opportunities—particularly for the youth—has been one of the factors contributing to the slow pace of poverty reduction in the DRC. A high rate of unemployment and underemployment is cited as an indication that the country's economic growth has not been inclusive. A lack of job opportunities for the youth may create a fertile ground for social unrest, particularly in the context of a post-conflict and fragile state. The World Bank estimates suggest that the DRC needs to create 2 million to 4 million jobs every year to absorb new entrants into the labor market and reduce poverty (World Bank 2018).

This study provides an analysis of the labor market and jobs in urban Kinshasa—the capital of DRC. This focus on Kinshasa is predicated by the fact that it has vast potential to serve as a growth engine for job creation and poverty reduction in the country. Kinshasa is on its way to becoming the largest megacity in Africa over the next 25 to 30 years, registering an influx of 400,000 new inhabitants every year. Thus, the future of economic growth and poverty eradication rests upon the city's ability to absorb these new entrants and provide them with access to jobs, more importantly, quality jobs. In particular, this study seeks to answer the following questions:

- (a) What are the labor supply and employment patterns in Kinshasa? And who is excluded from the labor market, either being inactive, unemployed, or underemployed?
- (b) What types of jobs, in terms of the economic sectors, informality, and self-employment versus wage, exist in Kinshasa? And where do they spatially concentrate in the city?
- (c) How is the labor market status related to neighborhoods and location characteristics?

To answer these questions, this paper relies primarily on a recently conducted household survey in Kinshasa, and is supplemented with other existing surveys and spatial data sets. The findings are summarized as follows. First, female and young workers are more likely to experience unemployment and underemployment than other workers in Kinshasa. The policy needs to support female and young workers by removing barriers—such as discrimination against them—to their accessing better jobs. Second, the availability of good-quality jobs is still limited in Kinshasa. The majority of existing jobs are low-productive, informal self-employment jobs. Third, in addition to

the scarcity of good jobs, which are concentrated in the city core, poor accessibility due to limited connective infrastructure and transport system further reduces job opportunities for people living in the outskirts. In fact, those people with inadequate job accessibility in Kinshasa are poorer, female, and/or young workers. This suggests that a mismatch in the labor market could be effectively reduced by complementing labor policies that support disadvantaged workers (such as female and young workers) with spatial interventions to enhance their mobility and access to economic opportunities.

This paper is structured as follows. Section 2 explains the data used in this paper and describes the labor force and employment conditions in Kinshasa. Section 3 assesses the employment conditions by examining who engages in better/worse jobs and how jobs are spatially distributed. Section 4 concludes.

## **2. Data and background**

### **2.1 Data**

The analysis of this paper relies primarily on a recently collected household survey in Kinshasa. Conducted by the INS of the DRC under the World Bank's statistical operation in the country, it is an integrated survey, consisting of two surveys, targeting individuals and households. The first part of the survey includes sociodemographic characteristics, education, health, living conditions, employment, urban agriculture and non-agricultural household entrepreneurship. The second component is the household consumption survey.

The Kinshasa Household Survey was collected in two 18-day phases between mid-October and the end of November 2018 on a sample of 2,592 households. Given the outdated last population census—which was collected in 1984—the sampling method for the Kinshasa Household Survey was based on high-resolution satellite imagery. A two-stage stratified sampling design with equal allocation of first-degree enumeration area (EAs) was used for the survey. Kinshasa had been divided into two clusters: urban and rural. The 23 communes/districts of the city were considered as urban and some areas of Maluku, as part of the survey, were considered rural.

Two criteria were used to stratify the city (a) the building density of EAs and (b) typology of Kinshasa areas. The stratification of EAs according to the density criterion was carried out as follows: 1) Low density; fewer than 10 buildings per hectare, 2) Medium density; from 10 to 20 buildings per hectare, and 3) High density; more than 20 buildings per hectare. Precarious neighborhoods are those not suitable for habitation. In the survey, precarious areas are defined based on their characteristics of dwellings and geographic and environmental features.

- Precarious areas. This is a neighborhood whose dwellings are built by the occupants on land acquired in undeveloped areas, on farmland and market gardens, or on uneven ground (exposure to erosion and flooding). Buildings are anarchic and the use of recycled materials (cardboard, plastics, and sheet metal) is common. Most often, they are located in parts of the city abandoned by the more affluent categories: on steep slopes or near industrial areas, which makes them all the more dangerous and where misery is concentrated. Collective facilities (water, electricity, sanitation, and transport) are reduced and availability is low.

- Non-precarious areas. These are neighborhoods where homes are self-constructed, constructed by stages, or constructed with the intervention of a contractor. They are also neighborhoods built entirely by the state for social housing in accordance with urban standards (drainage system, access to water and electricity, tracing roads, and so on) and habitat.

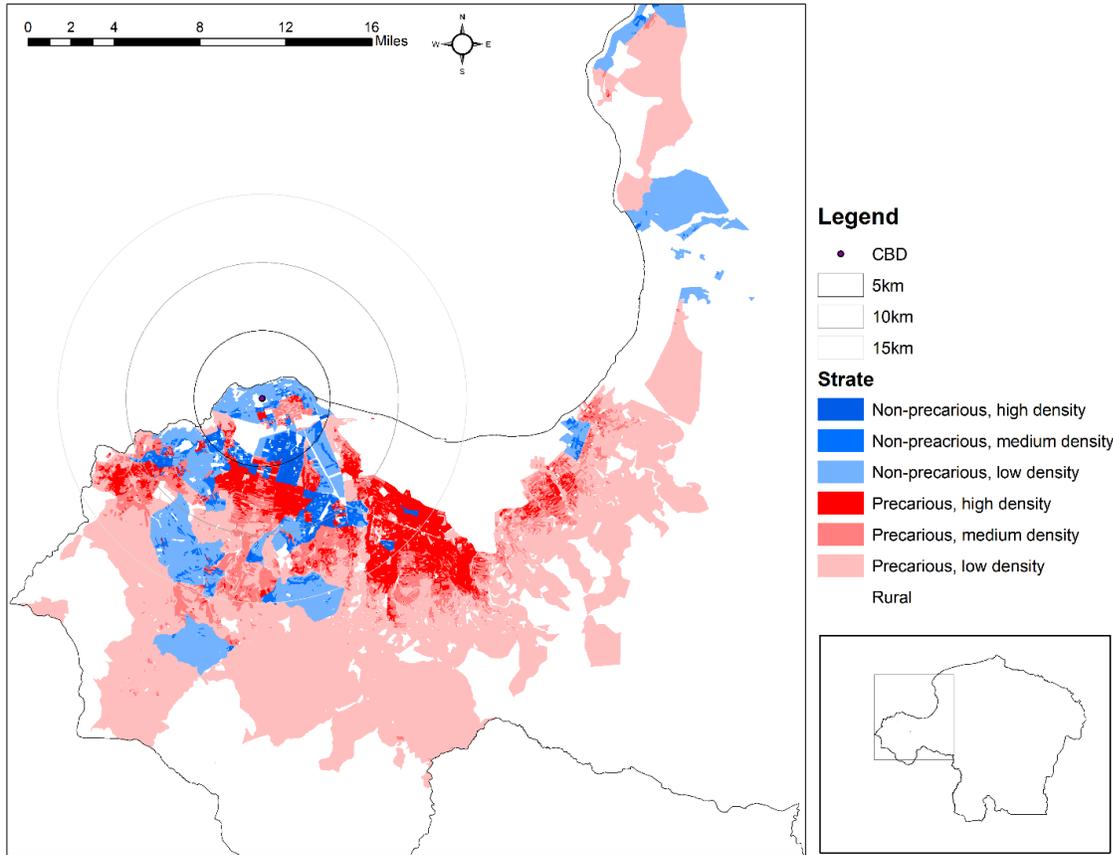
Each EA is then classified as either precarious or non-precarious by the knowledge of local experts based on the definition above (Figure 1).

The sample was drawn from the following seven strata: (a) low-density non-precarious zone, (b) medium-density non-precarious zone, (c) high-density non-precarious zone, (d) low-density precarious zone, (e) medium-density precarious zone, (f) high-density precarious zone, and (g) rural area.

While the Kinshasa Survey is prepared with an innovative approach, the use of the survey requires caution against its data quality and comparability. It is extremely challenging to design a sampling survey to collect information about households and individuals that represents Kinshasa, due to the lack of a recent population census. The sampling of the Kinshasa Survey, which is the primary data for this study, was prepared by drawing on satellite imagery. In addition, unlike the 1-2-3 household survey of 2012, the stratification of the 2018 survey explicitly captures precarious areas. Despite such an innovative sampling approach, the Kinshasa Survey has concerns about the data quality because of a problem in the data collection process (see Batana et al. 2021a for detailed descriptions). Considering all these factors, this study does not report any absolute number of population based on the survey and does not make a direct comparison between the Kinshasa Survey and the 1-2-3 household survey.

The analysis of job accessibility draws on the 2017 JICA Commuter Survey, which was conducted in 2017 with the aims of informing the Urban Transport Master Plan toward 2030 and identifying priority projects. The study area of the survey mainly covers urban parts of Kinshasa Province and spans over 1,450 km<sup>2</sup> (out of the total area of Kinshasa covering 9,985 km<sup>2</sup>). For the survey, 8,000 households were sampled and randomly selected based on a satellite image of the study area. Surveyors were dispatched to visit the selected households and conduct face-to-face interviews with their representatives to answer the survey questionnaires. The questionnaire was designed to collect socioeconomic and commuting information of each household member.

**Figure 1: Proliferation of precarious neighborhoods**

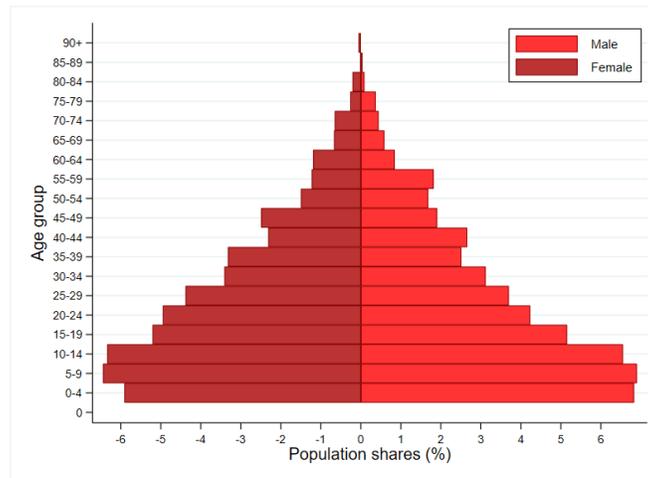


*Source:* Kinshasa Survey 2018.

## **2.2. Labor force characteristics**

With a persistent high dependency ratio, the youth (ages between 15 and 24) account for a significant proportion of the working-age population in Kinshasa. The dependency ratio—the ratio of the non-working-age population (under age 15 or age 65 and over) to the working-age population—is relatively high in Kinshasa (Figure 2). The young population (under age 15) accounts for nearly 39 percent of the Kinshasa population, pushing up the dependency ratio to around 72 percent. Youth (ages between 15 and 24) constitute about two-thirds of the working-age population in urban Kinshasa. As discussed further in Section 2.3, the issues of unemployment and underemployment are particularly pronounced among this demographic group. Expanding access to good jobs for the youth remains a key challenge for inclusive growth in Kinshasa.

**Figure 2: Age structure in Kinshasa**



Source: Kinshasa Survey 2018.

Significant gender inequality is still present in education attainment. The majority of working-age population has completed secondary education (69 percent), while 10 percent have completed only primary education (or not completed formal education), and 21 percent have completed tertiary education (Table 1). The breakdown of educational attainment by gender shows a gap between men and women. For example, 25 percent of working-age men completed higher education in contrast to 15 percent among women. In addition, 12 percent of working-age females have completed only primary education, as opposed to 8 percent among men. As discussed later in this report, the productivity of jobs is positively correlated with education attainment. A lack of improvement or persisting gender gaps in education attainment may hamper inclusive growth in the labor market and access to good jobs.

A wider gap in education attainment is found between poor and non-poor individuals. Poverty is measured based on the poverty line (CDF1,396,363 per adult-equivalent per year) and per adult-equivalent annual consumption expenditures based on the 2018 Kinshasa survey.<sup>2</sup> A larger share of poor individuals have completed only primary education (13 percent) than non-poor individuals (6 percent) (Table 1). Even more stark contrast is found in the share of individuals who have completed tertiary education: a third of non-poor people as opposed to only 11 percent among the poor.

**Table 1: Educational attainment among working-age population in Kinshasa**

	All working age	Youth (15–24)	Male	Female	Poor	Non-poor
Primary	10.2	9.0	7.8	12.4	13.1	5.9
Secondary	69.3	81.1	66.5	71.9	75.1	59.8
Tertiary	19.8	9.5	24.7	15.2	11.1	33.7
Other	0.7	0.4	0.9	0.4	0.7	0.6

Source: Kinshasa Survey 2018.

Note: ‘Other’ includes non-formal and/or professional education.

Women are less likely to be active in the labor force, while the unemployment rates are higher among men and the youth. The labor force participation rate (LFPR) of women is 56 percent,

<sup>2</sup> See Batana et al. (2021a) for details.

which is about 10 percentage points lower than that of men (Table 2).<sup>3</sup> While the male working-age population is more likely to enter the labor market, male labor force participants are more likely to be unemployed than women. The unemployment rate among men (8.7 percent) is higher than among women (5.6 percent), implying the existence of discouraged women who do not seek employment. The unemployment rate is particularly high among male and young workers, reaching as high as 18.4 percent.

Poor male workers are more likely to be unemployed than non-poor male workers, while there is no substantial difference in labor status between poor and non-poor women. The unemployment rate among the poor male labor force is relatively high (12 percent). By contrast, poor women's unemployment rate is only 5 percent. Poverty does not appear to have influenced labor force participation status, as the LFPR of poor women is not particularly low (54 percent) compared to other women.

**Table 2: Labor force status in Kinshasa by age, sex, and poverty (percentage)**

	All	Male	Female
<b>(A) Working-age population</b>			
Employed	56.1	59.8	52.7
Unemployed	4.4	5.7	3.1
Not active	39.5	34.5	44.1
Labor force participation rate	60.5	65.5	55.9
Unemployment rate	7.2	8.7	5.6
<b>(B) Only youth</b>			
Employed	23.8	23.0	24.4
Unemployed	3.7	5.2	2.4
Not active	72.5	71.8	73.2
Labor force participation rate	27.5	28.2	26.8
Unemployment rate	13.5	18.4	8.9
<b>(C) Poor</b>			
Employed	53.2	55.3	51.2
Unemployed	5.0	7.3	2.7
Not active	41.8	37.4	46.1
Labor force participation rate	58.2	62.6	53.9
Unemployment rate	8.5	11.8	5.0

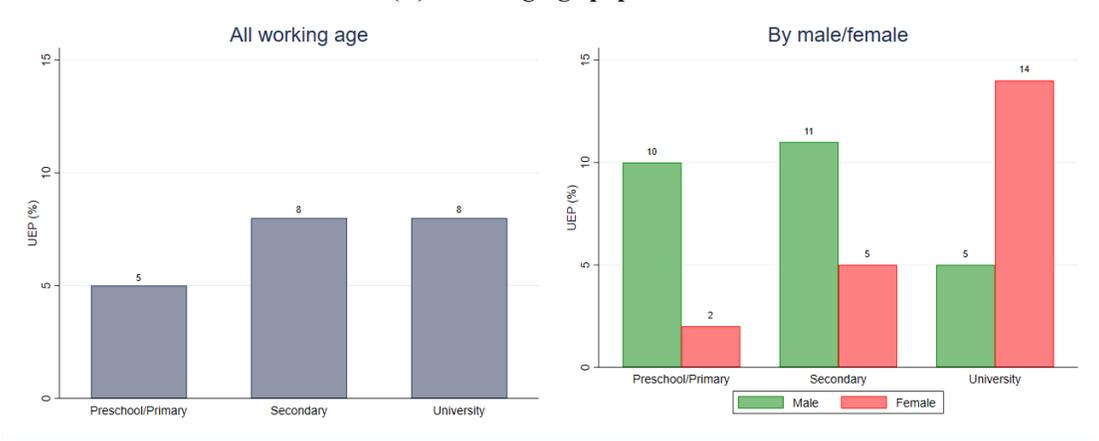
Source: Kinshasa Survey 2018.

The female (particularly young) working-age population with higher education faces a particularly high rate of unemployment. A simple look at unemployment rates and workers' educational attainment does not show any clear correlation (Panel A in Figure 3). The unemployment rate is 5–8 percent among those with primary education, secondary education, and higher education. Breaking down the relationship by gender, however, shows a contrasting pattern. The

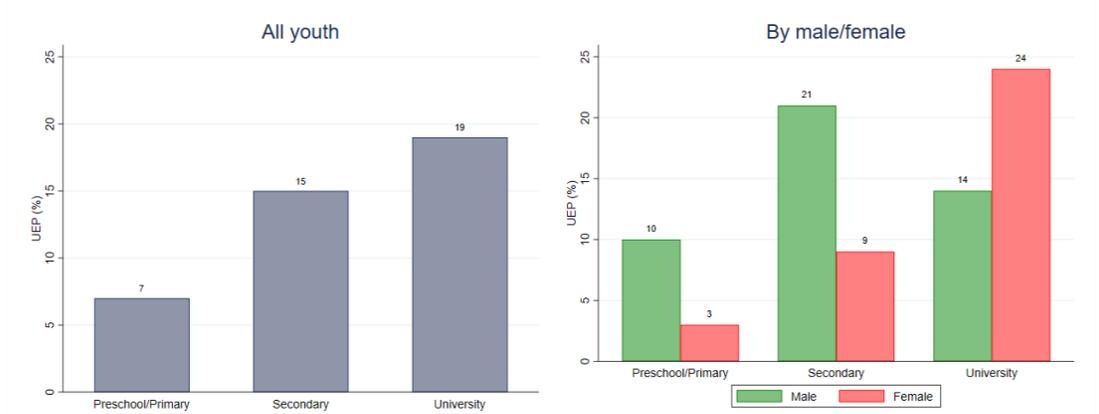
<sup>3</sup> Labor force is defined in this report as active if an individual either (a) worked during the last 7 days, (b) did not work during the last 7 days but had a job (that is, absent), or (c) did not work but looked for a job. The labor force participation rate is calculated as the share of active working-age population. Unemployment rate is calculated as the ratio of working-age population with no job to the total number of active working-age population.

unemployment rate of male workers is lower among those with higher educational levels, reducing from 10 percent (primary) to 5 percent (tertiary). By contrast, well-educated women are more likely to be unemployed, with their unemployment rates increasing from 2 percent (primary) to 14 percent (tertiary). In particular, the unemployment rate among the young, female working-age population with tertiary education was a staggering 24 percent in 2018 (Panel B). Therefore, fewer women than men are likely to complete tertiary education and, even with tertiary education, women are more likely to be unemployed than men. A multivariate regression was performed to explore a set of demographic and geographic factors that may explain unemployment patterns (see Annex B for methodology and Table A.2 in Annex A for regression outputs). The regression results confirm that male working-age populations with higher education are significantly less likely to be unemployed than female working-age populations with the same level of education even after controlling for age and location of residence (for example, distance from the city core).

**Figure 3: Unemployment rates by education levels and sex**  
**(A) Working-age population**



**(B) Only youth**



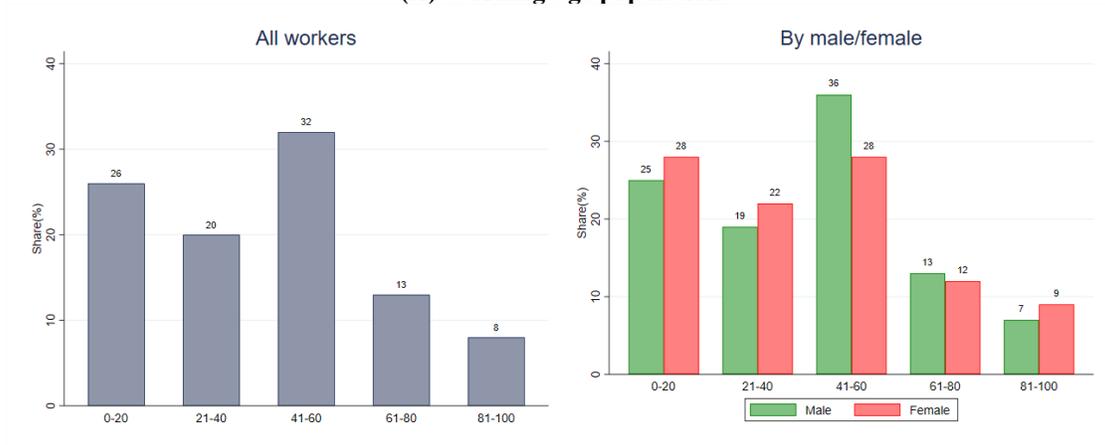
Source: Kinshasa Survey 2018.

Underemployment appears to be prevalent among the youth. The share of workers who worked fewer than 20 hours per week is 26 percent in urban Kinshasa (Panel A in Figure 4). The share of young female workers working fewer than 20 hours is particularly high at 49 percent (Panel B in Figure 4). While some of them might have chosen to work part time for a positive reason, the data suggests that the number of hours worked correlates positively with wage levels (discussed in

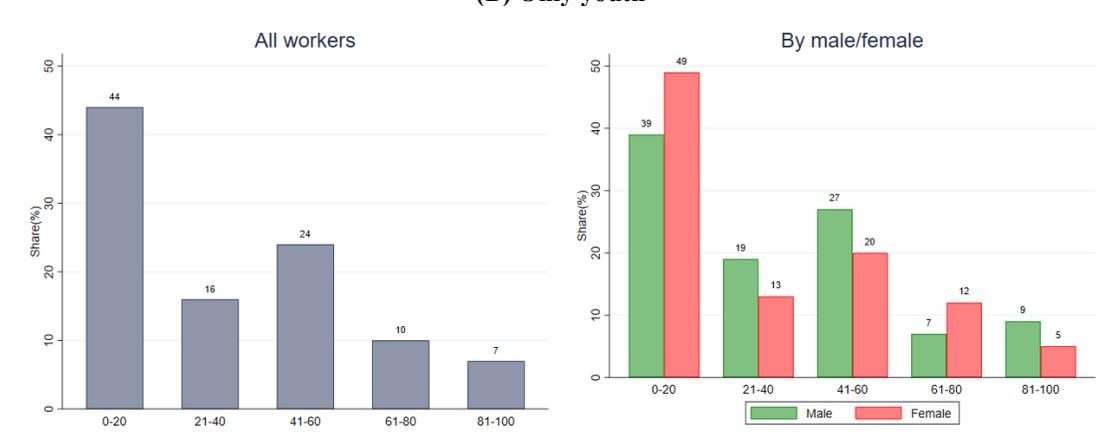
Section 3.1). Thus, in addition to their higher chance of being unemployed, the youth may be facing a significant challenge in accessing quality jobs. In the case of poor workers, there is no different pattern from other workers in the distributions of hours worked (Panel C).

**Figure 4: Hours worked during the last 7 days by sex**

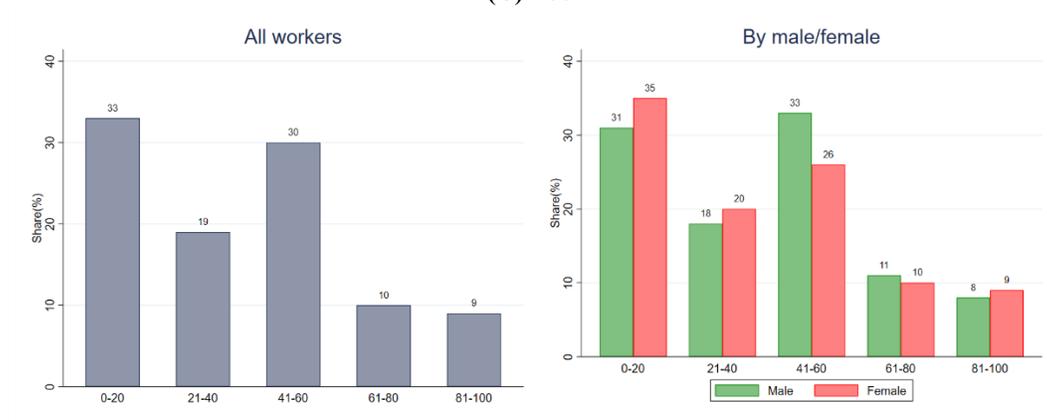
**(A) Working-age population**



**(B) Only youth**



**(C) Poor**



Source: Kinshasa Survey 2018.

A poor business environment in urban Kinshasa may be at the heart of underemployment. The DRC remains among the most challenging countries in the world to do business. The 2017 Doing Business Report ranks the country 184 of 190 and notes that it performs poorly across all indicators. Similarly, the 2016–2017 Global Competitiveness Index ranked the country 129 of 138. A lack of basic services and core infrastructure—coupled with a weak regulatory environment—coalesces to impede firm entry and the creation of good-quality jobs. This results in a proliferation of informal self-employment jobs with low productivity, and of erratic piecemeal activities with irregular working hours.

### 2.3. Job characteristics

A large proportion of jobs in Kinshasa are private, informal, and/or self-employment jobs. In 2018, public sector jobs accounted for only 14 percent of jobs in Kinshasa.<sup>4</sup> Around 60 percent of jobs are informal, in that they do not offer a national identification number (IDN) and/or do not keep formal accounting books (Table 3). About half the jobs in Kinshasa are wage jobs, while the other half are self-employment jobs. Not surprisingly, informal jobs are predominantly self-employment jobs. However, formal jobs are composed of both wage and self-employment jobs. In other words, all self-employment jobs are not necessarily informal, as 32 percent of formal jobs are actually self-employment.

**Table 3: Formality and occupation types in Kinshasa**

	%
Formal and wage	23.9
Formal and self-employment	14.2
Informal and wage	9.1
Informal and self-employment	43.4
Formal total	40.3
Informal total	59.7
Wage total	45.8
Self-employment total	44.9

*Source:* Kinshasa Survey 2018.

*Note:* Occupation types other than wage and self-employment (such as employer and family worker) are not shown.

The majority of jobs in Kinshasa are service sector jobs. With a small fraction of jobs in agriculture (5.9 percent) and manufacturing (7.8 percent), about 80 percent of jobs in Kinshasa are in the service sector (Table 4).<sup>5</sup> Kinshasa remains largely a local city—as opposed to a global city that is open to regional and global trade, markets, and investments—and it produces fewer internationally tradable goods and services (60 percent) than other world cities (Lall, Henderson, and Venables 2017).

<sup>4</sup> Unless otherwise noted, this section only looks at jobs of the working-age population.

<sup>5</sup> For this analysis, the service sector includes commerce; transportation, storage, and communication; financial, insurance, and real estate; public administration; and other services.

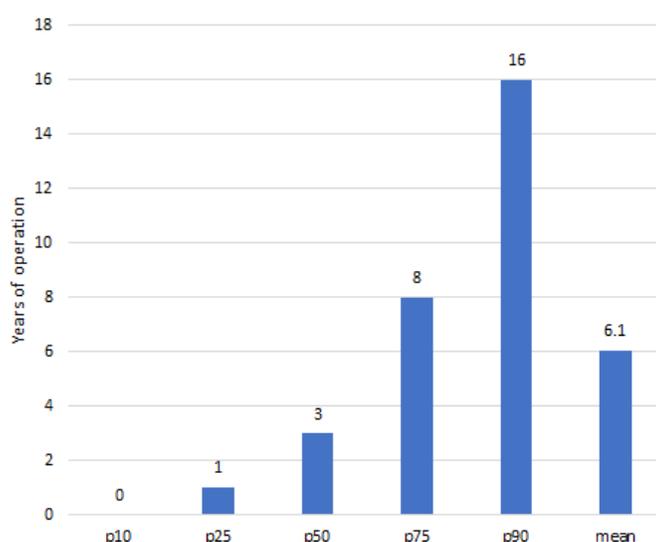
**Table 4: Composition of economic sectors in Kinshasa**

	%
Agriculture and fishing	5.9
Mining and quarrying	0.0
Manufacturing	7.8
Electricity, gas, and water supply	0.4
Construction	6.3
Commerce	41.7
Transportation, storage, and communication	6.0
Financial, insurance, and real estate	1.4
Public administration	6.9
Other services	23.8

Source: Kinshasa Survey 2018.

Informal enterprises are characterized by few years of operation, reliance on household capital, and self-employment (that is, no employee other than the owner). According to the Kinshasa Survey, 50 percent of informal enterprises have been in operation for fewer than 3 years (Figure 5), indicating their brief existence. The average years of operation is 6.1 years. These informal enterprises mostly rely on household savings (62 percent) or income from family property (15 percent). The use of bank credit is negligible—97 percent of informal entrepreneurs did not apply for loans. In addition, most of them are microenterprises, comprising only the owner (79 percent). Only 4 percent of informal enterprises hire 4 or more employees (including the owner him/herself).

**Figure 5: Years of operation of informal enterprises in urban Kinshasa**



Source: Kinshasa Survey 2018.

Note: 'p90' indicates 90 percentile. For example, 90 percent of informal enterprises operated for 16 years or less.

Part-time jobs are concentrated in self-employment jobs. One may expect part-time jobs (hours worked less than 25 hours per week) to be a common characteristic of self-employment jobs, yet this is not necessarily the case. In 2018, the share of part-time jobs in self-employment (51 percent)

was significantly higher than the share of full-time jobs (41 percent). Full-time jobs are significantly more likely to be in wage employment than part-time jobs. Moreover, part-time jobs are more likely to be in agriculture and fishing. Finally, full-time jobs are statistically significantly more likely to be in jobs related to electricity, gas and water supply.

**Table 5: Characteristics of full-time and part-time jobs (percentage)**

	Full-time	Part-time	Difference
Formal	46.4	29.5	16.9***
Informal	53.6	70.5	-16.9***
Wage	51.1	34.7	16.4***
Self-employment	41.4	51.0	-9.5**
Agriculture and fishing	3.7	10.3	-6.6***
Mining and quarrying	0.0	0.0	0.0
Manufacturing	8.0	5.8	2.3
Electricity, gas, and water supply	0.6	0.1	0.5**
Construction	5.1	8.1	-3.0
Commerce	44.4	36.7	7.8*
Transportation, storage, and communication	7.0	6.0	0.9
Financial, insurance, and real estate	1.4	0.7	0.7
Public administration	7.5	6.1	1.4
Other services	22.1	26.1	4.0

Source: Kinshasa Survey 2018.

Note: Difference-in-means tests are conducted. \*\*\*p < 0.01; \*\*p < 0.05; \*p < 0.1.

### 3. Assessment of employment conditions

#### 3.1 Who engages in better/worse jobs?

Younger workers endure less favorable employment situations, as they are more likely to engage in private sector jobs, informal jobs, and/or part-time jobs. The previous section shows that the youth are facing higher unemployment rates. Even among the employed, young workers appear to work in unfavorable conditions (Table 6). The chance of working in public sector jobs is limited among workers in the younger cohort. Only 6 percent of workers in the cohort of ages 15–24 (and 9 percent of workers of ages 25–34) engaged in public sector jobs in 2018.<sup>6</sup> In addition, the youth (ages 15–24) tend to work in informal jobs (70 percent) and/or work for less than 25 hours per week (45 percent).

Gender gap in employment conditions persists, as demonstrated by higher unemployment rates among highly educated women and the higher share of female workers in informal employment. As observed in the previous section, the unemployment rate of female working-age population with tertiary education is remarkably high. Female workers are also more likely to engage in informal jobs. In 2018, 70 percent female workers engaged in informal jobs, as opposed to 48 percent male workers (Table 6). As such, only a small fraction of female workers are managers or skilled employees.

<sup>6</sup> Among the public sector employees, the workers of ages 15–24 and 25–34 constitute 5 percent and 19 percent, respectively.

Compared to non-poor workers, poor workers are more likely to engage with jobs that are in the private sector, informal, part-time, and self-employment. Working in the public sector is a limited option to poor workers (10 percent, as opposed to 19 percent among non-poor workers) (Table 6). More than 70 percent of poor workers have informal jobs (as opposed to 49 percent among non-poor workers). Poor workers are also more likely to work with part-time jobs (37 percent) and self-employment jobs (57 percent).

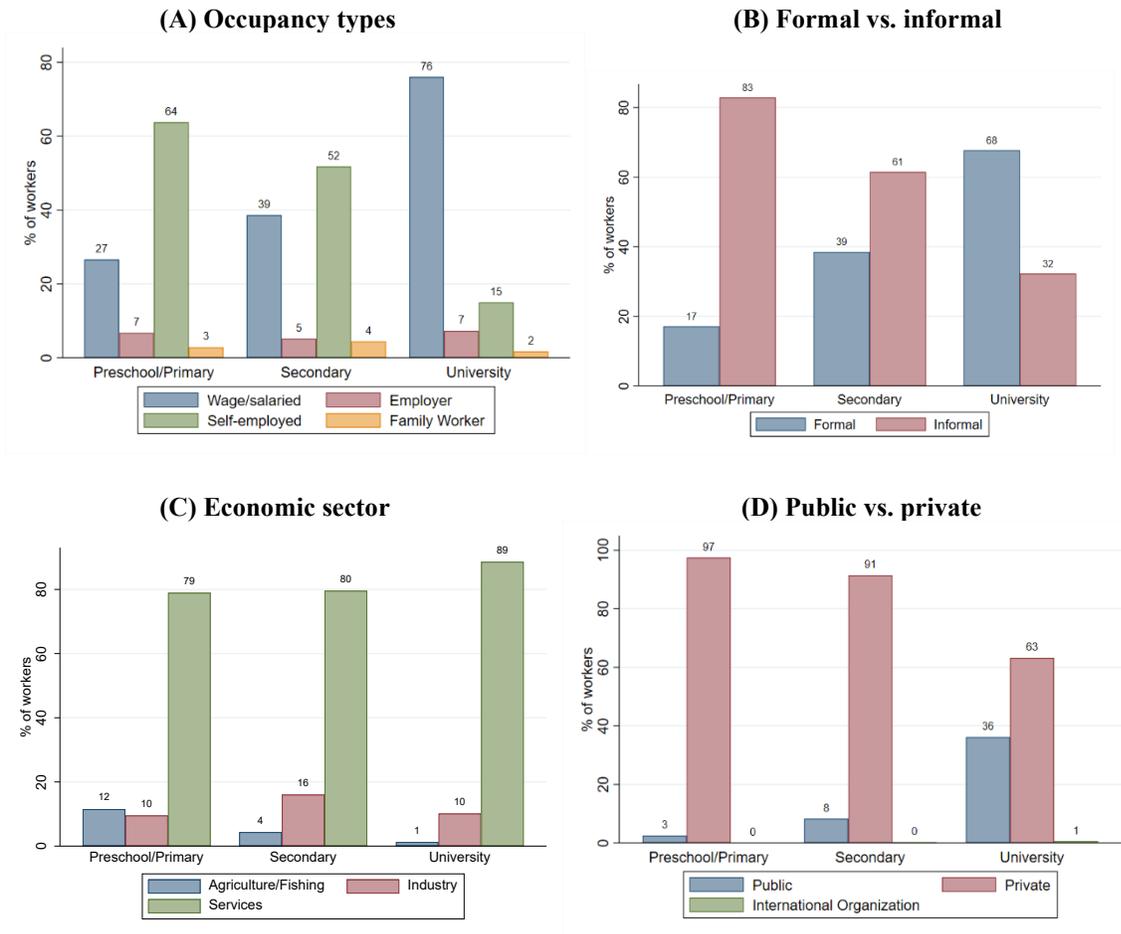
**Table 6: Employment conditions in Kinshasa by age (percentage)**

	Age			Sex		Poverty	
	15–24	25–34	35–64	Male	Female	Poor	Non-poor
Private	93.8	90.2	82.5	82.0	90.6	90.0	80.9
Public	6.2	9.3	17.3	18.0	9.4	10.0	19.1
Formal	30.0	39.1	42.8	52.1	28.8	28.9	51.2
Informal	70.0	60.9	57.2	47.9	71.2	71.1	48.8
Part-time (<25 hours/week)	44.6	30.4	26.6	27.4	32.4	36.9	23.2
Full-time (>25 hours/week)	55.4	69.6	73.4	72.6	67.6	63.1	76.8
<i>Types of occupation</i>							
Managers	2.3	9.6	12.4	14.5	6.0	6.0	15.9
Skilled employee	9.9	18.0	17.1	23.2	9.0	13.1	22.5
Unskilled employee	16.9	10.1	9.1	14.2	5.5	9.9	9.4
Family worker	26.8	6.9	9.1	12.1	8.3	14.1	4.9
Own-account worker	44.1	55.3	52.2	35.9	71.1	56.9	47.2

Source: Kinshasa Survey 2018.

Workers' education levels are clearly associated with their employment conditions. More specifically, workers with higher education are more likely to have wage/salaried jobs (76 percent), and work in the formal (68 percent) and/or public sectors (36 percent) compared to those with lower levels of education (Figure 6). In contrast, workers who have only preschool/primary education usually end up in the informal sector (83 percent) and are mostly self-employed (64 percent) in the private sector.

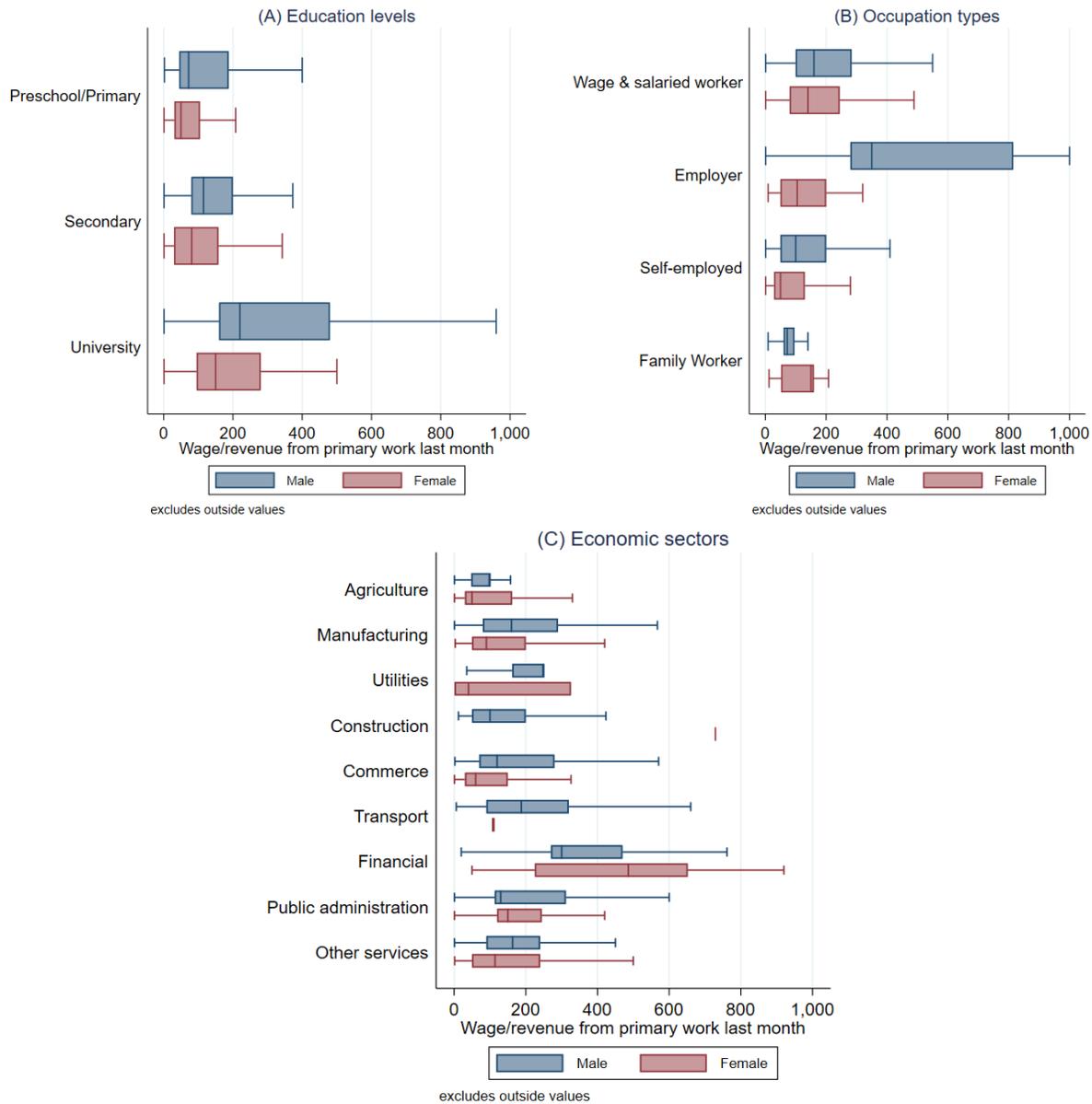
**Figure 6: Employment characteristics by workers' education levels**



Source: Kinshasa Survey 2018.

A snapshot of labor income distributions by the characteristics of workers and jobs implies gaps across them. As expected, labor income is higher among well-educated workers (Panel A in Figure 7). This is particularly the case for male workers, as the median monthly income of those who have completed highest education is CDF220,000, compared to CDF115,000 among male workers who completed secondary education. Female workers earn less even if they have completed higher education (CDF150,000). Among both male and female workers, the median labor income from wage jobs is higher than that from self-employment jobs (Panel B). In terms of economic sectors (Panel C), male workers earn relatively well in the sectors of finance and utilities (CDF300,000 and CDF250,000, respectively). The income level in public administration is not particularly high for male workers. By contrast, income from public administration jobs is relatively high for women (CDF150,000).

**Figure 7. Labor income (thousand CDF/month)**



Source: Kinshasa Survey 2018.

Workers with higher education tend to receive higher labor income, given their demographic and geographic characteristics. To better understand what drives differentials in earnings across different types of jobs or across demographic groups, a multivariate regression analysis was performed.<sup>7</sup> The level of education is one of the key determinants of labor income. Workers with higher education earn 116–160 percent more than workers with only preschool/primary education, after allowing for other demographic and geographical characteristics.

<sup>7</sup> See details on the methodology of labor income regression in Annex B and regression outputs in Table A.1 in Annex A.

There is a clear gender gap with regard to labor income. As previously discussed, the education levels of women and their employment characteristics are different from men in that the former tend to be less educated and are more likely to be employed in the informal sector. Even after accounting for all these demographic and employment characteristics, male workers seem to have much higher labor income than female workers. Our regression results suggest that the earnings of male workers are 57–82 percent higher than those of female workers.<sup>8</sup> As such, gender inequalities are observed not only along demographic and employment characteristics but also in the baseline productivity of jobs that they have and/or gender-based discrimination.

The formality of jobs positively correlates with earning levels—that is, workers in the informal sector have about 64–68 percent lower income than workers in the formal sector. As discussed earlier, a significant share of jobs available in Kinshasa is informal in nature (without proper registration or formal accounting books). One of the possible reasons for this is a perennial shortage of wage jobs, which pushes workers into low-quality, informal jobs. There is a growing need for the creation of good-quality jobs by improving the business environment, which would in turn attract productive firms and private investments. Not only does it entail greater investments in key urban services and infrastructure, expanding access to jobs also requires capacity building for the government to efficiently administer rules and regulations that could facilitate the creation of quality jobs in Kinshasa (for example, reducing administrative time and costs associated with the formalization process).<sup>9</sup>

Earnings differentials across sectors appear to be driven partly by different hours of work coupled with varying levels of productivity. There is a significant gap in earnings between service and industry jobs, on one hand, and agriculture, on the other. However, once hours of work and other demographic characteristics are accounted for, this gap is no longer statistically significant. In agriculture, the average hours of work per week was 28 hours, which was significantly lower than other sectors like industry (37 hours) and services (46 hours). Many workers who engage in agriculture, agro-business and fishing in Kinshasa are indeed underemployed compared to other sectors. The underemployment in this sector is likely due to the lack of connectivity and other incentives for the development of agricultural production. However, these workers also have limited access to more productive jobs in urban centers due to higher costs of living and a lack of connective infrastructure—a topic that is discussed more extensively in the following section.

### **3.2. Spatial distribution of jobs**

The geographical distribution of jobs within urban Kinshasa reveals high concentration of jobs in a few pockets within the city. In Kinshasa, more than 70 percent of workers work at office or a particular, non-home workplace. For the spatial analysis of jobs within urban Kinshasa, we rely on the 2017 JICA Commuter Survey, which provides detailed information on the locations of jobs and means of transportation to reach those jobs.<sup>10</sup> Panel (A) in Figure 8 shows the estimated number of jobs per square kilometers at the quartier level. Panel (B) presents spatial variation in the index

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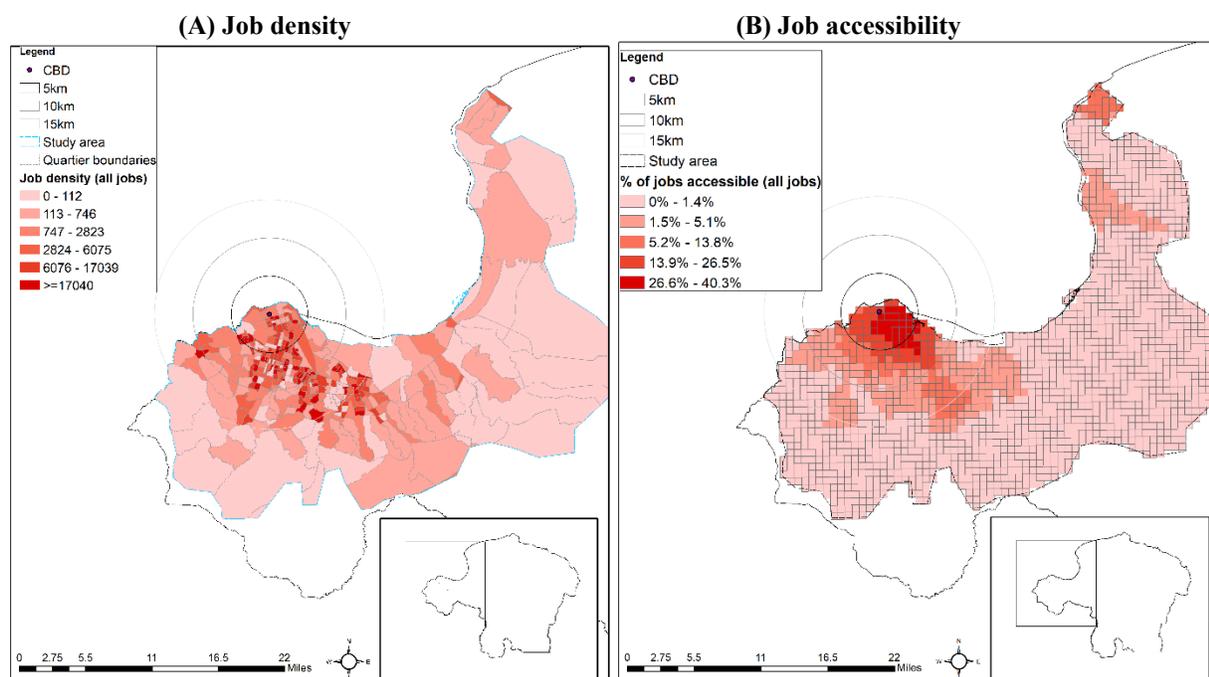
<sup>8</sup> A previous World Bank study in the DRC also highlights the importance of income disparities between men and women especially in urban areas where women appear to be disadvantaged (World Bank 2014).

<sup>9</sup> World Bank (2018b, 39).

<sup>10</sup> See Annex A for details on the 2017/18 JICA Commuter Survey.

of job accessibility, which is equivalent to the estimated number of jobs accessible within one hour of walking at a resolution of roughly 1 km<sup>2</sup> grid cells.<sup>11</sup>

**Figure 8: Spatial distribution of jobs and job accessibility in Kinshasa**



*Sources:* JICA Survey and OpenStreetMap.

*Note:* Panel (A) indicates the average number of jobs per sq. kilometers; Panel (B) shows the share of jobs accessible within one hour of walking per 30 arc second grid.

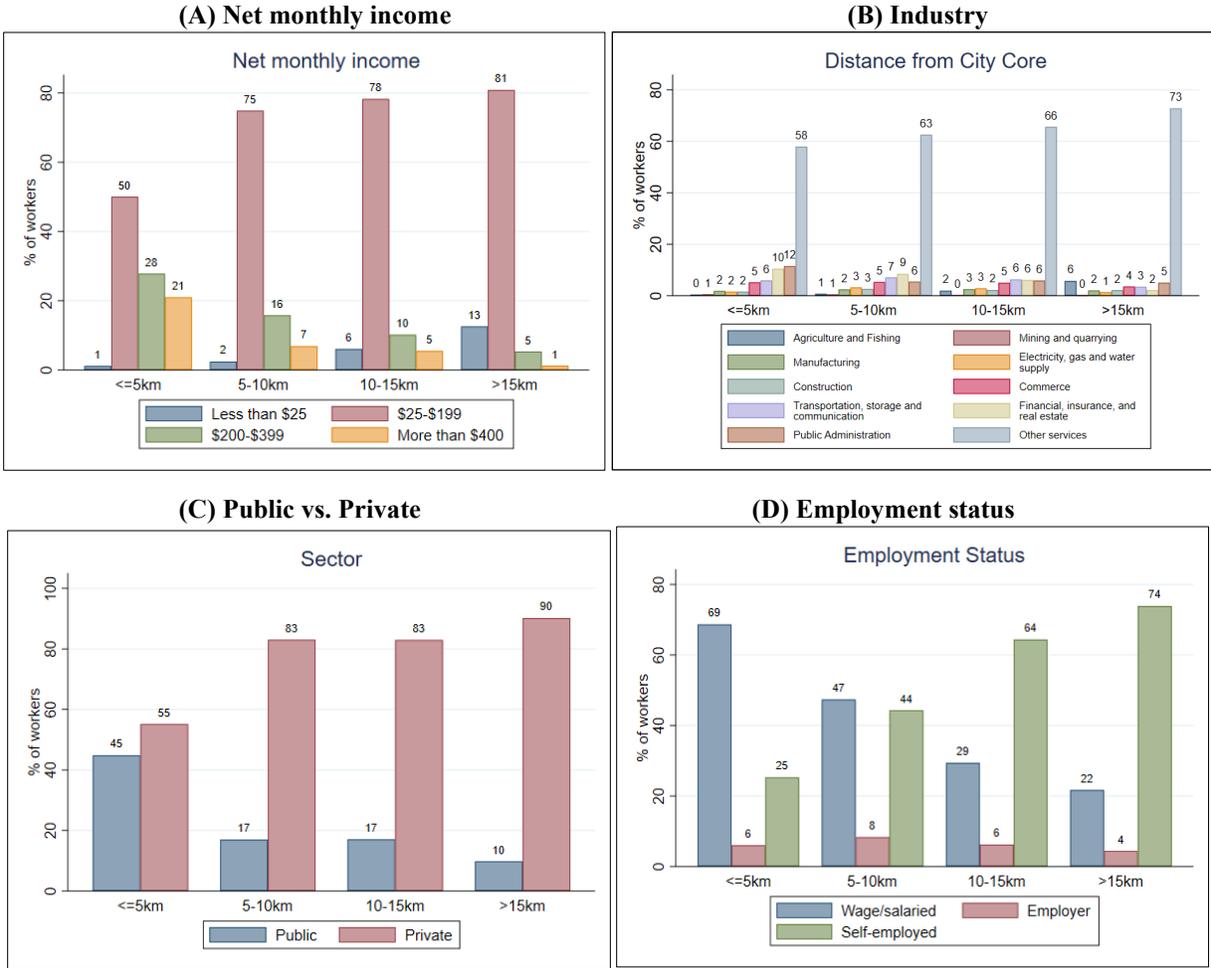
The highest concentration of jobs lies in the central business district (CBD or Gombe) and its immediate surroundings while N’djili and some parts of Maluku (in the Northeastern part of urban Kinshasa) also offer higher accessibility to jobs. Some of the communes that are most accessible to jobs are Barumbu, Kinshasa, Lingwala, Kalamu, and Gombe where about 30–40 percent of all jobs in urban Kinshasa are available within one hour walking distance. Outside the city core,<sup>12</sup> N’djili and parts of Maluku (for example, Maluku, Monaco, and Menkao) also offer relatively greater access to job opportunities.

The productivity and economic sector of jobs spatially vary significantly with a high concentration of well-paying jobs in the CBD. As shown in Panel A of Figure 9, 21 percent and 28 percent of workers who work in the city core report earning an average monthly net income of US\$400 or more, and US\$200–US\$399 respectively. In the peri-urban areas that are beyond the 15 km radius of the CBD, the percentage of workers earning an average monthly net income of US\$400 or more is less than 1 percent; 5 percent earn US\$200–US\$399 on average each month. The well-paying jobs concentrated in the city core are largely wage/salaried, service, and/or public sector jobs.

<sup>11</sup> See Annex B for details on the index of job accessibility.

<sup>12</sup> Throughout this report, the city core is defined as areas that are within the 5 km radius of the CBD.

**Figure 9: Job locations and characteristics**

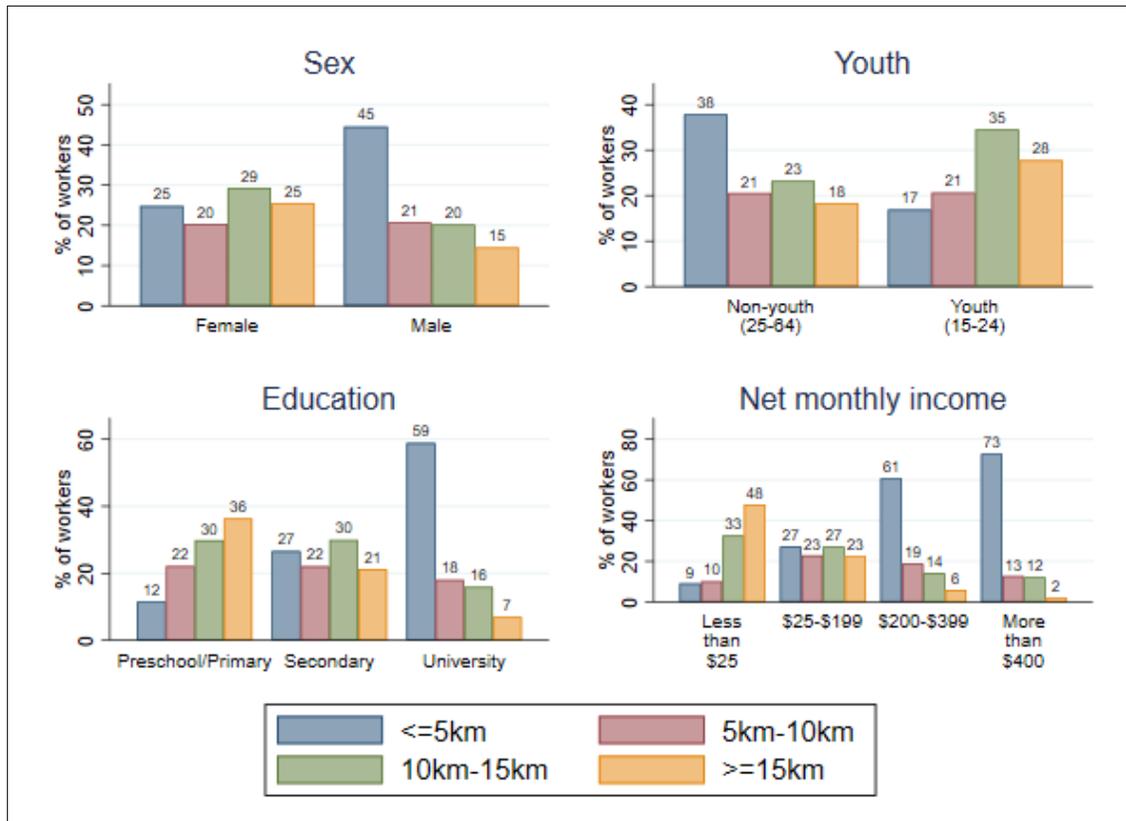


Source: JICA Survey.

Note: ‘Other services’ in Panel (B) include the following job categories: Education services; Health and welfare; Arts, entertainment and recreational activities; Other service activities; Activities of private households as employers; Undifferentiated households as producers of goods and services activities for own use; and Service extraterritorial organizations and bodies.

The youth and female workers are largely excluded from access to well-paying jobs in the CBD. Overall, those who work in the city core tend to be predominantly male, older, and well-educated. While 45 percent of male workers work within the 5 km radius of CBD, only 25 percent of female workers have jobs in the city core (Panel A in Figure 10). Furthermore, the share of youth with employment in the city core (17 percent) is much lower than the corresponding rate of non-youth workers between 25 and 64 years (38 percent) or between 25 and 34 years (32 percent). In terms of education, while 59 percent of workers with higher education work in the city core, this rate decreases to 12 percent for those with only preschool/primary education. Demographic characteristics of workers are closely linked to where they work within urban Kinshasa, and the females, less-educated, and youth are excluded from well-paying jobs offered within the city core, which in turn affects spatial inequalities in income and welfare.

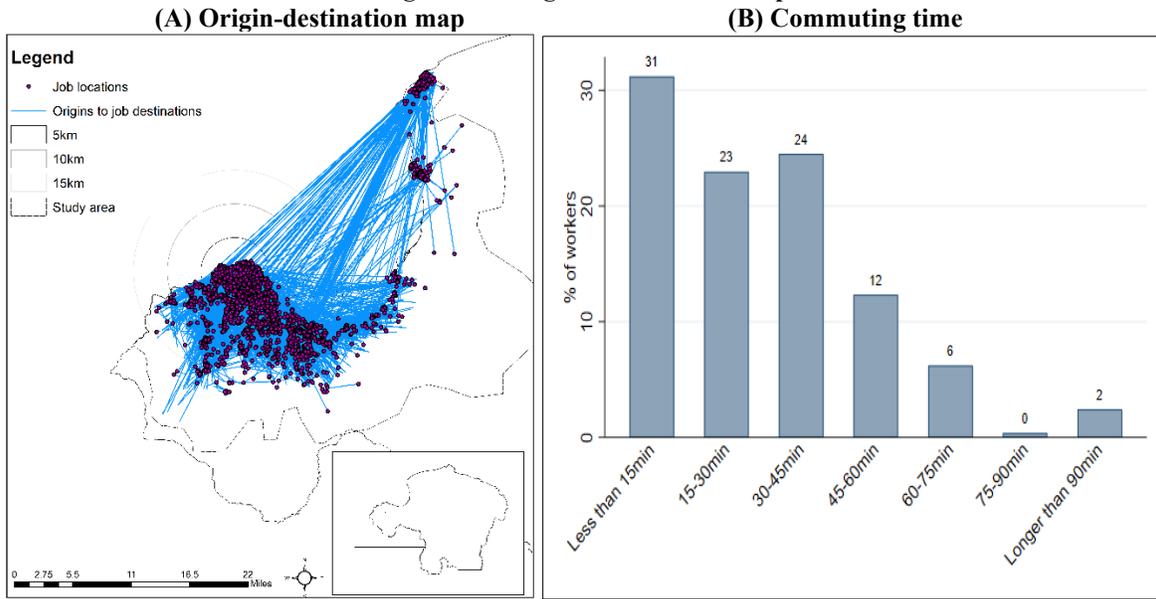
**Figure 10: Demographic characteristics of workers, by distance from the CBD**



Source: JICA Survey.

Accessibility to jobs is also driven by the locations of households and the existing transportation system. As shown in Figure 11—which presents the origin-destination network map where origins are household locations and destinations are self-reported geographical coordinates of job locations—several commuters travel long distances to work in the CBD and its surrounding areas. The average commuting time for all workers is about 30 minutes. About 47 percent of workers spend 15–45 minutes commuting from their respective homes to their workplaces. 31 percent of workers spend less than 15 minutes in commuting time.

**Figure 11: Origins-destinations map**



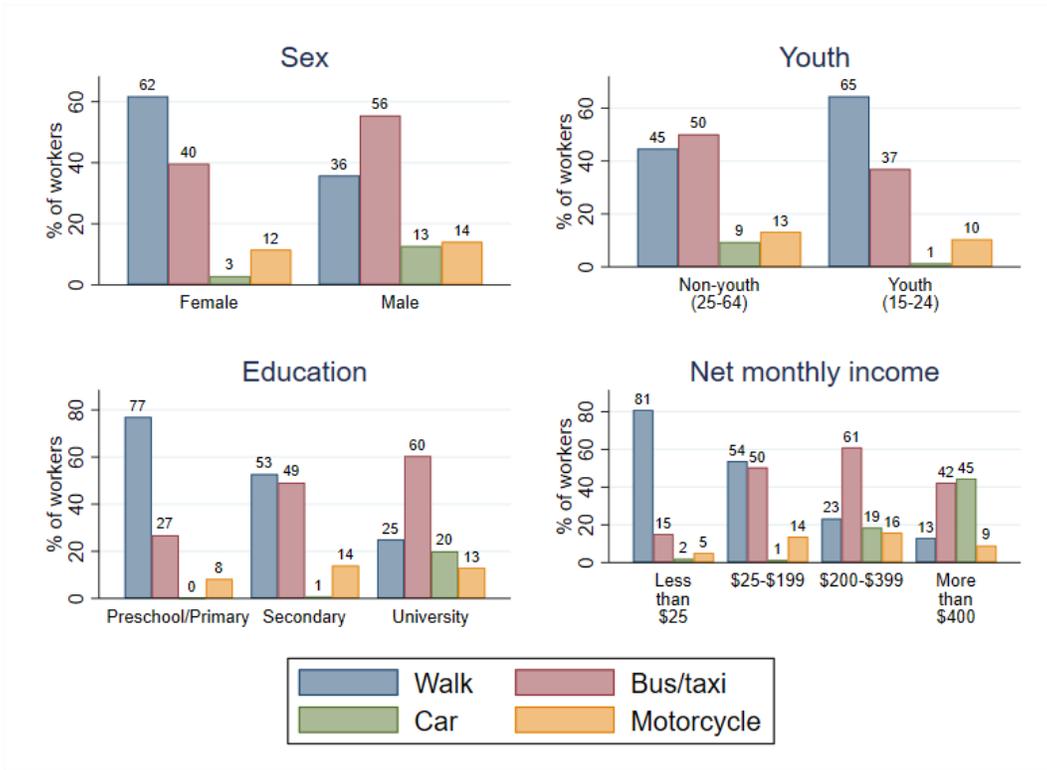
Source: JICA Survey.

A lack of alternative means of commuting other than walking/bicycle limits access to jobs for the females, youth, less-educated, and people with low income. Bus or taxi is the most commonly used mode of transport among all workers (50 percent), followed by non-motorized transport like walking (46 percent).<sup>13</sup> However, the primary means of commuting vary significantly across different demographic and socioeconomic groups (Figure 12). Females, youth, and/or less-educated workers rely mainly on walking to commute. For instance, 62 percent of female workers rely on walking as the primary means of commuting; this rate drops to 36 percent for male workers who rely more on alternative means of commuting like bus/taxi. In terms of education, 77 percent of workers with only preschool/primary education walk to work, whereas only 25 percent of workers with higher education rely on non-motorized means of transport. Unsurprisingly, the option of commuting by car or motorcycle is largely available only to individuals with a higher level of education and/or income.

Walking to work may impose additional burden on women given the serious concerns about the lack of safety. Safety is a major concern in Kinshasa, and particularly so for women and the youth living in precarious neighborhoods. A large share of households feel unsafe walking alone in neighborhoods. Around 46 percent of households in non-precarious neighborhoods feel unsafe, which is already very high. However, even a larger share of households feel so in precarious neighborhoods (around 56 percent). This is not surprising given the lack of (functioning) streetlights in many neighborhoods. Also, a large number of households experienced becoming a victim of crime in neighborhoods. For instance, about 12 percent of households had their houses broken into by someone during the last 12 months (both in precarious and non-precarious neighborhoods), and such incidence in dense precarious neighborhoods tended to involve violence.

<sup>13</sup> Biking accounts for less than 1 percent.

**Figure 12: Means of transportation**

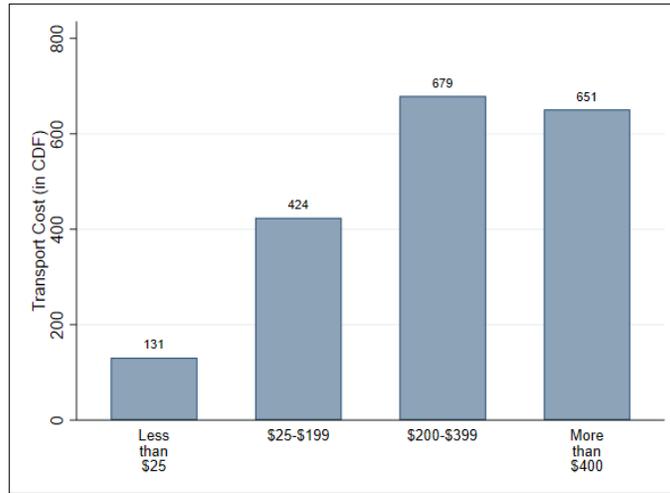


Source: JICA Survey.

One of the key challenges for workers, particularly among the youth and females, to access well-paying jobs is a shortage of affordable and safe connective public transport. Females, youth, and/or less-educated workers are much less likely to use public transport. Workers with a higher net monthly income are more likely to rely on public transport to commute. One reason for this pattern has to do with commuting costs. The average amount of expenditures of a one-way commuting trip for workers increases as their net monthly income increases. For instance, workers with a monthly net income of US\$200 or more spend roughly US\$0.4 (or CDF 650) on a one-way trip, which is five times more than what those with a monthly net income of less than US\$25 spend on average, that is, US\$0.08 (or CDF 130) (see Figure 13).<sup>14</sup>

<sup>14</sup> Calculated based on US\$1= CDF 1,464 based on the exchange rate of 2017 (World Development Indicators).

**Figure 13: Transportation expenditures and income**

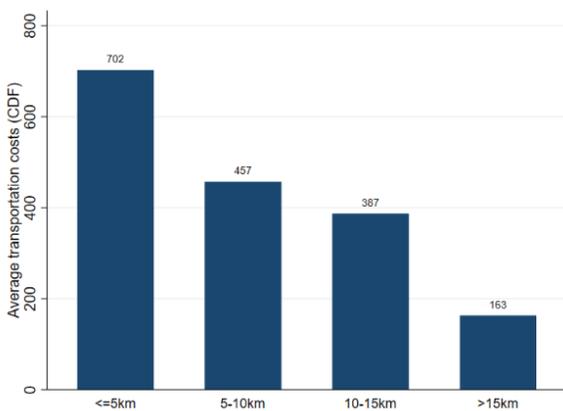


Source: JICA Survey.

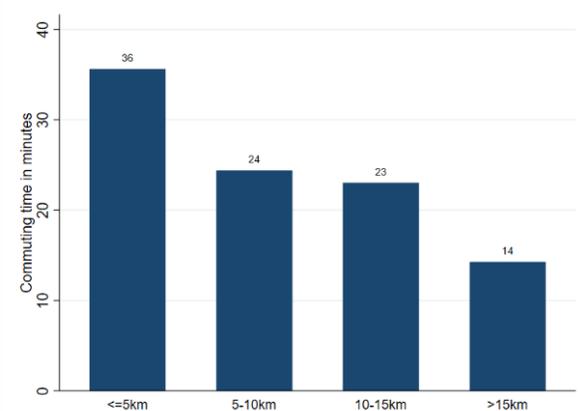
Workers who commute to work in the CBD and its surrounding areas tend to pay higher costs of transportation. According to the JICA transport survey, we find that those workers who work in the CBD and its vicinity on average pay much higher transportation fees compared to those who work outside the city core (Figure 14). Accordingly, those who work in the city core also tend to spend more time for commuting than those who do not. Well-paying jobs are attractive enough for people to incur higher costs of transportation and spend longer for commuting. However, the flip side of this finding is that those well-paying jobs concentrated in the city core may be largely inaccessible for those who cannot afford to incur such higher costs of transportation.

**Figure 14. Transportation costs and commuting time by distance between place of work and CBD**

**(A) Average transportation costs**



**(B) Average commuting time to work**

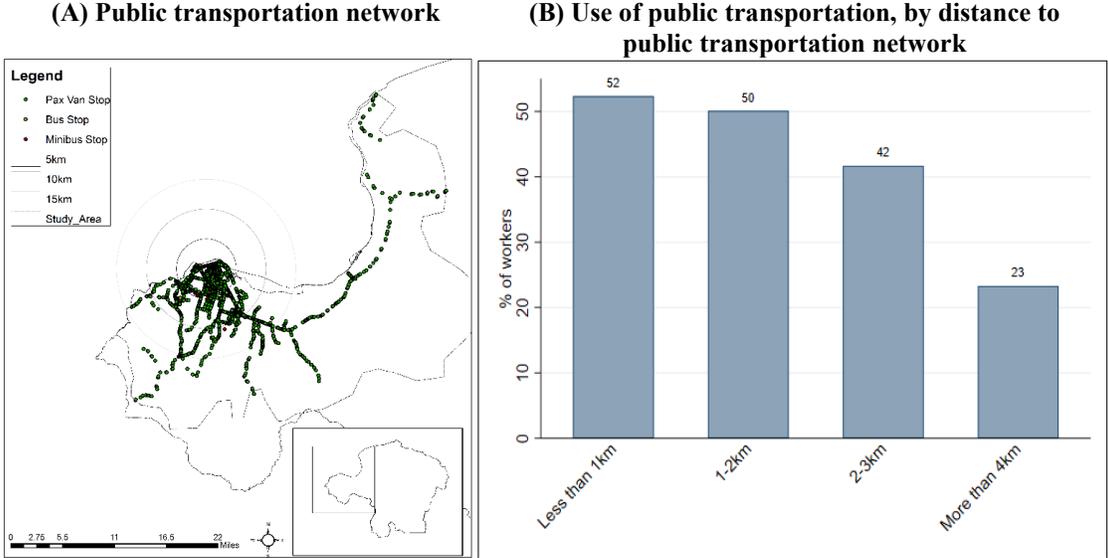


Source: JICA Survey.

A lack of access to public transport presents a key challenge to job accessibility in urban Kinshasa, especially for poorer households. As discussed by Batana et al. (2021b), poor households tend to live in peri-urban areas that are further from the city core. These peri-urban areas are disconnected from a dense network of key public services and infrastructure that the city can offer, but are more affordable to live in. As shown in Panel A of Figure 15, however, the public transportation network

becomes sparse beyond the city core; a large swath of areas outside the 10 km radius of the CBD is disconnected from the public transport network. In fact, the distance between the location of a household and its nearest bus/taxi stop negatively correlates with the likelihood that the workers would commute by public transport (see Panel B of Figure 15). Building a connective public transport network that can offer affordable access to well-paying jobs thus remains a priority so that workers in the peri-urban areas may benefit from the jobs that the city can offer (Lall et al. 2017).

**Figure 15: Public transportation network**



Source: JICA Survey.

**4. Conclusion**

The DRC’s economic growth and poverty reduction hinge critically on its ability to generate enough jobs—and good-quality jobs—for the rapidly increasing population. Kinshasa is not only the political capital of the DRC, but also an economic hub that has vast potential to serve as a growth engine for the country. Urban Kinshasa still suffers from a lack of good-quality jobs, the production of which is constrained by inadequate infrastructure, including transport, among many other factors. In addition to the supply-side bottleneck, lack of education deprives workers of the opportunities to access well-paying, wage/salaried jobs, and instead traps them in self-employment or informal jobs. What is worse is that the youth and female workers, even if they have high educational attainment, are less likely to be in productive jobs; many of them are underemployed and thus unable to generate enough income to escape poverty.

The difficult employment situations that the youth and females face in urban Kinshasa are compounded by geographical factors. These workers are spatially disconnected from the city core—which offers greater access to relatively good-quality jobs—due to a lack of alternative means of commuting other than walking or cycling. The analysis calls for supplementing labor market interventions that support those disadvantaged workers—such as job fairs, vocational training, and public works programs—with spatial interventions to reduce a prevalent mismatch in the labor market. The spatial interventions may include, for instance, the provision of support

for the development of an affordable transport system (e.g., minibus) and transport subsidies to disadvantaged workers for job searching.

## Annex A: Supplementary tables and figures

Table A.1: Labor income regression (Heckman's selection model)

	(1)	(2)	(3)	(4)
<i>Demographic variables</i>				
Age	0.109*** (0.026)	0.109*** (0.026)	0.110*** (0.030)	0.111*** (0.030)
Age squared	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Male	0.579*** (0.080)	0.600*** (0.082)	0.454*** (0.092)	0.466*** (0.092)
Secondary	0.308*** (0.104)	0.275*** (0.106)	0.241** (0.123)	0.198 (0.128)
University	0.957*** (0.119)	0.888*** (0.123)	0.850*** (0.152)	0.772*** (0.158)
Other	-0.182 (0.279)	-0.224 (0.276)	-0.197 (0.262)	-0.339 (0.255)
<i>Job characteristics</i>				
Industry		0.670*** (0.210)	0.487** (0.220)	0.332 (0.254)
Services		0.739*** (0.195)	0.375* (0.198)	0.221 (0.236)
Other		0.680*** (0.202)	0.306 (0.220)	0.172 (0.256)
Private		-0.057 (0.103)		
International organization		1.301*** (0.328)		
Informal			-0.447*** (0.094)	-0.393*** (0.093)
Hours of work last week			0.006*** (0.002)	0.006*** (0.002)
<i>Geographic characteristics</i>				
Distance to CBD				-0.041** (0.018)
Distance to CBD squared				0.001 (0.001)
Obs.	6,759	6,755	6,041	5,908

Note: Standard errors in parentheses. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ . Other control variables include marital status. The results of the first-stage selection models are not reported.

**Table A.2: Unemployment and informality**

	(1) Unemployment	(2) Informal
<i>Demographic variables</i>		
Age	-0.008** (0.003)	-0.007 (0.010)
Age squared	0.000* (0.000)	0.000 (0.000)
Male	0.051 (0.040)	-0.033 (0.087)
Secondary	0.001 (0.016)	-0.130** (0.054)
University	0.094*** (0.034)	-0.338*** (0.098)
Other	-0.055** (0.022)	0.099 (0.087)
Secondary × Male	0.013 (0.045)	-0.162 (0.099)
University × Male	-0.128** (0.053)	-0.154 (0.131)
Other × Male	-0.028 (0.044)	0.050 (0.163)
<i>Geographic characteristics</i>		
Distance to CBD	-0.008** (0.003)	0.029*** (0.008)
Distance to CBD squared	0.000 (0.000)	-0.000** (0.000)
Adj-R <sup>2</sup>	0.038	0.160
Obs.	2,862	1,879

Note: Standard errors in parentheses. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

**Table A.3: Use of public transportation**

	(1)	(2)	(3)
<i>Distance to public transportation stops</i>			
1–2 km	–0.017 (0.018)	0.021 (0.018)	0.032* (0.018)
2–3 km	–0.117*** (0.027)	–0.083*** (0.027)	–0.084*** (0.027)
More than 4 km	–0.266*** (0.025)	–0.198*** (0.026)	–0.169*** (0.027)
<i>Demographic characteristics</i>			
Male		0.100*** (0.015)	0.071*** (0.015)
Secondary		0.189*** (0.021)	0.165*** (0.021)
University		0.302*** (0.023)	0.206*** (0.024)
Other		0.113*** (0.027)	0.080*** (0.027)
Youth (15–24)		–0.072** (0.033)	–0.077** (0.032)
<i>Net monthly income</i>			
US\$25–US\$199		0.277*** (0.025)	0.251*** (0.025)
US\$200–US\$399		0.259*** (0.031)	0.213*** (0.032)
More than US\$400		0.038 (0.034)	–0.017 (0.035)
<i>Job characteristics</i>			
Employer			–0.141*** (0.031)
Self-employed			–0.158*** (0.019)
Private			–0.030* (0.018)
Industry			0.218*** (0.046)
Services			0.250*** (0.042)
Other			0.233*** (0.040)
Adj-R <sup>2</sup>	0.012	0.097	0.124
Obs.	5,747	5,645	5,490

Note: Standard errors in parentheses. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

## Annex B: Methodology

### Labor income regression

For the analysis of correlates with individual labor income, a Heckman's selection model is estimated. The baseline OLS model is set as follows:

$$\ln(y_i) = \alpha + \beta X_i + \varepsilon_i,$$

where  $y_i$  is the log monthly wage or labor income of individual  $i$ ,  $X_i$  is a vector of covariates including various demographic characteristics (for example, age, age squared, gender, education attainment), characteristics of jobs (for example, economic sectors, public/private, and formal/informal), and geographic characteristics of an enumeration area (for example, distance to the CBD).  $\varepsilon_i$  is an iid error term. In order to take account of the selection of individuals reporting labor income, Heckman's selection model is estimated by adding a first-stage selection model based on individual's demographic characteristics. The results are presented in Table A.1.

We also employed a regression analysis to identify factors that determine unemployment and informality of jobs. The outcome variable is a binary variable coded 1 if unemployed or working in the informal sector. An OLS (linear probability) model was used. The same set of demographic characteristics and geographic characteristics, as described above, was adopted for these regressions as well, although we also introduced interaction terms between education levels and sex to explore if there are any differential effects of education on employment conditions by sex. The results are presented in Table A.2.

### Job accessibility index

The index of job accessibility that we used in this report measures the share of job opportunities that can be reached within a certain travel time (Nakamura and Avner 2018). This index can be formalized as follows:

$$\text{Job accessibility}_i = \frac{\sum_j O_j * 1[t_{ij} < \bar{t}]}{\sum_j O_j},$$

where  $i$  indexes each location (or origin),  $O_j$  represents the number of job opportunities in location  $j$ ,  $t_{ij}$  is the travel time between location  $i$  and location  $j$ , and  $\bar{t}$  is a time threshold.  $1[\cdot]$  is an indicator function that takes the value of 1 if the statement in the brackets is true, 0 otherwise. In other words, this index captures the share of jobs that are accessible from location  $i$  within travel time =  $\bar{t}$ .

The index is computed for each 30-arc seconds grid (roughly squared kilometers) where travel time by walk between the centroid of each grid and the locations of jobs is derived based on OpenStreetMap and Open Source Routing Machine (OSRM).<sup>15</sup>

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<sup>15</sup> 'osrmtime' in STATA is used to compute travel time between the centroid of each grid and the locations of jobs as recorded in the 2017 JICA CS.

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