Angola Poverty Assessment

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Poverty and Equity Global Practice

Africa Region

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Acknowledgments

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IBEP	
INE	Instituto Nacional de Estadística
IDR	Inquerito de Despesas e Receitas
IDREA	Inquerito de Despesas, Receitas e Emprego do Angola
PND	Plano Nacional de Desenvolvimento

Overview

This overview summarizes the estimates of monetary and non-monetary poverty and the profile of the poor in Angola based on the recently released household budget survey, *Inquérito sobre Despesas, Receitas e Emprego de Angola* (IDREA 2018/2019).

The last household budget survey for the measurement of poverty in Angola was the *Inquérito Integrado sobre o Bem-Estar da População* (IBEP) undertaken in 2008. Given that the two surveys, IDREA and IBEP, are not comparable for measuring the change in the monetary poverty rate, the focus of this report is on understanding the geographic and socio-economic characteristics of poverty in Angola, for the purpose of informing the design and targeting of more effective poverty alleviation policies as well as providing a new baseline for the monitoring of progress toward the reduction of poverty and the boosting of shared prosperity in the country. [1]

Angola is the third-largest economy in the Sub-Saharan Africa and is classified as a low-middle income economy. Angola has a total population of about 30.81 million people (2018) and is divided into eighteen provinces. About 27 percent of the population lives in the capital region of Luanda and about 37 percent lives in rural areas. Angola, being the second largest oil producer in Africa, has an economy heavily reliant on the petroleum sector. Oil constitutes 87.6 percent of exports, 50 percent of government revenues, and together with natural gas, 31 percent of GDP. The country has a significant unrealized potential to develop industries in agriculture, fisheries, and minerals. More than 50 percent of the food consumed is imported, constituting 16 percent of merchandise imports.

The roots of poverty in Angola can be traced back to the economic structures established during the colonial period and the conditions created by the 27-year civil war. Whereas colonialism created an export economy in Angola, Angolans themselves were exploited and left in poverty. Most skilled work was done by foreigners without any transfer of skills to the Angolans. The command-economy policies enacted at independence and the long civil war pushed most foreign companies and workers holding the managerial, technical and administrative positions to leave. By 1976, the economy and administering of the country were left with the expertise of less than one hundred university graduates. Over the course of the civil conflict (1975-2002), half million to a million people died, millions of Angolans were wounded, and an estimated 3.7 million people becoming refugees or internally displaced, often migrating to the cities. The war destroyed important infrastructures such as schools, hospitals, railways and bridges, and this context resulted in a generation of newly independent Angolans without proper schooling or health care. The depopulation of the rural areas further entrenched regional disparities that began with the focus on coastal areas during the colonial period.

Stock of human capital is low. Angola ranks 149th out of 182 countries in the Human Development Index (HDI) of UNDP, and it also stands among the lowest countries in the world in terms of the Human Capital Index (HCI) (0.36) and slightly below the Sub-Saharan African (SSA) average (0.4). The HCI is composed of health (stunting and under-five mortality rate), education, and survival indicators, and its value suggests that a child born in Angola today will only reach 36 percent of their potential productivity when they grow up. In comparison to the other components of the HCI, the

[1] This poverty assessment validates many of the policy recommendations of the recent Angola Systematic Country Diagnostic (World Bank 2018) that provides a very complementary source of information on the constraints and opportunities for the reduction of poverty and the boosting of shared prosperity in Angola based on the data sources available at the time.

persistent and high prevalence of stunting in Angola has been a major contributor to the potential productivity and the low level of HCI.

Investments in building human capital have been lacking Angola's life expectancy of 61.5 years is below the average of 67.9 years for lower middle-income countries. Even though school enrollment has quadrupled since 2004, 1 in 6 school aged children do not attend school. In rural areas only 6 percent of girls of secondary school age are enrolled. Many costs associated with primary and secondary education are passed onto the students, limiting access for many. Given resource constraints boys are prioritized over girls, thus maintaining the gender gap. However, even those in school receive low quality education. Up to 75 percent of teachers have not received any formal training, pupil-to-teacher ratios are high (43.5), and schools lack even the basic facilities with open defecation being the sanitation option in 45 percent of schools. The literacy rate among the youth (aged 15 to 20 years) is only 75 percent. Worldwide, Angola ranks among the last in terms of human resources in the health sector, with only one physician, 23 health care workers and 63 nurses per 100,000 people. Maternal and child mortality rates are about double the average in lower-middle income countries. Angolan teenage girls (15- to 19-year-olds) have the highest rate of births per 1,000 girls in the world at 162 births per 1,000 girls.

Infrastructure needs are significant. Half of the population living in urban areas live in overcrowded, underserved slums. Only 63 percent of the urban population and 24 percent of the rural population have access to improved drinking water. Similarly, 61 percent of the urban population and 21 percent of the rural population have access to basic sanitation. The road network is sparse with a density of 6 km / 100 km2, one of the lowest in Southern Africa. Rural access index is the fourth lowest in the world after South-Sudan, Chad, and Mali. And only 17 percent of classified urban roads are paved. About 22 percent of the population has access to mobile broadband with 55 percent having access to a mobile phone.

In the decade after the end of the civil war, GDP per capita nearly doubled, from US$ 3,892 (PPP) in 2000 to US$ 6,813 (PPP) in 2014, though growth decelerated in more recent years, reaching US$ 5,725 (PPP) in 2018. This impressive expansion of the economy nonetheless did very little to reduce poverty between 2000 and 2014 and, in particular after 2014. The proportion of people living below the US$ 1.90 poverty line showed only a small decline, from 32.3 percent in 2000 to 28.0 percent in 2014. Despite survey comparability issues, US$ 1.90 poverty is expected to have remained unchanged between 2014 and 2018. Rapid population growth and increasing urban poverty meant that the absolute number of poor in Angola actually increased from 4.9 million to 6.7 million between 2000 and 2014, reaching over 10 million by 2018.

Monetary Poverty

The incidence of poverty in Angola as of 2019 based on a monetary measure of welfare (monthly food and non-food consumption expenditures per adult equivalent) is 32.3 percent at the national level. The estimates generated based on the contemporaneous IDR 2018/19 bridge survey carried out by INE explicitly for the purpose of comparing poverty changes over time suggest that there has not been a statistically significant change in poverty since 2008.

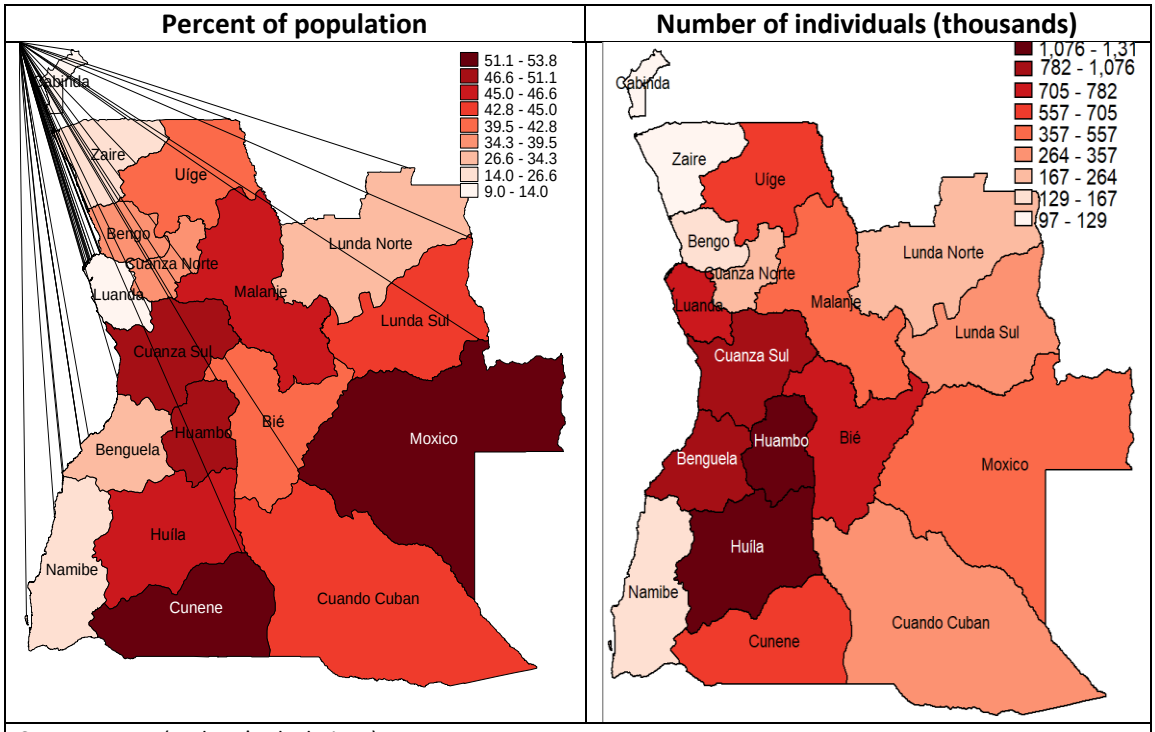
The incidence of poverty rates is almost three times higher in rural areas (54.7%) than in urban areas (17.8%). The gap between urban and rural poverty is even larger, when focusing on the depth and severity of poverty.

The strong dichotomy in welfare between urban and rural areas in Angola is reflected in a large inequality at the national level. The Gini coefficient in Angola is 0.51 which is one of the highest in Africa.

The highest incidence of poverty is found in the East (Moxico) and South (Cunene) of the country. However, the largest number of poor people is found in the coastal provinces, where the population density is the highest (especially Benguela, Huila, Huambo, Cuanza Sul, Luanda and Uige).

Yet, even within the large urban areas, pockets of poverty continue to persist. Over a third of all the poor people in Angola live in just three provinces in the South-West of the country, namely, Huila (1.3 million), Huambo (1.1 m.) and Kwanza Sul (1.1 m.). However, the highest poverty rates are found in the less densely populated interior regions of the country, such as Cunene (53.8%) and Moxico (52.0%).

Map O.1: Poverty incidence and the number of poor by province

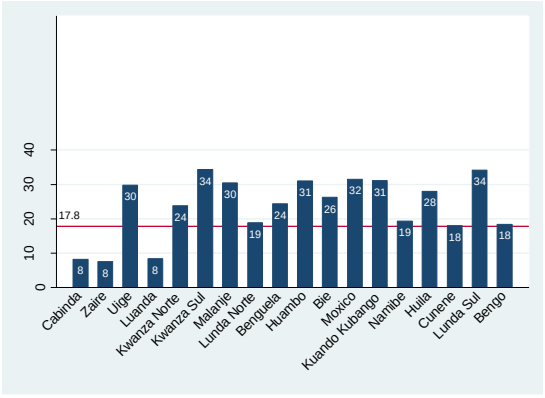
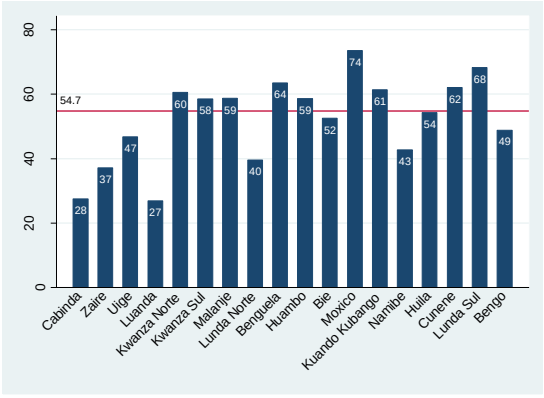


Source: IDREA (authors' calculations)

Two provinces (Huila and Lunda Sul) stand out as having high severity of poverty (9.6 and 7.9, respectively) in comparison to their poverty incidence (46.4% and 43.2%). The median consumption of poor people in Huila and Lunda Sul is considerably lower (by almost Kz 1,000) than in Moxico, where the incidence of poverty is significantly higher (52%). In other words, Moxico has a poverty rate that is more widespread, but less severe than Huila and Lunda Sul, a fact that points to possible issues of marginalization and social exclusion in these two provinces.

In Lunda Sul poverty is largely an urban phenomenon, whereas Huila's poor are found mostly in rural areas. Lunda Sul, which is a highly urbanised province, has the country's highest urban poverty rate, together with Kwanza Sul (34%). The province also has small but extremely deprived rural population, exhibiting the highest rural severity of poverty in the country (15). Huila, on the other hand, has an overwhelmingly rural population, but comparatively fewer poor people in urban areas (28%).

Figure O.1: Poverty headcount (FGT0) by urban and rural area of residence within provinces

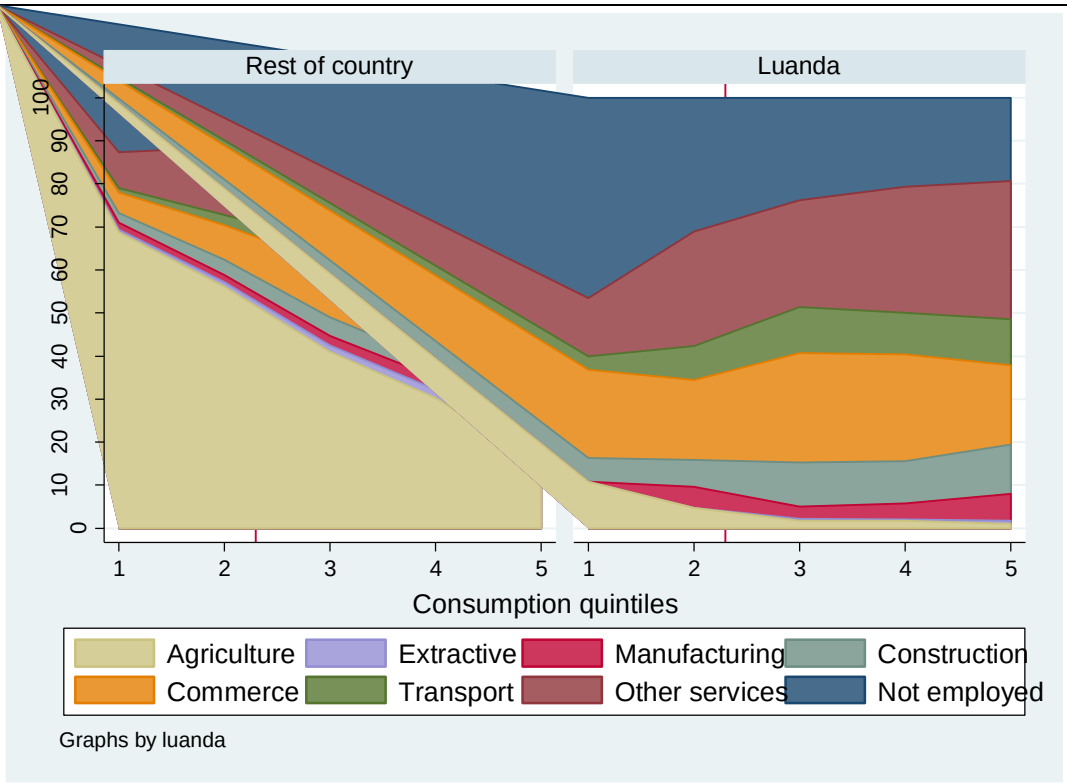
Urban	Rural
	

Source: IDREA (authors' calculations)

The duality of the Angolan economy is also reflected in two very different "types" of poverty. On the one hand, there is a traditional rural sector dominated by low-productivity subsistence agriculture. Poverty, outside of Luanda, is largely concentrated in this sector: 69% of households in the poorest national quintile are employed in the agricultural sector, vs. less than 15% in the top quintile.

On the other hand, there is a modern export-oriented oil-economy, which is mostly concentrated in Luanda and some other urban centers. In these areas, where employment in agriculture is marginal, poverty tends to linked to issues of unemployment and informality: In Luanda, non-employed households represent almost half (47%) of the population in the poorest, vs.24% in the third quintile (see Figure O.2).

Figure O.2: Sector of employment of the household head, by location[2]



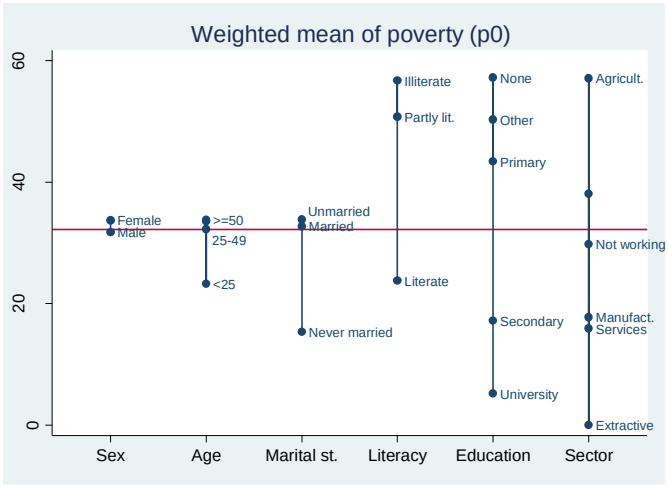
Source: IDREA (authors' calculations)

Poor households (at the bottom two quintiles of the welfare distribution, tend to be larger, more likely to be female-headed, and have a higher number of younger members (under 15) in comparison to wealthier households.

Illiteracy and low levels of education and being employed in agriculture are also strongly correlated with poverty. The poverty rate is almost three times higher amongst illiterate households than amongst literate ones. Similarly, the poverty rate is more than 50 percentage points higher amongst households headed by someone with no education, compared to households headed by someone with university education. In terms of the sector of employment, households headed by someone working in agriculture stand out as having the highest poverty rate (57%), whereas only 16% of those employed in the service sector are poor (see Figure O.3).

[2] It should be noted that in this figure "Not employed" includes both inactive and unemployed households.

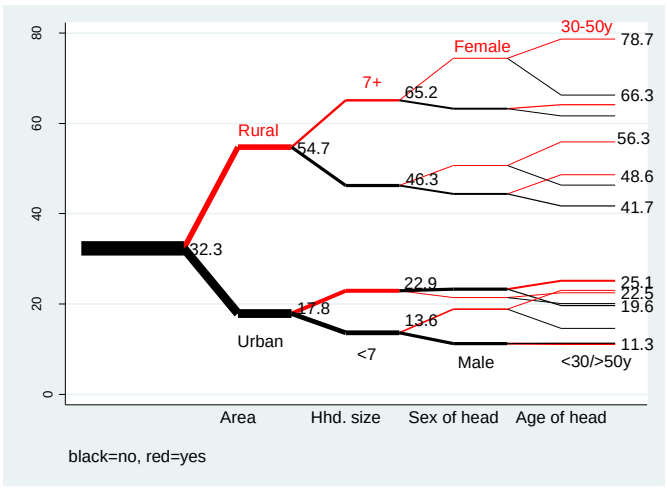
Figure O.3: Poverty incidence (%), by characteristics of the household head



Source: IDREA (authors' calculations)

Rural poverty is compounded by demographic risk factors, such as gender, age and household size. For instance**,** poverty rates in large rural households headed by women aged 30-50 years is almost 7 times higher than amongst households presenting none of these characteristics (78.7% vs. 11.3%) (Figure O.4).

Figure O.4: Probability of being poor by cumulative risk factors



Source: IDREA (authors' calculations)

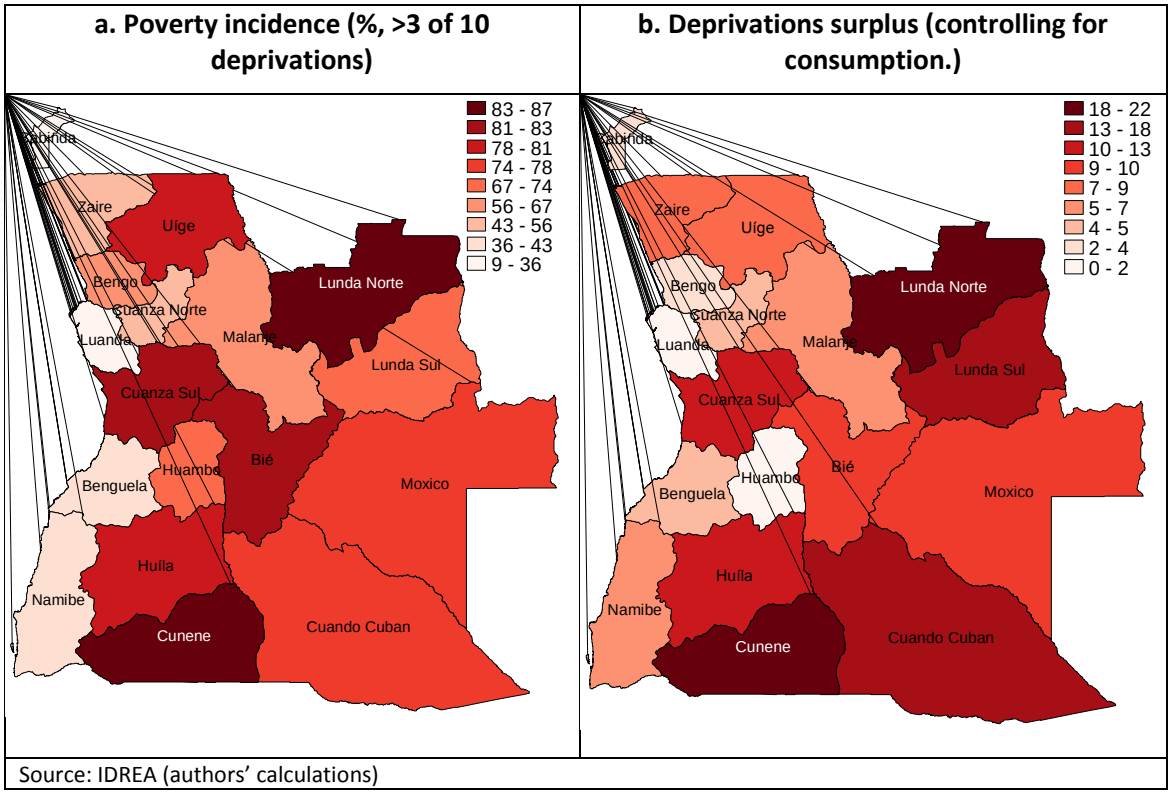
Non-Monetary Poverty

The incidence of multidimensional poverty is 52.5 percent at the national level, meaning that 52 percent of the households suffer more than 3 out of 10 possible weighted deprivations. Also, the gap between rural and urban areas is even larger (more than 3.4 times larger): 92.3 percent of rural, compared to just 26.8 percent of urban households.

In general, the provinces with high monetary poverty rates also tend to have high levels of multidimensional poverty. But the correlation is far from perfect. Lunda Norte, for instance, has over 83% of its population living in multidimensional poverty (see Map O.2a), despite having one of the country's lower rates of monetary poverty (27%). This "surplus" of multidimensional poverty in

Lunda Norte remains even after controlling for differences in demographic composition, as well as urbanization, and income/consumption (see Map O.2b).

Map O.2: Multidimensional poverty, by province

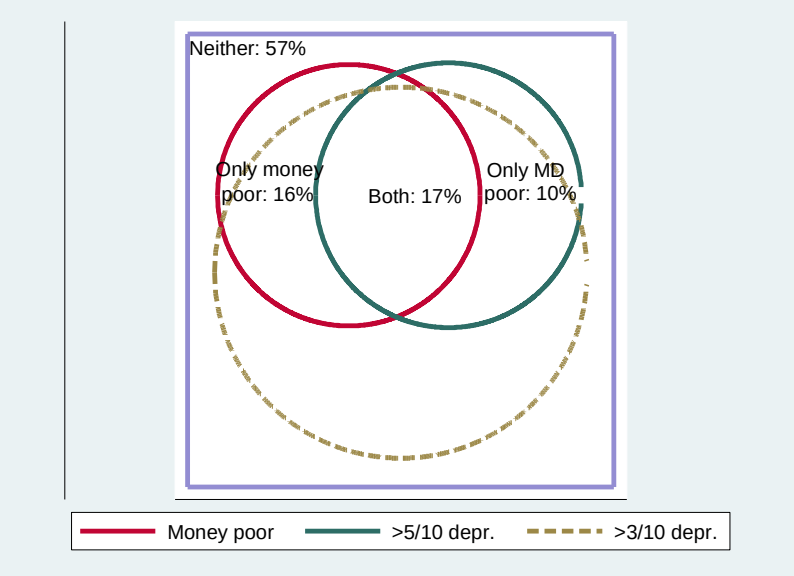


Source: IDREA (authors' calculations)

There is a significant discrepancy between monetary and nonmonetary poverty in Angola. Figure O.5 shows the overlap between monetary and non-monetary poverty. In order to facilitate comparison between the two measures, the figure also includes an additional measure of multidimensional poverty, which sets the poverty threshold at 5 out of 10 deprivations, instead of the usual 3 out of 10 deprivations, in order to ensure that the two groups are of similar size[3]. If monetary and non-monetary poverty were perfectly correlated, the red (money poor) and green (>5/10 deprivations) circles would overlap perfectly. However, as the graph shows, there is significant discrepancy between the two, as almost half of all poor households in terms of monetary poverty have less than 5/10 weighted deprivations, while almost as many households are multidimensionally poor without being money poor. The policy implications of this finding are discussed below.

[3] It was not possible to isolate exactly 32.3% of multidimensionally poor households (corresponding to the monetary poverty rate), due to the non-continuous nature of the multidimensional poverty index.

Figure O.5: Overlap between monetary and multidimensional poverty (>3 and >5 deprivations)

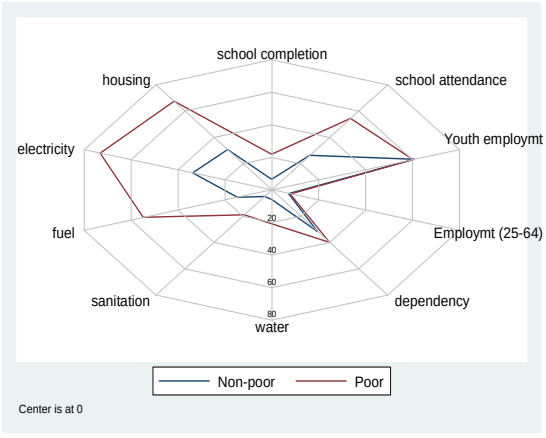
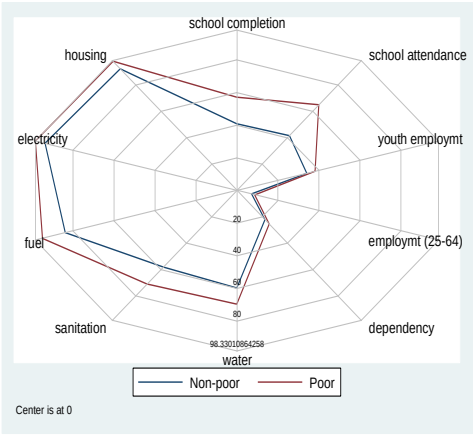


Source: IDREA 2018/19 (authors' calculations)

Lack of access to services in rural areas is one important dimension of poverty that is only partially captured by monetary poverty. Even after controlling for differences in consumption between urban and rural areas, as well as other relevant household characteristics, rural households are still significantly more likely to be multidimensionally poor than urban ones. In fact, **the area of residence is by far the most significant factor, after consumption, in predicting how many deprivations a household suffers** – much more so than household size, age, education and even employment of its members.

The decomposition of the multidimensional poverty index by dimension of wellbeing reveals that the largest differences between urban and rural areas are in access to improved water and sanitation, as well as school completion (Figure O.6). Furthermore, the gap between rich and poor households is larger in urban than in rural areas for most of the deprivations considered here. This suggests that financial constraints may be more prominent in urban areas, whereas supply-side or other non-financial constraints may be more important in rural area. The largest gaps between poor and non-poor households in urban areas is found in housing conditions: construction materials, access to electricity, cooking fuel. In rural areas, school attendance stands out as the issue separating poor from non-poor households the most.

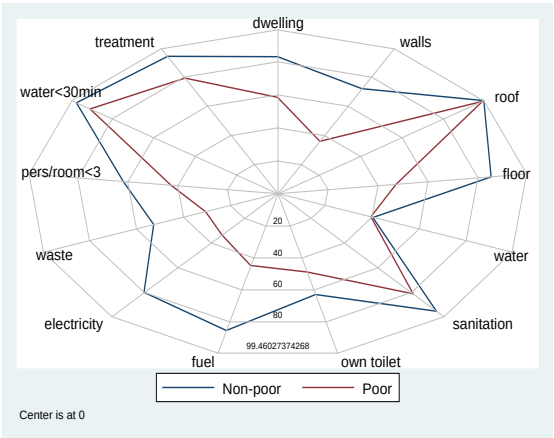
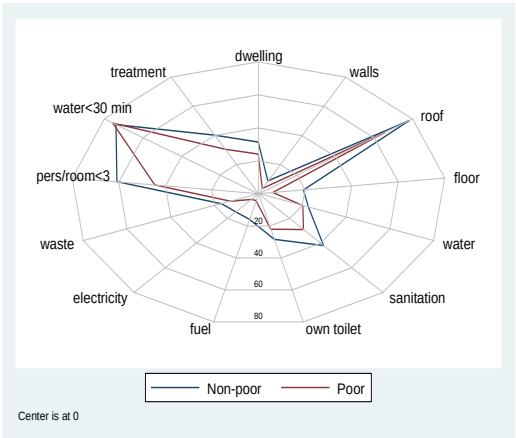
Figure O.6: Deprivations by monetary poverty status and area of residence

a. Urban	b. Rural
	

Source: IDREA 2018/19 (authors' calculations)
Note: The Poor and Non-Poor classification is based on monetary terms.

Poor households in urban areas are significantly less likely to be connected to the public grid, and are significantly less likely to use improved, i.e. non-solid, cooking fuels, and have adequate floors and walls (Figure O.7a). In rural areas, access to improved sanitation stands out as an indicator where poor households have significantly worse conditions than non-poor households (Figure O.7b). Poor households are also significantly more likely to live in crowded spaces (>3 pers./room).

Figure O.7: Percentage of population with adequate housing conditions[4] by poverty status and area

a. Urban	b. Rural
	

Source: IDREA 2018/19 (authors' calculations)

The lack of roads is an important driver of poverty in rural areas

The probability of being poor increases as the distance to the nearest market increases. This result holds even after controlling for other geographic and household characteristics. The effect is most pronounced for locations that are accessible by paved roads. For locations that are not accessible by

[4] Dwelling: house, apartment; Walls: hard walls; Floor: not earth; Water: tap, protected source; Sanitation: WC with sewage, Latrine; Fuel: gas, electricity, petrol; Electricity: generator, public network; Waste: bin, burnt, buried; Water time: <=30 minutes; Water treatment: boiled, ceramic filter, chlorine, solar.

road, there is almost no discernible relation between remoteness (distance to market) and poverty, probably due to structural inaccessibility of those locations.

Rural dwellers are significantly more likely than urban ones (33% vs. 23%) to not consult a medical professional while sick. In areas that are only accessible by unpaved roads, the likelihood of not consulting a medical professional while sick increases with the distance (in minutes) to the health facility. The disincentivising effect of distance is even stronger in areas that are only accessible on foot. But in areas that are accessible by paved roads, the effect is only visible for very large distances (>60 minutes from the health facility).

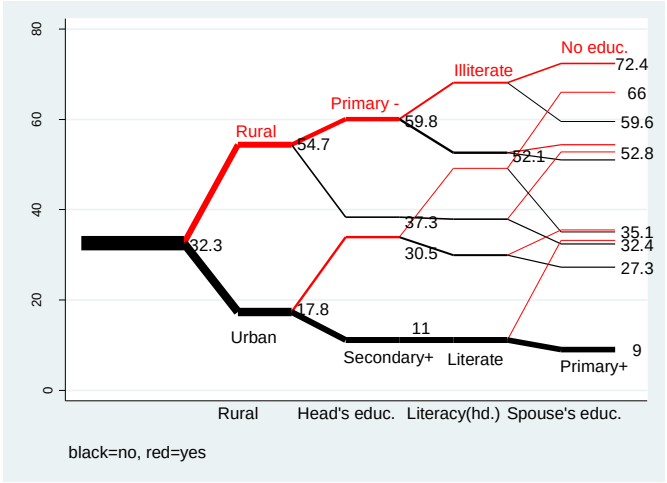
Accessibility also appears to play a key role in food security. In areas connected by road, the number of months in which a household experiences food shortage is strongly correlated with the number of months in which the road is usable. In areas that are not connected by road, accessibility appears to be uncorrelated with food shortage – probably reflecting the fact that those areas are inaccessible all year round. Even when a road exists and is usable, those without means of transporting agricultural produce are more likely to experience food shortages. This suggests that accessibility may be an important factor in determining food security in rural areas and may explain why even some relatively wealth households report food shortages in rural areas.

Accessibility also has knock-on effects on education, which itself is a key determinant of poverty. For children of illiterate spouses, distance increases the likelihood that the child will be out of school. Girls are more likely to be out-of-school overall, but less vulnerable than boys to dropping out as a result of excessive distance – probably because many of them already dropped out for other reasons. If the spouse/mother is literate, the relation between school distance and attendance is a bit more complex: in urban areas greater distance to school is associated with higher attendance up to a distance of around 30 minutes. This may reflect the fact that more motivated parents seek out better schools that are located further away from the home.

Lack of education as both a result and a cause of poverty

After area of residence (e.g., living in a rural area), education is one of the strongest predictors of both monetary and multidimensional poverty. The riskplot presented in Figure O.8 shows how various educational characteristics of household members interact to increase or reduce the risk of monetary poverty. The graph shows that that 72.4% of rural households headed by two uneducated parents (illiterate head with a spouse with less than primary education) are poor. By contrast, among urban households where both parents are educated, the poverty rate is just 9%.

Figure O.8: Risk plot showing the cumulative effect of educational disadvantages on poverty



Source: IDREA 2018/19 (authors' calculations)

Importantly, the effects of education on multidimensional poverty cannot simply be explained by the fact that more educated individuals tend to earn more. The average number of deprivations experienced by a household decreases significantly with the years of education of the household head, even after controlling for the fact that more educated households tend to be more urban and have higher income, as well as other relevant household chracteristics. The effect of education is stronger for females than for males, and it is stronger for the household head than for the spouse.

The negative effects of education on multidimensional poverty relate to, amongst other things, behavioural factors. For instance, in urban areas the likelihood of not consulting a medical professional while sick decreases significantly with the spouse's education. This result, which is obtained after controlling for household consumption, and other relevant household characteristics, suggests that financial barriers are only part of the explanation for why people do not consult a doctor while sick.

Furthermore, different deprivations often interact in ways that are mutually reinforcing. For instance, food insecurity increases the probability of children not attending school. Furthermore, the data appear to indicate that the effect of food shortages on school attendance are stronger for girls than for boys in both urban and rural areas. These results are obtained controlling for consumption, as well as parents' education and other relevant household characteristics.

Another dimension of wellbeing that is strongly correlated with education, is housing. Children suffering multiple housing deprivations are more likely to not attend school. For instance, a rural girl living in a crowded house with no electricity has an almost 50% chance (47.4%) of being out-of-school. That is almost 4 times more than an urban boy living in a spacious house with electricity (13.2%).

Vulnerability to poverty

The consumption budgets of poor and vulnerable households in Angola are particularly susceptible to increases in food prices. Angola imports more than 50% of its food needs. Potential disruptions of global value chains, lower revenues from the oil sector due to low global demand and low global oil prices and a potential depreciation in the exchange rate may lead to higher food import prices. On average, rural and urban households allocate 62.4 and 43.5 percent of their

expenditures to food purchases, respectively, and these shares are even higher for poorer households. According to the 2018-19 IDREA, 55 percent of the households surveyed report experiencing lack of food in the last 12 months, and 66% worrying about food in the past 7 days. In rural areas, the most commonly cited cause for the food shortages is drought (29%), whereas urban dwellers are more likely to blame their food insecurity on prices (14%).

The current food security and nutritional context in Angola is exacerbated by the onset of the COVID-19 pandemic. The measures used to constrain the spread of the virus will create upwards pressure on food prices through at least two channels: 1) supply shocks as production chains are affected (including production of local farmers) and 2) demand shocks as individuals seek to stockpile in anticipation of expected scarcity. In addition, the southern provinces of Cunene, Namibe and Huíla, have been experiencing one of the more severe droughts in 38 years. Given that the south is an important agricultural region for the country, production disruptions in this region may affect national consumption and push vulnerable households below the poverty threshold.

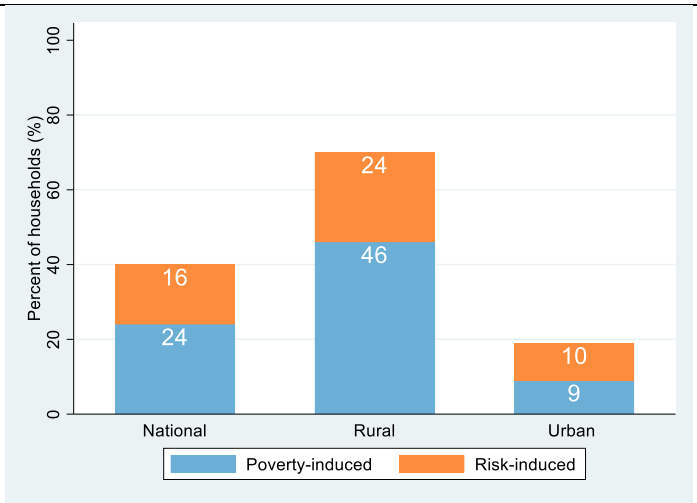
In a context of high volatility in consumption, a household's currently observed poverty status is, therefore, unlikely to be a very good guide for its vulnerability to poverty or its 'poverty risk'. In general, the extent of vulnerability to poverty depends on the nature of the shocks experienced by households (for example, covariate shocks such as food price and economic shocks, weather-related, climate-induced shocks or natural hazards affecting large communities or households, or idiosyncratic shocks such as illness), the risk management strategies of households and communities, the abilities of households to cope after the incidence of the shock (for example, assets owned, social capital), and their access to safety nets.

Vulnerability to poverty in Angola, and especially in the rural areas, is primarily due to low human capital and physical capital or assets (i.e., vulnerability is poverty-induced). The analysis in the report, confirms that vulnerability to poverty in Angola is mainly driven by low human capital and low asset endowments and hence permanent low consumption prospects rather than by high consumption volatility (or risk-induced vulnerability). In the rural areas, the majority, or 70 percent, of vulnerable households have expected consumption that is below the poverty line (Figure O.8). Decomposing vulnerability into two sources, vulnerability due to low human capital and low asset endowments(poverty-induced) and vulnerability due attributed to high consumption variability (risk-induced), reveals that the vulnerability to poverty in the rural areas is mainly poverty-induced (46 percent vs. 24 percent). In the rural areas, two-thirds of the vulnerability is poverty-induced and one-third is risk-induced.

Moreover, the share of risk-induced vulnerability is higher among vulnerable households in urban areas than in rural areas. In urban areas, vulnerability to poverty is more likely due to high volatility in consumption than due to poverty (Figure O.8). That is, in the urban areas where 19 percent of the household are vulnerable to poverty more than half (10 percent) are households that possess sufficient human capital and asset endowments to be above the poverty line, but negative shocks are likely to push them below the poverty line.

The share of risk-induced vulnerability is higher among vulnerable households in urban areas than in rural areas. In urban areas, vulnerability to poverty is more likely due to high volatility in consumption than due to poverty (Figure O.9). That is, in the urban areas where 19 percent of the household are vulnerable to poverty, more than half (10 percent) are households that possess sufficient human capital and asset endowments to be above the poverty line, but negative shocks are likely to push them below the poverty line. Within provinces the share of households subject to risk-induced vulnerability varies considerably less than the share of households subject to poverty-induced vulnerability.

Figure O.9: Poverty-induced vs. risk-induced vulnerability in Angola, 2019



Source: IDREA 2018/19 (authors' calculations)

A multivariate analysis of the determinants of vulnerability to poverty in Angola reveals that ownership of assets is the factor that most strongly differentiates the vulnerable from the non-vulnerable households. Ownership of more of assets is associated with a lower likelihood of being vulnerable.[5] Other factors also impact the probability of being vulnerable to poverty, but in terms of the marginal effect on the likelihood of falling below the poverty line asset ownership is the most important factor.

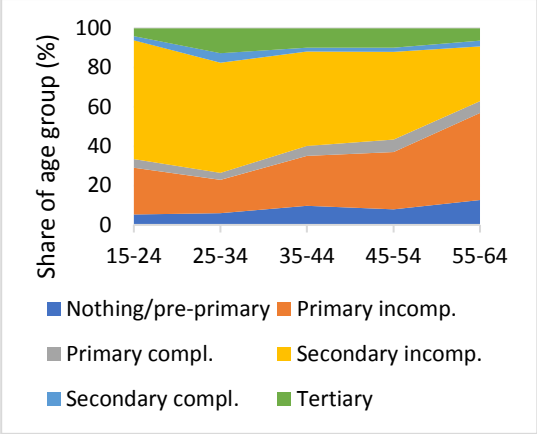
Angola's labor force: young, and inexperienced

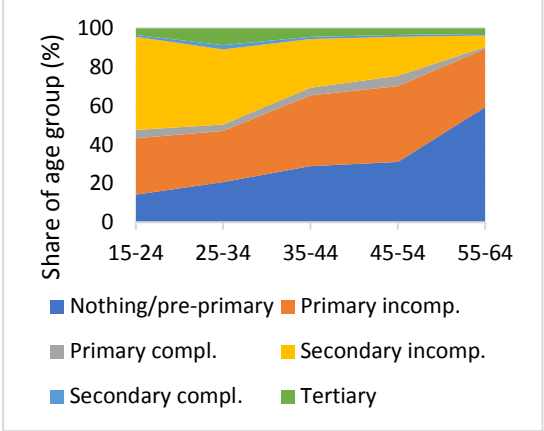
An important share of the labor force (15-64 yrs. old) is not educated, especially females. 44 percent of the labor force has less than primary education. Among females, 56 percent have less than primary education, whereas among males this fraction is 32 percent. The youth (15-25 yrs. old), and especially males, who enter the labor force are more educated, in the sense that a higher proportion of the youth have incomplete secondary education or more, in comparison to older age groups (Figure O.10).

Figure O.10: Educational attainment of Labor Force by age groups

a. Males **b. Females**

[5] Assets considered for asset total: stove, fridge, radio, tv, computer, mobile bike, moto, car, improved toilet, improved water. The asset index itself also includes the number of bedrooms and each asset is weighted.





Source: IDREA 2018/19 (authors' calculations)

There are significant differences in labor force participation by region. Cunene has the lowest labor force participation rate with only 36 percent of the working age population employed or looking for a job. Lunda Sul, Cabinda, Lunda Norte, Cuando Cubando, Namibe, and Luanda, have a labor force participation below the national average of 76 percent. Cuanza Sul is the region with a higher participation rate of 90 percent. The differences in labor force participation are related to the economic activities prevalent in the provinces. Provinces with the lowest labor force participation are those where commerce and service sectors are more important while provinces with high labor force participation are those where the agriculture sector is more important.

Social norms, family deprivation in assets, preferences, and poverty all combine to limit the educational and labor market opportunities of women early in their life cycle, especially in the rural areas of Angola. The school attendance rate among children 8 to 16 years old is between 80 and 90 percent in urban areas whereas in rural areas for the same age groups it reaches a peak at 74 percent at the age of 11 and drops after that age especially among girls. Overall, the school attendance rate of boys is higher than that of girls and this gender gap is larger in rural areas than in urban areas. Accessibility of schools in rural areas, affordability of the costs of child education, and parental illiteracy combine to limit the investments of families on the human capital of their children and especially girls.

The main reasons for not working are studying, no jobs and no experience or qualifications. Almost 50 percent of the people not in the labor force are studying and this percentage is higher among males: 57% of males reported to be studying, compared to 40% of females. With 15 percent, the second main reason for not participating in the labor market is that there are no jobs. On average, 9 percent of those out of the labor force reported that they do not have the experience or qualifications required to find a job. Among females 13% reported being out of the labor force because they were sick/disabled/pregnant, and 8 percent do not participate because they become housewives.

The share of youth not studying and not working is higher for females than males and the gap increases with age. As they get older, females drop from school and either stay at home or work in low skill jobs. Males are more likely to either study or work than females. The gap in time allocation between males and females increases from aged 16 to 20. From 21 years old to 24, youth are mostly working, but an important share stayed at home doing nothing**.**

Young female household heads with children have more limited opportunities than those without children. Young females with children can't afford to spend their time studying and are either

working or taking care of their children at home. Young females without children have more choices to allocate their time, but after 17 years of age, an important share of them do not study nor work.

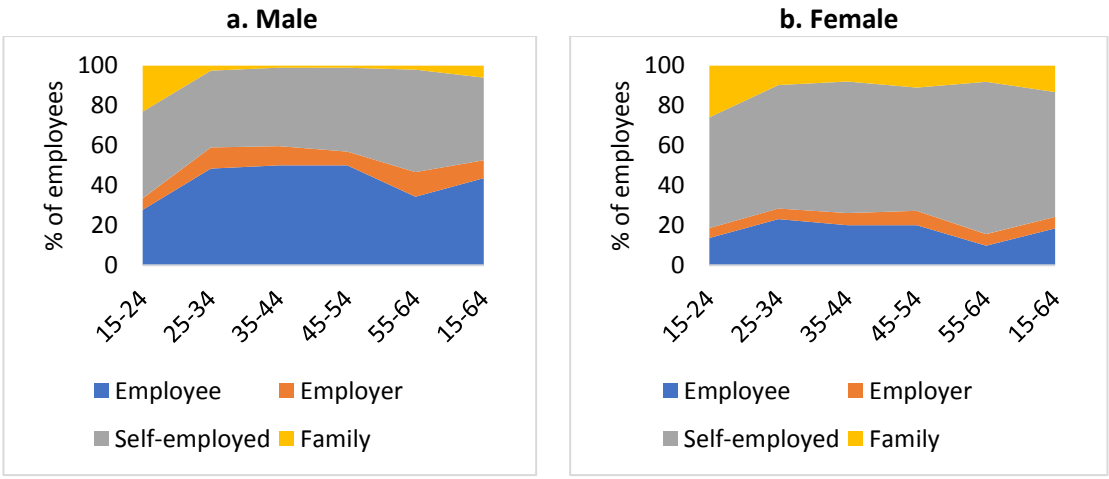
Productive employment opportunities are limited especially for the youth and women

The youth face higher unemployment rates. The unemployment rate is higher in young people aged between 15 and 24 years, reaching 29%, which is more than twice the unemployment rate of people aged 25-54, 11%. The unemployed youth represent more than 50 percent of the total unemployed in Angola. The youth are overall more educated than the older, however, they have limited opportunities to find a job.

Broad unemployment rate in Angola is almost twice the unemployment rate. 27 percent of the labor force are willing to work compared to 15 percent actively seeking a job meaning that 12 percent of the population in the labor force is discouraged (person is without work in the reference period, is available to work, did not actively seek work in the reference period, but would accept work if offered). The fraction of the discouraged population is higher among the youth at 21%, among people in urban areas at 12%, among the poor at 13%, and among those with middle level education at 14%.

Most Angolans are self-employed (Figure O.11). 52.2% of employees are self-employed, 30.7% were in paid employment, 9.8% were family workers and 7.3% were employers. Younger workers are more likely to be self-employed and in unpaid jobs than workers aged 25 to 64. 25% of the youth start working as unpaid worker and 50% as self-employed. Paid employment is significantly higher for men (31%) than for women (18%) and increases with age.

Figure O.11: Employment type by gender and age



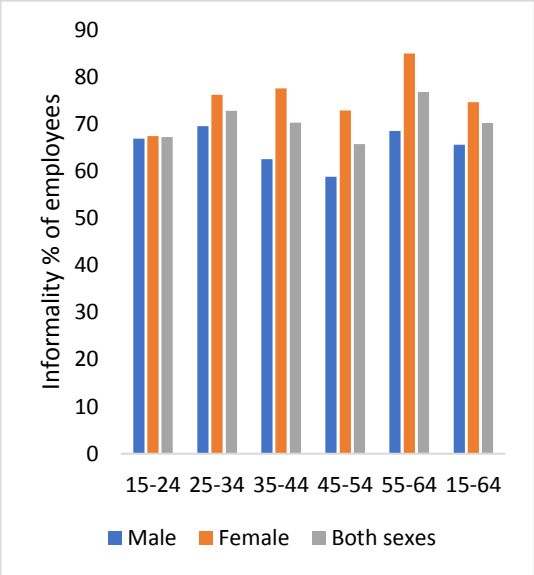
Source: IDREA 2018/19 (authors' calculations)

About 45 percent of the workforce in Angola is engaged in agriculture, followed by commerce/hotels 23% and services 15%. The employment share of the more productive manufacturing sector remains low. The oil sector employs only 1% of the total employees. The breakdown across sectors varies between rural and urban areas, with agriculture dominating in the former and services concentrating most of the workers in the latter.

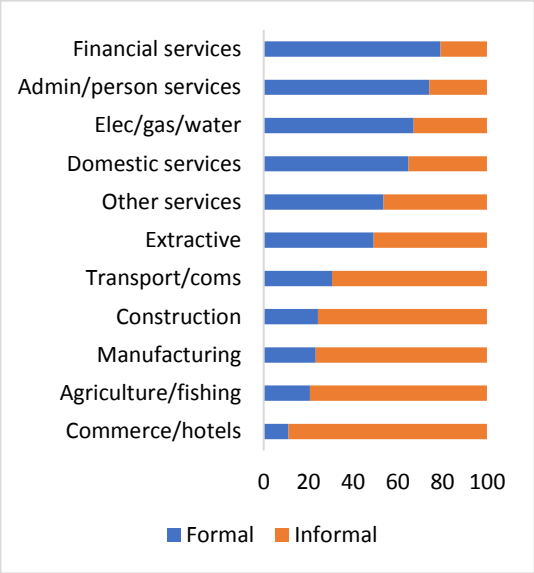
Overall, 70% of the employed workers in Angola are employed in the informal sector (Figure O.12).[6] Informality is higher for females than males (75% vs 66%) and increases with age. Moreover, the rate of informal employment is above 70% in commerce/hotels, agriculture, manufacturing and construction.

Figure O.12: Informality, by gender and sector

a. Informality by gender and age group



b. Informality by economic sector



Source: IDREA 2018/19 (authors' calculations)

Investing in human capital

Investments in the human capital (especially health and education) of younger household members are fundamental for economic growth and poverty reduction in the long term. Access to basic services is one of many critical ingredients in the production of human capital of children. Other factors include the quality of services accessed and the household income level, which in turn depends on the stock human capital of older household members and the returns they are able to receive for their human capital through markets.

Monetary poverty and inequalities in access to basic services such as health, water, sanitation, and proper care and feeding practices, in the initial stages of children's lives are associated with delayed child growth, in both physical and cognitive terms. The long-term consequences for human capital, economic productivity, and national development overall can even be quantified in economic terms. The chronic malnutrition of children is associated with a high risk of stunting , impaired cognitive development, lower school attendance rates, reduced human capital attainment, and a higher risk of chronic disease and health problems in adulthood (Victora et al., 2010; Black et al., 2013; Hoddinott et al., 2013). Thus, inequities in access to services early in the life of a child also contribute to the intergenerational transmission of poverty. Recent World Bank estimates suggest that the per capita income penalty a country incurs for not having eliminated chronical malnutrition when today's workers were children is around 7 percent of gross domestic product (GDP) per capita, on

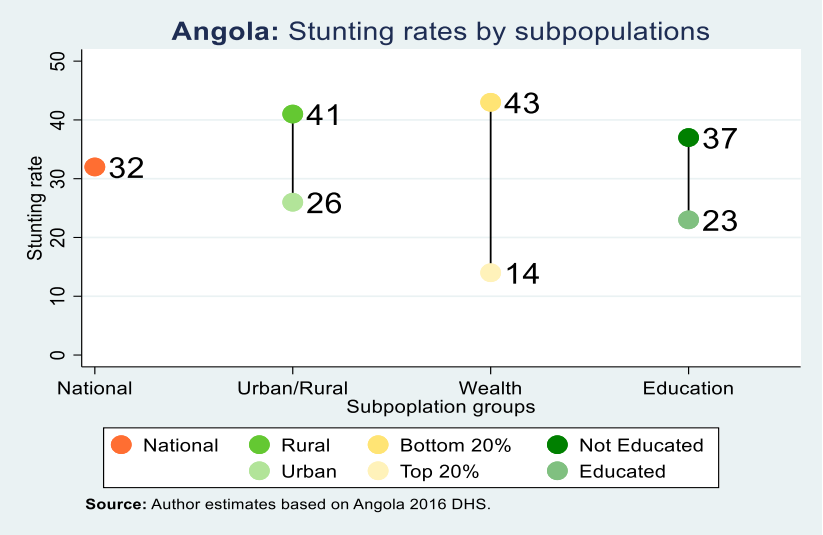
[6] An informal worker is defined as: working without a written contract, in a company not registered with public agencies, and does not benefit from any social security benefits (paid annual leave, health insurance, etc.)

average. In Sub-Saharan Africa and South Asia, these figures rise to about 9–10 percent of GDP per capita (Galasso et al., 2017).

Early pregnancy among adolescent girls, combined with poor maternal health and nutrition contribute to child chronic malnutrition. In Angola, childbearing begins early. According to the 2016 DHS, Angolan teenage girls (15 to 19-year-olds) have the highest rate of births per 1,000 girls in the world at 162 births per 1,000 girls. This has serious consequences because, relative to older mothers, adolescent girls are more likely to be malnourished and have a low birth weight baby who is then more likely to become malnourished, and be at an increased risk of illness and death, than those born to older mothers.

Based on the most recent Demographic and Health Survey of 2016, the prevalence of stunting among children between 0 and 23 months of age in Angola is 32 percent (Figure O.13). In rural areas, 41 percent of the children are stunted meaning that they are excessively short for their age whereas in urban areas only 26 percent are stunted.[7] Children from households in the bottom 20 percent of the wealth distribution have a stunting rate that is 29 percentage points higher than children from households from the top 20 percent of the wealth distribution. Differences in stunting rates can also be seen according to maternal education as well—23 percent of children whose mothers have more than 7 years of education or higher are stunted, while the prevalence rises to 37 percent of children whose mothers have less than 7 years of education.

Figure O.13: Differences in stunting in Angola by socio-economic characteristics



Source: Authors' estimates based on Angola 2016 DHS

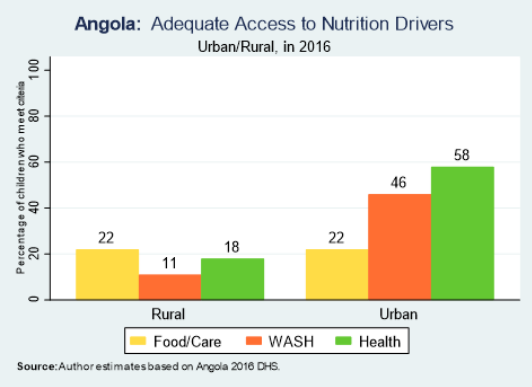
Differences in the prevalence of stunting are also stark across provinces. The prevalence of stunting among children under 24 months of ages is highest in Huambo (42.4 %) and Huila (42.1 %) and lowest in Cabinda (16.5 %) resulting in a difference of 26 percentage points between the most stunted and least stunted region.

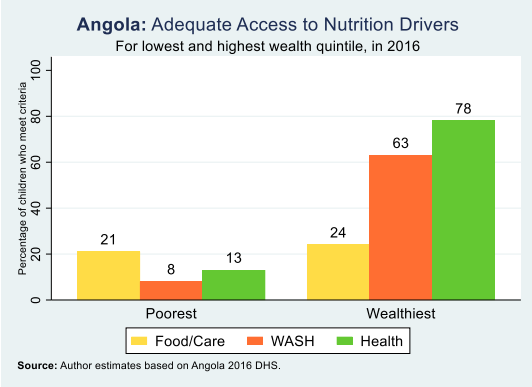
The differences in the prevalence of stunting among children are accompanied by inequalities in access to adequate food and care, health services and WASH services between rural and urban

[7] In statistical terms, a child is chronically malnourished (stunted) if his/her height-for-age Z-score (HAZ) is more than 2 standard deviations (sd) below the median height of a healthy reference population (that is, HAZ <-2). Child is classified as severely stunted if HAZ<-3.

areas (Figure O.14). The inequalities in access to adequate levels in the underlying drivers of nutrition, the health sector, agriculture, education, social protection, and water, sanitation, and hygiene (WASH), are especially pronounced between urban and rural areas and poorer and wealthier households in Angola.[8]

Figure O.14: Level of access to Food & Care, WASH, and access and utilization of Health services in Angola (children under 24 months)





Source: Authors' estimates based on Angola 2016 DHS

In Angola, only 5% of the children, less than 24 months of age, have adequate levels of all three drivers of nutrition at the same time. In contrast, 58% of the children have simultaneous access to adequate levels of one or two nutrition drivers, and 37 % do not have access to an adequate level of any of the three nutrition drivers.

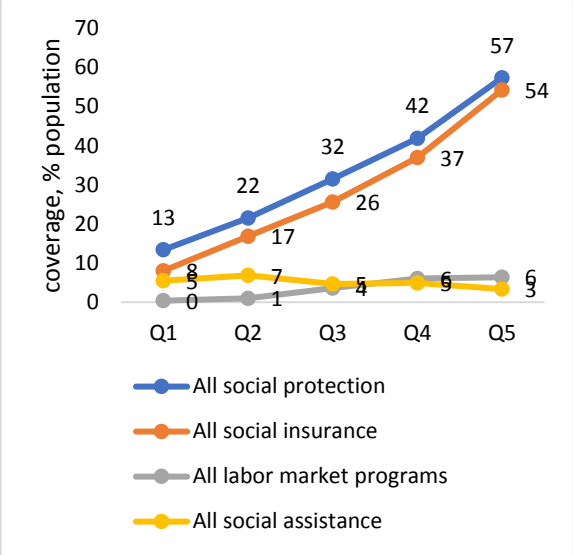
Social protection system is regressive

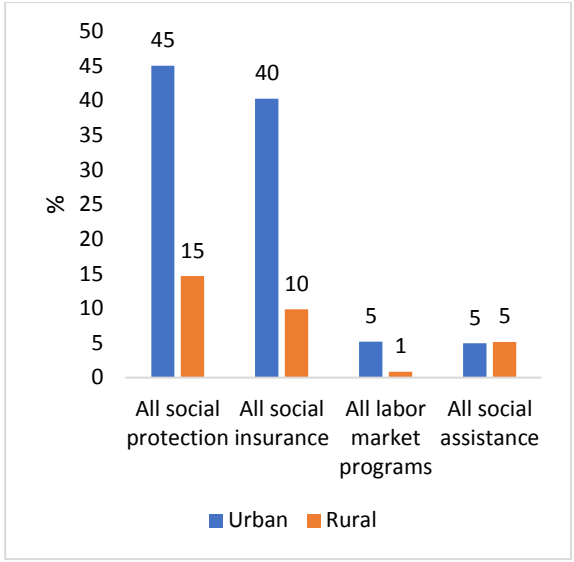
Overall, the poor do not seem to be well served by Angola's social protection system and the country's social protection spending could be much better aligned with its social needs (Figure O.15). Most of the social protection coverage comes from contributory pensions which benefit more those in the formal sector. Among the poorest quintile, only 13 percent of the population benefit from social protection and mainly through social insurance benefits. Social assistance and labor market programs have very low coverage. Overall, coverage is higher in urban than rural areas, except for social assistance programs.

Figure O.15: Social Protection and Labor program coverage

a. Coverage by quintile **b. Coverage by R/U area**

[8] The UNICEF (1990) conceptual framework views undernutrition as the consequence of a variety of interlinked factors. The causes of undernutrition are classified into three hierarchical categories: (i) the immediate causes, (ii) the underlying causes, and (iii) the basic causes of undernutrition. In any given context identification of the immediate causes of undernutrition—disease or inadequate dietary intake—is useful for guiding policy actions especially in situations of crises. In general, however, disease and inadequate dietary intake are typically consequences of a variety of underlying drivers that are interrelated.





Note: Programs captured in IDREA: Retirement Pension, Medical/Life insurance, Professional training, development or learning course (INEFOP), School meal, Informal credit (Kixiquila), Credits from NGOs, Cooperatives, Kikuia, Donations, Private/Remittances transfers

The target population of the social assistance programs is unclear, and some programs cover at the same time different vulnerable groups. Also, targeting criteria are mostly based on categorical groups.

Policy considerations

Angola's 2018–2022 National Development Plan (*Plano Nacional de Desenvolvimento*, PND) recognizes the urgency in addressing the wellbeing of the whole nation, by reducing hunger and extreme poverty, expanding youth employment, and diversifying the economy. The new administration led by President João Lourcenço plans to diversity and stimulate the economy by encouraging private sector investment, pushing for transparency, and opening up sectors to competition via the privatization of large-scale state-owned enterprises.

The following four broad areas of action emerge from the analysis in relation to the poverty reduction and boosting of shared prosperity in Angola.

Increase human capital through the provision of better services

Better services can help build human capacity both in the short- and medium-term, ultimately creating employment opportunities for the poor and raising productivity. Enhanced social programs will help to break the transmission of poverty from generation to generation. The improvement of children's educational attainment and health increases the accumulation of human capital during critical life cycle stages. Investments in education, health and social protection thus have a direct effect on economic growth, by enhancing labor quality and raising labor force participation rates. Accordingly, access to skilled workers will help firms improve their productivity and competitiveness. Improved design, coverage, and implementation of social protection programs can help families invest in health, child nutrition, and education, earn income and learn skills that help them find good jobs, and cope with shock and unexpected adverse events. Specific policies include:

Increasing the supply and quality of both preschool education and secondary education. Investing in early childhood development can increase the efficiency of education resources by improving

school readiness, child cognitive abilities later in life, lowering repetition and school drop-out rates later. Additionally, expanding secondary-school access and increasing secondary completion rates is vital for economic diversification. Strategies to improve school attendance include reducing out of pocket expenses, and cash transfer programs. To improve the quality of schooling rapidly, public-private partnerships also need to be considered.

Boosting the quality and accessibility of primary and child health services, especially in poor communities and rural areas, with an emphasis on reducing chronic malnutrition. An acceleration of the progress towards reducing chronic malnutrition, in addition to "nutrition-specific" intervention through the health sector requires simultaneous multisectoral efforts through "nutrition sensitive" interventions in the agriculture, education, and WASH sectors (World Bank, 2013). In Angola, the greatest reduction in stunting in Angola is associated with providing access to any one nutrition driver to the group of children that are most deprived in terms of access to nutrition drivers. In the context of budgetary constraints, these results have important implications for the targeting and the sequencing of sector-specific interventions in target areas (or populations).

Expanding coverage, efficiency, and effectiveness of social protection programs. In 2020, among the policies included in Angola's PND with the implementation of two cash transfers programs: 'Valor a Crianca' and 'Kwenda', supported by UNICEF and the World Bank respectively. The creation of the social registry, investments in information and monitoring systems, consolidation of programs, introduction of two cash transfer programs are among the most outstanding changes in the past couple of years. In addition, the shift from inefficient, universal price subsidies to effective poverty-targeted social safety nets, and social services to foster investments in human and productive capital and increase the opportunities of poor households to participate fully in the country's development is also remarkable. However, the current social protection programs of Angola continue to have limited coverage, insufficient financing, and are highly fragmented. Only 5 percent of the poorest population are covered by safety nets. Moreover, safety net programs are mostly focused on ex-military and ex-veteran benefits. Very little is left for the poor and vulnerable especially the youth and children. Aligning the sector's priority with the demographic and poverty needs are imperative. Support to the decentralization of social programs through support to municipalities would be key to ensure effectiveness and efficiency of the system.

The significant discrepancy between monetary and nonmonetary poverty identified in this report has important implications for the design and targeting of social programs in Angola. Budgetary constraints give rise to difficult trade-offs between the reduction of monetary poverty and the reduction of non-monetary poverty (i.e., the provision of basic services). Target populations or municipalities based on monetary poverty are likely to have little overlap with target populations or municipalities based on non-monetary poverty. Thus, particular care has to be given to determining of the primary objectives of different programs and to the choice and design of the targeting approach that is best suited to accomplishing the objectives of programs.

Boost agricultural productivity and commercialization

Increasing agricultural productivity will be critical for rural poverty alleviation. The rural population relies heavily on agriculture as a main income source. Increasing agricultural productivity and output will help to improve livelihoods especially for the rural poor, while contributing to food security, improving the current account by reducing food imports, and ultimately help to diversify the economy. The abundance of arable land, and opportunities in the fishing and livestock areas, provide huge potential. However, for increased agricultural productivity to be effective it should be accompanied with other investments improving connectivity to markets. This report has provided strong empirical evidence that longer distances to the nearest markets are associated with poverty

Policy focus and innovation is required to increase productivity in the largest employment sectors, agriculture and services. The services sector though increasing in employment share needs to raise its productive capacities perhaps by encouraging foreign investment. Entrepreneurship in both sectors areas needs encouragement and better access to financing.

Support the expansion of the private sector for job creation

Creating opportunities for entrepreneurship and private sector investment can lead to more and better jobs for the poor, and contribute to economic diversification. Policies are needed to improve the investment climate and lower cost of doing business to encourage entry and growth by private sector firms.

Employment opportunities need to be expanded to create jobs for currently unemployed youth and women as well as to absorb the future workers. Promoting the employment of young women specifically, can deliver a double impact on growth: directly through their productive contribution to the economy and indirectly by lowering fertility.

Active Labor Market Programs (ALMP) can support particularly young people's labor market integration. The objective of such youth-focused Active Labor Market Programs (ALMP) would be to support the productive inclusion of vulnerable youth in rural and urban areas of Angola.

Improve existing road network

The analysis in the report has also identified a variety of ways in which limited access to paved roads acts as a constraint for poverty reduction, increased food insecurity and higher likelihood that children drop out of school. Better road connectivity can open new domestic markets for agriculture, fisheries and manufacturing, decrease the cost of doing business, contribute to increasing human capital and raise economic output as well as create jobs.

Chapter 1: Poverty and Inequality in Angola

This chapter presents estimate of the poverty rate and the profile of the poor in Angola based on the recently released household budget survey, *Inquérito sobre Despesas, Receitas e Emprego de Angola* (IDREA 2018/2019). IDREA is the second household budget survey implemented in Angola, after an earlier survey *Inquérito Integrado sobre o Bem-Estar da População* (IBEP) undertaken in 2008. It is important to bear in mind that the two surveys, IDREA and IBEP, are not comparable for the measurement of monetary poverty. IDREA uses a 7-day recall to collect food expenditure data, whereas IBEP used a diary to record food expenditures with a greater range of itemized food and non-food items.

Understanding the sociodemographic and geographic characteristics associated with poverty is a first important step toward understanding the factors limiting economic opportunities of the Angolan population and informing effective policies toward the alleviation of poverty. The focus is mainly on univariate profiles of poverty. In the next chapter, the correlates of poverty are also examined based on regression analysis that controls for the variety of sociodemographic and geographic variables, such as education and gender that may be confounding the poverty profiles based on univariate relationships.

Poverty line for 2018-19

Changes in the consumption patterns in the country between 2010 and 2017 require an update of the poverty line.[9] The 2018-19 IDREA is a different type of survey than the 2008 IBEP. The new IDREA is designed to gather information for an analysis of a variety of topics but collects less detailed information on expenditures compared to the 20008 IBEP. Thus, the results are not directly comparable unless a survey-to-survey imputation method is used. Additionally, in ten years the consumption patterns of the country might have changed, which implies that there is a likely change in the type of food and quality of food items purchased by households to fulfill their caloric requirements. The preceding factors require that a new poverty line be created to reflect not only the design of the new survey but also the changes in the consumption patterns in the country.

The value of the new poverty line is calculated based on the Cost of Basic Needs (CBN) methodology of the World Bank applied to the 2018-19 IDREA (see Silva-Leander, 2019a). The CBN method calculates the cost of obtaining a consumption bundle believed to be adequate for basic consumption needs. Table 1 displays the food and non-food components of the poverty line per adult equivalent.

Table 1: Poverty line per adult equivalent

	Kz	%
Food	4,083	33.6
Non-food	8,098	66.4
Total	12,181	100.0

Source: IDREA (authors' calculations)

[9] All the details of the construction of the food and non-food consumption aggregate based on IDREA 2018-19, can be found in Silva-Leander (2019a).

Poverty in 2018-19 and poverty changes between 2008 and 2019

Table 2 below presents the national poverty estimates calculated using IDREA data. The poverty indicator used is the Foster-Greer-Thorbeck (FGT) index, for which we report incidence (p0), as well as depth (p1) and severity (p2) of poverty. The results indicate that the national poverty rate is 32.3%, with a large confidence interval stretching about 4 percentage points to either side.

Table 2: Poverty (incidence, depth, and severity), national (95% conf. interval)

Poverty	Estimate	Std. error	Lower bound	Upper bound
Incidence (p0)	32.3	2.08	28.1	36.3
Depth (p1)	9.1	0.75	7.6	10.5
Severity (p2)	4.7	0.47	3.8	5.6

Source: Authors' calculations based on IDREA

It is important to point out that the 2018-19 poverty estimates based on IDREA are not directly comparable to the official poverty estimates based on the IBEP 2008 survey, as the two surveys use different methodologies (diary method for the IBEP 2008, vs. 7-day recall method for IDREA). Between March 2018 and March 2019, INE has also carried out a "bridge" survey (IDR) that collected consumption for a national representative sample of households using the same week-long diary method also used in the 2008 IBEP survey. The purpose of this bridge (IDR) survey was to have comparable welfare estimates in 2008 and 2019 that would shed light on how poverty changed over the period.

While care has been taken to use a methodology that is as similar as possible to the one used in the 2008 IBEP survey, there were problems during the data collection stage of IDR.[10] For example, food consumption in the IDR turned out to be almost one third of the amount declared in the contemporaneous IDREA survey, and half of the consumption in the 2008 IBEP survey (in real terms). Given these problems, indirect estimation methods had to be used in order to infer the change in poverty based on the method developed by Deaton (2003) and Tarozzi (2002) that estimate poverty directly based on the relation between a household's poverty status and the non-food component of the consumption aggregate that is comparable in the 2008 IBEP and in the 2018 IDR. For this reason, the results presented in Table 3 should be viewed as estimates that are conditional on the estimation method and assumptions employed (see Silva-Leander, 2019b).

Table 3 presents the poverty estimates obtained for IBEP and IDR data. **The estimates generated based on the IDR 2018/19 bridge survey indicate that there has not been a statistically significant change in poverty since 2008 (see Silva-Leander 2019b).**[11] It is possible that this result hides a U-shaped poverty trajectory over the period 2008-2018, since the first half of that decade was characterised by strong economic growth, while the second half was marked by a sharp economic downturn.

[10] A more detailed discussion of these problems is contained in Silva-Leander (2019b).

[11] It should also be noted that the model employed also predicts accurately the official poverty rates in 2008. The official poverty rate in IBEP was 36.6%, whereas the model predicts poverty rates between 36.5%

Table 3: Poverty incidence, national (95% conf. interval)

Poverty	Estimate	Std. error	Lower bound	Upper bound
OFFICIAL POVERTY RATES				
IBEP (2008)	36.6	1.4	33.8	39.4
MODEL ESTIMATES based on total non-food consumption				
IBEP (2008)	36.5	1.13	34.3	38.7
IDR (2018)	36.3	1.2	34.0	38.8

Source: Authors' calculations based on IDREA

Poverty and inequality profile (monetary poverty)

The document looks first at the geographic and demographic profiles of poor households, before focusing on the relation between monetary and non-monetary poverty in various dimensions of wellbeing, such as education, health, housing, assets and food security. For expositional simplicity, most of the results are presented in graphical form in the main body of the document. However, all of the detailed results of the multivariate regressions referred to in the text are available in Appendix A, while all the descriptive statistics are provided in Appendix B.

Table 4 below shows the disaggregated poverty estimates by area of residence. It shows large differences between urban and rural areas, **with a poverty rate (p0) that is almost three times higher in rural areas than in urban areas (54.7% vs. 17.8%). The gap between urban and rural poverty is even larger, when focusing on the depth and severity of poverty.**

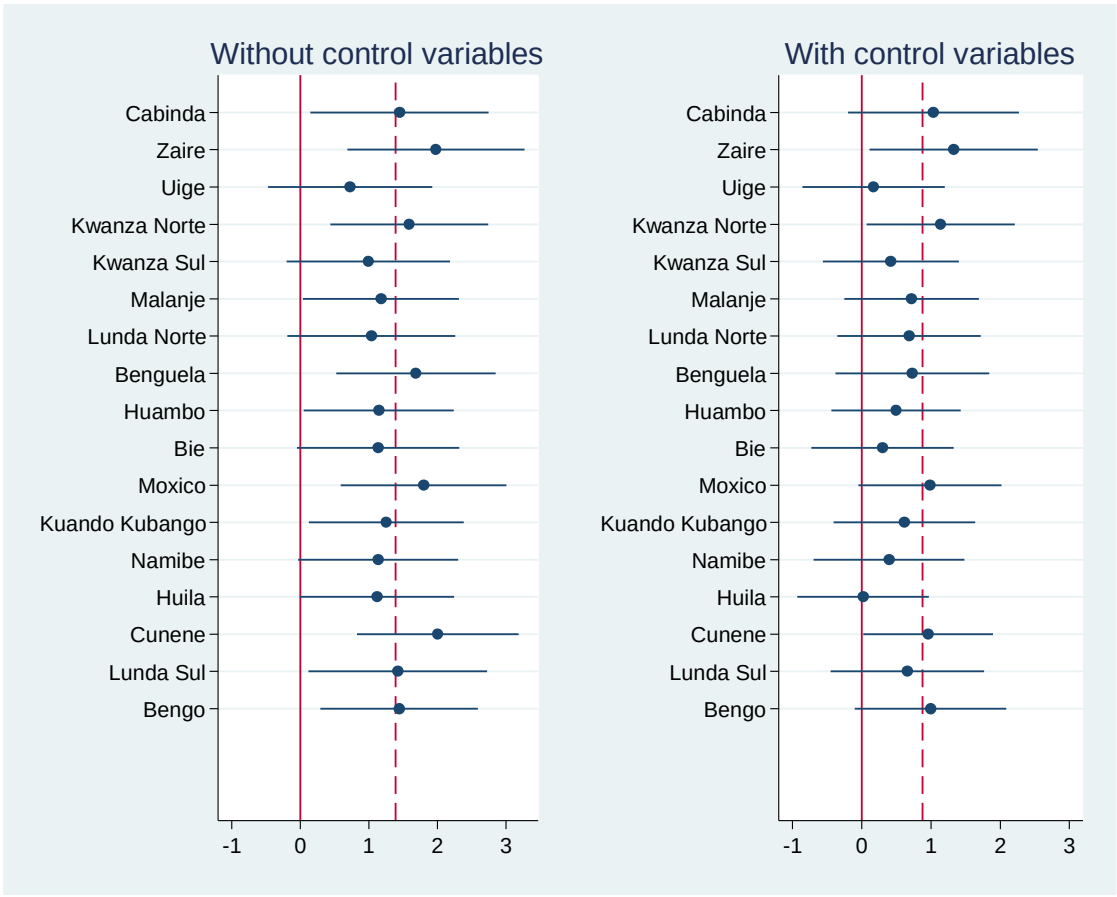
Table 4: Poverty (incidence, depth, and severity), by area of residence

Area	Incidence FGT0	Depth FGT1	Severity FGT2
Urban	17.8	4.1	1.9
Rural	54.7	16.7	9.2
Total	32.3	9.1	4.7

Source: IDREA (authors' calculations)

Over one third of the overall urban/ rural poverty gap is explained by differences in household composition (household size, age, gender, marital status), education (literacy and years of education of household head and spouse), as well as employment characteristics of household members (employment status, employer, sector, and total hours worked). In Uige and Huila, these factors explain almost the totality of the poverty gap between urban and rural areas (Figure 1 for summary results, and Appendix A for detailed regression results).

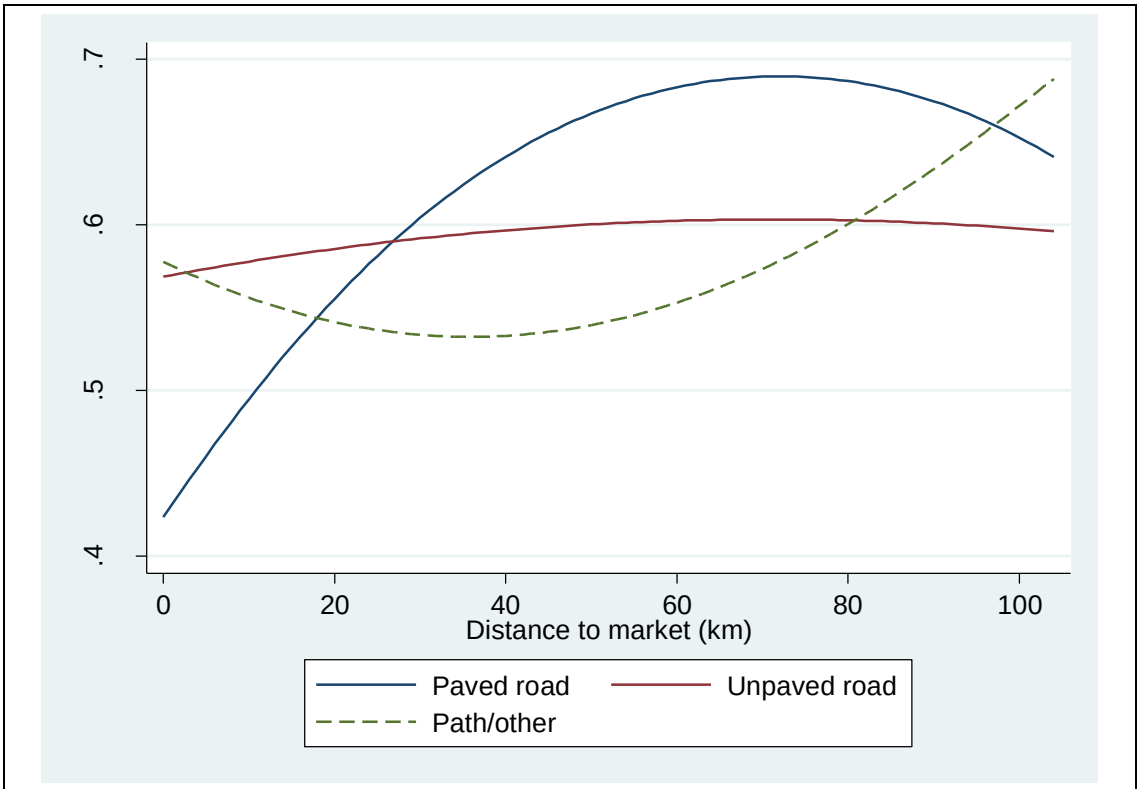
Figure 1: Effect of rural residence on the likelihood of being poor (logit coefficients with 95% confidence intervals), by province



Source: IDREA (authors' calculations)

Figure 2 shows that, **even within rural areas, the probability of being poor increases as one moves away from the town centres, as measured by the distance to the nearest market.** This result hold even after controlling for other geographic and household characteristics (see Appendix A for full regression results). The effect is most pronounced for location that are accessible by paved roads. For locations that are not accessible by road, there is almost no discernible relation between remoteness (distance to market) and poverty, probably due to structural inaccessibility of those locations.

Figure 2: Probability of being poor vs. distance to market (rural areas only, controlling for relevant characteristics), by type of road



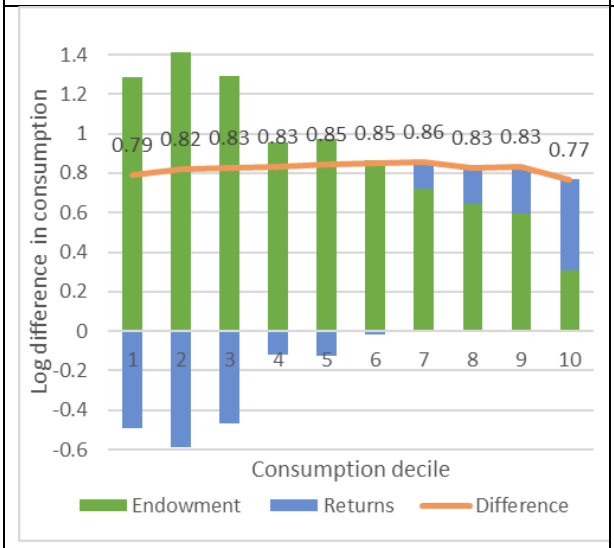
Source: IDREA (authors' calculations)

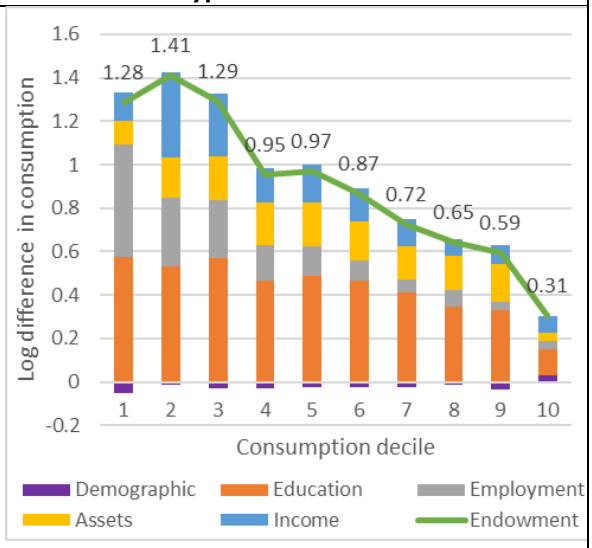
The Oaxaca-Blinder decomposition[12] shows that **the bulk of the urban/rural consumption gap can be explained by differences in endowment, particularly at the lower end of the distribution (see Figure 3a).** In particular, urban households tend to be more educated and be employed in higher-paying sectors. For poorer households, the type of employment and sources of income explain a large part of the difference between urban and rural households, whereas for richer households assets play a proportionally more important role (see Figure 3b).

In the higher income deciles, differences in returns on endowments also play an important role (see Figure 3a). In other words, it is not so much that rich rural households tend to have less education, employment, etc, than urban ones, but that their jobs tend be less well remunerated in rural areas.

[12] The decomposition was carried out following the method proposed by Oaxaca (1973) and Blinder (1973). The coefficients were estimated using an unconditional quantile regression (see Firpo et al., 2007)

Figure 3: Oaxaca-Blinder decomposition of urban/rural consumption gap, by decile





Source: IDREA (authors' calculations)

The additional breakdown of the urban/rural gap by level of urbanisation[13] in Figure 5 shows that **there are in fact two separate gaps: (1) a returns gap between Luanda and other large cities, and (2) an endowment gap between provincial towns and rural areas.** The endowment-gap dominates at the lower end of the urban/rural distribution, as rural and small-town households tend to be poorer, whereas the returns-gap is more prominent at the higher end of the distribution, which is dominated by larger cities.

Table 5: Oaxaca-Blinder decomposition consumption gap, by decile

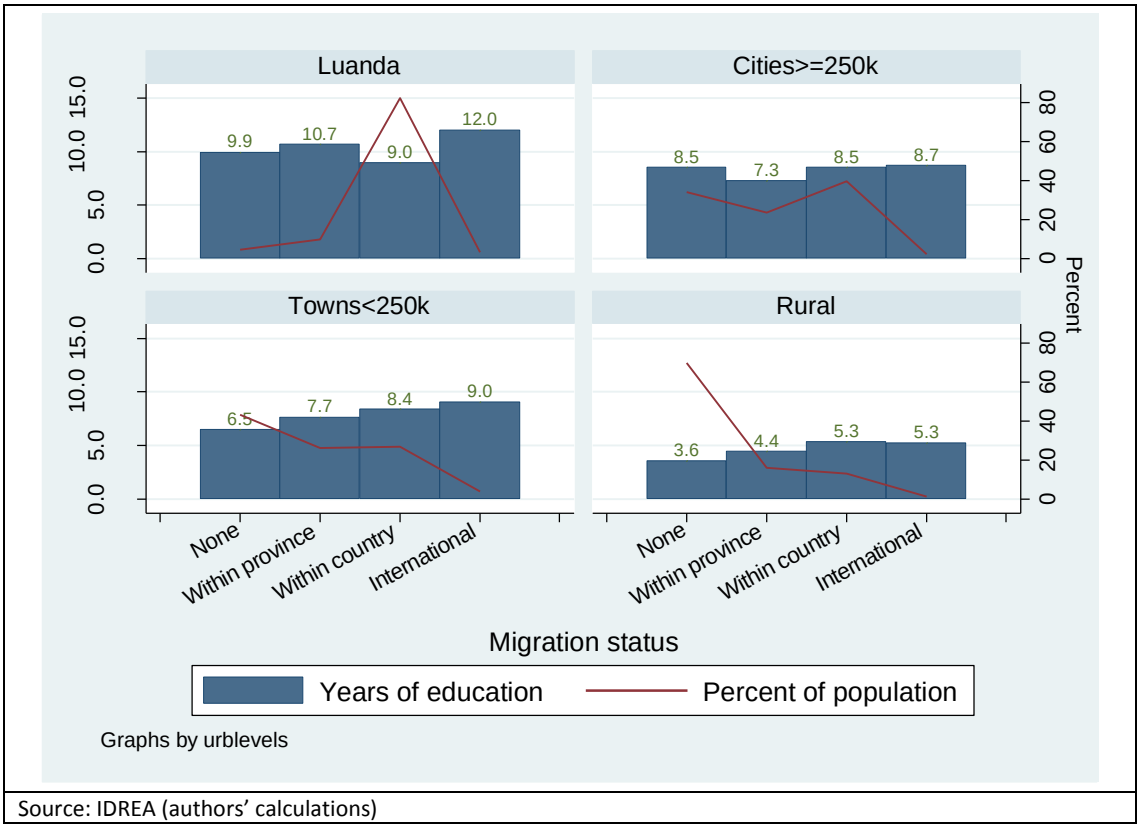
	Luanda vs. cities		Cities vs. towns		Towns vs. rural	
Decile	Endowmt.	Returns	Endowmt.	Returns	Endowmt.	Returns
1	0.04	0.53	0.13	0.17	0.71	-0.27
2	0.02	0.43	0.18	0.06	0.51	-0.02
3	0.10	0.32	0.22	-0.01	0.62	-0.13
4	0.17	0.15	0.20	0.04	0.59	-0.07
5	0.11	0.15	0.16	0.07	0.50	0.07
6	0.12	0.11	0.20	0.05	0.50	0.05
7	0.14	0.02	0.16	0.09	0.61	-0.02
8	0.10	-0.02	0.16	0.09	0.57	0.03
9	0.09	-0.04	0.19	0.08	0.52	0.10
10	-0.02	0.18	0.12	0.08	0.57	-0.01

Source: IDREA (authors' calculations)

[13] Table 5 breaks down the urban/gap into various steps: (1) Luanda vs. provincial cities (>250K inhabitants), (2) provincial cities vs. towns (<250K), (3) provincial towns vs. rural area. Town size was identified based on the estimated total number of individuals living in urban areas in each commune. The assumption is that there wouldn't be more than one large town per commune.

Figure 4 suggests that **these gaps may in part be explained by migration patterns.** Indeed, the graph shows that migration is highly correlated with education level in small towns, but less so in larger urban centres. This suggests more educated rural households tend to migrate to urban centres, where returns to education are higher. Compared to small-town dwellers these migrants tend to be more educated, but compared to city dwellers, the migrants are less educated – simply because the general level of education is higher in these areas. The large differences in returns may also mean that "skilled" migrants are willing to take up low-skilled jobs when moving to Luanda and other large cities, but not when moving to smaller towns.

Figure 4: Average years of education of the household head, by migration status



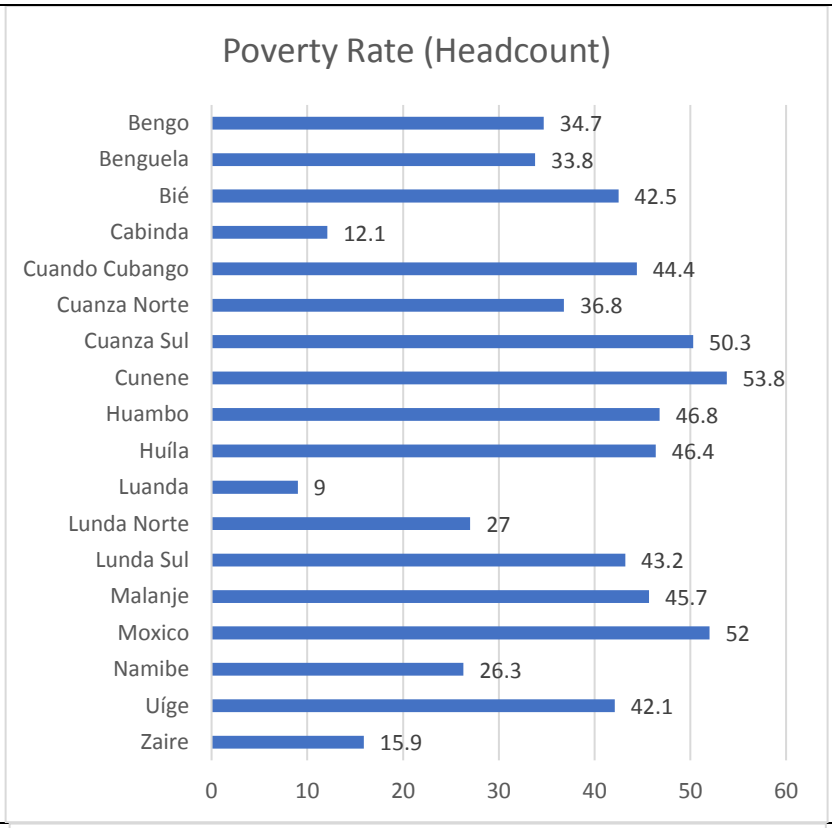
Source: IDREA (authors' calculations)

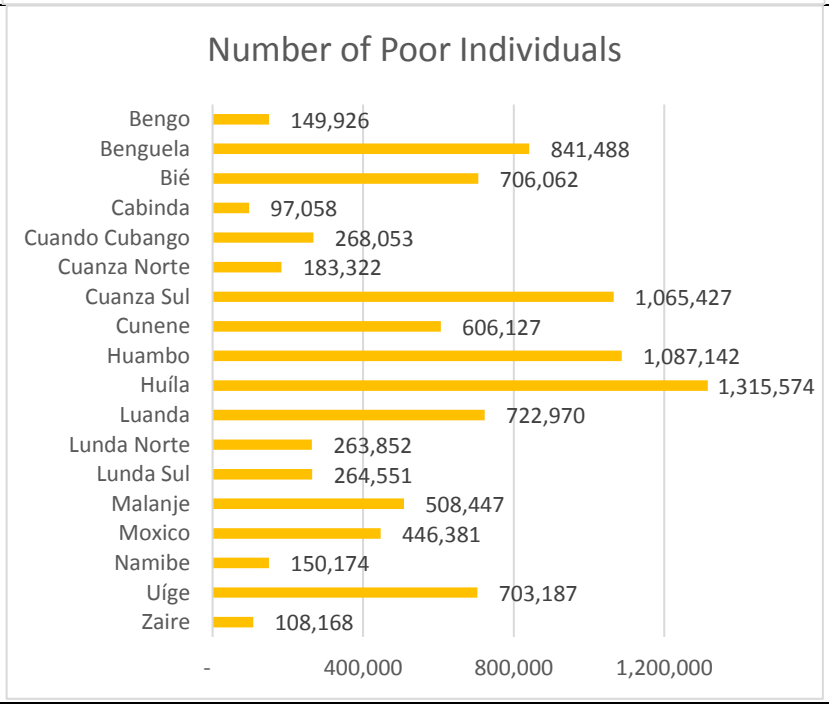
The distribution of poverty across provinces

The estimates of poverty by province show (see Figure 5 top) that a large proportion of the poor are concentrated in the Western half of the country, except Namibie, Cabinda, Bengo and Zaire (see Figure 5 bottom). This, however, partly reflects the greater population density in those areas, as the highest poverty rates are found in the East (Moxico) and South (Cunene) of the country, which have a relatively low population density.

Moxico has the second highest poverty rate in the country (52%), but has comparatively low depth and severity of poverty (see Figure 7), meaning that the poverty is widespread but not particularly severe. By contrast, Lunda Sul has relatively few poor people, but those who are poor tend to be worse off than elsewhere, having one of the lowest median consumption for poor people in the country.

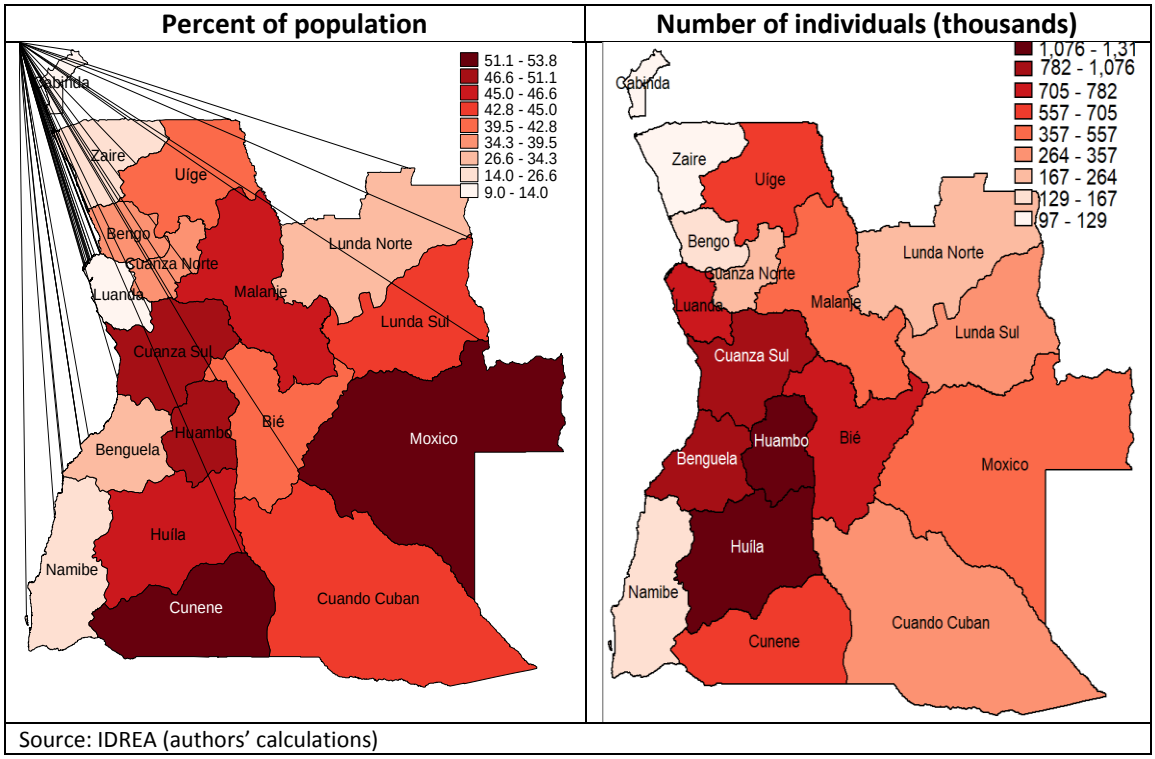
Figure 5: The incidence, depth, and severity of poverty and the number of poor individuals by province





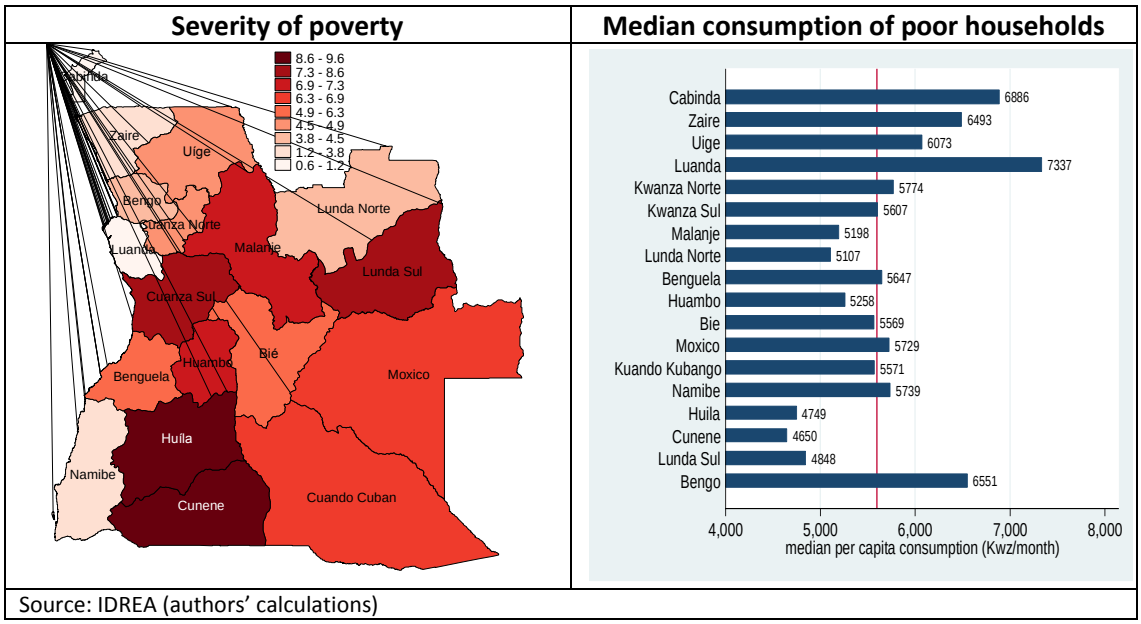
Source: IDREA (authors' calculations)

Map 1: Poverty incidence and the number of poor by province



Source: IDREA (authors' calculations)

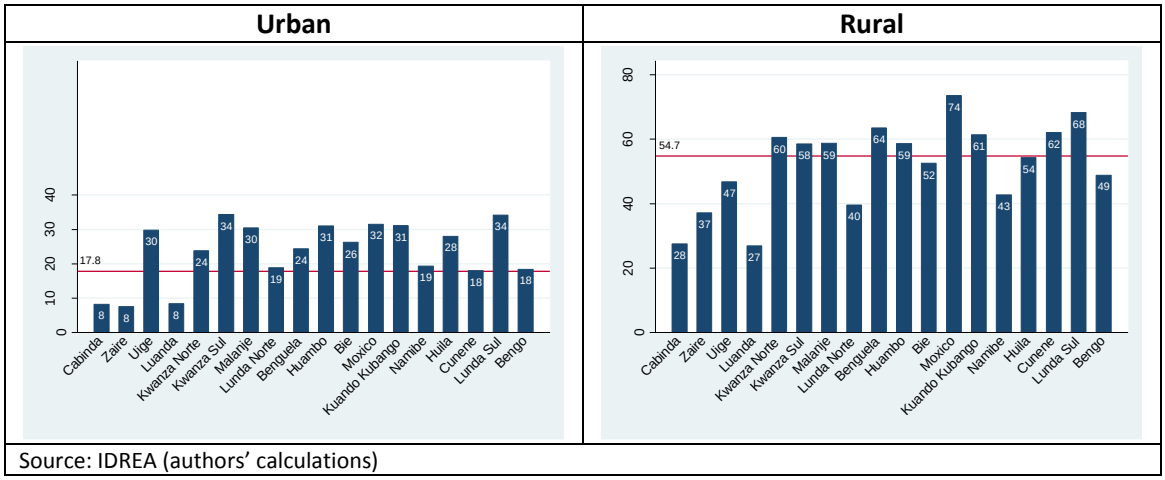
Map 2: Severity of poverty and median poor-consumption, by province



Source: IDREA (authors' calculations)

The prevalence of poverty (FGT0) is generally higher in the rural areas of provinces (see Figure 6). In the Zaire province, for example, the rural poverty headcount rate (37.1%) is almost 5 times higher than the urban poverty rate (7.5%). The largest urban/rural gap in absolute terms is found in Cunene (62.0% vs. 18.0% in rural/urban areas, respectively). The highest rural poverty rate overall is found in Moxico (73.6%)

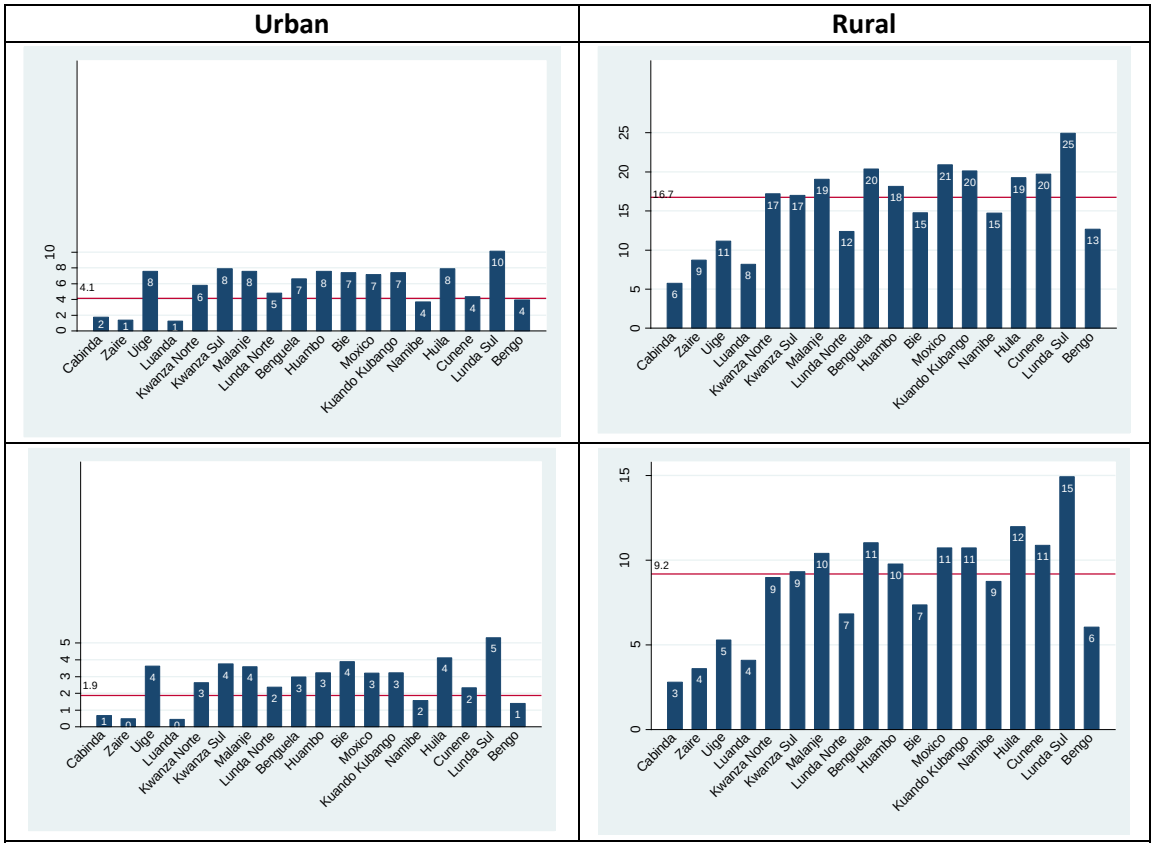
Figure 6: Poverty headcount (FGT0) by urban and rural area of residence within provinces



Source: IDREA (authors' calculations)

Also, in the rural areas of each province, the poverty rate is not only higher but also deeper, meaning that the poor households are further away below the poverty line, compared to urban areas. This can be inferred easily for figure 7 below displaying the poverty gap (FGT1) and severity of poverty (FGT2) indices for urban and rural areas within provinces.

Figure 7: The Poverty gap (FG1) and the severity of poverty (FGT2) by urban and rural area of residence within provinces

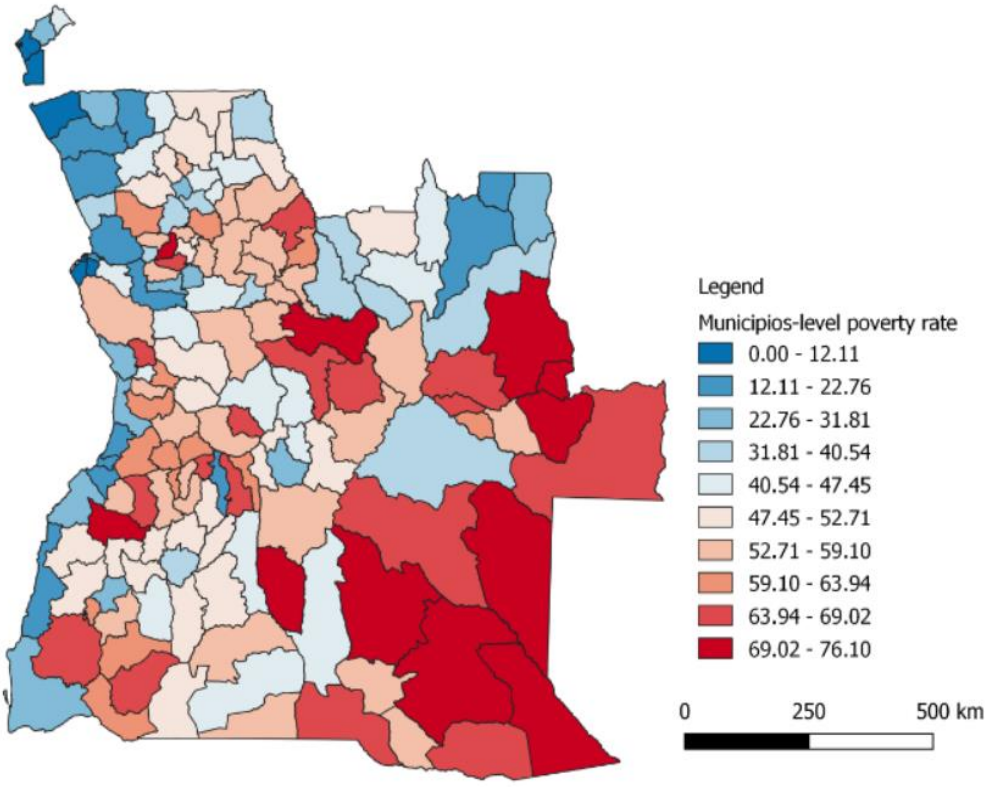


Source: IDREA (authors' calculations)

Headcount poverty rates at the provincial level or for urban and rural areas within provinces are useful for identifying the concentration of poverty within fairly broad geographic or administrative

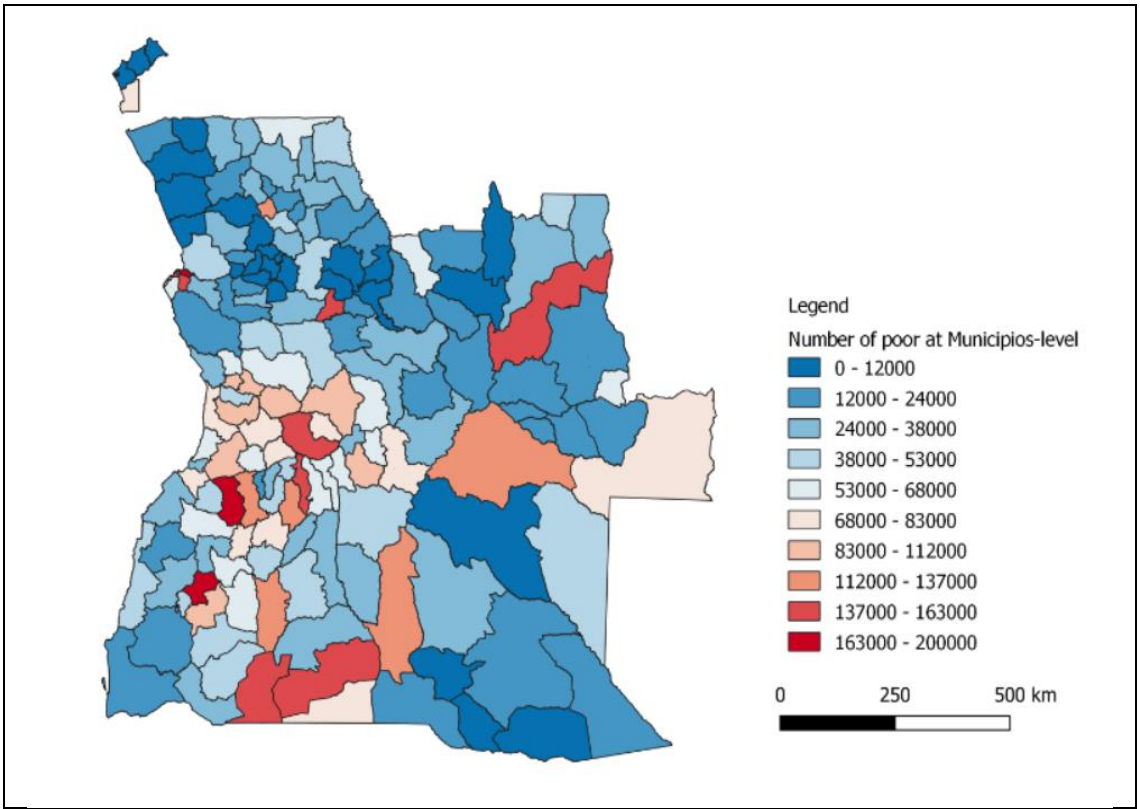
areas, but to be really useful at the operational level they need to be at a finer geographic or administrative level. **Figures 8 and 9 below present estimates of headcount poverty rate and the number of poor individuals at the municipal level which is a lower administrative level than the province.** The poverty map at the municipality level is derived based on the small area estimation method that uses household-level data from the 10% sample of the 2014 Population and Housing Census and the 2018-19 *Inquerito sobre Despasas, Receitas, e Emprego de Angola* (IDREA). The Elbers, Lanjouw, Lanjouw (2003) (ELL) model relies on detailed income/consumption information from a household survey to estimate a welfare model, given a set of observable household characteristics. The parameter estimates from that model are then applied to the same set of characteristics in the population census to predict missing welfare information and then estimate expected levels of poverty across localities in the census

Figure 8: Poverty rates at municipality level based on the 10% national census sample, (% of population below the national poverty line)



Source: Authors' calculations based on the 2018-19 IDREA and the 10% sample of the 2014 Population and Housing Census of Angola

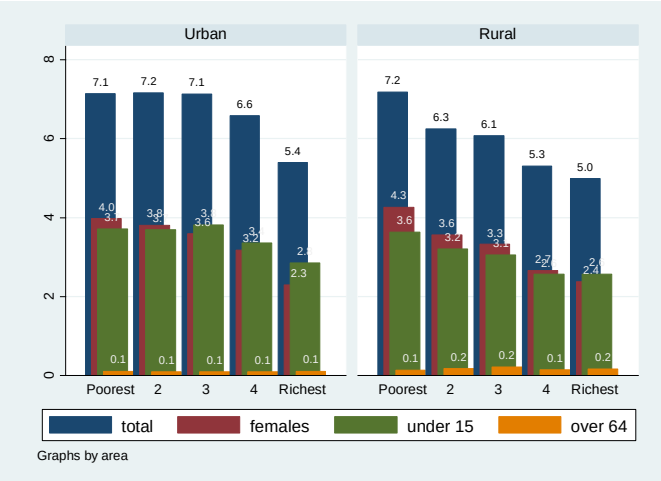
Figure 9: Number of poor individuals at the municipality level based on the 10% national census sample (using national poverty line)



Source: Authors' calculations based on the 2018-19 IDREA and the 10% sample of the 2014 Population and Housing Census of Angola

Poor households (in the bottom two quintiles of the welfare distribution, tend to be larger, more likely to be female-headed, and have a higher number of younger members (under 15) in comparison to wealthier households (see Figure 10).

Figure 10: Demographic composition of households, by quintile



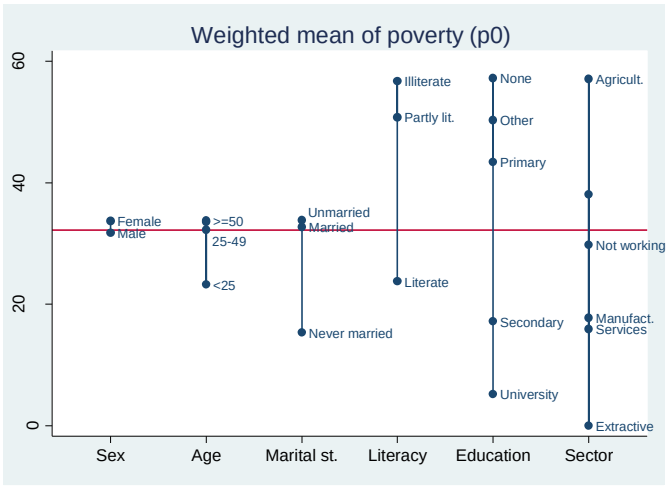
Source: IDREA (authors' calculations)

Figure 11 below presents the poverty incidence disaggregated by the characteristics of the household head. The results do not show a significant difference between male and female-headed households in terms of the incidence of poverty, although the detailed results presented in the Appendix, indicate that poverty tends to be slightly more severe amongst female headed households. Similarly, no significant differences between married and unmarried household heads appear to be present, although those that have never been married tend to be better off.

Education is strongly correlated with poverty. The poverty rate is almost three times higher amongst illiterate households than amongst literate ones. Similarly, the poverty rate is more than 50 percentage points higher amongst households headed by someone with no education, compared to households headed by someone with university education.

In terms of the sector of employment, households headed by someone working in agriculture stand out as having the highest poverty rate (57%), whereas only 16% of those employed in the service sector are poor (for detailed results, see Appendix A)

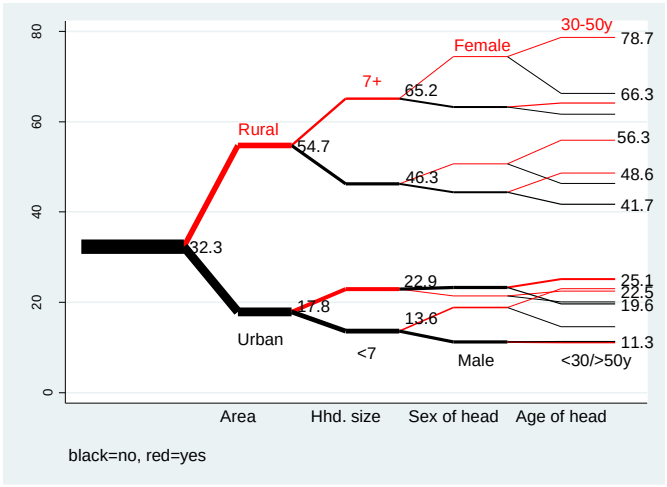
Figure 11: Poverty incidence (%), by characteristics of the household head



Source: IDREA (authors' calculations)

The simple comparisons above tend to obscure the fact that households possessing several of these demographic risk factors at the same time tend to be particularly vulnerable to poverty. Figure 12 shows the risk plot based on some of the demographic risk factors identified above. For instance, the graph shows that **78.7% of large rural households headed by women aged 30-50 years are poor** (95% confidence interval stretches from 70.7% to 86.7%). Amongst households that do not present any of these characteristics (i.e. smaller male-headed urban households), the poverty rate is almost 70 percentage points lower (11.3% with a 95% confidence interval of 8.9% to 13.6%).

Figure 12: Probability of being poor by cumulative risk factors



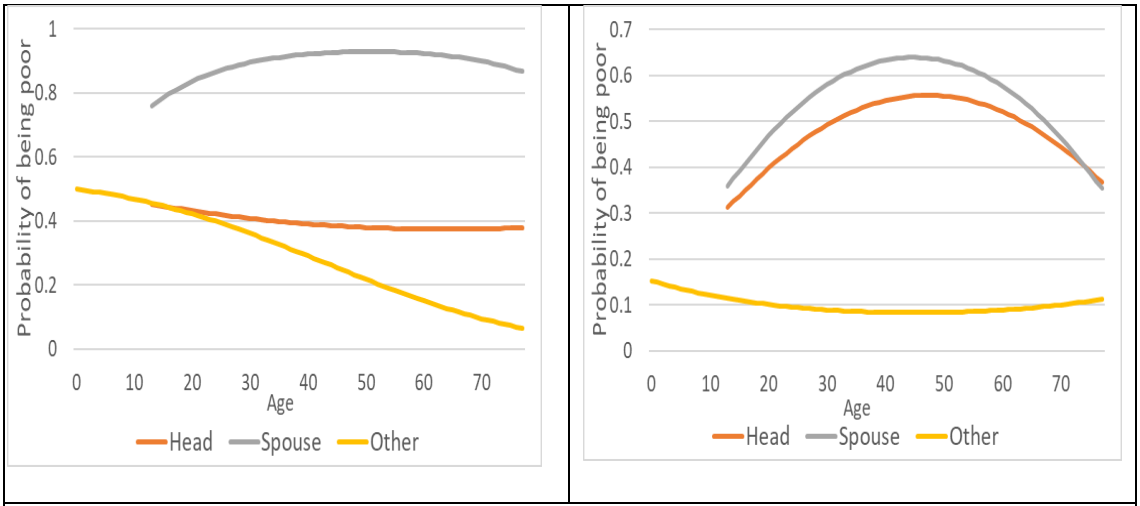
Source: IDREA (authors' calculations)

Controlling for differences in household size, and location, age matters for poverty only for female-headed households. [14] Figure 13 provides a more detailed picture of the relation between the age of different household members, and the probability of being poor, controlling for differences in household size, location, etc. The results show that for male-headed households, the age of the head and spouse are not strongly correlated with the poverty status of the household, whereas for female-headed households they are: **households headed by older women, or with older spouses, tend to be poorer up to about 50 years of age.** For male-headed households, on the other hand, the average age of other household members appears to matter: households with a higher average age (i.e. households with fewer young children) tend to be less poor (see Appendix 0 below for detailed regression results).

Figure 13: Probability of being poor vs. age of household members (controlling for relevant characteristics), by sex of the head

a. Male-headed	**b. Female-headed**

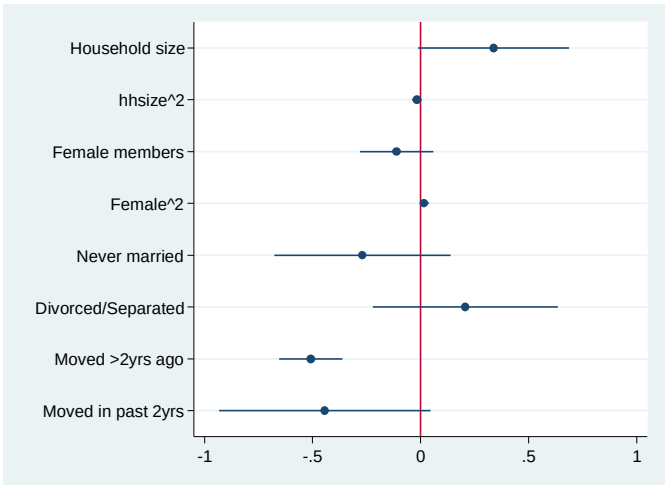
[14] It is important to point out that the econometric models presented in this chapter do not seek to provide causal explanations of the observed phenomena and do not take into account the specialized literature on the various topics addressed in the chapter (e.g. education, health, etc.). For this reason, these models should be seen simply as multivariate correlations, and as initial explorations pointing to possible areas for further investigation by relevant sector experts.



Source: IDREA (authors' calculations)

Migration is associated with a lower likelihood of being poor (Figure 14). Households where at least one household member has moved at some point in the past tend to be significantly less poor than households where no one has migrated. Controlling for age and geographic location of the household, the factor that stands out as being most significant is migration: households where at least one household member has moved at some point in the past tend to be significantly less poor than households where no one has migrated.

Figure 14: Relation between demographic characteristics of the household and the likelihood of being poor (logit coefficients with 95% confidence interval)

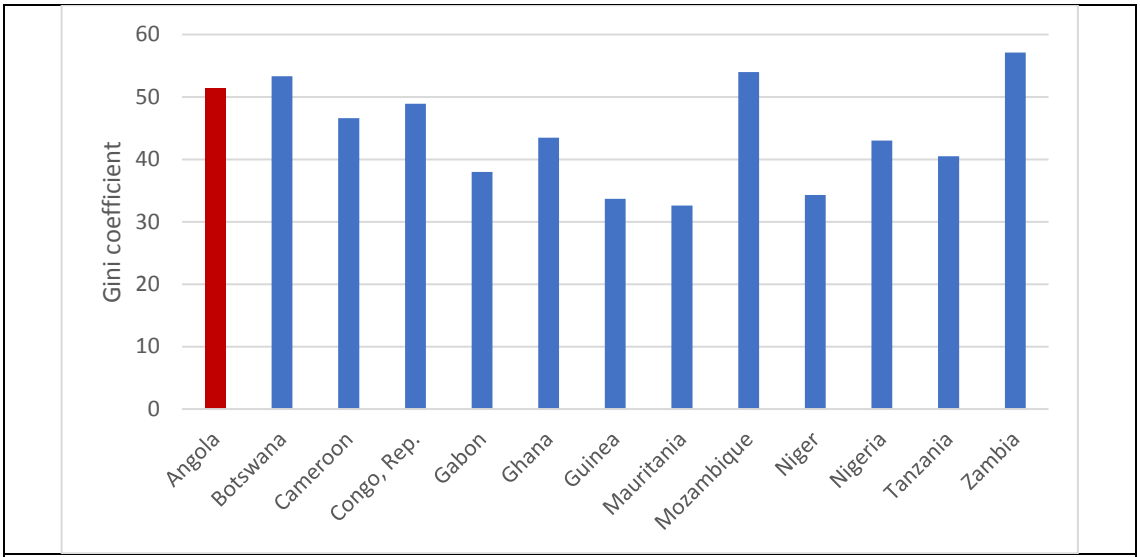


Source: IDREA (authors' calculations)

Inequality

The duality in poverty in Angola is reflected in a large inequality. The Gini coefficient in Angola is 0.51 which is one of the highest in Africa (see Figure 15).

Figure 15: Angola Gini coefficient vs. some comparators



Source: IDREA (authors' calculations) and World Development Indicators (WDI)

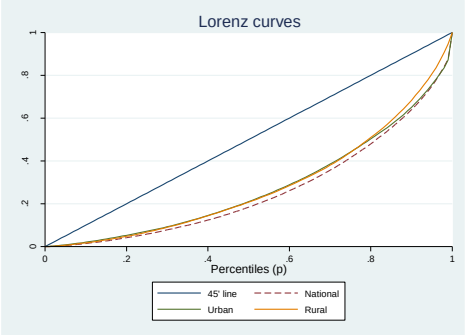
The Gini-coefficient is somewhat higher in urban areas (0.48) than in rural areas (0.44), although the differences are not statistically significant (Table 6). Given that the poverty rates are lower in urban areas, the higher measures of inequality in urban areas suggests that the inequality is driven by inequities prevailing mainly at the higher end of the welfare distribution in urban areas. The Lorenz curves in Figure 16 reveal that urban and rural areas have almost identical distributions up until the 8th decile, after which, the urban Lorenz curve bulges outwards. This reflects the presence of a small number of very rich households in urban areas, who account for a large share of the overall Gini-coefficient.

Table 6: Gini-coefficients, by area of residence (95% conf. interval)

Area	Estimate	Std. error	Lower bound	Upper bound
Urban	0.48	0.03	0.43	0.53
Rural	0.44	0.01	0.43	0.46
Total	0.51	0.02	0.47	0.55

Source: IDREA (authors' calculations)

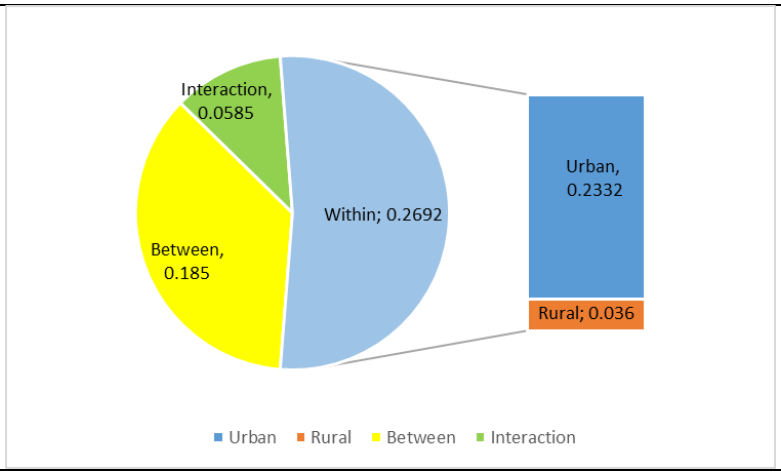
Figure 16: Lorenz curves (real per capita consumption), by area of residence



Source: IDREA (authors' calculations)

The decomposition of the Gini-coefficient by area of residence shows that inequality within urban and within rural areas (or within-group inequality) accounts for more than half of the -total value of the Gini-coefficient (0.27 of the total 0.51 Gini-coefficient) (see Figure 17). Inequality between urban and rural areas accounts for 0.18 points of the Gini-coefficient. Further decomposition shows that **the overwhelming majority of the within-group inequality comes from inequality within urban areas (0.23 out of a total within-group inequality of 0.27)**.

Figure 17: Decomposition of inequality by area of residence

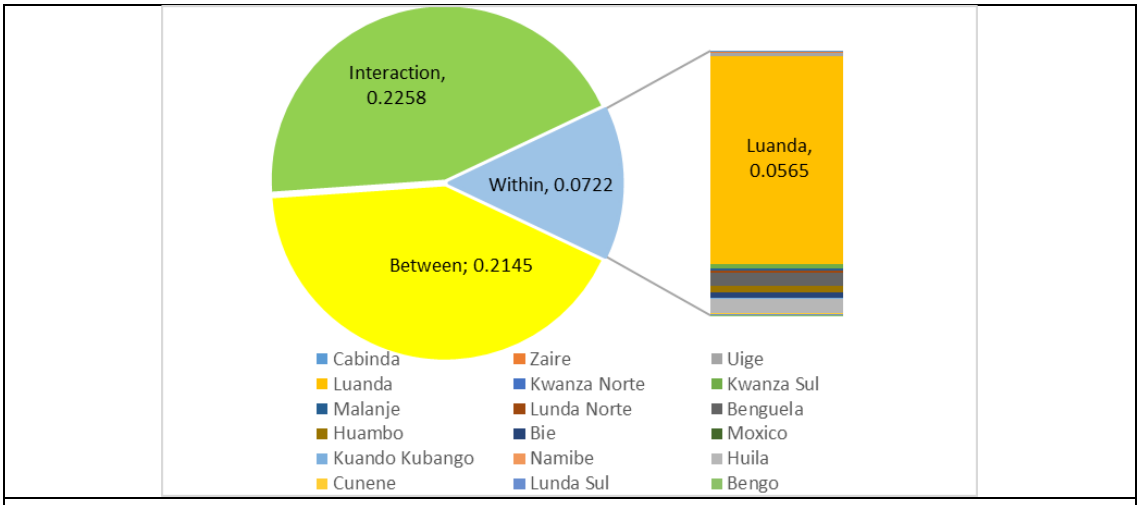


Source: IDREA (authors' calculations)

The decomposition of inequality by province (see Figure 18), on the other hand, shows that **inequality between provinces (0.21) is much more important than inequality within provinces (0.07).** Further decomposition reveals that the within-province inequality is almost exclusively driven by Luanda (0.06 out of a total within-province inequality of 0.07).

In summary, the IDREA data appears to reveal a great division between urban areas of Luanda province, and all the rest of the country. This split drives within-province inequality within Luanda province, and within-area inequality within urban areas. It also explains much of the between-province inequality (between Luanda and other provinces), and between-areas inequality (between urban and rural areas).

Figure 18: Decomposition of inequality by province



Source: IDREA (authors' calculations)

Conclusions

The incidence of poverty in Angola as of 2019 based on a monetary measure of welfare (monthly food and non-food consumption expenditures per adult equivalent) is 32.3 percent at the national level and is almost three times higher in rural areas (54.7%) than in urban areas (17.8%).

The highest incidence of poverty is found in the East (Moxico) and South (Cunene) of the country. However, the largest number of poor people is found in the coastal provinces, where the population density is the highest (especially Benguela, Huila, Huambo, Cuanza Sul, Luanda and Uige).

Yet, even within the large urban areas, pockets of poverty continue to persist. Over a third of all the poor people in Angola live in just three provinces in the South-West of the country, namely, Huila (1.3 million), Huambo (1.1 m.) and Kwanza Sul (1.1 m.). However, the highest poverty rates are found in the less densely populated interior regions of the country, such as Cunene (53.8%) and Moxico (52.0%).

Two provinces (Huila and Lunda Sul) stand out as having high severity of poverty (9.6 and 7.9, respectively) in comparison to their poverty incidence (46.4% and 43.2%). The median consumption of poor people in Huila and Lunda Sul is considerably lower (by almost Kz 1,000) than in Moxico, where the incidence of poverty is significantly higher (52%). In other words, Moxico has a poverty rate that is more widespread, but less severe than Huila and Lunda Sul, a fact that points to possible issues of marginalization and social exclusion in these two provinces.

In Lunda Sul poverty is largely an urban phenomenon, whereas Huila's poor are found mostly in rural areas. Lunda Sul, which is a highly urbanised province, has the country's highest urban poverty rate, together with Kwanza Sul (34%). The province also has small but extremely deprived rural population, exhibiting the highest rural severity of poverty in the country (15). Huila, on the other hand, has an overwhelmingly rural population, but comparatively fewer poor people in urban areas (28%).

The duality of the Angolan economy is also reflected in two very different "types" of poverty. On the one hand, there is a traditional rural sector dominated by low-productivity subsistence agriculture. Poverty, outside of Luanda, is largely concentrated in this sector: 69% of households in

the poorest national quintile are employed in the agricultural sector, vs. less than 15% in the top quintile.

On the other hand, there is a modern export-oriented oil-economy, which is mostly concentrated in Luanda and some other urban centers. In these areas, where employment in agriculture is marginal, poverty tends to linked to issues of unemployment and informality: In Luanda, non-employed households represent almost half (47%) of the population in the poorest, vs.24% in the third quintile (see Figure O.2).

Poor households (at the bottom two quintiles of the welfare distribution, tend to be larger, more likely to be female-headed, and have a higher number of younger members (under 15) in comparison to wealthier households.

Illiteracy and low levels of education and being employed in agriculture are also strongly correlated with poverty. The poverty rate is almost three times higher amongst illiterate households than amongst literate ones. Similarly, the poverty rate is more than 50 percentage points higher amongst households headed by someone with no education, compared to households headed by someone with university education. In terms of the sector of employment, households headed by someone working in agriculture stand out as having the highest poverty rate (57%), whereas only 16% of those employed in the service sector are poor (see Figure O.3).

Rural poverty is compounded by demographic risk factors, such as gender, age and household size. For instance**,** poverty rates in large rural households headed by women aged 30-50 years is almost 7 times higher than amongst households presenting none of these characteristics (78.7% vs. 11.3%)

Chapter 2: Multidimensional poverty

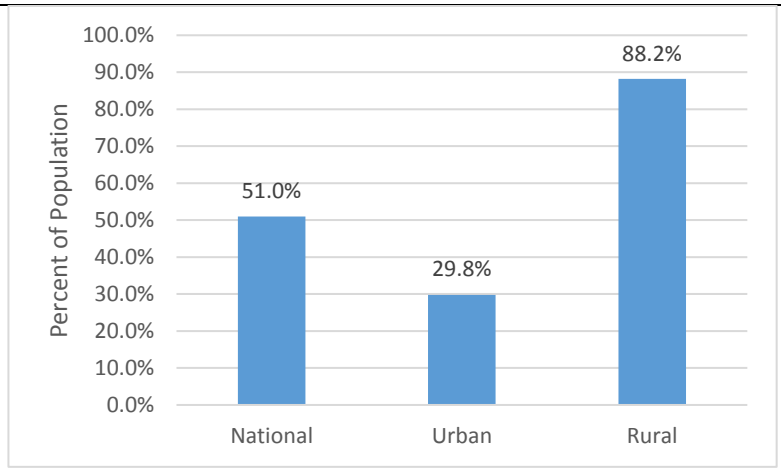
Consumption-based or monetary poverty is only one dimension of poverty. In fact, poverty has many different dimensions, most of which are nonmonetary. This chapter presents estimates of nonmonetary poverty based on (1) the Global Multidimensional Poverty Index (MPI) constructed by the Oxford Poverty and Human Development Initiative (OPHI) and computed using data from the 2016 DHS of Angola;[15] and (2) a multidimensional poverty index based on data from the IDREA 2018-19 survey.

The Global Multidimensional Poverty Index (MPI)

The Global MPI focuses on the combination of deprivations that afflict a household at the same time, and it has 10 indicators that are grouped into three dimensions (health, education, and living standards). Each dimension is equally weighted, and each indicator within a dimension is also equally weighted. Each deprivation indicator is defined in Appendix C.

The incidence of multidimensional poverty (measured in terms of simultaneous deprivation in one-third of the 10 indicators) is 51 percent at the national level in 2016 (see Figure 19). A person is identified as multidimensionally poor or MPI poor if he or she is deprived in at least one-third of the weighted MPI indicators. In other words, a person is 'MPI poor' if the person's weighted deprivation score is equal to or higher than the poverty cut-off of 33.33 percent. This yields the proportion of the population that is multidimensionally poor, which is analogous to a poverty headcount (H). The incidence of poverty in rural areas is considerably higher (88.2 percent) than in urban areas of Angola, where 29.8 percent of the population is poor (see Figure 19).

Figure 19: Multidimensional Poverty Headcount in Angola



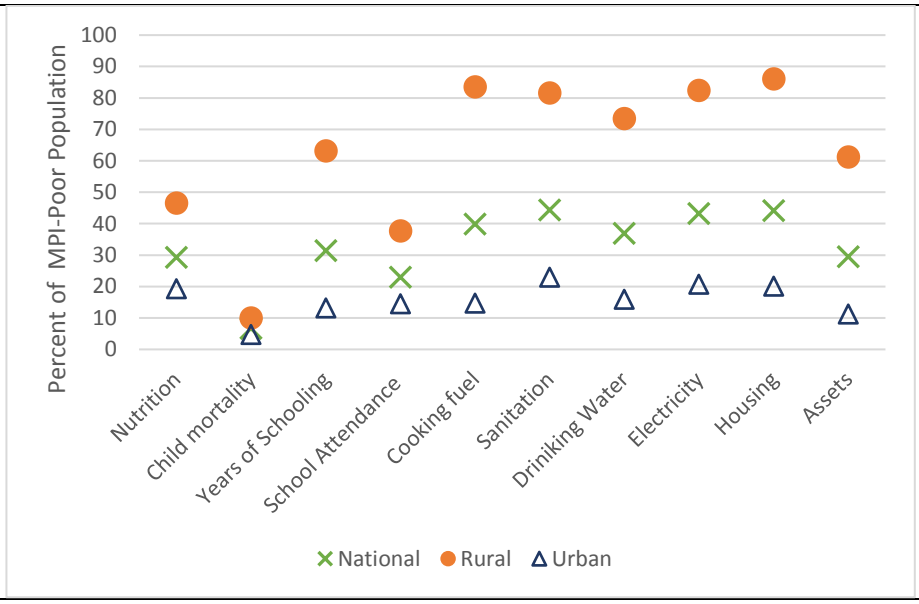
Source: Authors' calculations based on DHS 2015-16

The prevalence of deprivations among the 10 indicators used to measure living standards, education, and health, reveals that **deprivations in the indicators used for living standards, such as cooking fuel, sanitation, drinking water, and electricity, are considerably higher in the rural areas compared to urban areas for the multidimensionally poor**. Figure 20 shows

[15] The global MPI was created using the multidimensional measurement method of Alkire and Foster (2011).

the fraction of the population at the national level as well as disaggregated by rural and urban areas that is multidimensionally poor and simultaneously deprived in each indicator, that is, deprived in a specific component of the MPI as well as poor in the multidimensional sense (that is, deprived in at least one-third of the weighted MPI indicators).

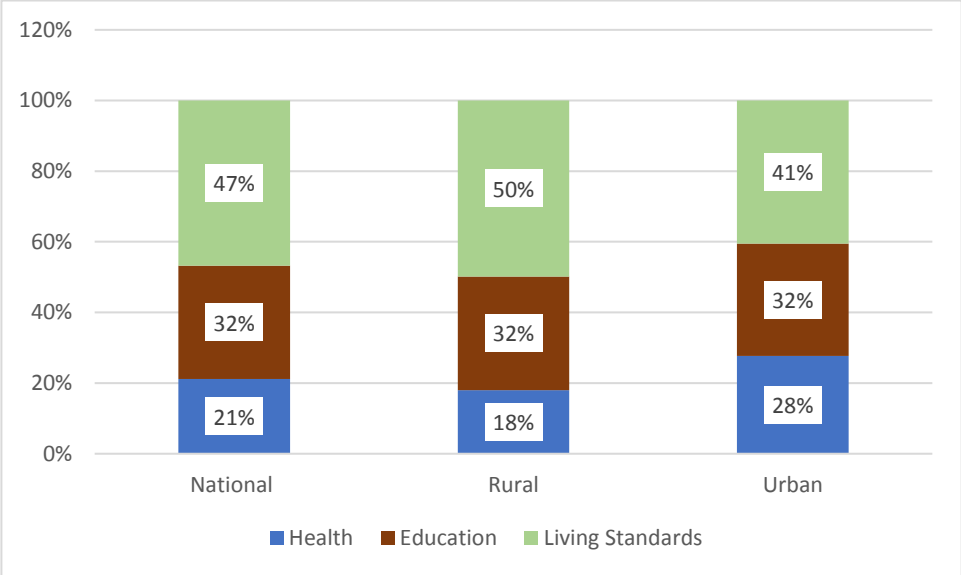
Figure 20: Censored Headcount Ratios or Deprivation Rates among the MPI-Poor: National, Rural & Urban areas



Source: Authors' calculations based on DHS 2015-16

Deprivations in living standards have the greatest contribution to poverty in Angola in 2016 at the national level (47 percent). Deprivations in education have the second highest contribution to poverty (32 percent) followed by deprivations in health (21 percent). The same general pattern prevails in both urban and rural areas (see Figure 21). This analysis is useful since it shows the contribution of various indicators to poverty in different areas, which can reveal structural differences in urban and rural poverty. This in turn can inform policy responses in different areas, making the MPI useful for the prioritization of policies, the monitoring the effects of policy shifts and program changes.

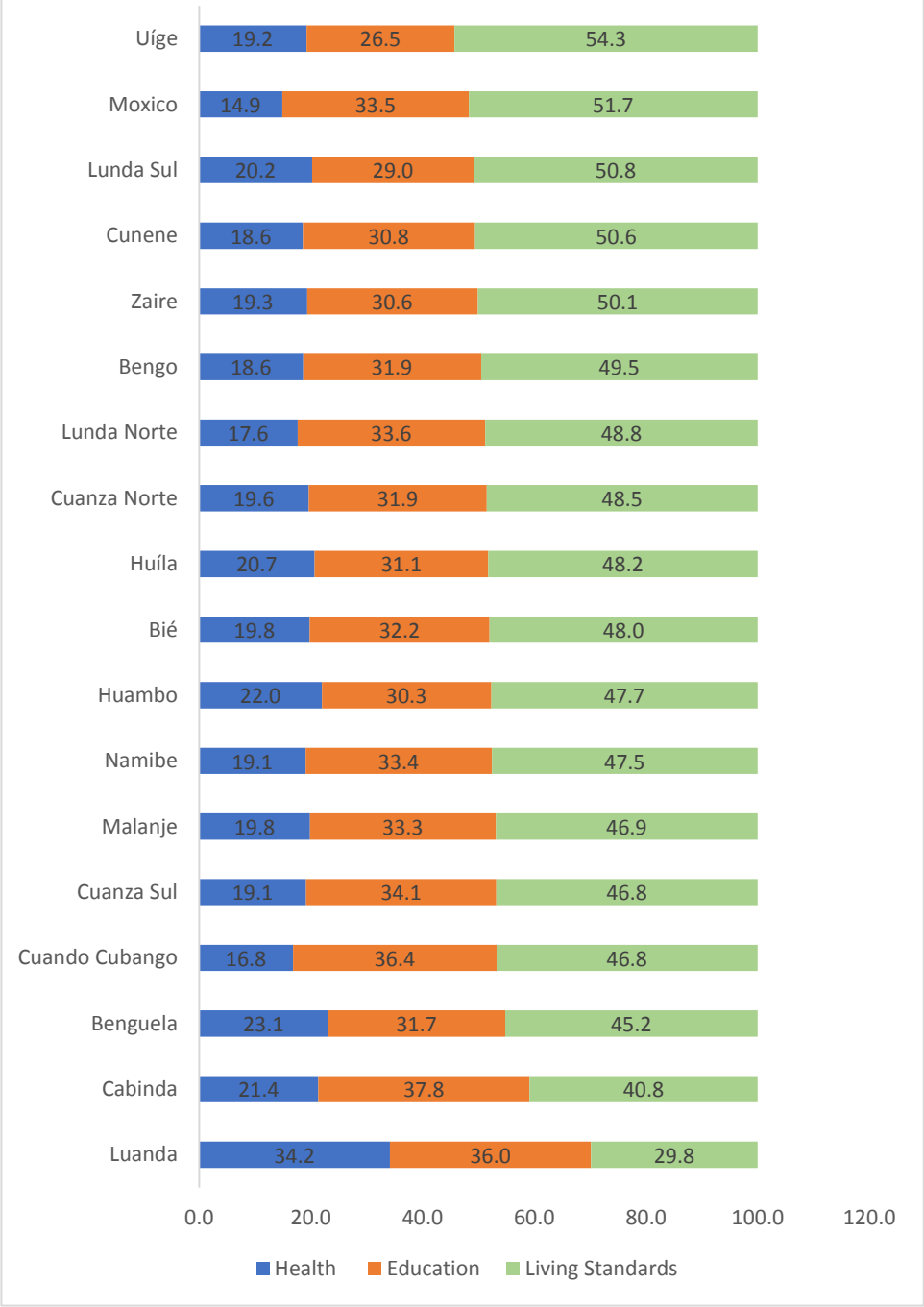
Figure 21: Contribution of health, education and living standards measures to multidimensional poverty by area in Angola



Source: Authors' calculations based on DHS 2015-16.

In all of the provinces except Luanda, deprivation in living standards contribute between 41% and 54% to overall poverty in the province with the remainder consisting of the contributions of deprivations in the indicators of education and health (Figure 22). In contrast, in Luanda deprivations in education (36%) have the highest contribution to poverty followed by deprivations in health (34.2%), while living standards contribute just under 30% to the overall MPI.

Figure 22: Contribution of health, education and living standards measures to multidimensional poverty by province in Angola



Source: Authors' calculations based on DHS 2015-16

A Multidimensional poverty index based on data from the IDREA 2018-19 survey.

A limitation of the Global MPI above is that it is only able to address the dimensions of poverty that can be measured in the DHS survey. The remainder of this chapter uses data from the 2018-19 IDREA to examine the relationship between multidimensional and monetary poverty.

The analysis based on the IDREA survey uses the official multidimensional poverty index for Angola, which measures deprivations[16] across four different dimensions of wellbeing:[17]

- **Health**: Household does not have access to improved water source and does not use appropriate water treatment method; Does not have access to improved sanitation.
- **Education**: No household member aged 12+ has completed basic 6 years of education; At least one school-aged child (5-14) is not attending school.
- **Housing**: Household uses solid cooking fuels; Does not have access to electricity from the public network; Inadequate construction materials for roof, floor or walls.
- **Employment**: At least one youth (15-24) is neither employed nor in education; at least one adult (25-64) is unemployed; there is less than one working member aged 15-64 for every 5 household members.

The figures presented in this section differ from those recently published in INE's official multidimensional poverty report (INE 2019) because (a) the official report used Census data, whereas this report uses IDREA data, and (b) one indicator used in the official multidimensional poverty index (Birth registration) had to be excluded from the index as it was not available in IDREA.

In terms of multidimensional poverty, the incidence of multidimensional poverty at 52.5 percent but the gap between urban and rural households is even larger (see Table 7). Thus, the incidence of multidimensional poverty based on IDREA is comparable to the 51 percent in the DHS (see Figure 19). However, based on the IDREA survey, 92.3 percent of rural households suffer more than 3 out of 10 possible weighted deprivations, compared to just 26.8% of urban households. The incidence of poverty in rural areas based on the DHS is 88.2 percent for rural areas and 29.8 percent in urban areas (see Figure 19).

Table 7: Incidence of multidimensional poverty (>3/10 weighted deprivations), by area

Area	Mean	Std. error	Lower bound	Upper bound
National	52.5	3.45	45.7	59.3
Urban	26.8	1.33	24.2	29.4

[16] Deprivations are defined as follows for each group.
Health: Water: Household does not have access to improved water source (tap, protected source) and does not use appropriate water treatment method (boiled, ceramic filter, solar, chlorine);
Sanitation: Household does not have access to improved sanitation (WC connected to sewage, Latrine).
Education: School completion: No household member aged 12+ has completed basic 6 years of education;
School attendance: At least one school-aged child (5-14) is not attending school.
Housing: Fuel: Household uses solid cooking fuels (coal, grass, dung, wood);
Electricity: Household does not have access to electricity from the public network;
Inadequate construction materials for roof (adequate: cement, tiles, zinc), floor (adequate: cement, wood, tiles) or walls (adequate: bricks, stone, cement);
Employment: Youth employment: At least one youth (15-24) is neither employed nor in school;
Employment: At least one adult (25-64) is unemployed;
Dependency: There is less than one working member aged 15-64 for every 5 household members.
[17] The figures presented in this section differ from those recently published in INE's official multidimensional poverty report (INE 2019) because (a) the official report used 2014 Census data, whereas this report uses IDREA 2018-19 data, and (b) one indicator used in the official multidimensional poverty index (Birth registration) had to be excluded from the index as it was not available in IDREA.

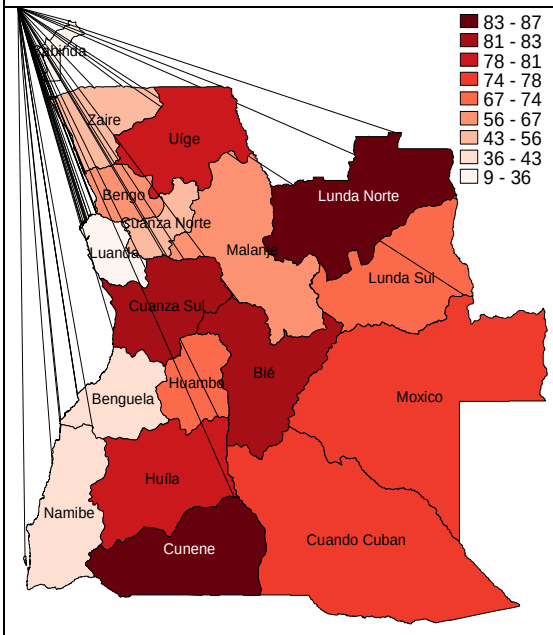
Rural	92.3	1.39	89.6	95.0

Source: IDREA 2018/19 (authors' calculations)

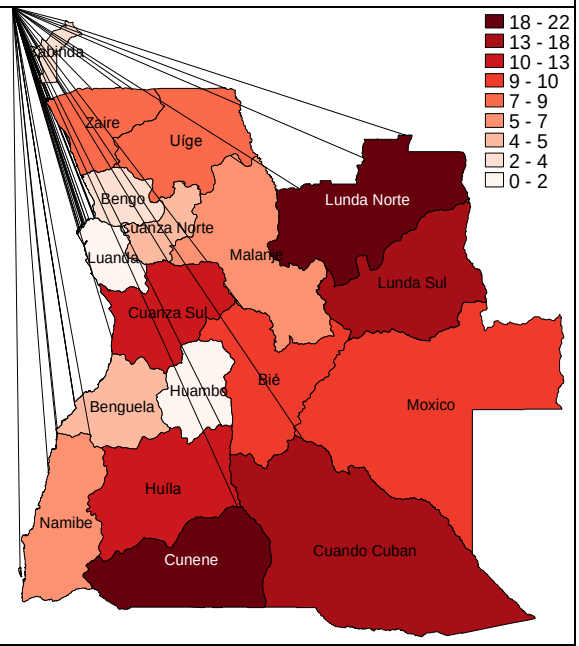
Map 3 below shows the provincial multidimensional poverty rates (left), as well as the provincial deprivations surplus (right), that is, the number of deprivations that cannot be explained by differences in consumption, urbanization, demographic composition, etc. The map shows that, with the exception of Cuanza Sul, coastal provinces tend to have relatively less multidimensional poverty, even after controlling for the fact that these provinces tend to be richer and more urbanized than inland provinces. **Four provinces (Lunda Norte, Cunene, Cuanza Sul and Bie) have multidimensional poverty rates in excess of 80%.** These high levels of multidimensional poverty are particularly surprising for Lunda Norte, which is a fairly urbanized province (61% urbanization) with a comparatively low level of monetary poverty (27%).

Map 3: Multidimensional (MD) poverty, by province

a. MD poverty incidence (%, >3/10 depr.)



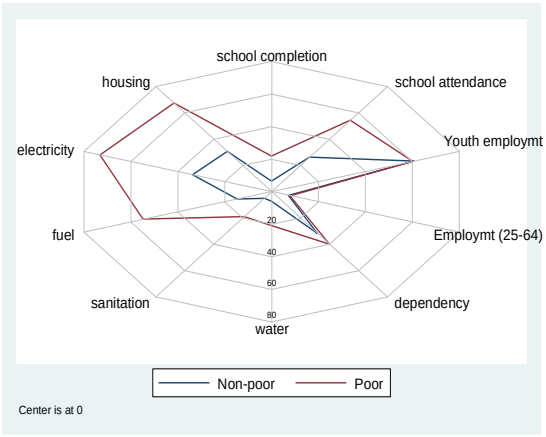
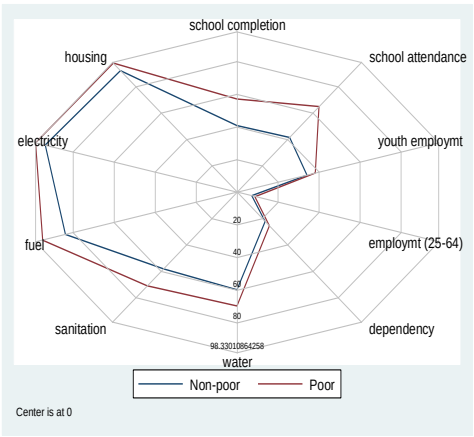
b. Deprivations surplus (controlling for cons.)



Source: IDREA 2018/19 (authors' calculations)

Poor households in terms of monetary poverty are worse off than non-poor ones in almost all non-monetary dimensions of wellbeing, except employment. Figure 23 displays the deprivations faced by households in some key dimensions or categories for urban and rural areas. **The gap in deprivations between rich and poor households is larger in the urban than in the rural areas for most of the categories considered here. This suggests that financial constraints may be more prominent in urban areas, whereas supply-side or other non-financial constraints may be more important in rural area.** The largest gaps between poor and non-poor households in urban areas is present in housing conditions: construction materials, access to electricity, cooking fuel. In the rural areas, school attendance stands out as the issue separating poor from non-poor households the most.

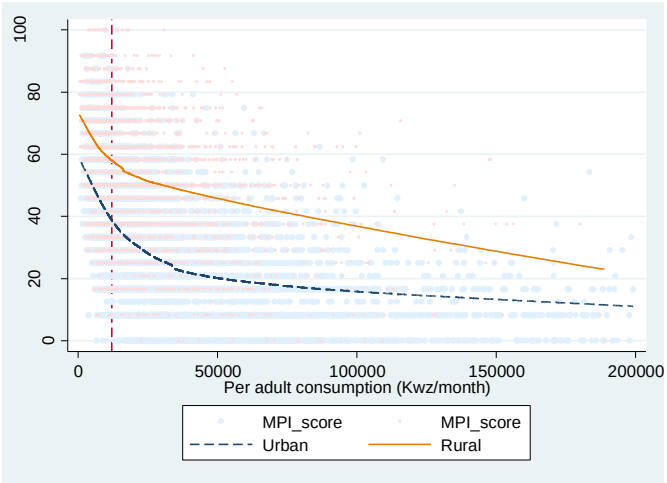
Figure 23: Deprivations by monetary poverty status and area of residence

a. Urban	b. Rural
	

Source: IDREA 2018/19 (authors' calculations)
Note: The Poor and Non-Poor classification is based on monetary terms.

There is a strong relation between monetary poverty and non-monetary deprivations, especially for households close to or below the poverty line. Figure 24 below shows the relation between consumption per adult equivalent and non-monetary deprivations as measured by the multidimensional poverty index (MPI). Unsurprisingly, the figure shows that there is a strong relation between monetary consumption and non-monetary deprivations, especially for households close to or below the poverty line (dashed vertical red line). Above 25,000 kz per adult/month, the relation between monetary consumption and non-monetary deprivations flattens out significantly, despite there still being a considerable number of multidimensionally poor individuals (with more than 3 weighted deprivations out of 10). This suggests that there may be other, non-financial, factors at play, which affect wellbeing for these households.

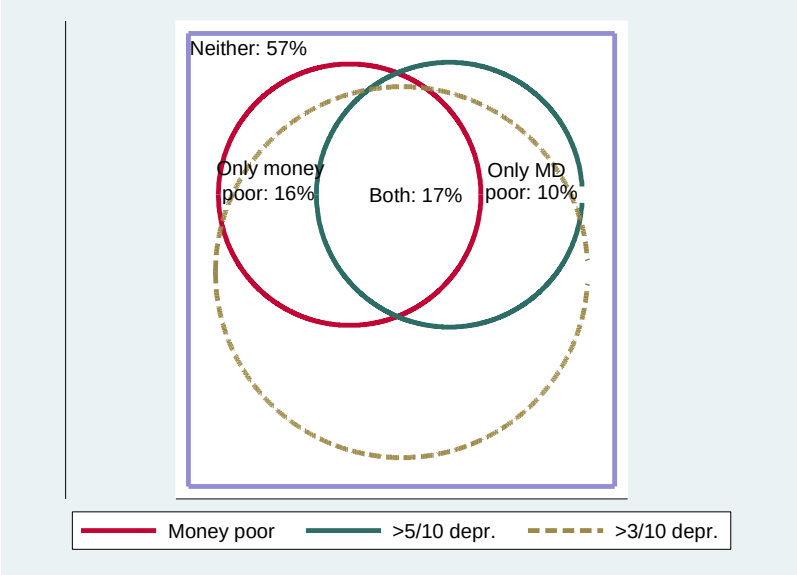
Figure 24: Relation between consumption and non-monetary deprivations, by area



Source: IDREA 2018/19 (authors' calculations)
Note: Locally weighted regression of MPI on consumption per adult equivalent (both from the IDREA 2018-19 survey).

There is a significant discrepancy between monetary and nonmonetary poverty in Angola. Figure 25 shows the overlap between monetary and non-monetary poverty. In order to facilitate comparison between the two measures, the figure also includes an additional measure of multidimensional poverty, which sets the poverty threshold at 5 out of 10 deprivations, instead of the usual 3/10 deprivations, in order to ensure that the two groups are of similar size.[18] If monetary and non-monetary poverty were perfectly correlated, the red (money poor) and green (>5/10 deprivations) circles would overlap perfectly. However, as the graph shows, there is significant discrepancy between the two, as almost half of all poor households in terms of monetary poverty have less than 5/10 weighted deprivations, while almost as many households are multidimensionally poor without being money poor.

Figure 25: Overlap between monetary and multidimensional poverty (>3 and >5 deprivations)



Source: IDREA 2018/19 (authors' calculations)

The correlates of monetary and non-monetary poverty

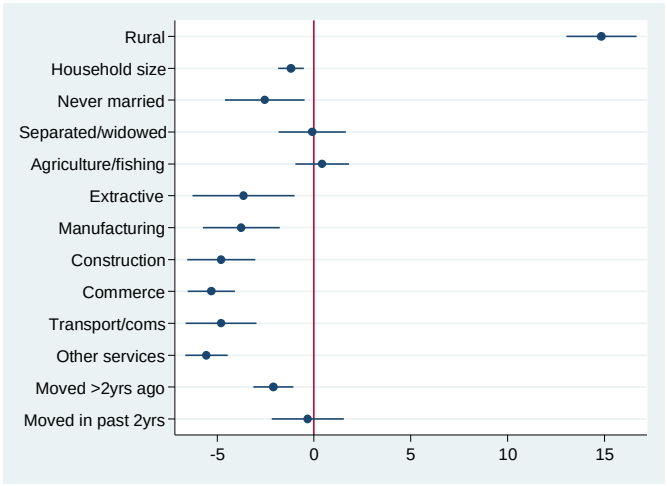
The profiles of monetary and non-monetary poverty presented in the previous section are a useful step to identify the characteristics of the population groups that are poor, but they are not sufficient to identify measure the impact at the margin of various household characteristics on poverty. Multivariate analysis based on regression techniques is a more robust way of assessing the correlates of poverty. For instance, the variation in poverty measures across rural and urban areas may be due to specific characteristics of the area, but it may also be due to differences in characteristics of the households residing in the different areas (e. g., more educated people may live in urban areas). For this purpose, the analysis in this chapter is based on regressions that are useful for assessing some of the important correlates of poverty, controlling for the influence of other confounding factors. Of particular interest is the extent to which the relationship between monetary and non-monetary poverty (measured by the incidence of >3 of 10 deprivations) is affected when confounding factors,

[18] It was not possible to isolate exactly 32.3% of multidimensionally poor households (corresponding to the monetary poverty rate), due to the non-continuous nature of the multidimensional poverty index.

such as the level of education of the head of the household, or residing in a rural or urban area, are taken into consideration.

Other things being equal, rural households are significantly more likely to experience deprivations than urban households, even at similar consumption levels. In order to explore the factors affecting discordance between monetary and non-monetary poverty, the multidimensional deprivation score is regressed on a number of explanatory variables, controlling for consumption, as well as geographic and demographic characteristics of the households. Some of the key determinants are described below (Figure 26). The results show that one of the most significant determinants of non-monetary deprivation, after income/consumption, is the area of residence. **This probably reflects the lack of access to services in rural areas.** Households working in any other sector than agriculture are significantly less likely to be deprived, compared to households where the head is not working, even after controlling for differences in income/consumption. Non-recent migration (>2 years ago) is also associated with a lower level of deprivation.

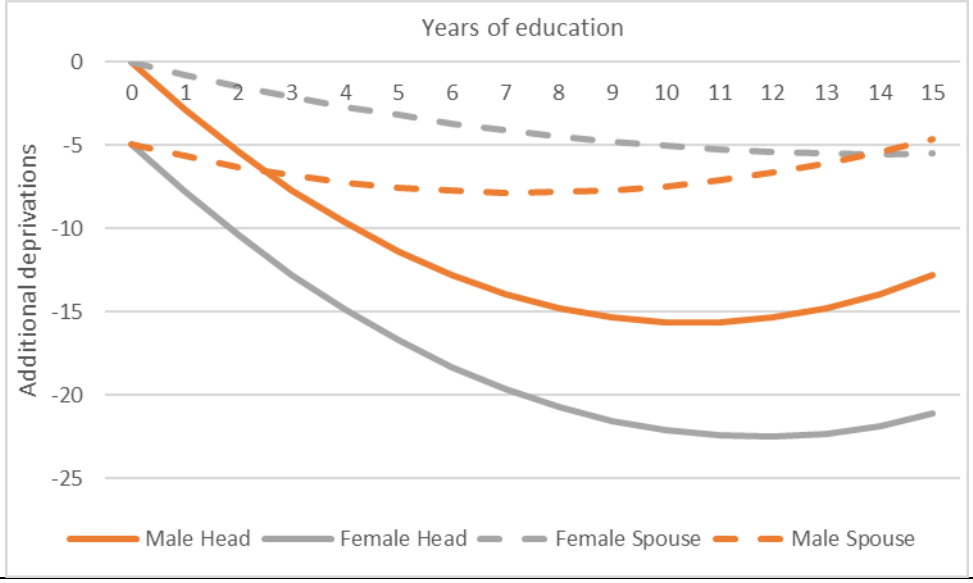
Figure 26: Determinants of deprivation (controlling for consumption, etc.) – logit coefficients with 95% confidence intervals



Source: IDREA 2018/19 (authors' calculations)

Almost as important as the area of residence in determining multidimensional poverty, is the education level of the household head. Figure 27 shows that the average number of deprivations experienced by a household decreases significantly with the years of education of the household head. Importantly, this result holds even after controlling for the fact that more educated households tend to be more urban and have higher income. The effect of education is stronger for females than for males, and it is stronger for the female household head than for the male spouse.

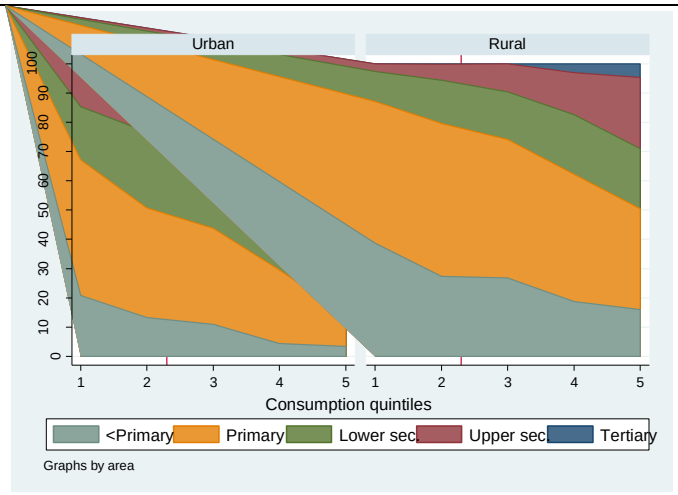
Figure 27: Effect of education on deprivations (controlling for consumption, etc.), by sex



Source: IDREA 2018/19 (authors' calculations)

Figure 28 shows the distribution of the population by level of education of the head of household. It shows that 67% of people in the poorest quintile in urban areas, and 87% in rural areas, are headed by someone with primary or no education. In the richest quintile, this proportion drops to 14% in urban areas, and 51 % in rural areas.

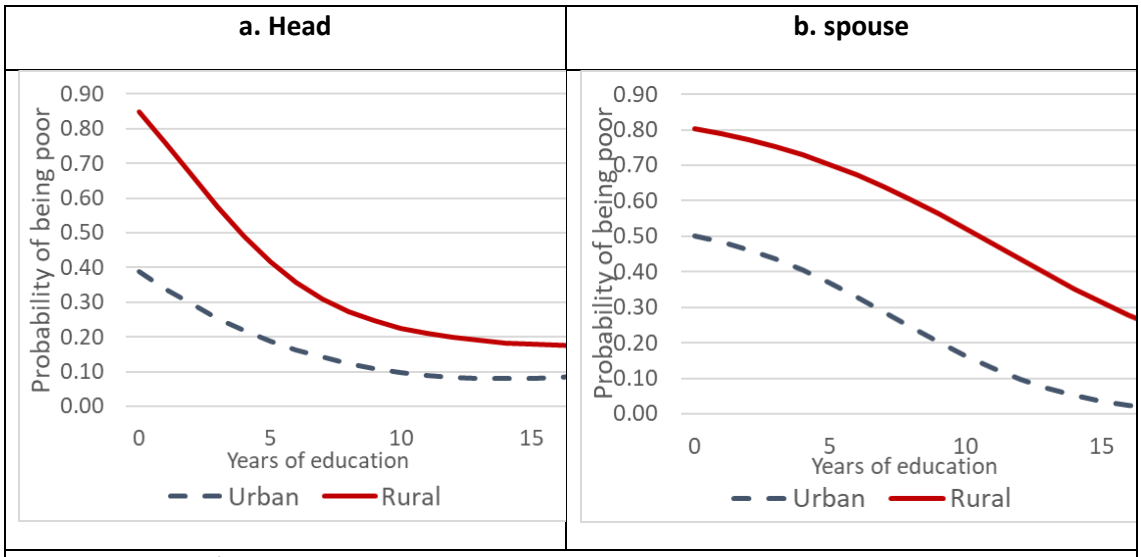
Figure 28: Distribution of the population by level of education of the head of household and national quintile, by area



Source: IDREA 2018/19 (authors' calculations)

Importantly, the inverse relationship between education and poverty remains strong, especially in rural areas, even after controlling for the sector and type of employment of the household head and spouse, as well as other relevant characteristics of the household (Figure 29, with the regression estimates provided in Appendix A).

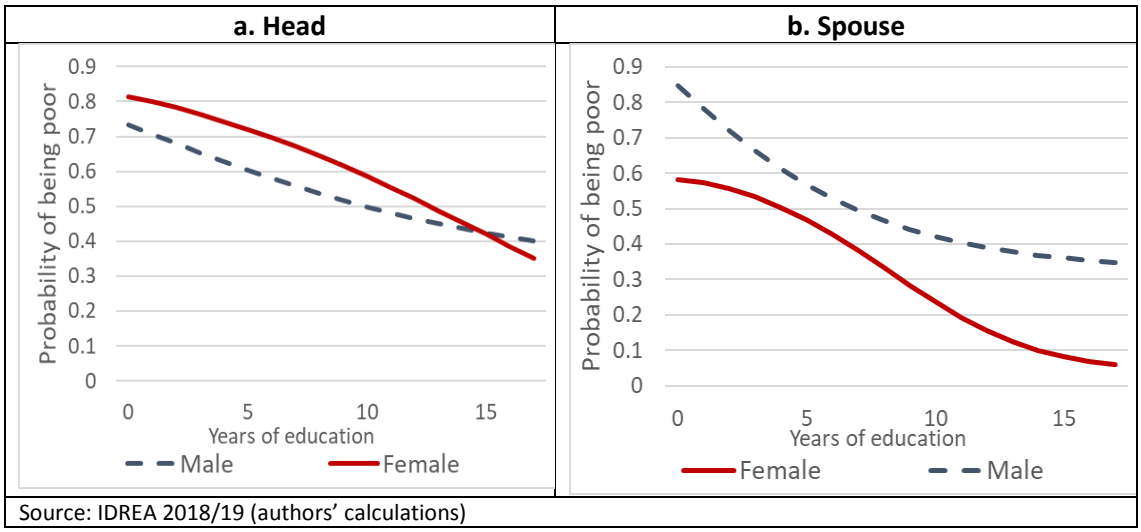
Figure 29: Probability of being poor vs. years of education (controlling for relevant household characteristics, etc.), by area



Source: IDREA 2018/19 (authors' calculations)

Disaggregating the results by the sex shows that the effect of education (as in years of education) is similar for male and female heads (see Figure 30). However, **female heads are more vulnerable to poverty than male heads regardless of how many years of education they have (**for detailed regression results, see Appendix A). The early years of education have a greater effect on the probability of being poor among male spouses[19], whereas secondary education appears to be more important for female spouses.

Figure 30: Probability of being poor vs. years of education (controlling for relevant household characteristics, etc.), by sex

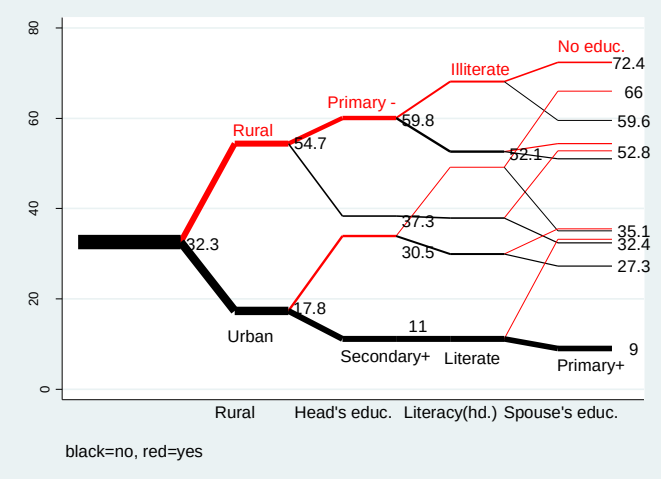


Source: IDREA 2018/19 (authors' calculations)

[19] This result has a high error margin, since there are only 288 male spouses in the sample.

Households where both the head and the spouse have low education are especially vulnerable to poverty. For instance, the riskplot presented in Figure 31 shows that 72.4% of rural households headed by two uneducated parents (illiterate head with a spouse with less than primary education) are poor. In contrast, among urban households where both parents are educated, the poverty rate is just 9%.

Figure 31: Risk plot showing the cumulative effect of educational disadvantages on poverty



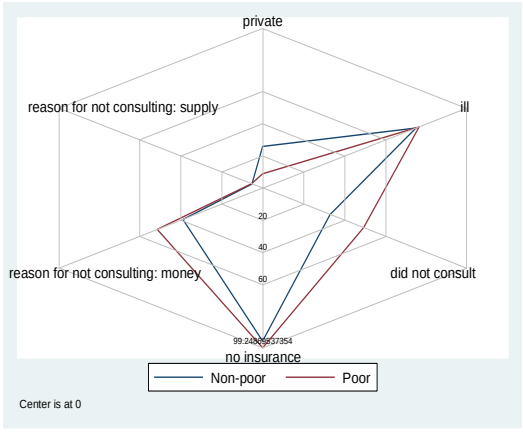
Source: IDREA 2018/19 (authors' calculations)

Health

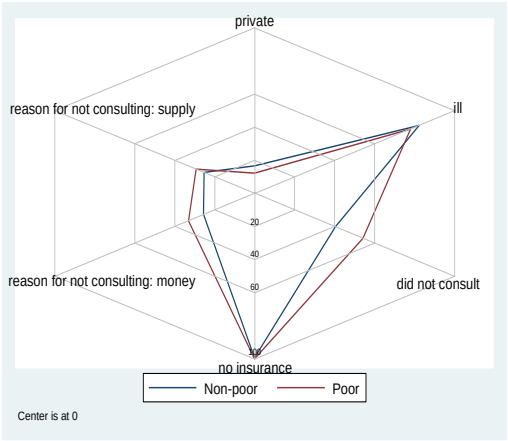
Figure 32 presents some key health indicators for poor and non-poor households in urban and rural areas. The indicators show, amongst other things, that **poor households in urban areas are less likely to consult a medical professional when sick and are more likely to cite financial constraints as the reason for not consulting. In rural areas, poor households are also more likely to cite supply-side constraints, such as waiting times, or lack of medicines or medical personnel, as the reason for not consulting.** In urban areas, poor households are less likely to have health insurance, and are less likely to use private health facilities.

Figure 32: Key health indicators for poor and non-poor households, by area

a. Urban



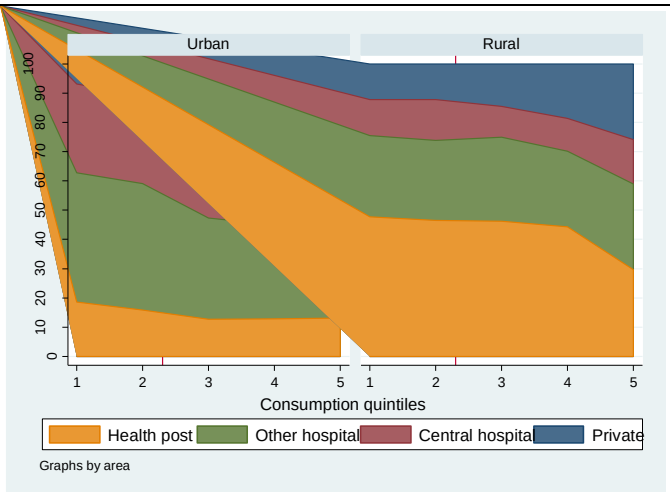
b. Rural



Source: IDREA 2018/19 (authors' calculations)

The more detailed breakdown of usage patterns by consumption quintiles in Figure 33 shows that richer households are more likely to use private health facilities, largely at the expense of primary health care (health posts) in rural areas, and at the expense of public hospitals in urban areas.

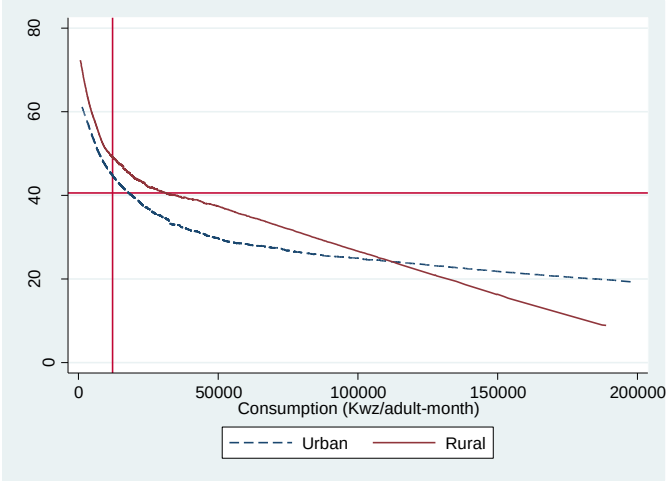
Figure 33: Use of different types of health facility, by consumption quintile



Source: IDREA 2018/19 (authors' calculations)

Figure 34 looks at the bivariate relation between consumption and the probability of not consulting while sick. It confirms that **the probability of not consulting decreases significantly as income/consumption rises.** The relation is particularly strong for poor households, meaning that a small increase in income/consumption is associated with a large fall in the probability of not consulting. At higher incomes (>50,000Kz per adult/month), the relation flattens out more in urban than in rural areas. This suggests that other (non-financial) factors may be more significant in determining whether a household chooses to consult a doctor. These reasons will be explored below.

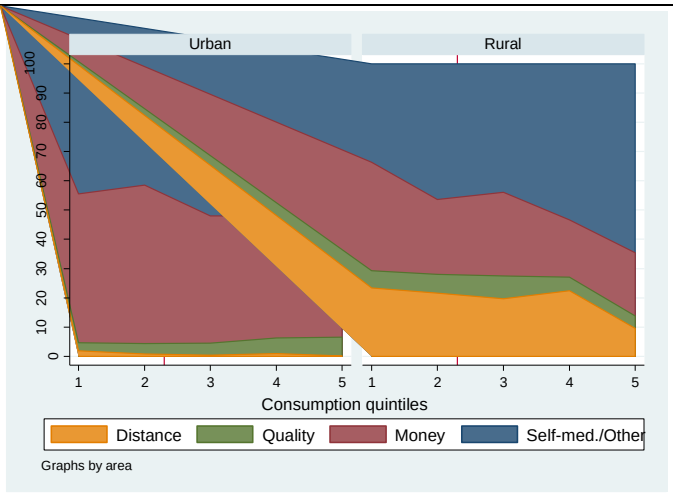
Figure 34: Probability of not consulting while sick depending on consumption, by area



Source: IDREA 2018/19 (authors' calculations)

Figure 35 breaks down the reasons provided by respondents for not consulting, depending on the consumption quintile of the household and the area of residence. It should be noted that rich households are also less likely to respond to the question, which is not reflected in this graph. The graph shows that rich urban households are slightly more likely to blame their non-consultation on service quality issues (lack of doctors, medication or long waiting times). **In rural areas, distance to the health facility is the main supply-side reason for consulting.** Richer households are more likely to self-medicate in both urban and rural areas. This may partly reflect the fact that the illnesses reported by richer households tend to be less severe, as the threshold for self-reporting illness tends to be lower for richer households (Figure 34 above).

Figure 35: Reasons for not consulting (% of respondents), by area



Source: IDREA 2018/19 (authors' calculations)

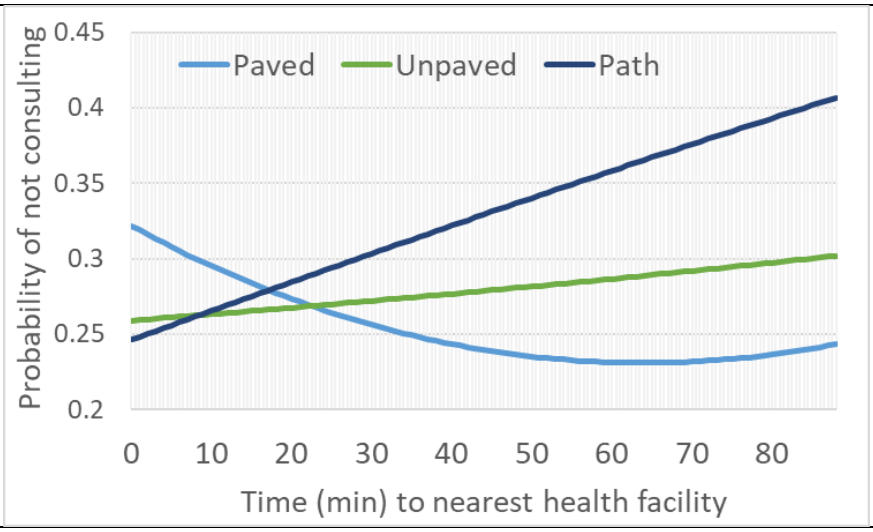
Once other factors are taken into account, the significance of consumption as an explanation for non-consultation weakens considerably (see Figure 36). This suggests that financial barriers are only part of the explanation for why people choose not to consult while sick. In urban areas, the education of the spouse appears to play a significant role in determining whether sick household members consult health professionals. Urban households where someone has recently used secondary or tertiary health facilities are also less likely to consult. In rural areas, only the use of private health facilities reduces the likelihood to consult. Other things being equal, residents of Lunda Norte are significantly less likely than other people to consult a health professional when sick, particularly in rural areas (see Appendix A0 below). For urban areas, Zaire stands out as having the lowest conditional probability of health consultation (see Appendix A).

Figure 36: Selected determinants of the probability of consulting while sick (controlling for consumption, etc.), by area – logit coefficients with 95% confidence intervals

Source: IDREA 2018/19 (authors' calculations)
Note: *variable has been rescaled (0-1) for visual comparability with other coefficients.

One of the factors that appears to be significant in rural areas is physical access, as measured by the time it takes to reach the nearest health facility. Figure 37 shows the conditional probability of not consulting depending on the distance to the nearest health facility in minutes. The graph shows that **if the road is paved, distance does not appear to reduce the likelihood of consultation, except for very remote locations (>60 minutes from the health facility). In areas accessible by unpaved roads, however, the likelihood of not consulting increases with the distance to the health facility. And for locations that are only accessible on foot, the negative effect of distance is even stronger.**

Figure 37: Probability of not consulting while sick vs. time to health facility (rural areas only, controlling for relevant characteristics), by type of road

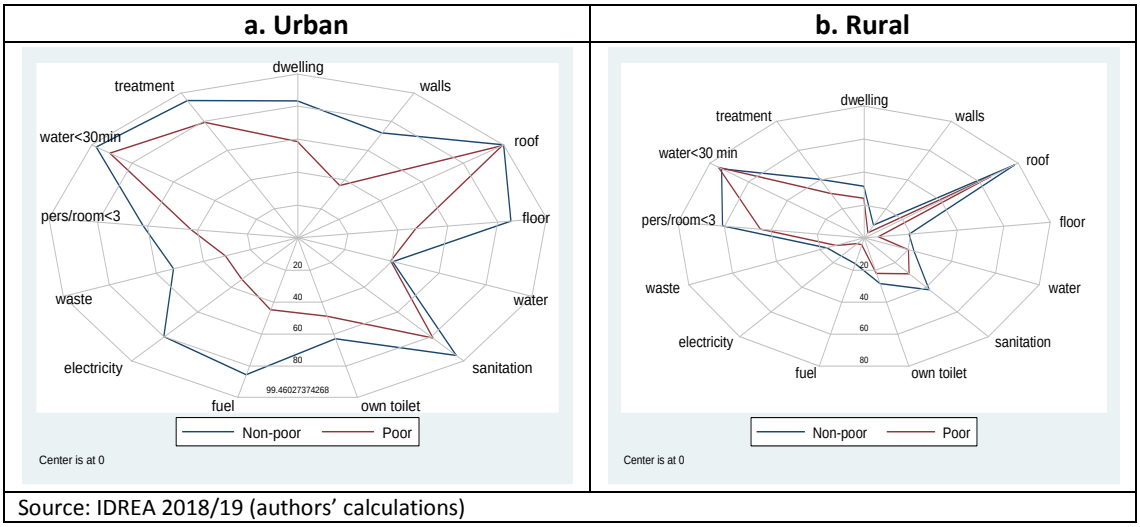


Source: IDREA 2018/19 (authors' calculations)

Housing and Living Standards

Figure 38 presents some key housing indicators for individuals living poor vs. non-poor households in urban and rural areas. The first thing to note is that urban areas tend to have significantly better housing conditions in general than rural areas. The second thing that stands out from the graph is that the gap between poor and non-poor households in terms of housing conditions tends to be much larger in urban areas than in rural areas. Non-poor households have consistently better housing indicators, as is to be expected. In urban areas, the largest differences between poor and non-poor households are found for electricity (poor households are significantly less likely to be connected to the public grid) and cooking fuel (poor households are significantly less likely to use improved, i.e. non-solid, cooking fuels). Poor households are also significantly less likely to have adequate floors and walls. **In rural areas, access to improved sanitation stands out as an indicator where poor households have significantly worse conditions than non-poor households.** Poor households are also significantly more likely to live in crowded spaces (>3 pers./room).

Figure 38: Percentage of population with adequate housing conditions[20] by poverty status and area

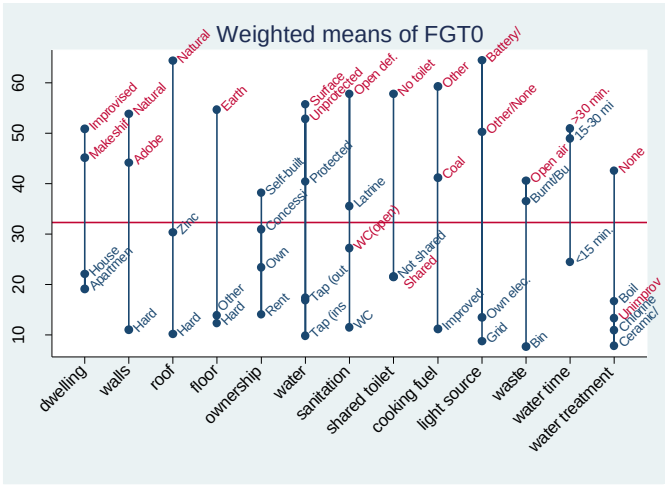


Source: IDREA 2018/19 (authors' calculations)

Figure 39 provides additional disaggregation of the housing indicators and more details on which housing conditions are considered adequate (blue) and inadequate (red). The graph shows the poverty incidence for each sub-group. The highest poverty rates (64%) are found among people living in households with natural (i.e. grass, thatched, etc.) roofs and in households using battery/petrol as their main energy source for lighting. Almost all of the households with natural roofs are located in rural areas, whereas households without access to electricity are found in both urban and rural areas (for more details on the point estimates and confidence intervals, see Appendix 0 below).

[20] Dwelling: house, apartment; Walls: hard walls; Floor: not earth; Water: tap, protected source; Sanitation: WC with sewage, Latrine; Fuel: gas, electricity, petrol; Electricity: generator, public network; Waste: bin, burnt, buried; Water time: <=30 minutes; Water treatment: boiled, ceramic filter, chlorine, solar.

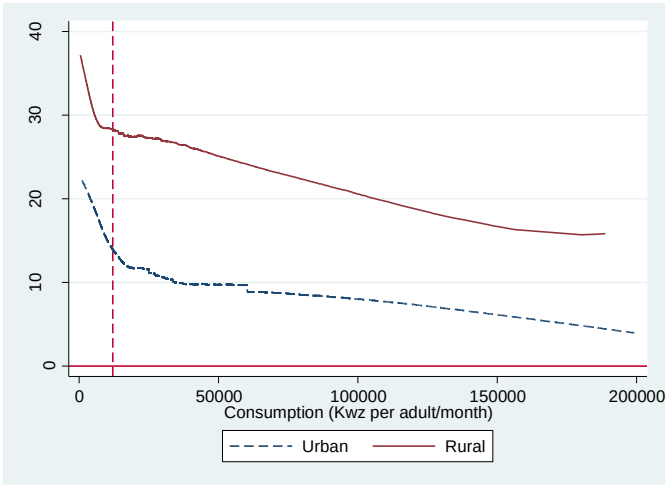
Figure 39: Poverty incidence by selected housing indicators



Source: IDREA 2018/19 (authors' calculations)

Figure 40 shows the relation between the return time to water and total household consumption per adult equivalent, as estimated by a locally weighted regression. The graph shows that **distance to the water source increases exponentially with poverty for households below the poverty line, both in urban and rural areas.** For households above the poverty line, the relation between income/consumption and water distance is much weaker, which suggests that this a poverty-specific problem.

Figure 40: Time to water depending on consumption, by area



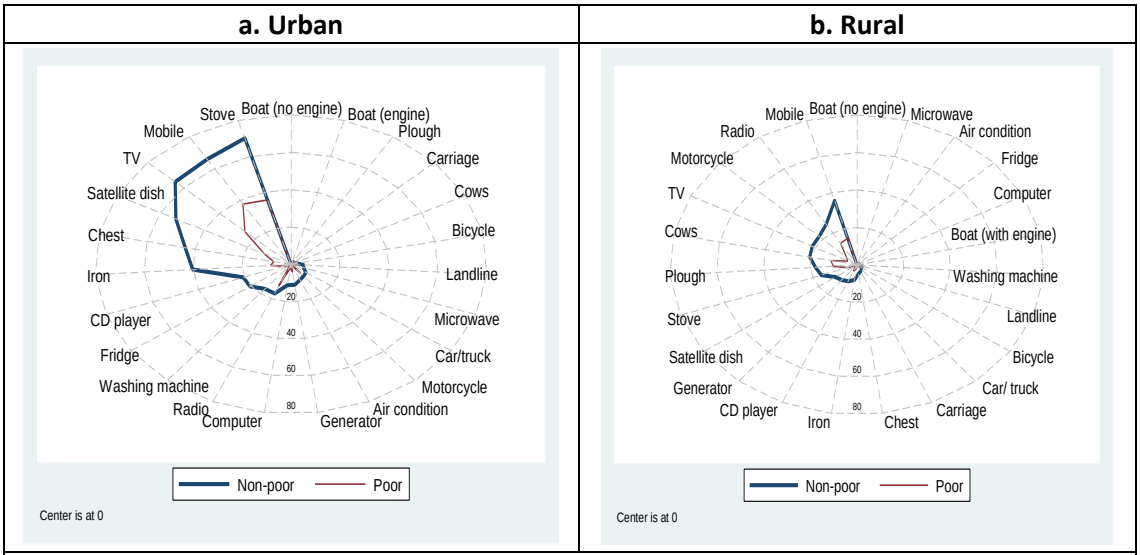
Source: IDREA 2018/19 (authors' calculations)

Assets

Figure 41 shows the proportion of individuals living in households owning at least one of the listed assets. The graph shows, unsurprisingly, that urban households are much more likely to own assets than rural households and that poor households are less likely to own assets than non-poor households. In urban area, the most commonly owned assets are stoves (70% and 35% for non-poor and poor households, respectively), mobile phones (66%/38%), and TVs

(65%/26%). In rural areas, the most common asset are mobile phones (36%/15%), radios (25%/13%), and motorcycles (22%/6%). In urban areas, the second most common type of assets are household appliances, whereas in rural areas, households are more likely to own productive assets, such as cows and ploughs.

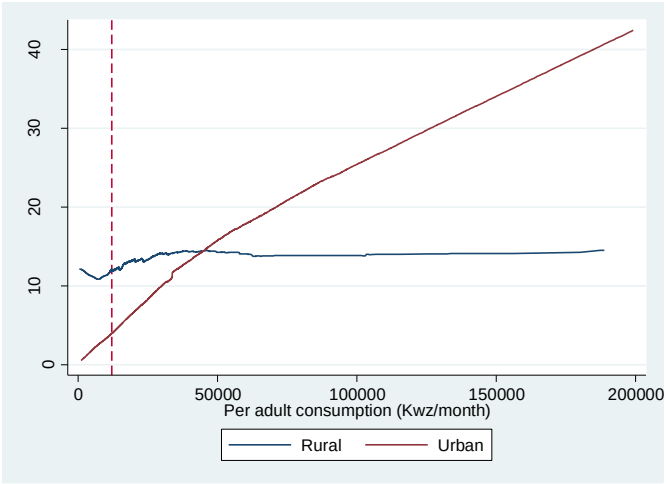
Figure 41: Percent living in households owning at least one asset, by area



Source: IDREA 2018/19 (authors' calculations)

Figure 42 show the relation between the total number of assets owned by households, and total household consumption, as estimated by a locally weighted regression. For this estimate, assets have been weighted by their median price. So, for instance, a car (median price: 1.7 million Kz) will weight 500 time more in the asset index than a radio (3500kwz). The index shows that **asset ownership is strongly correlated with income/consumption at all levels of the distribution in urban areas. In rural areas, however, the total number of assets owned by a household appears to be unrelated to the total consumption of the household.**

Figure 42: Relation between asset ownership (weighted by median price) and consumption, by area

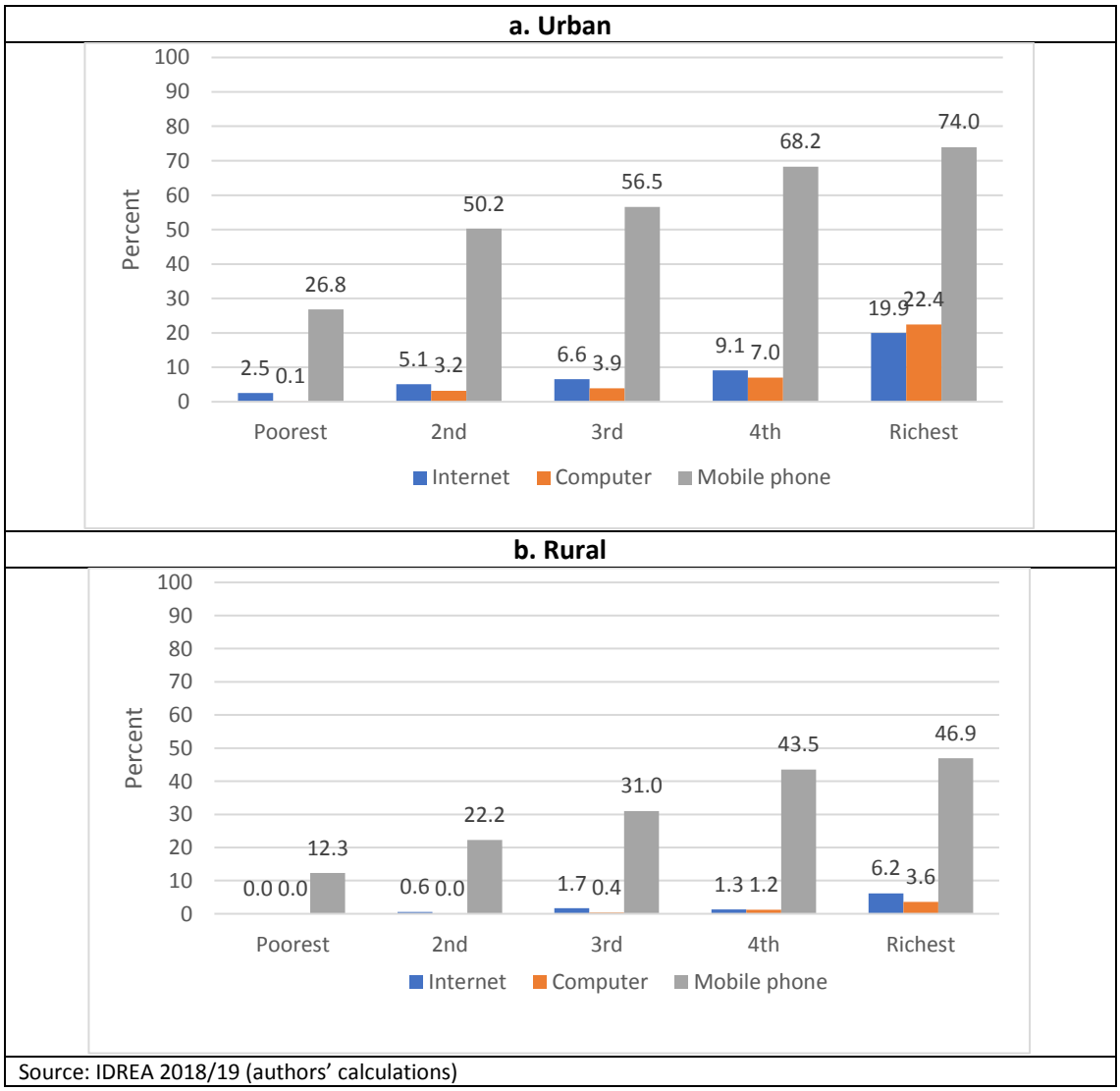


Source: IDREA 2018/19 (authors' calculations)

Further exploration revealed that this surprising result is due to the fact that rural households tend to own a relatively large number of cows (3 on average). **Cows are relatively expensive (90,000kwz/cow) but are uncorrelated with total household consumption, as the ownership of cows is almost equally spread across consumption quintiles.** This explains why asset ownership, as measured above, appears to be uncorrelated with total household consumption in rural areas.

Finally, Figure 43 reveals that **access to the internet or ownership of a personal computer, or a mobile phone, is generally higher in urban areas relative to rural areas and higher among wealthier households**.

Figure 43: Ownership of digital assets and access to internet by national quintile and area



Source: IDREA 2018/19 (authors' calculations)

Conclusions

The incidence of multidimensional poverty is 52.5 percent at the national level, meaning that 52 percent of the households suffer more than 3 out of 10 possible weighted

deprivations. Also, the gap between rural and urban areas is even larger (more than 3.4 times larger): 92.3 percent of rural, compared to just 26.8 percent of urban households.

In general, the provinces with high monetary poverty rates also tend to have high levels of multidimensional poverty. But the correlation is far from perfect.

The decomposition of the multidimensional poverty index by dimension of wellbeing reveals that the largest differences between urban and rural areas are in access to improved water and sanitation, as well as school completion. Furthermore, the gap between rich and poor households is larger in urban than in rural areas for most of the deprivations considered here. This suggests that financial constraints may be more prominent in urban areas, whereas supply-side or other non-financial constraints may be more important in rural area. The largest gaps between poor and non-poor households in urban areas is found in housing conditions: construction materials, access to electricity, cooking fuel. In rural areas, school attendance stands out as the issue separating poor from non-poor households the most.

Poor households in urban areas are significantly less likely to be connected to the public grid, and are significantly less likely to use improved, i.e. non-solid, cooking fuels, and have adequate floors and walls. In rural areas, access to improved sanitation stands out as an indicator where poor households have significantly worse conditions than non-poor households. Poor households are also significantly more likely to live in crowded spaces (>3 pers./room).

There is a significant discrepancy between monetary and nonmonetary poverty in Angola. This finding has important implications for the design and targeting of social protection programs in Angola. Identifying target populations or municipalities based on monetary poverty is likely to yield quite different population groups or administrative areas that may have little overlap. Thus, particular care has to be given to determining of the main objectives of the program and to the choice and design of the targeting approach that is best suited to accomplishing the objectives of the program.

Living in a rural area and level of education are the two strongest predictors (in order of importance) of multidimensional poverty of households with the same level of consumption per adult equivalent (the monetary measure of welfare). The significant role of living in a rural area probably reflects the lack of access to services in rural areas.

More importantly, the significant effect of education on multidimensional poverty implies that education has an additional role beyond its effect on income and consumption. The average number of deprivations experienced by a household decreases significantly with the years of education of the household head, even after controlling for the fact that more educated households tend to be more urban and have higher income, as well as other relevant household chracteristics. Also, the effect of education is stronger for females than for males, and it is stronger for the household head than for the spouse.

The beneficial effects of education on multidimensional poverty relate to, amongst other things, behavioural factors. For instance, in urban areas the likelihood of not consulting a medical professional while sick decreases significantly with the spouse's education. This result, which is obtained after controlling for household consumption, and other relevant household characteristics, suggests that financial barriers are only part of the explanation for why people do not consult a doctor while sick.

Furthermore, different deprivations often interact in ways that are mutually reinforcing. For instance, food insecurity increases the probability of children not attending school. Furthermore, the data appear to indicate that the effect of food shortages on school attendance are stronger for girls than for boys in both urban and rural areas. These results are obtained controlling for consumption, as well as parents' education and other relevant household characteristics.

Another dimension of wellbeing that is strongly correlated with education, is housing. Children suffering multiple housing deprivations are more likely to not attend school. For instance, a rural girl living in a crowded house with no electricity has an almost 50% chance (47.4%) of being out-of-school. That is almost 4 times more than an urban boy living in a spacious house with electricity (13.2%).

Chapter 3: Vulnerability to Poverty

Introduction

The poverty headcount measure discussed in the previous chapter is only able to assess the current poverty status of a household but not necessarily a very useful guide to its future poverty status. To the extent that households in Angola are frequently hit by a variety of shocks, the volatility of income and possibly consumption may be high. In a context of high volatility in consumption, a household's currently observed poverty status is, therefore, unlikely to be a very good guide for its vulnerability to poverty or its 'poverty risk'. For example, the current consumption of a household may be above the poverty line and thus it may be classified as non-poor, but because its consumption is likely to differ significantly in the next period because of shocks experienced between the current and next period, the same household may end up being classified as poor in the next period. Such a household may be said to be 'vulnerable to poverty' even though currently it is not poor. In general, the extent of vulnerability to poverty depends on the nature of the shocks experienced by households (for example, covariate shocks such as economic shocks, weather-related, climate-induced shocks or natural hazards affecting large communities or households, or idiosyncratic shocks such as illness), the risk management strategies of households and communities, the abilities of households to cope after the incidence of the shock (for example, assets owned, social capital), and their access to safety nets.[21]

Understanding the nature of shocks that households are exposed to and their coping strategies is essential for the design of more effective policies. In the absence of any social protection program, poor and vulnerable families have limited ways to protect themselves against negative shocks. As a result, they are more likely to slide into poverty following a negative event and less likely to escape it. In particular, in the absence of social protection systems, shocks can have long-term effects, as households may resort to coping strategies with adverse implications for their future well-being. Certain coping strategies are more harmful than others, for example, sending children to work instead of school or depleting productive assets can have negative long-term effects on the household's welfare.

This chapter focuses on understanding vulnerability and its sources as well as shocks and coping strategies among households in Angola. The next section presents an analysis of vulnerability and its sources in Angola based on the Gunther and Harttgen (2009) method applied to the 2018-19 IDREA (for more details see Appendix D). The method requires data on the characteristics of the communities where household live. Given that the IDREA survey collected information on community characteristics only for rural communities, the analysis is first carried out by constructing community characteristics by aggregating information collected from households at the commune (*comuna)* level in both urban and rural areas by the IDREA survey. Though there are shortcomings associated with this approach, it was adopted on the belief that the benefit of being able to compare estimates of vulnerability between urban and rural areas exceeded the costs. A separate analysis is also carried by re-estimating the model using household data from rural areas only combined with

[21] Vulnerability to poverty is related to the concept of 'resilience' which concerns the longer time path of well-being in the face of shocks, especially the likelihood that any adverse outcomes of either risk avoidance or a realized shock do not persist for an extended period. For example, a non-poor household may be vulnerable to becoming poor due to job loss yet be quite resilient if the prospects for finding follow-on employment offering similar compensation are high and/or formal or informal safety net programs reliably provide adequate support reasonably promptly. In statistical terms, a non-poor household with high conditional variance of income might be both vulnerable (to becoming poor) and resilient (because the poverty is sufficiently low in duration, intensity, and/or likelihood (Barrett and Constas 2014).

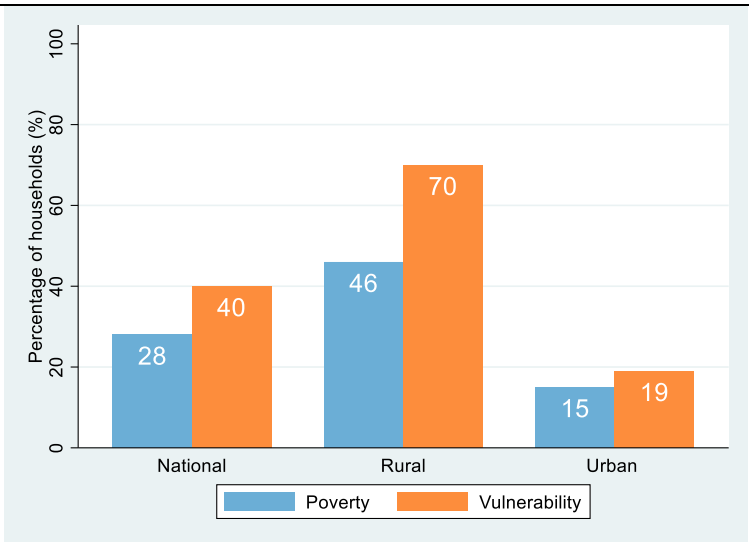
the information collected by the *comuna* level questionnaire applied to key informants in rural communities.

Vulnerability to poverty

The incidence of vulnerability is higher than the incidence of poverty. Based on the poverty line estimate of 12,180.75 Kwanza (per adult equivalent), 40 percent of the households are identified as vulnerable, whereas only 28 percent are classified as poor (Figure 44). The discrepancy in the poverty rate reported here in comparison to the poverty rates (either at the national or at the urban/rural level) reported in chapter 1 is due to the fact that the poverty rate reported here is an estimate based on the underlying model of consumption as a function of household and community observed characteristics used for the estimation of vulnerability to poverty. The poverty rates in chapter 1 are derived based on actual consumption per adult equivalent.

The prevalence of vulnerability is higher in rural areas compared to that in urban areas. 70 percent of rural households are vulnerable to poverty whereas only 19 percent of urban households are vulnerable (Figure 44).

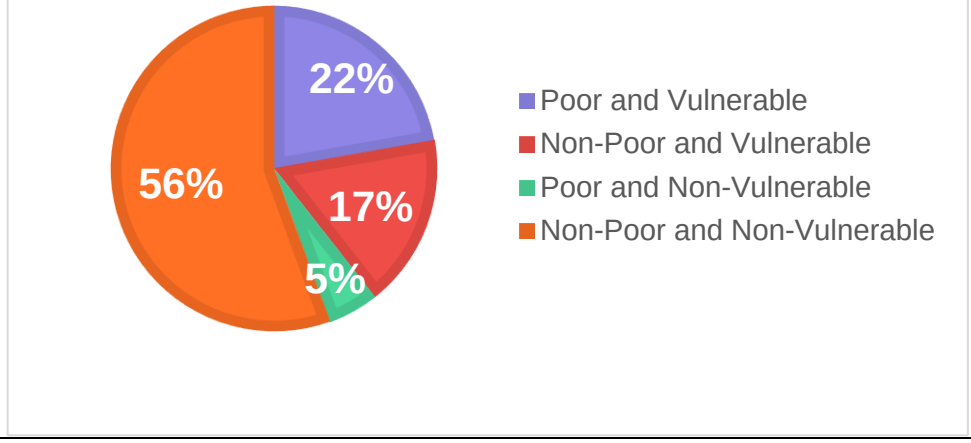
Figure 44: Poverty and vulnerability rates in Angola, 2019



Source: IDREA 2018/19 (authors' calculations)

While there is overlap between households that are in poverty in any given year and those that are vulnerable, slightly over one-fifth of the households are "mismatched". Twenty-two percent of households are both poor based on prior year's consumption and also vulnerable to poverty (Figure 45). However, there are 17 percent of households that did not fall under the poverty line based on their past 12 months of consumption but are vulnerable to poverty. There were also 5 percent of household that given their characteristics were not characterized as vulnerable, but nonetheless had consumption below the poverty line. The fact that there are poor non-vulnerable households is expected. The threshold at 29 percent implies that households that have a probability less than 29 percent of being below the poverty line are considered non-vulnerable. However, their probability of being below the poverty line is not zero and given some set of circumstances they also may fall below the poverty line. Most households, 56 percent, were neither poor in the prior year nor vulnerable to poverty based on their current characteristics.

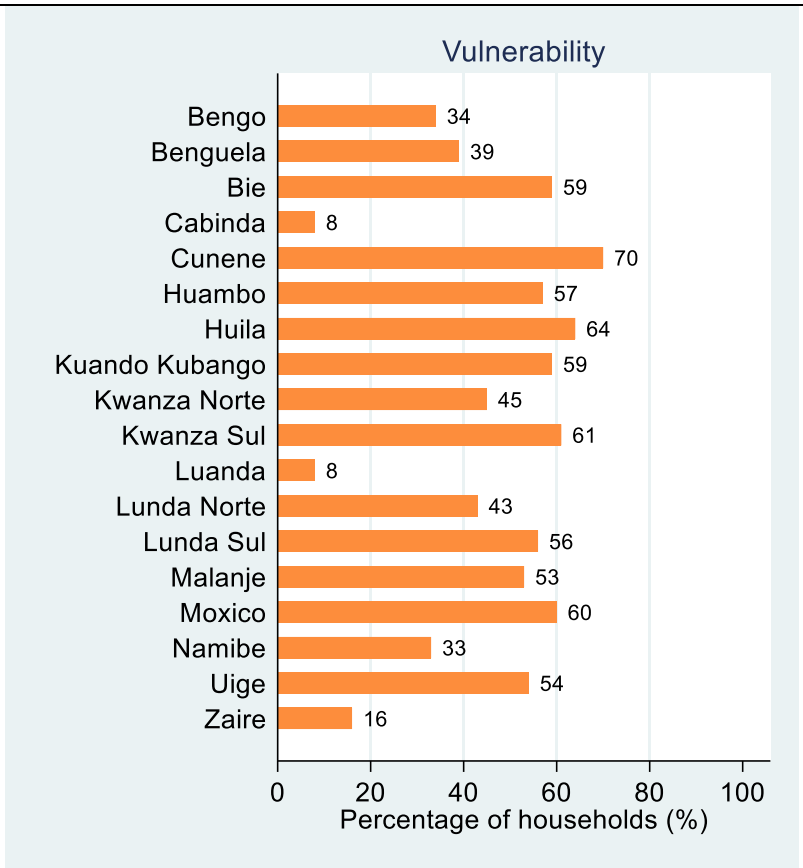
Figure 45: Household poverty and vulnerability status



Source: IDREA 2018/19 (authors' calculations)

The prevalence of households vulnerable to poverty varies considerably across provinces. Whereas, in general, a higher poverty rate translates to a higher share of the households being vulnerable to poverty, the correspondence is not one-to-one. For example, Lunda Norte and Namibe have very similar poverty rates, around 27 percent (see Figure 46), but the fraction of vulnerable households in Lunda Norte is 43 percent compared to 33 percent in Namibe (Figure 46). Thus, the current poverty rate does not necessarily identify the populations that are vulnerable.

Figure 46: Vulnerability to poverty by province in Angola, 2019

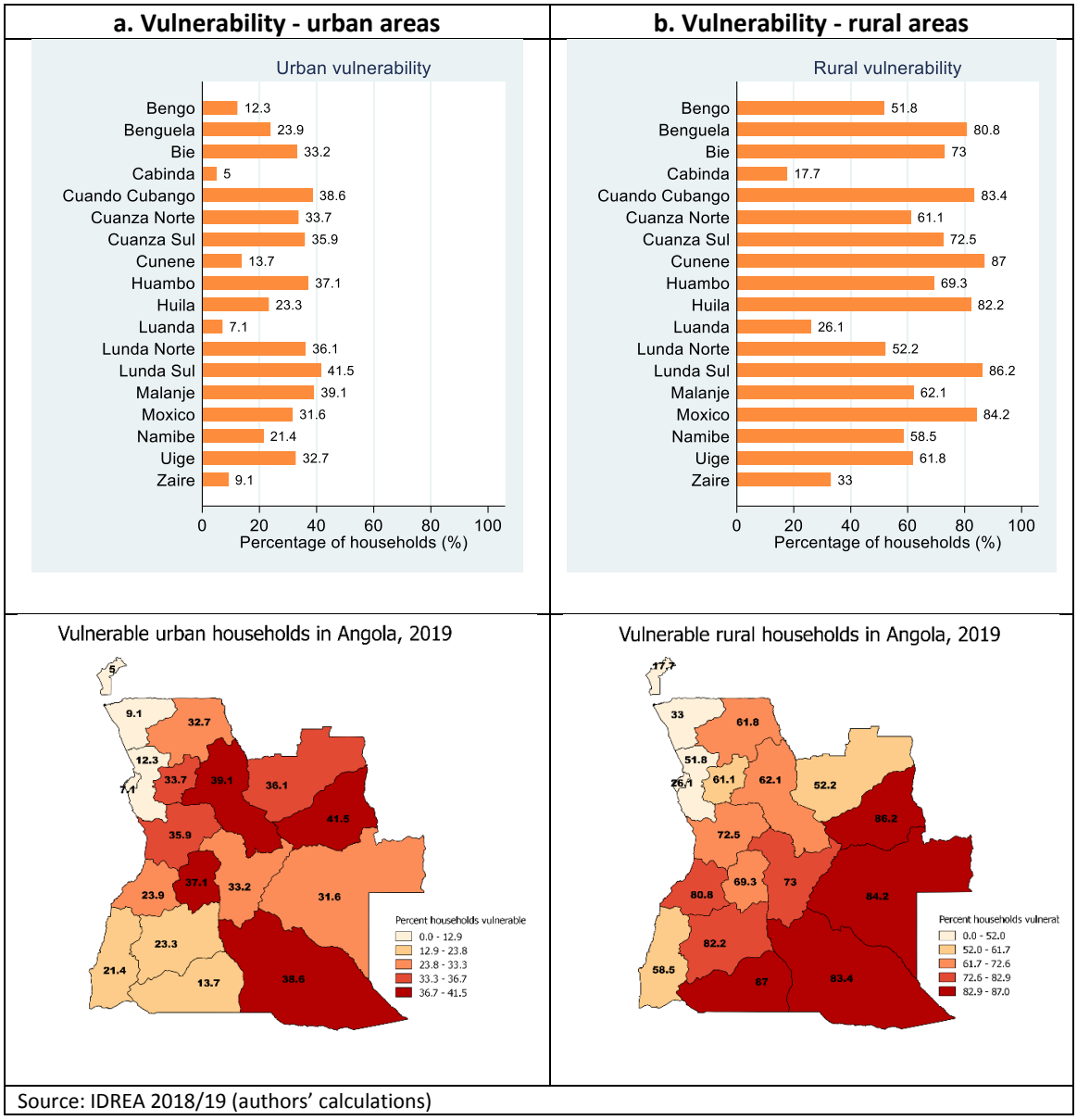


Source: IDREA 2018/19 (authors' calculations)

The prevalence of vulnerability is high in the provinces of Cunene, Huíla, Namibe and Kuando Kubango, all of which have been experiencing a severe drought in 2018-2019. The high prevalence of vulnerability in these provinces implies that the drought is likely to lead to a substantial increase in the incidence and severity of poverty, increased food insecurity, and an increase in incidence of child malnutrition and all the negative consequences this entails.

The incidence of vulnerability to poverty is generally higher in the rural areas (where poverty rates are also higher). The highest vulnerability rates for households in rural areas are in the south-eastern and eastern part of the county, whereas vulnerability in urban areas is more geographically scattered (Figure 47 a and b). In contrast, the coastal northern provinces have the lowest vulnerability rates both for rural and urban areas.

Figure 47: Vulnerability rates for urban and rural populations in Angola, 2019



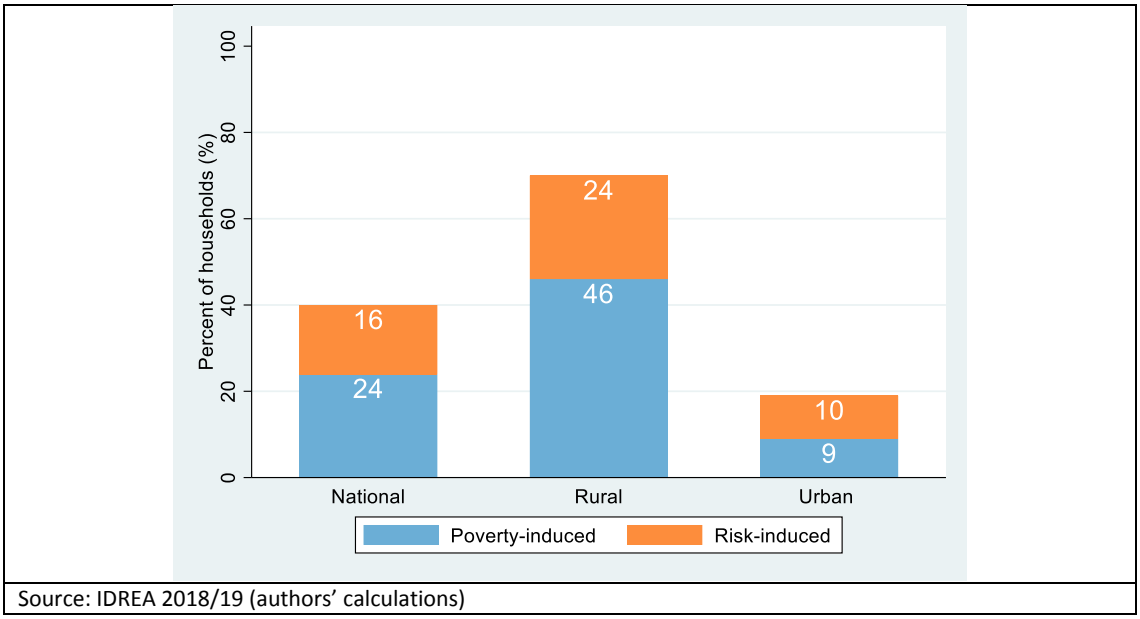
Source: IDREA 2018/19 (authors' calculations)

Vulnerability to poverty in Angola, and especially in the rural areas, is primarily due to low human capital and physical capital or assets (i.e., vulnerability is poverty induced). In the rural areas, the majority, or 70 percent, of vulnerable households have expected consumption that is below the poverty line (Figure 48). Decomposing vulnerability into two sources, vulnerability due to low

human capital and low asset endowments(poverty-induced) and vulnerability due attributed to high consumption variability (risk-induced), reveals that the vulnerability to poverty in the rural areas is mainly poverty-induced (46 percent vs. 24 percent). In the rural areas, two-thirds of the vulnerability is poverty-induced and one-third is risk-induced.

The share of risk-induced vulnerability is higher among vulnerable households in urban areas than in rural areas. In urban areas, vulnerability to poverty is more likely due to high volatility in consumption than due to poverty (Figure 48). That is, in the urban areas where 19 percent of the household are vulnerable to poverty more than half (10 percent) are households that possess sufficient human capital and asset endowments to be above the poverty line, but negative shocks are likely to push them below the poverty line.

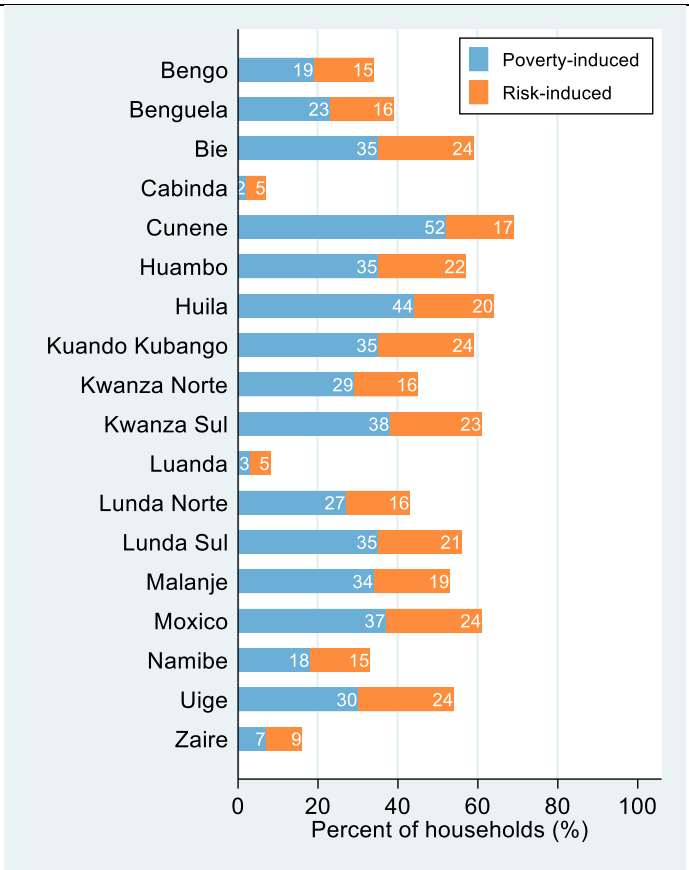
Figure 48: Poverty-induced vs. risk-induced vulnerability in Angola, 2019



Source: IDREA 2018/19 (authors' calculations)

Within provinces the share of households subject to risk-induced vulnerability varies considerably less than the share of households subject to poverty-induced vulnerability. The share of risk-induced vulnerability within provinces ranges from 5 percent to 24 percent of households. In contrast, the share of poverty-induced vulnerability ranges from 2 percent to 52 percent (Figure 49). The provinces with the largest share of risk-induced vulnerable households are the provinces of Bie, Moxico and Uige, where 24 percent of households are subject to risk-induced vulnerability. The provinces with the largest share of households vulnerable to poverty due to low human and physical capital accumulation are Cunene (52 percent of households), Huila (44 percent) and Kwanza Sul (38 percent). These three provinces are among the least urbanized provinces in Angola.

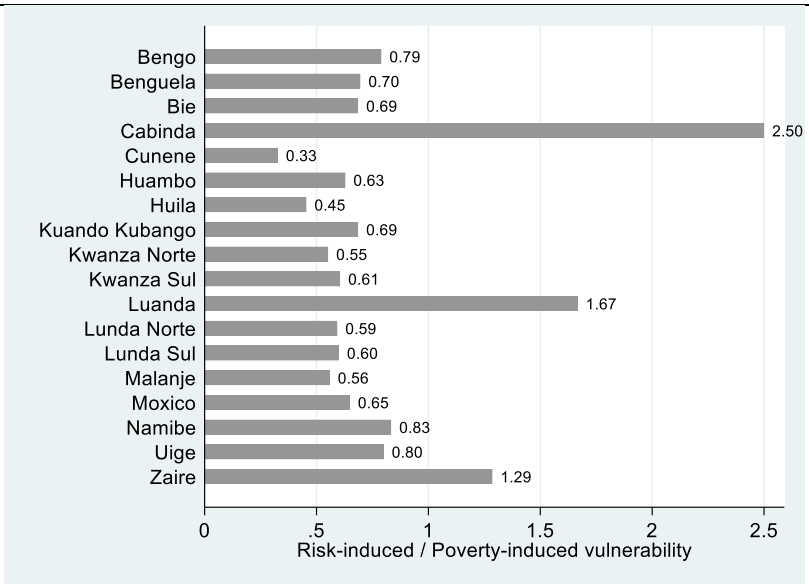
Figure 49: Poverty- and risk-induced vulnerability by province in Angola, 2019



Source: IDREA 2018/19 (authors' calculations)

The provinces with lowest rates of vulnerability to poverty are Cabinda, Luanda and Zaire, the most urbanized provinces. In fact, in these three provinces risk induced vulnerability dominates since the ratio of risk-induced to poverty-induced vulnerability is greater than one (Figure 50).

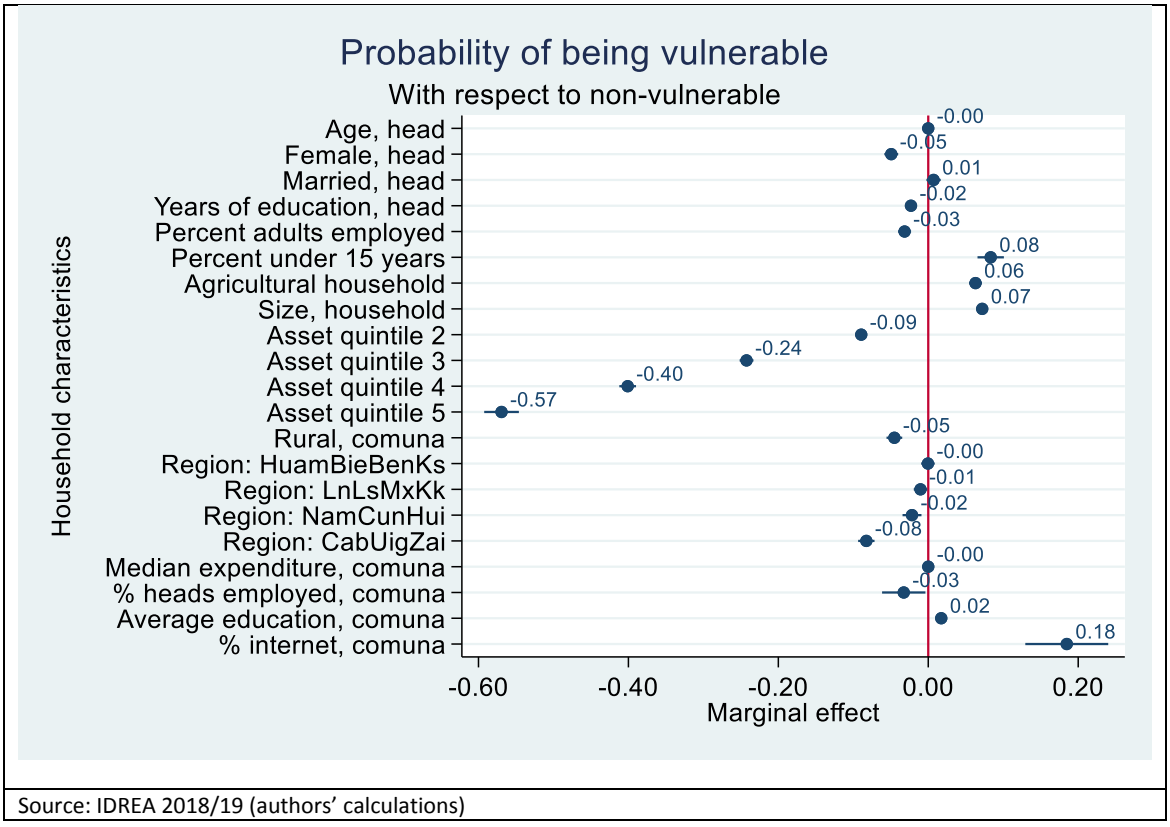
Figure 50: Ratio of risk-induced vulnerability to poverty-induced vulnerability by province in Angola, 2019



Source: IDREA 2018/19 (authors' calculations)

A multivariate analysis of the determinants of vulnerability to poverty in Angola reveals that ownership of assets is the factor that most strongly differentiates the vulnerable from the non-vulnerable households (Figure 51). Ownership of more of assets is associated with a lower likelihood of being vulnerable.[22] Other factors also impact the probability of being vulnerable to poverty, but in terms of the marginal effect on the likelihood of falling below the poverty line asset ownership is the most important factor. Those in the lowest asset quintile have on average 0.2 assets out of the 11 considered, those in the second quintile have 1.1 assets more, those in the third quintile have about 1.3 assets more than those in quintile 2. Those in the highest quintile have 6.5 of the assets considered. Another factor that has a relatively large impact is education. An additional year of education of the household head is associated with a 2 percent decline in the likelihood of being vulnerable to poverty. Other characteristics associated with a significant increase in the likelihood of being vulnerable to poverty include the presence of younger (less than 15 years of age) members in the household, having a large household size, and being engaged in agriculture. All things equal, households in Cabinda, Uige and Zaire are significantly less likely to be vulnerable than households in other regions. It is of interest to note, that exactly the same set of characteristics is associated with a higher likelihood of a household being vulnerable to risk among the set of households that not chronically poor.

Figure 51: Probability of being vulnerable to poverty in the full sample of households (urban and rural households pooled)



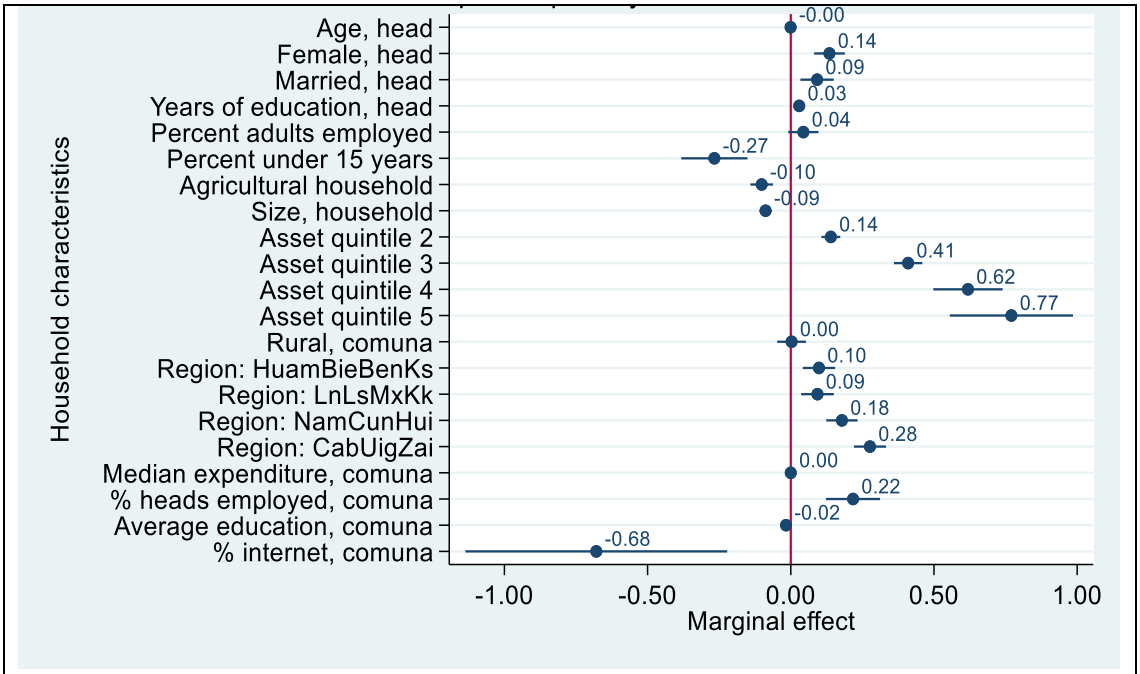
Source: IDREA 2018/19 (authors' calculations)

An analysis of the determinants of risk-induced vs poverty induced vulnerability among vulnerable households to poverty in Angola also reveals that ownership of assets is associated with a higher

[22] Assets considered for asset total: stove, fridge, radio, tv, computer, mobile bike, moto, car, improved toilet, improved water. The asset index itself also includes the number of bedrooms and each asset is weighted.

likelihood of risk-induced vulnerability. The opposite patterns emerge when analysing the determinants of risk-induced vulnerability relative to poverty-induced vulnerability in the set of households vulnerable to poverty. Vulnerable households with more assets are more likely to be associated with risk-induced vulnerability in comparison to poverty-induced vulnerability (see Figure 52). Factors that make a household more likely to be vulnerable among the set of households that are not chronically poor are also the factors that make a vulnerable household to be risk-vulnerable and not poverty-vulnerable. One noticeable difference is the role regions have in the distribution of poverty-induced versus risk-induced vulnerability. In comparison to the reference region (the omitted region dummy) which includes the provinces of Luanda, Bengo, Malanje and Kwanza Norte, households in other regions are more likely to be risk-vulnerable rather than poverty-vulnerable.

Figure 52: Probability of being risk-vulnerable in comparison to being poverty-vulnerable



Source: IDREA 2018/19 (authors' calculations)

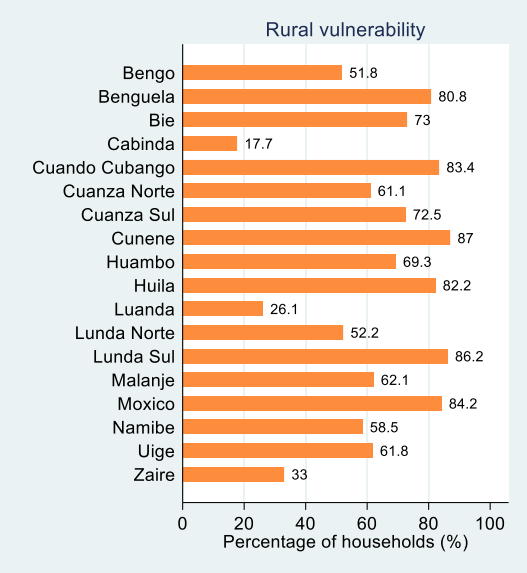
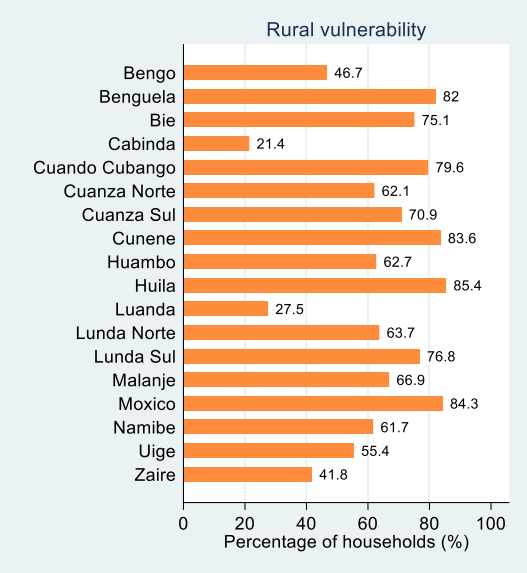
Vulnerability and its determinants in rural Angola

The analysis in the previous section revealed that, in general, the prevalence of vulnerability is higher in the rural areas of Angola. The caveats noted above regarding the way *comuna*-level variables were constructed, warrant an exclusive analysis of vulnerability for rural areas based on *comuna*-level variables collected by the IDREA and the sample of rural households. A finding that the estimates of vulnerability among rural households in the previous section are comparable to those obtained using the more robust *comuna*-level variables collected by the IDREA, is also useful for affirming the credibility of the estimates of vulnerability in urban areas.

Figure 53 presents the estimates of vulnerability to poverty for rural areas in each province based on the earlier approach and the sample of rural households that allows use of the community level variables collected by the IDREA. Overall, the results for rural areas are very similar to the results in the previous section using all households from urban and rural areas. Naturally, there are some differences due to the differences in weights are given to the various components and because of the availability of a broader set of community level variables characterizing the rural communities. For most provinces the two vulnerability estimates are within 5 percentage points. More sizable

differences emerge in the estimates of vulnerability for Huambo, Uige, Zaire Lunda Sul and Lunda Norte (6%, 7%, 8%, 9% and 12%, respectively).

Figure 53: Vulnerability to poverty (headcount rates) in Angola, based on the rural sample of households in IDREA

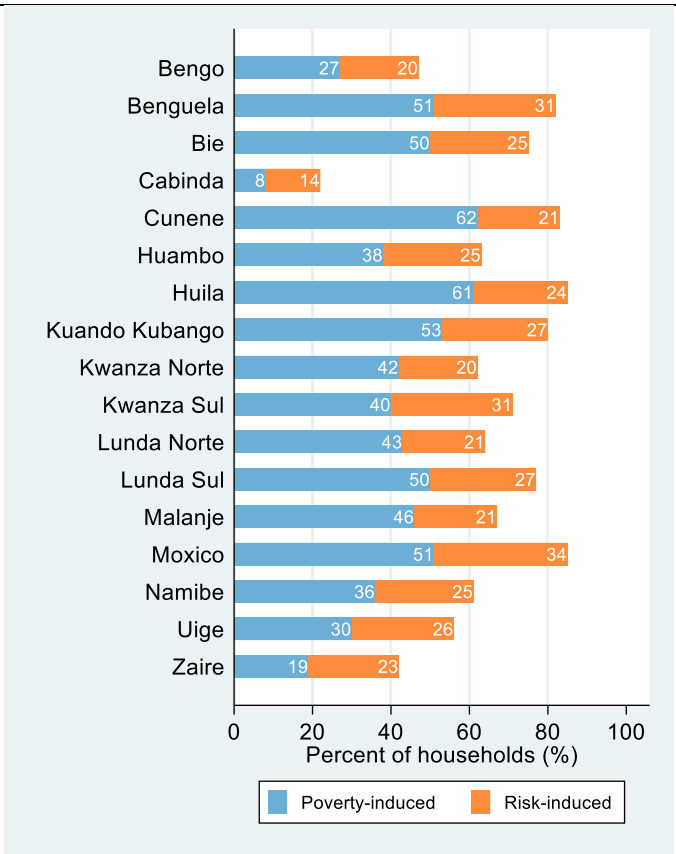
a. Rural Vulnerability based on the model applied to the full (urban & rural) sample of households in IDREA	b. Rural Vulnerability based on the model applied to the rural sample of households in IDREA
	

Source: IDREA 2018/19 (authors' calculations)

The decomposition of vulnerability to poverty into its sources reveals that there is a big variance in the prevalence of poverty-induced vulnerability in the rural areas across provinces. Poverty-induced vulnerability ranges from 8 percent in Cabinda to 62 percent in Cunene (Figure 54). The provinces with the highest overall vulnerability rates are the also the provinces with the highest poverty-induced vulnerability rates. Provinces where at least half of the rural population is expected to have expenditures below the poverty line are: Cunene (62%), Huila (61%), Kuando Kubango (53%), Benguela (51%), Moxico (51%), Bie (50%), and Lunda Sul (50%). These are also all provinces where the vulnerability rates are above 75 percent.

The provinces of Moxico, Benguela and Kwanza Sul have the highest risk-induced vulnerability in rural areas. About a third of the households in these provinces are on average above the poverty line, but likely to fall below the poverty line as a result of shocks experienced that result in consumption volatility (Figure 54).

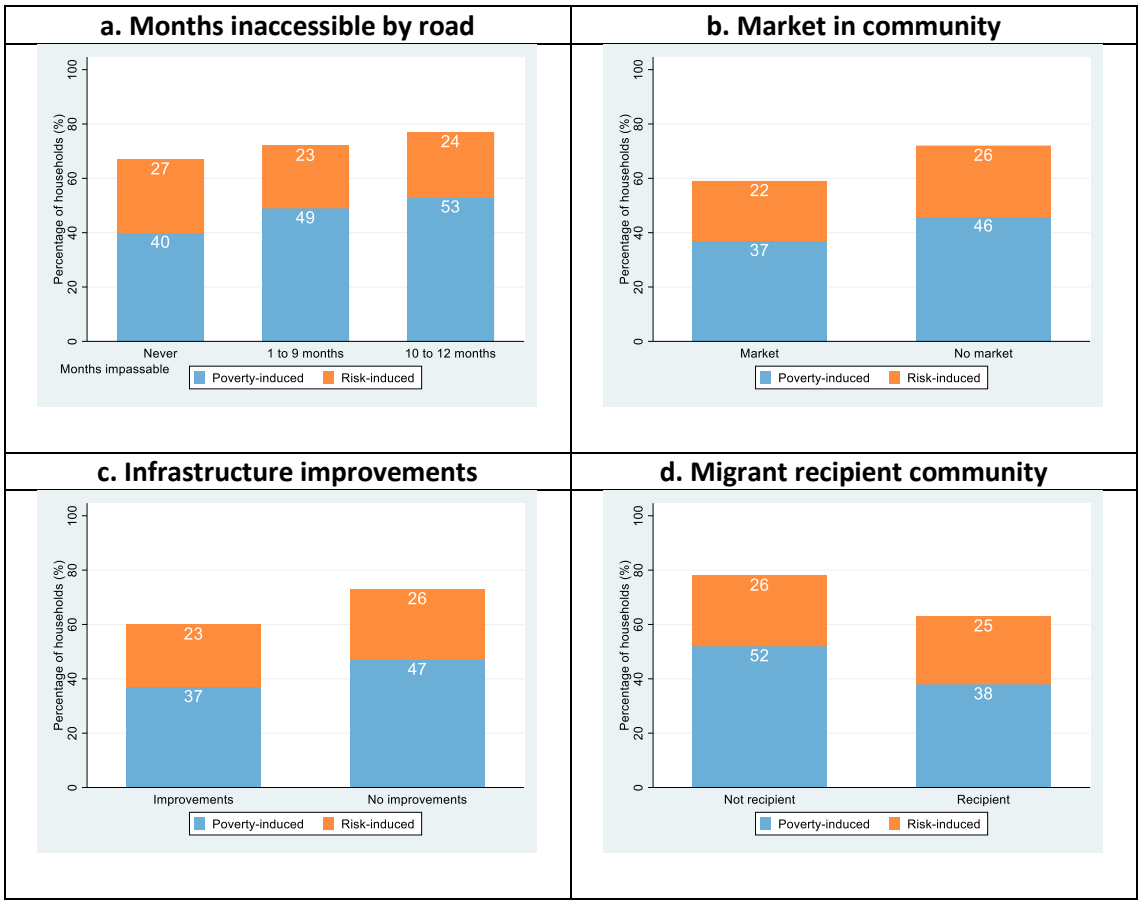
Figure 54: Poverty-induced and risk-induced vulnerability by province in rural Angola, 2019



Source: IDREA 2018/19 (authors' calculations)

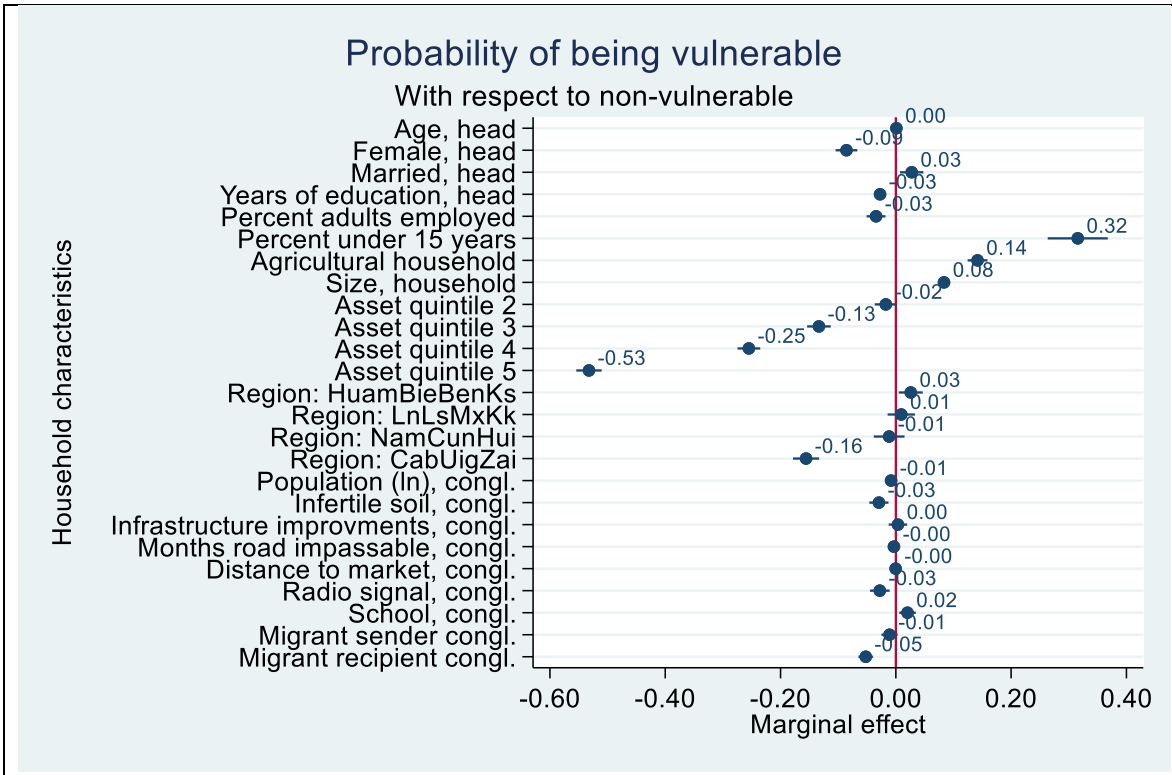
Vulnerability to poverty among households that are not chronically poor is dominated by idiosyncratic shocks. Also, the contribution of covariate shocks to vulnerability to poverty varies considerably across provinces. Of the risk-vulnerable households over 92 of the households in each province are vulnerable to idiosyncratic shocks—shocks that affect only the household in question, such as sudden unemployment, death of a family member or illness in the households (Figure 55). Vulnerability to covariate shocks, shocks that affect all simultaneously households in a community, such as weather or price shocks—is the highest in Kuando Kubango (28% of risk-vulnerable households), Huila (27% of risk-vulnerable households) and Cunene (24% of risk-vulnerable households). Malanje (8%), Kwanza Sul (11%) and Kwanza Norte (13%) have the smallest share of risk-vulnerable households that are susceptible to covariate risk. There are also households which fall below the vulnerability threshold only when both idiosyncratic and covariate shocks occur simultaneously. The highest shares are in Kuando Cubango and Moxico where 7 percent of the risk-vulnerable households fall below the vulnerability threshold only if both types of shocks occur simultaneously.

Figure 55: Poverty- and risk-induced vulnerability by community characteristics in rural Angola, 2019



A multivariate analysis of the determinants of vulnerability to poverty in rural areas reveals that ownership of assets is the factor that most strongly differentiates the vulnerable households. As in the national sample, for the rural population, lack of assets is correlated with higher likelihood of being vulnerable (see Figure 56). Other characteristics associated with a significant increase in the likelihood of being vulnerable to poverty include the presence of younger (less than 15 years of age) members in the household, having a large household size, and being engaged in agriculture. All things equal, households in Cabinda, Uige and Zaire are significantly less likely to be vulnerable than households in other regions. It is of interest to note, that the exactly the same set of characteristics is associated with a higher likelihood of a household being vulnerable to risk among the set of households that not chronically poor.

Figure 56: Probability of being a vulnerable household in the rural areas.



Source: IDREA 2018/19 (authors' calculations)

Conclusions

Vulnerability to poverty in Angola, and especially in the rural areas, is primarily due to low human capital and physical capital or assets (i.e., vulnerability is poverty-induced). The analysis in the report, confirms that vulnerability to poverty in Angola is mainly driven by low human capital and low asset endowments and hence permanent low consumption prospects rather than by high consumption volatility (or risk-induced vulnerability). In the rural areas, the majority, or 70 percent, of vulnerable households have expected consumption that is below the poverty line (Figure O.8). Decomposing vulnerability into two sources, vulnerability due to low human capital and low asset endowments(poverty-induced) and vulnerability due attributed to high consumption variability (risk-induced), reveals that the vulnerability to poverty in the rural areas is mainly poverty-induced (46 percent vs. 24 percent). In the rural areas, two-thirds of the vulnerability is poverty-induced and one-third is risk-induced.

Moreover, the share of risk-induced vulnerability is higher among vulnerable households in urban areas than in rural areas. In urban areas, vulnerability to poverty is more likely due to high volatility in consumption than due to poverty (Figure O.8). That is, in the urban areas where 19 percent of the household are vulnerable to poverty more than half (10 percent) are households that possess sufficient human capital and asset endowments to be above the poverty line, but negative shocks are likely to push them below the poverty line.

The share of risk-induced vulnerability is higher among vulnerable households in urban areas than in rural areas. In urban areas, vulnerability to poverty is more likely due to high volatility in consumption than due to poverty. That is, in the urban areas where 19 percent of the household are vulnerable to poverty, more than half (10 percent) are households that possess sufficient human capital and asset endowments to be above the poverty line, but negative shocks are likely to push

them below the poverty line. Within provinces the share of households subject to risk-induced vulnerability varies considerably less than the share of households subject to poverty-induced vulnerability.

A multivariate analysis of the determinants of vulnerability to poverty in Angola reveals that ownership of assets is the factor that most strongly differentiates the vulnerable from the non-vulnerable households. Ownership of more of assets is associated with a lower likelihood of being vulnerable. Other factors also impact the probability of being vulnerable to poverty, but in terms of the marginal effect on the likelihood of falling below the poverty line asset ownership is the most important factor.

Chapter 4: Labor Markets and Employment

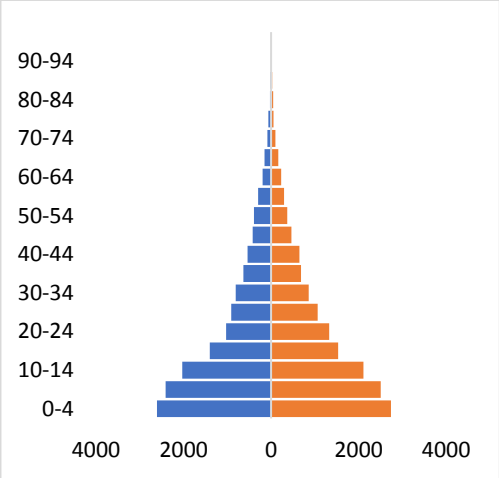
The objective of this section is to examine the role of the labor market as a determinant of poverty and inequality. Specifically, this chapter will focus mainly on youth, women and the poor to assess the interactions between poverty and labor markets, how the labor market is performing in terms of allocating jobs to the labor force and potential inequalities in the returns to labor.

Angola's population is young and growing quickly

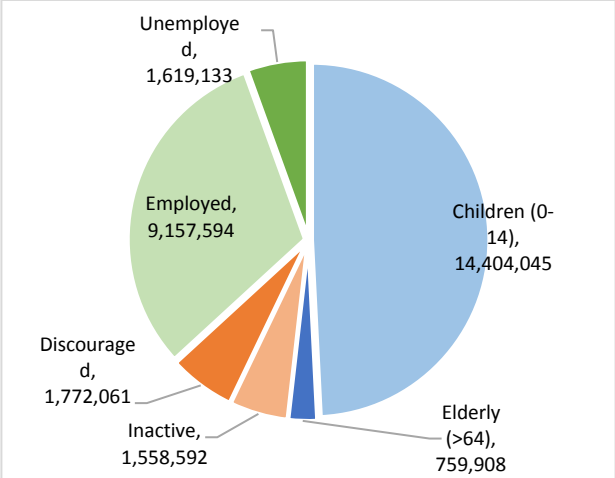
Angola has a high dependency ratio and a working-age population that is growing slowly. Angola's population is young and growing quickly. Angola has the 7th highest fertility rate in the world, at 6.0 children per woman. The working age population (15-64 years old) represents almost 50 percent of the total population.

Figure 57: The age pyramid and composition of the population of Angola

a. Population pyramid



b. Population composition



Source: IDREA 2018/19 (authors' calculations)

Labor Force Participation

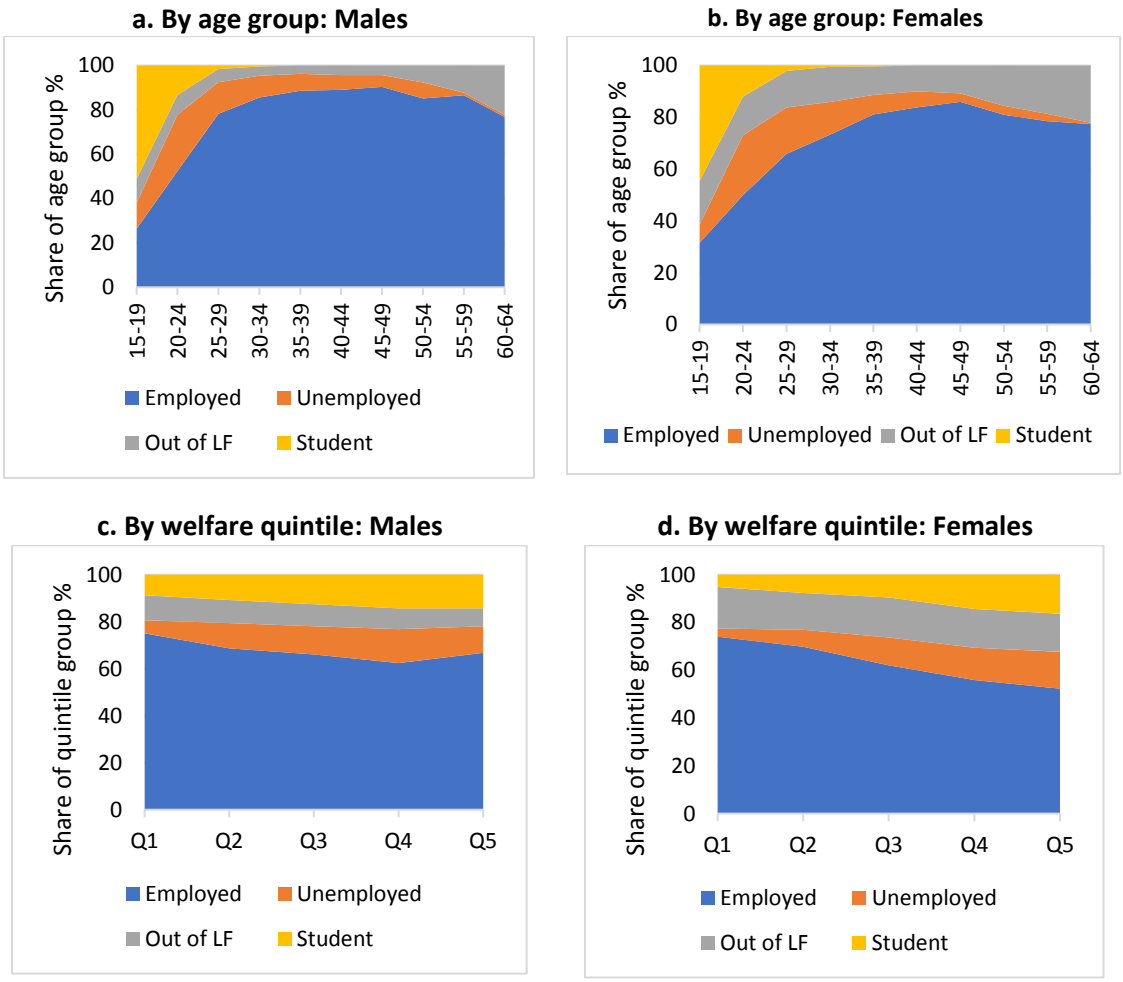
The working age population is estimated at 14 million individuals (almost 50 percent of the total population) of which 53 percent are female and 47 percent are male. Approximately, 10 million people are in the labor force (economically active population) of which, 9 million are employed and 1.6 million are seeking a job. The population outside the labor force (economically inactive) is estimated at 3 million people of which 1.5 million are inactive and 1.7 million are discouraged.

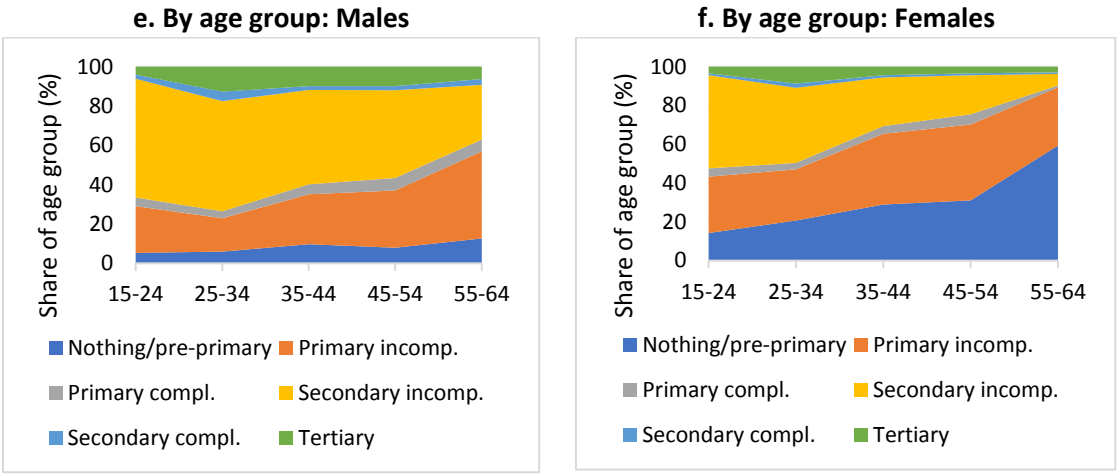
There is a difference in participation I the labor force by gender. While almost 80% of males 15 and older are either working or looking for a job, 73% of females are in the same situation. Both, males and females have similar participation rates when they are young and old. When they are teenager, 15 to 19 years old, their participation rate is low and around 38 percent as they spent most of their time studying or out of the labor force. However, once they reach 25 years old, on average 14 percent of the females remain outside the labor force, mainly as housewives, compared to 6 percent of males. When they are old, (65 years of age and older) participation rate is 78 percent and mostly as employees.

Labor force participation rates are higher in the lowest quintiles. People in the lowest quintiles are more likely to be employed than people in the richest quintiles and the difference is higher among females where 74 percent of them in the first quintile are employed compared to only 52 percent in the highest quintile. The opposite occurs with the share of people unemployed which is higher among rich families. There are no big differences in the share of people out of the labor force within quintiles.

An important share of the labor force is not educated, especially females. 44 percent of the labor force has less than primary education. Among males, one third have less than primary education, and females are more than 50 percent. The youth who enter the labor force are more educated, especially among males. Most of the youth have incomplete secondary education or more.

Figure 58: Labor Force Status by Gender and selected groups

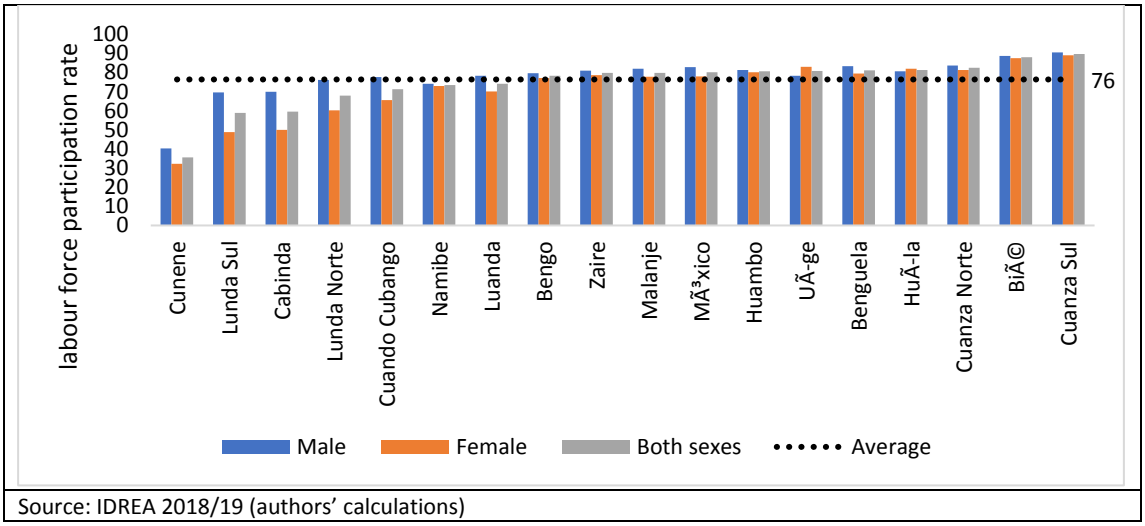




Source: IDREA 2018/19 (authors' calculations)

There are significant differences in labor force participation by region. Cunene has the lowest labor force participation rate with only 36 percent of the working age population employed or looking for a job. Lunda Sul, Cabinda, Lunda Norte, Cuando Cubando, Namibe, and Luanda, have a labor force participation below the national average of 76 percent. Cuanza Sul is the region with a higher participation rate of 90 percent. The differences in labor force participation are related to the economic activities in the provinces. Provinces with the lowest labor force participation are those where commerce and service sectors are more important while provinces with high labor force participation are those where the agriculture sector is more important.

Figure 59: Labor Force participation by Province and Gender



Source: IDREA 2018/19 (authors' calculations)

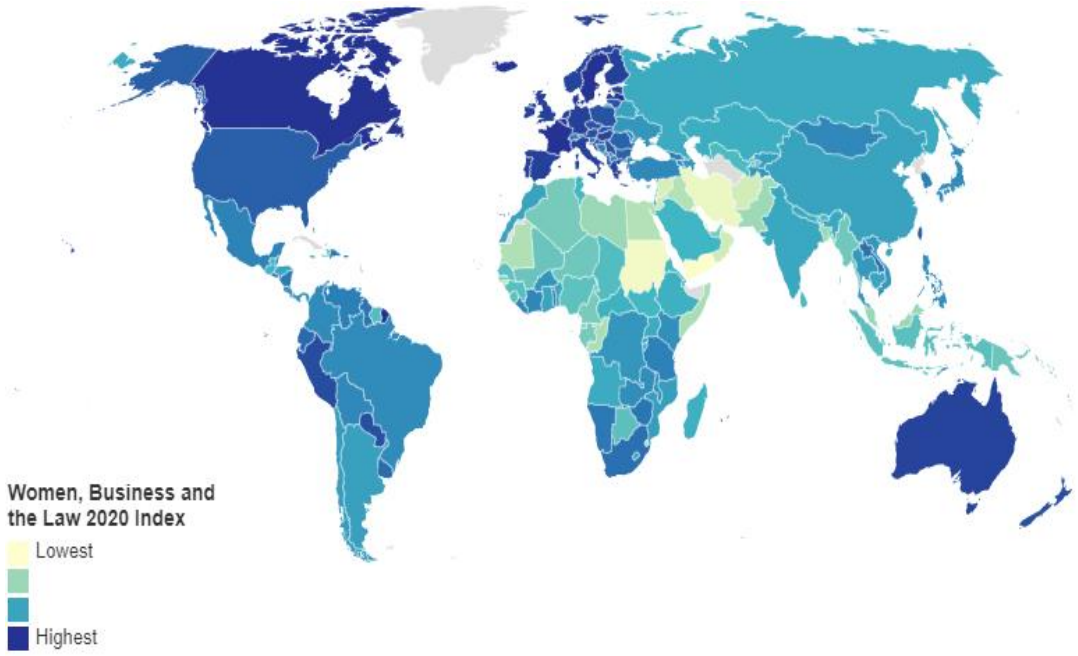
Box 1: Gender Gaps in the labor market in Angola

Women are less likely to participate in the labor market than men. In 2018, the labor force participation among women was lower than men (73.9% vs 79.2%). While the female unemployment rate was slightly above the male rate (15.3% vs 14.8.%); the employment rate was lower among women (84.7%) than men (85.2%). Female broad unemployment rate and shared is higher than for male (24.9% vs 28.9% and 43.8% vs 56.2%). More than 50% of women in the labor force have less than primary education compared to 32% of male.

Women in waged employment often face informality and poor working conditions. Most of women are working in vulnerable jobs facing high informality and poor working conditions. The share of vulnerable employment (own account workers and contributing family workers) in total employment is 81.5% for women and 56.4% for male. Most women work in the informal market (74.7% of women are informal compared to 65.6% of men). The median earning for male is twice as much as for female (30 thousand kz per month vs 15 thousand kz per month). Almost 50% of employed females are low earners compare to 22.8% of males and females represent 65% of the total earners with low earnings. Half of the women worked in the agriculture sector a number that drops to 38.6% for men.

Time use is gender-differentiated. Water transportation and collection of firewood are associated with gender, as the responsibility for household supply is attributed to women, shared only with the children (IBEP, 2008). Child care is also mainly a female responsibility.

The law affects economic decisions women make and in Angola, women get 73 percent of the rights of men (Women, Business and the Law data, 2020). There are no legal gender differences regarding going places, getting married, running a business or managing assets. However, the law affects women and men differently regarding starting a job, getting paid, having children or receiving a pension. Regarding sexual harassment, the recently approved penal code includes two decrees on criminal penalties or civil remedies on sexual harassment (Article 184, sexual assault; and Article 188, sexual harassment). On the other hand, according to the 2015 national labor law, women cannot work in jobs deemed hazardous, arduous or morally inappropriate in the same way as men; women are not able to work in the same industries as men; there is maternity leave (12 weeks) but no paternity or parental leave; and the law does not establish explicit pension care credits for periods of childcare.

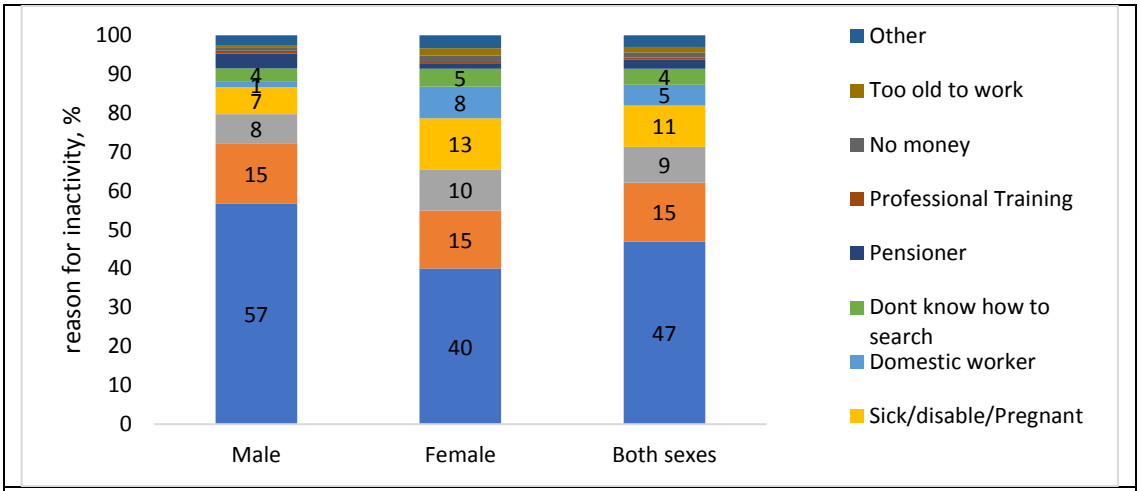


Reasons for not working

The main reasons for not working are studying, no jobs and no experience or qualifications. Almost 50 percent of the people not in the labor force are studying and is higher among males: 57%

of males reported to be studying, compared to 40% of females. With 15 percent, the second main reason for not participating in the labor market is that there are no jobs. On average, 9 percent of those out of the labor force reported that they do not have the experience or qualifications required to find a job. Among females 13% reported being out of the labor force because they were sick/disabled/pregnant, and 8 percent do not participate because they become housewives.

Figure 60: Reasons for inactivity

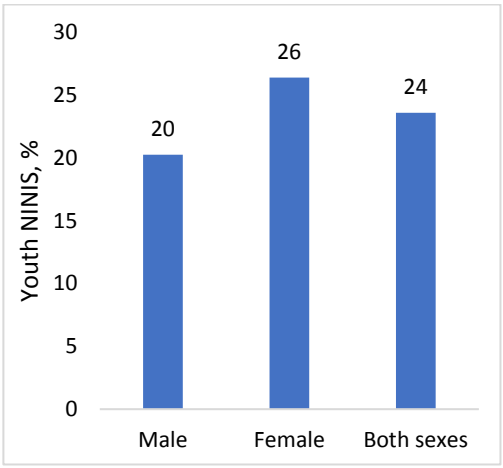


Source: IDREA 2018/19 (authors' calculations)

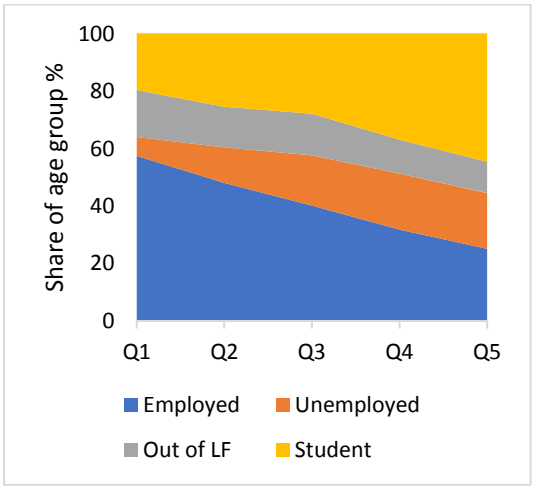
There is a large share of the youth that do not work nor study. The share of youth population 15 to 24 years old that are not in education, employment or training is 24 percent. This share is higher for females than males (26% vs 20%). Among the poorest quintiles, youth are more likely to be employed and not studying. While more than 50% of the youth in the poorest quintiles are employed, only 25% of those in the richest quintiles are. This means that youth especially among the poorest households are not acquiring the skills they will need to have access to a skilled job in the future.

Figure 61: Characteristics of Angola's youth

a. Youth not studying not working by gender



b. Youth employment status by quintile

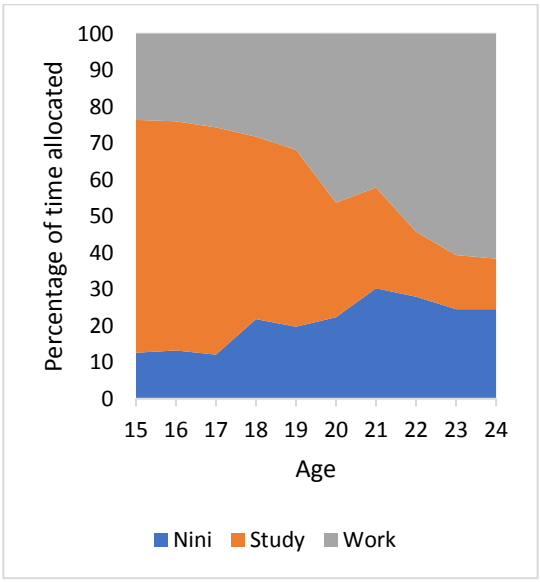


Source: IDREA 2018/19 (authors' calculations)

The share of youth not studying and not working is higher for females than males and the gap increases with age. As they get older, females drop from school and either stay at home or work in low skill jobs. Males are more likely to either study or work than females. The gap in time allocation between males and females increases from aged 16 to 20. From 21 years old to 24, youth are mostly working, but an important share stayed at home doing nothing**.**

Figure 62: Time allocation among the youth 15 – 24 years old by sex

a. Male



b. Female

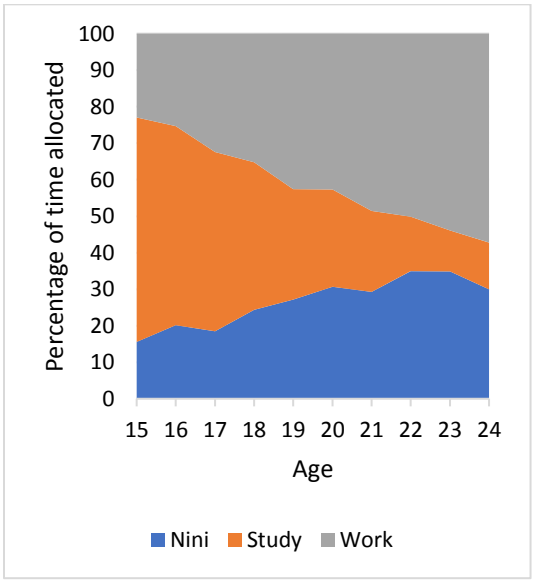
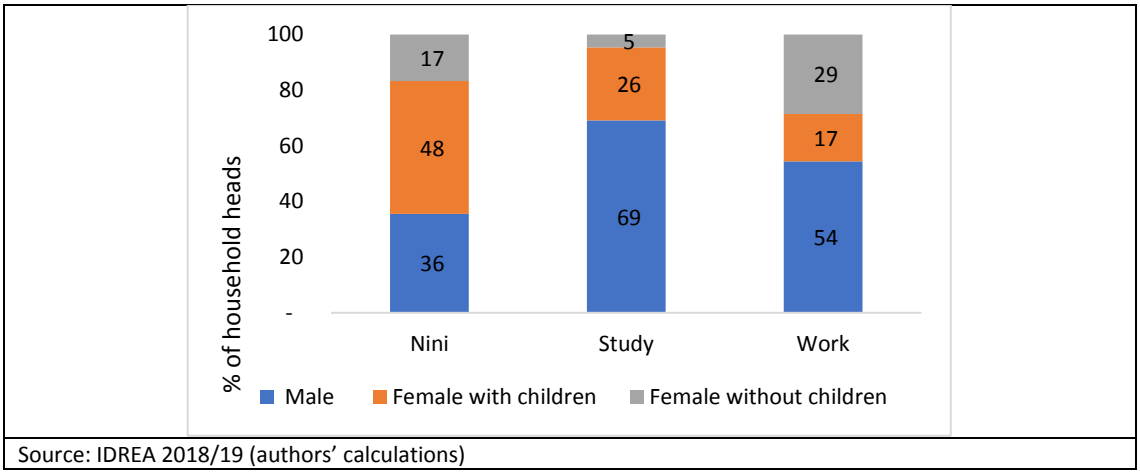


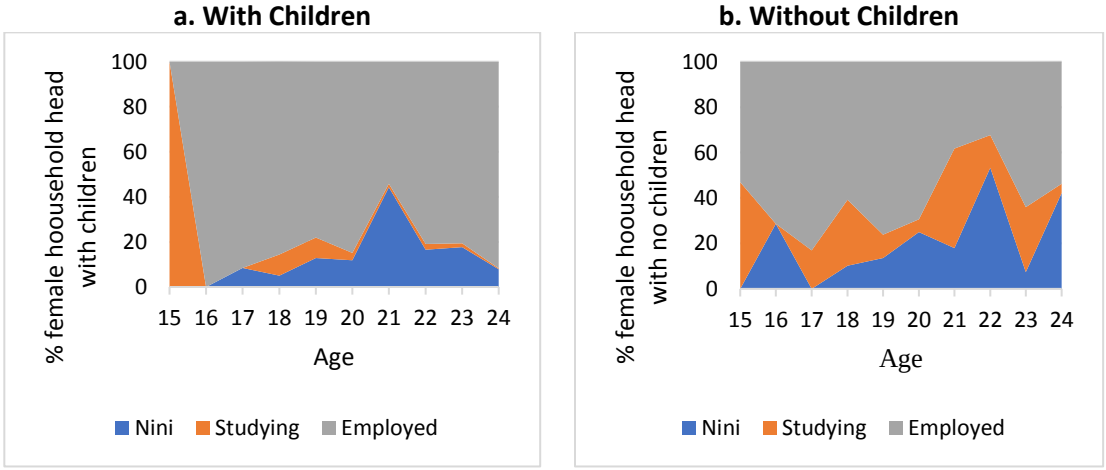
Figure 63: Share of youth household heads by time allocation



Source: IDREA 2018/19 (authors' calculations)

Young female household heads with children have more limited opportunities than those without children. Young females with children can't afford to spend their time studying and are either working or taking care of their children at home. Young females without children have more choices to allocate their time, but after 17 years old, an important share of them do not study nor work.

Figure 64: Youth female household head time allocation with and without children



Source: IDREA 2018/19 (authors' calculations)

Unemployment

Unemployment rate is 15 percent and is higher in urban than in rural areas. The unemployment rate in the urban area is around 23%, more than 7 times higher than in the rural area, which is 3%. 93 percent of the total population seeking for jobs are in the urban areas. There are no differences in unemployment rates between male and females, but females represent 52% of the total unemployed.

The youth face higher unemployment rates. The unemployment rate is higher in young people aged between 15 and 24 years, reaching 29%, which is more than twice the unemployment rate of people aged 25-54, 11%. The unemployed youth represent more than 50 percent of the total unemployed

in Angola. The youth are overall more educated than the older, however, they have limited opportunities to find a job.

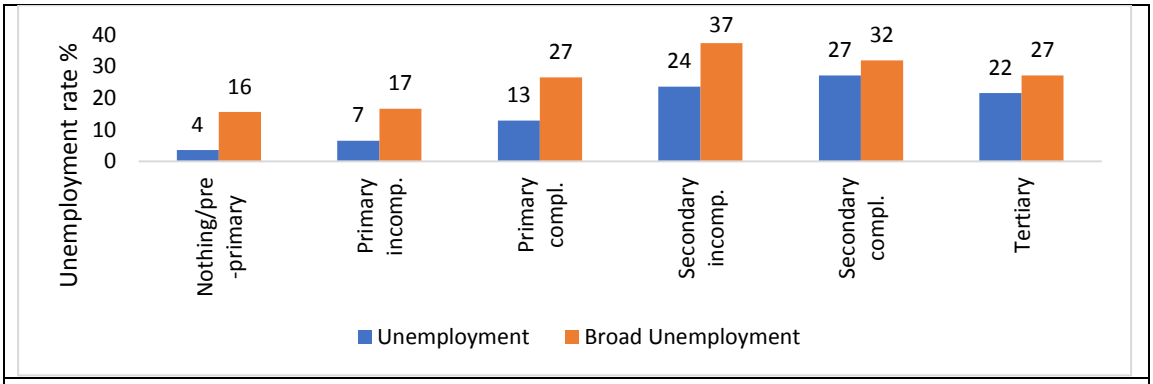
Higher unemployment for people in the richest quintile. The poor have an unemployment rate of 9 percent compared 19 percent among the non-poor. The non-poor represent 75 percent of the total unemployed.

Figure 65: Unemployment rates by Groups

Source: IDREA 2018/19 (authors' calculations)

Higher unemployment rate for middle level educated people. Unemployment rates are higher for people with some secondary education or more with more than 20 percent of them seeking a job. Unemployment rate is lower for people with lower levels of education, only 4% among those with no education and around 10 percent of those with some primary education.

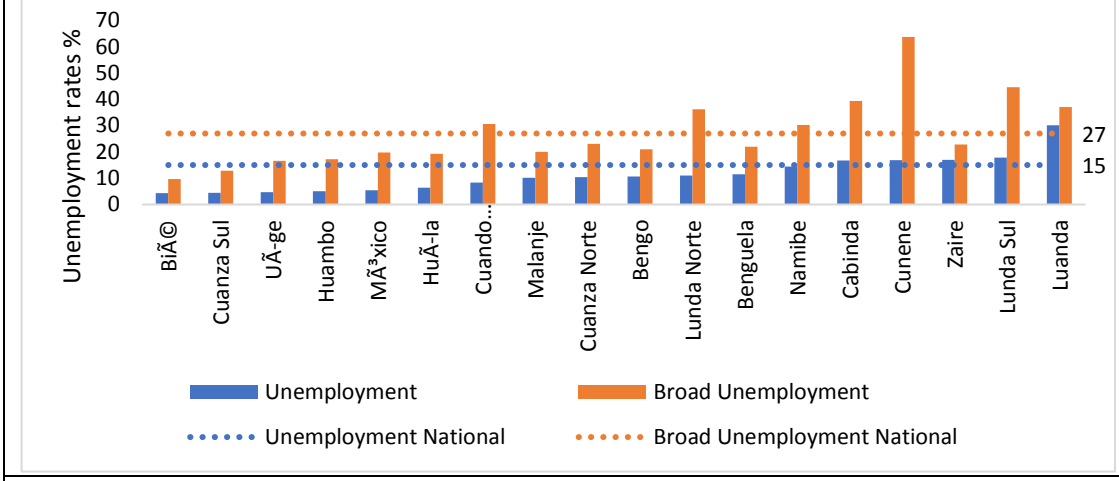
Figure 66: Unemployment rate by education level



Source: IDREA 2018/19 (authors' calculations)

Higher unemployment in Luanda Province. Unemployment rates are driven by Luanda with 37 percent of the labor force seeking jobs. Lunda Sul, Zaire, Cunene, and Cabinda have unemployment rates above the national average, around 17 percent. The region with the lowest unemployment rate is Bie with only 4% followed by Cuanza Sul, Uige, Huambo and Moxico with 5%. Provinces with the lowest unemployment rates are those where most of their economic activity is on agriculture while larger unemployment rates are in provinces where commerce and service sectors are big.

Figure 67: Unemployment rates by province



Source: IDREA 2018/19 (authors' calculations)

Discouraged workers

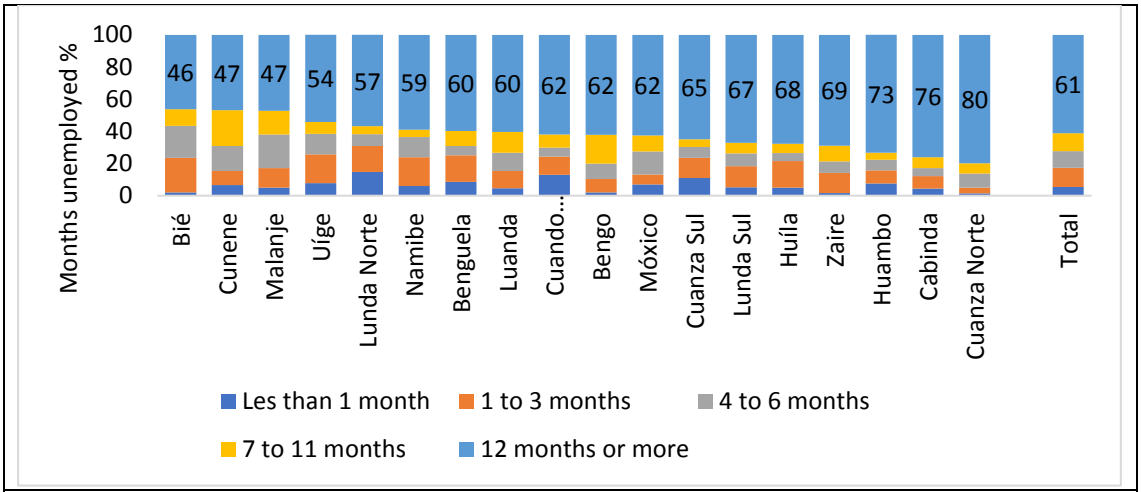
Unemployment measures, as traditionally defined, often fail to capture discouraged workers who would be willing to work but do not actively seek jobs. In countries where formal search mechanisms, such as employment offices, are not well established, the broad unemployment rate might provide a better picture than the standard unemployment rate. Angola has used the broad concept of unemployment, which requires that the person be available to work in the 7 days preceding the survey but does not require that the person has actively sought work. Thus, the unemployment rate transmits the percentage of people who do not have a job but are available to work.

Broad unemployment rate in Angola is almost twice the unemployment rate. 27 percent of the labor force are willing to work compared to 15 percent actively seeking a job meaning that 12 percent of the labor force population are discouraged (person is without work in the reference period, is available to work, did not actively seek work in the reference period, but would accept work if offered). Discouraged population are higher among the youths with 21%, people in urban areas 12%, among the poor 13%, and among those with middle level education 14%.

Number of months unemployed

People remain unemployed for about year. On average more than 60% of unemployed have been 12 months or more searching for a job, with no differences between males and females. In most provinces, more than 50% of the people have remained unemployed for more than a year except in Bie, Cuenene and Malanje. This means the economy of those regions cannot absorb the supply of labor and the cost of the unemployment is cover by the rest of the household members.

Figure 68: Months Unemployed



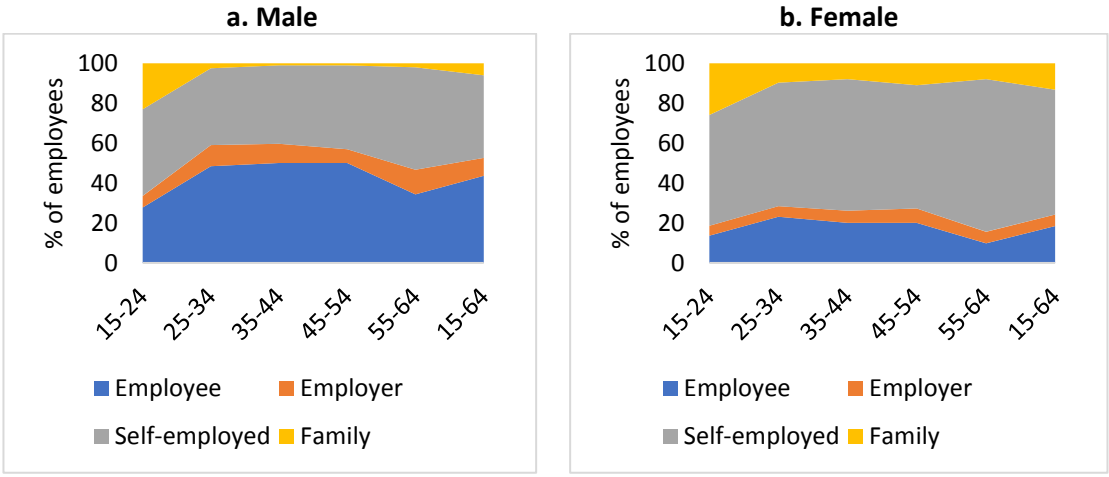
Source: IDREA 2018/19 (authors' calculations)

Quality of Jobs

In Angola, employment rate is high, but people work in low-quality, low productivity jobs. Employment rate to working age population is 65 percent. The employed population aged 15 to 64 years old is estimated at 9.1 million people, with 4.4 million males and 4.6 million females. Approximately 38.8% of young people aged 15-24 were employed with 37% male and 40% female.

Most Angolans are self-employed. 52.2% of employees are self-employed, 30.7% were in paid employment, 9.8% were family workers and 7.3% were employers. Younger workers are more likely to be self-employed and in unpaid jobs than workers aged 25 to 64. 25% of the youth start working as unpaid worker and 50% as self-employed. Paid employment is significantly higher for men (31%) than for women (18%) and increases with age.

Figure 69: Employment type by gender and age

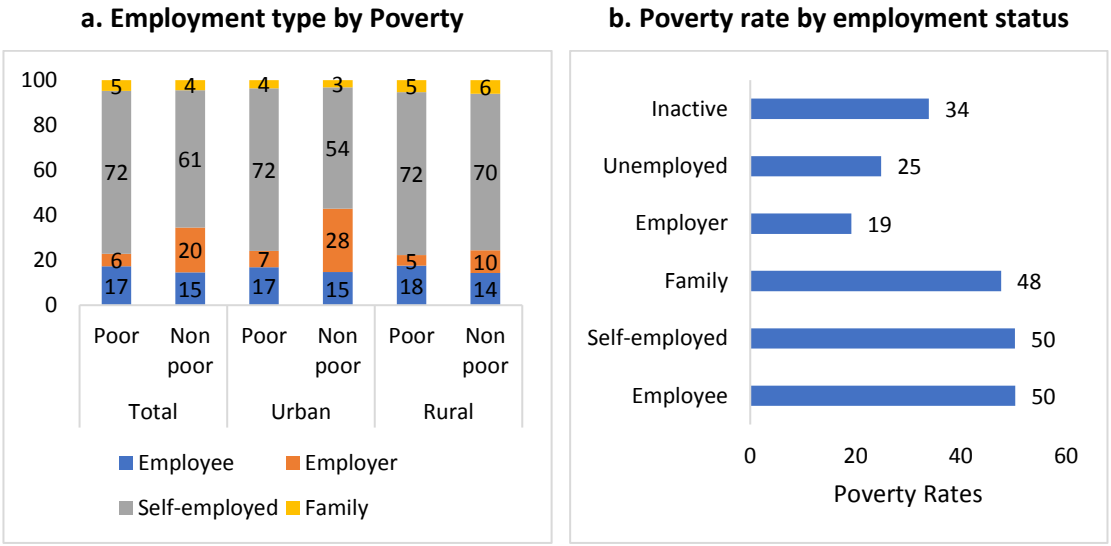


Source: IDREA 2018/19 (authors' calculations)

Inequalities of employment types between the poor and non-poor. The poor are more likely to be self-employed than the non-poor. Most of the poor have no option but to work. Poverty rates among employees and self-employed are higher than among those unemployed or out of the labor

force. 72% of poor employees are self-employed mostly in auto consumption activities. Low earnings in employments is a source of poverty. Less than 20 percent of the poor and non-poor are in paid employment. In urban areas, an important share of the non-poor are employers.

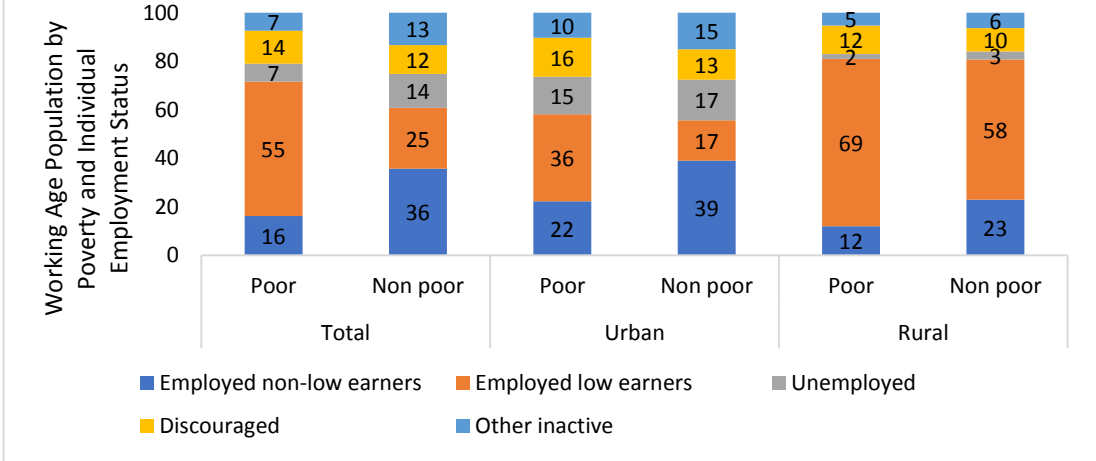
Figure 70: Employment status and poverty



Source: IDREA 2018/19 (authors' calculations)

The poor in Angola are in the labor force mostly as low earning employees. Low earning rate is defined as the ration of workers who earn below a certain level considered insufficient to bring him/her out of poverty. 55 percent of the poor are employed low earners and in rural areas this share reaches 69%. Labor policies for the poor should target mostly individuals who are employed rather than those who are out of the labor force.

Figure 71: Working Age Population by Poverty and Employment Status

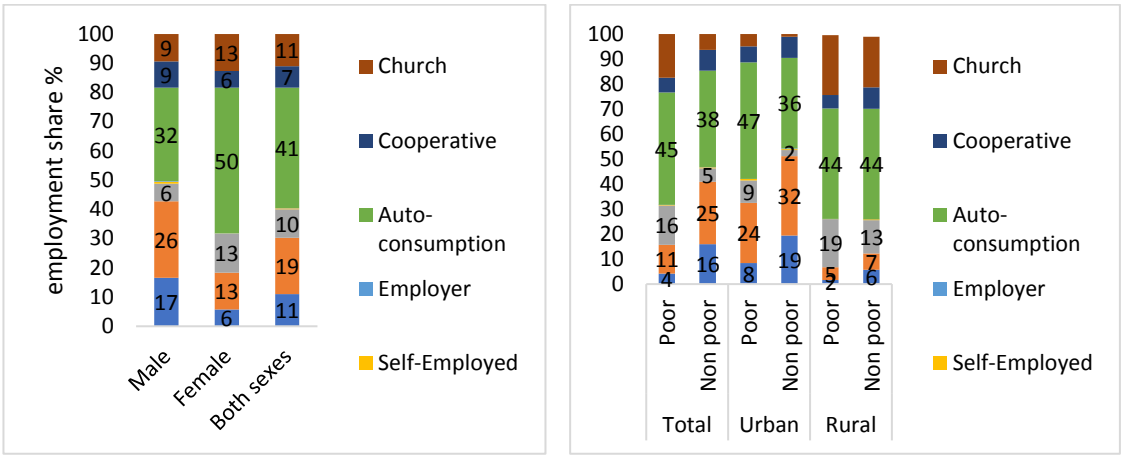


Source: IDREA 2018/19 (authors' calculations)

Auto-consumption is the main type of employment, particularly among females and the poor. 32% of employees work for auto-consumption, 50% of females and 45% of the poor. Public sector employee represents 11% of the labor force, and private 19%.

Figure 72: Employment type, occupation and poverty

a. Employment by Occupation and Gender **b. Employment by Occupation and Poverty**

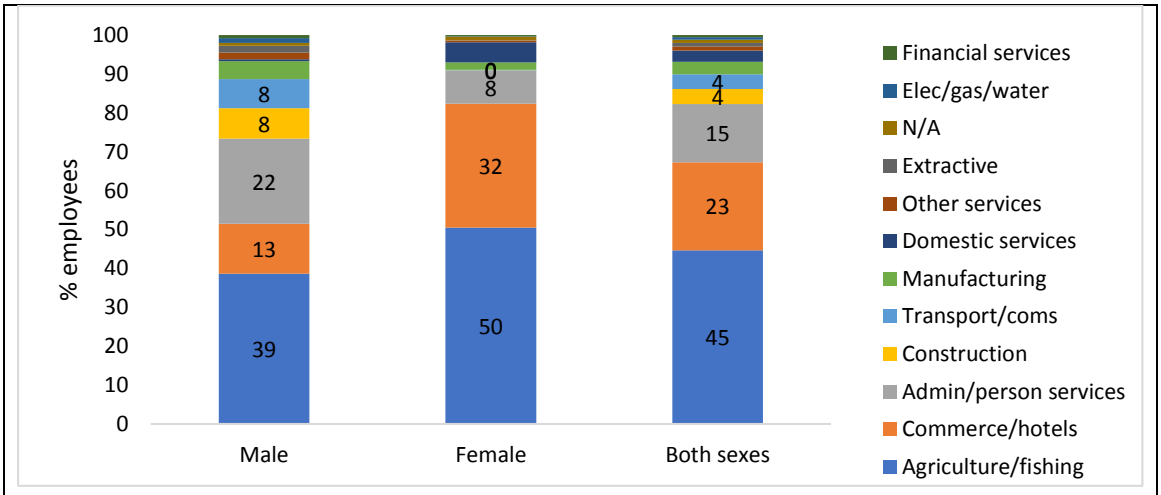


Source: IDREA 2018/19 (authors' calculations)

Economic Sector

Angola relies heavily on agriculture with 45 percent of employment occurring in this sector, followed by commerce/hotels 23% and services 15%. The employment share of the more productive industry sector remains low.

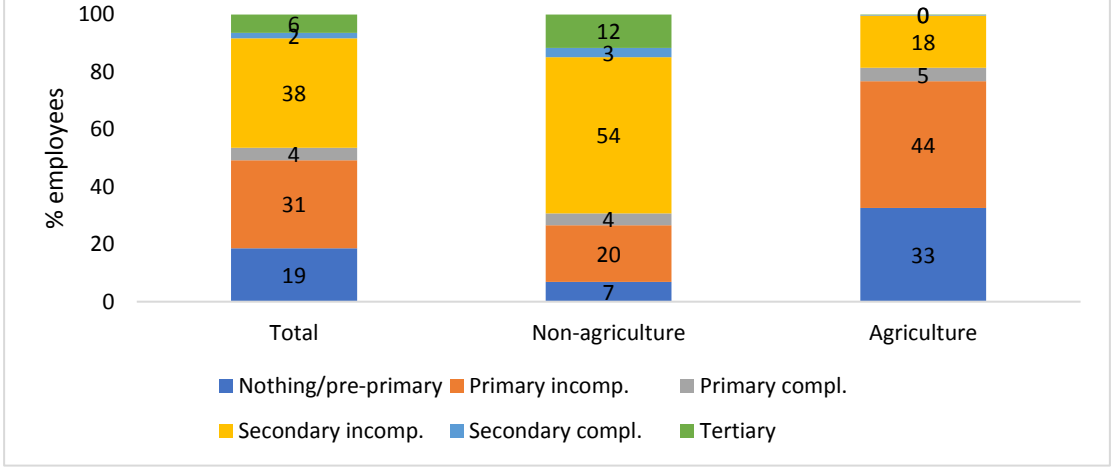
Figure 73: Employment by Economic Sector



Source: IDREA 2018/19 (authors' calculations)

The agriculture sector employs mostly people with no education. Approximately, 77 % of the labor in the agriculture sector has less than primary education. This figure reverse for non-agriculture sector where 73% of the employees have primary education or more.

Figure 74: Employment by educational level and sector

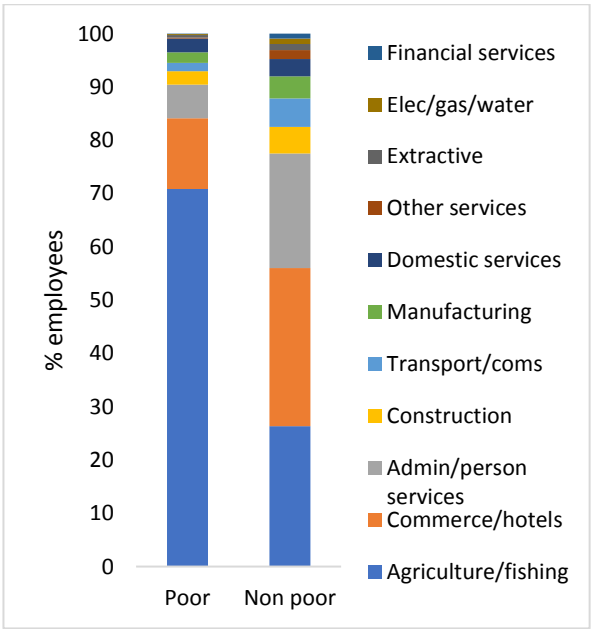


Source: IDREA 2018/19 (authors' calculations)

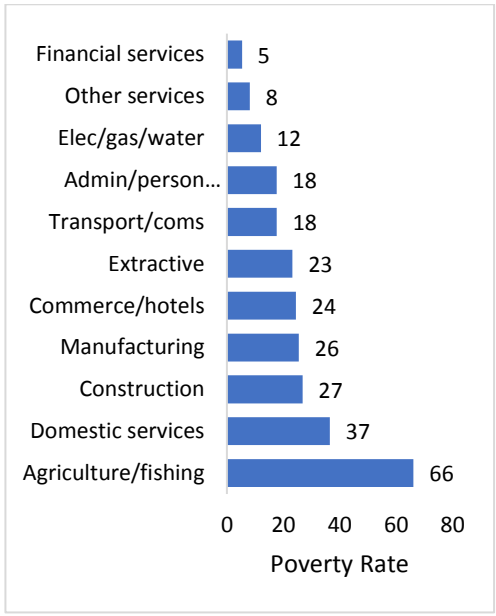
The share of agriculture workers is higher among the poor than the non-poor. The poor are more likely to work in the agriculture sector with more than 70% of poor employees. The highest poverty rates are concentrated among those working in the agriculture sector, 66%. Half of the non-poor workers are in the service sector.

Figure 75: Sector of Employment and Poverty

a. Employment by sector and poverty status



b. Poverty rate by sector

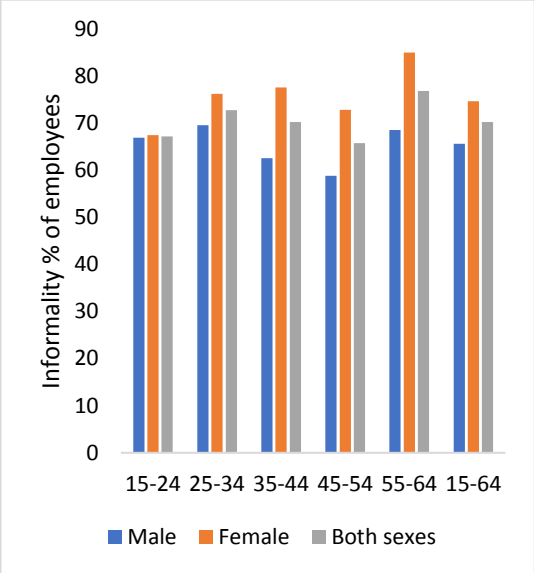


Source: IDREA 2018/19 (authors' calculations)

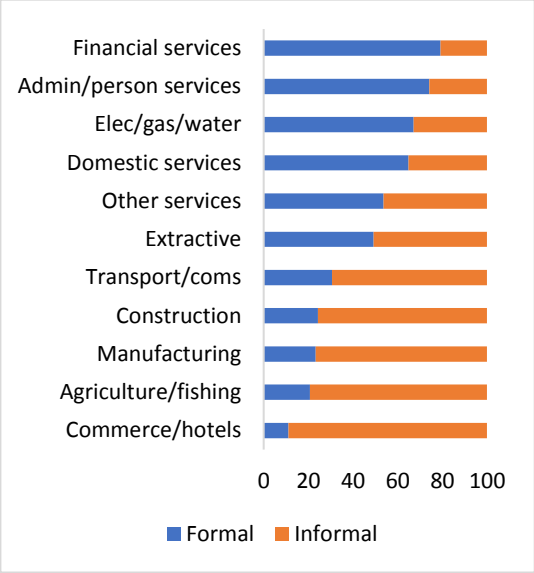
Most of jobs in Angola are in the informal sector, 70%. An informal worker is defined as: working without a written contract, in a company not registered with public agencies, and does not benefit from any social security benefits (paid annual leave, health insurance, etc.) Informality is higher for females than males (75% vs 66%) and increases with age. Informality rate is above 70% in commerce/hotels, agriculture, manufacturing and construction.

Figure 76: Informality, by gender and sector

a. Informality by gender and age group



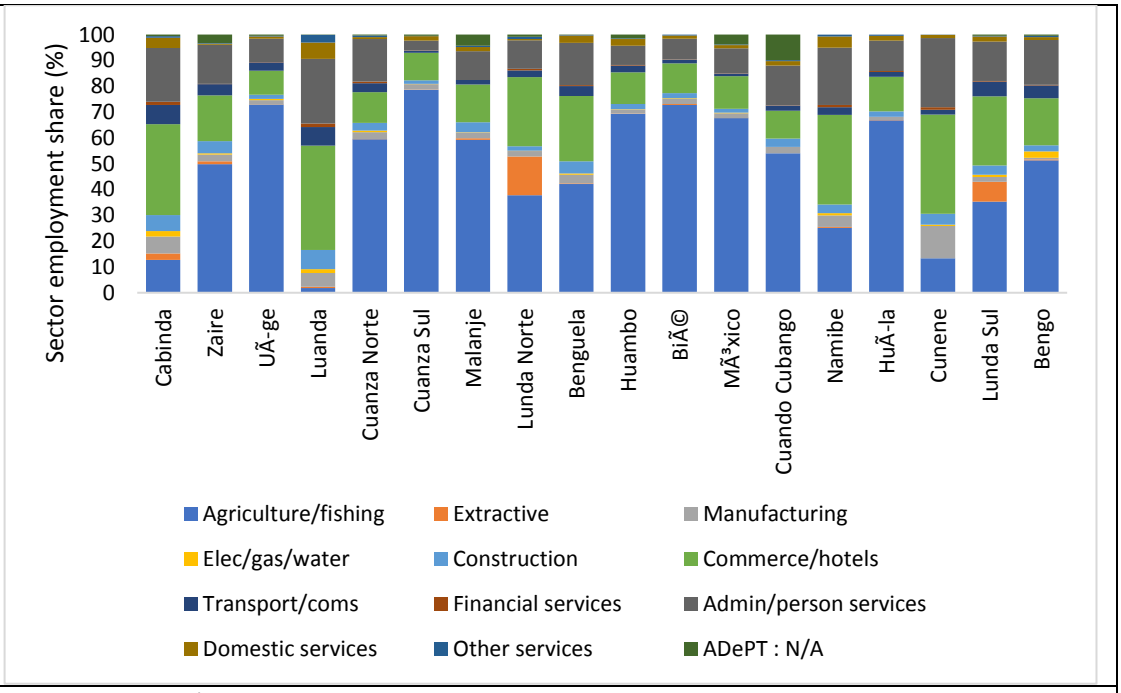
b. Informality by economic sector



Source: IDREA 2018/19 (authors' calculations)

By province, more than 50% of workers are in the agriculture sector except for Cabinda, Luanda, Lunda Norte, Benquela, Cunene, and Lunda Sul. In these provinces, the most important sectors are commerce/hotels and services. This shows clearly that the labor programs should have different approaches for different regions.

Figure 77: Employment by Economic Sector and Province

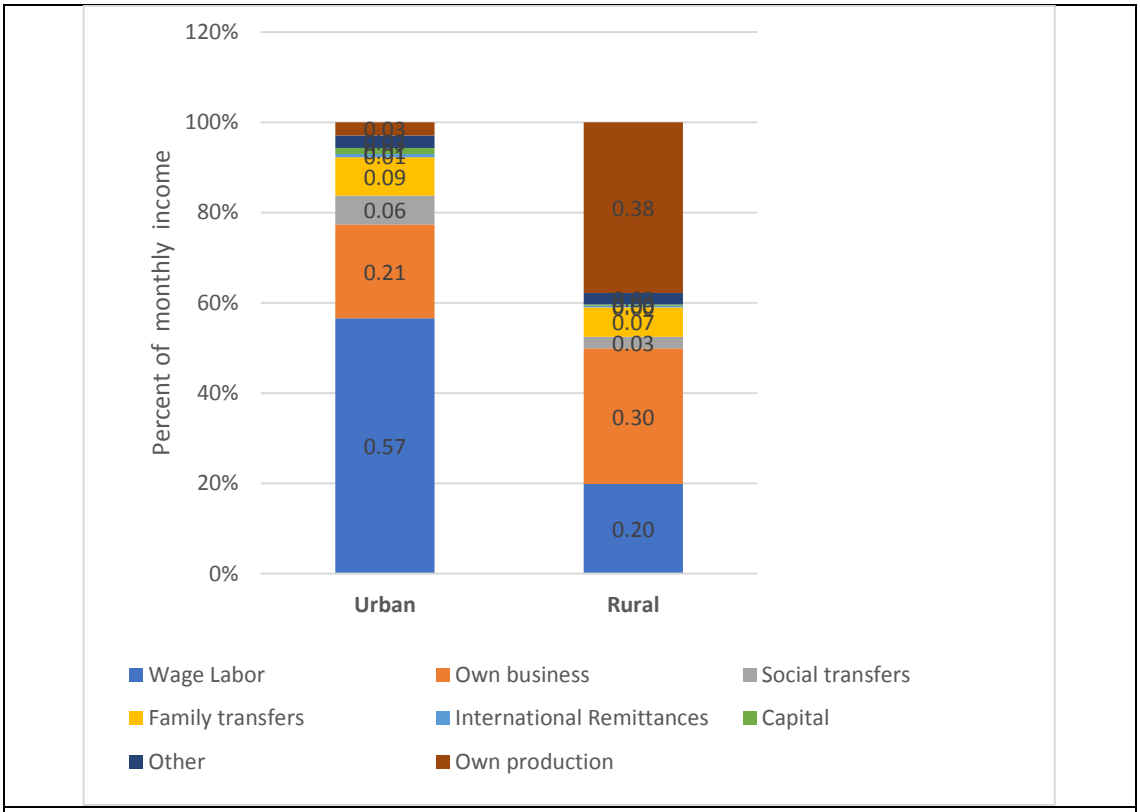


Source: IDREA 2018/19 (authors' calculations)

Earnings inequality and what accounts for the observed inequality

The average household income per capita is 19,536 Kz/mo. in urban areas and 7,899 Kz/mo in rural areas.[23] Moreover the composition of the average income per capita differs significantly between urban and rural areas (see Figure 78). In the urban areas, average income is composed mainly of wage income from labor (57 percent), income from own business (21 percent), family transfers (9 percent) and transfers from social programs (6 percent). In the rural areas, where the average income per capita is less than half of the income in urban areas, income is composed mainly of income from own production (38 percent), income from own business (30 percent), wage income from labor (20 percent), followed by family transfers (7 percent) and transfers from social programs (3 percent).

Figure 78: The composition of income per capita in urban and rural areas

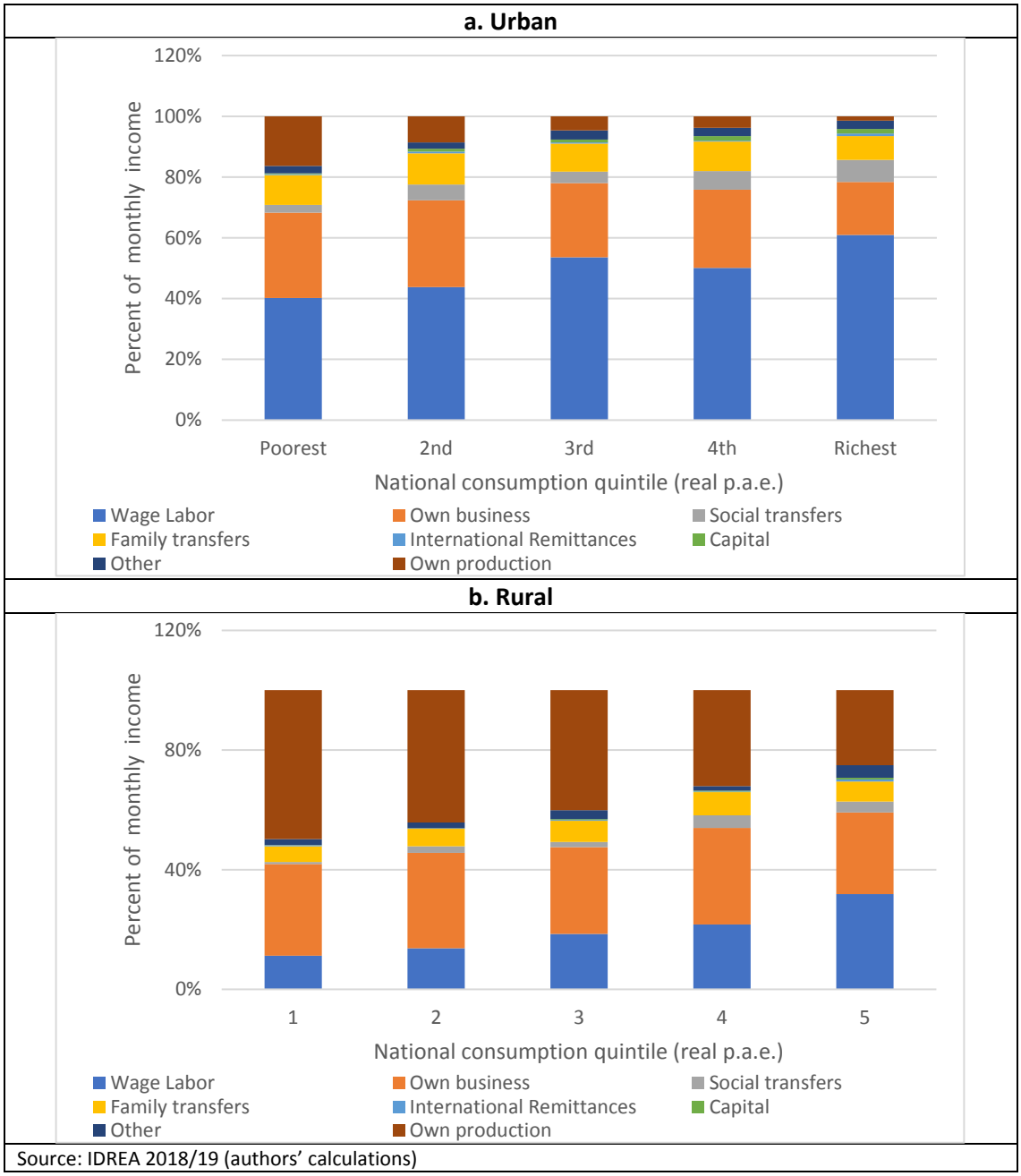


Source: IDREA 2018/19 (authors' calculations)

Further decomposition of the sources of income by quintiles of the national consumption per adult equivalent in urban and rural areas, yields some revealing patterns. The share of wage income from labor increases in higher quintiles in both urban and rural areas, while the share of income from own business, own production and family transfers declines. the share of income from transfers from social programs increases in higher quintiles. The increasing fraction of income from social programs in higher quintiles of the national distribution of consumption in both urban and rural areas attests to the bad targeting of the social protection system towards the poor..

[23] It is important to note that the value of the average household income per capita in urban areas and in rural areas are considerably lower than the average values of consumption per capita in urban areas (28,720 Kz/mo) and in rural areas (11,616 Kz/mo). This is a common phenomenon in household surveys all over the world collecting information on both consumption and income as households tend to under-report their income, and It is precisely for this reason that consumption is the preferred measure of household welfare.

Figure 79: The composition of income per capita in urban and rural areas by quintile

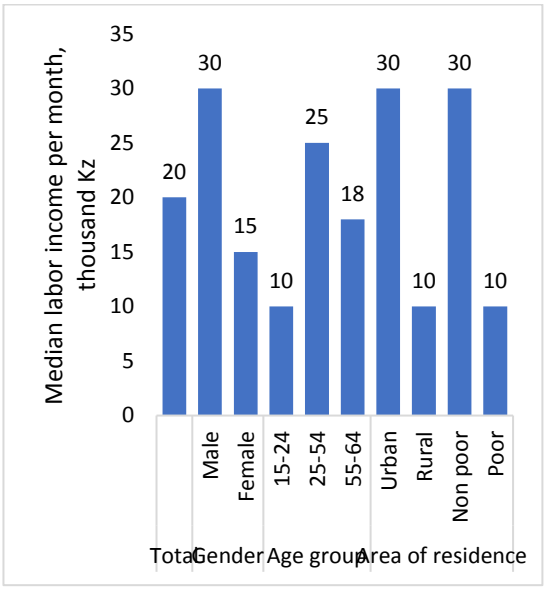


Source: IDREA 2018/19 (authors' calculations)

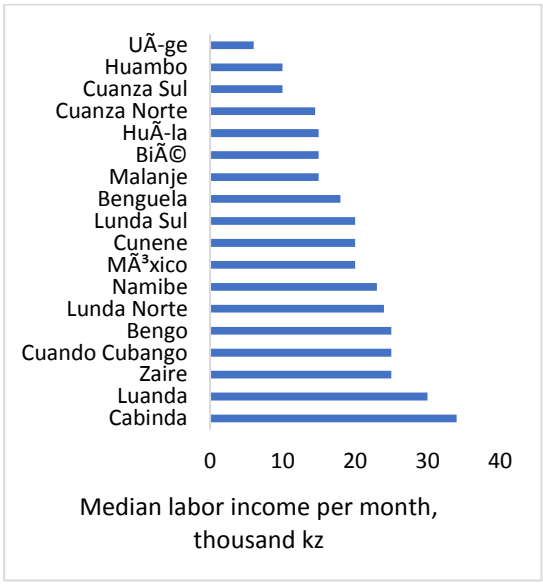
The median labor income in Angola is 20 thousand kz per month. Male labor income is twice as much as female (30 vs 15 thousand kz) and is 3 times higher in urban than rural areas (30 vs 10 thousand kz). Among the youth, the median labor income is 10 thousand kz per month, followed by 25 thousand kz per month of those aged 25-54 years old. By provinces, Cabinda, Luanda, Zaire, Cuando Cubando, and Bengo have a median labor income above 25 thousand kz per month. The province with the lowest monthly labor income is Uige with 6 thousand kz per month followed by Huambo, and Cuanza Sul with 10 thousand kz per month.

Figure 80: Monthly labor earnings

a. Median labor earnings per month, by selected groups



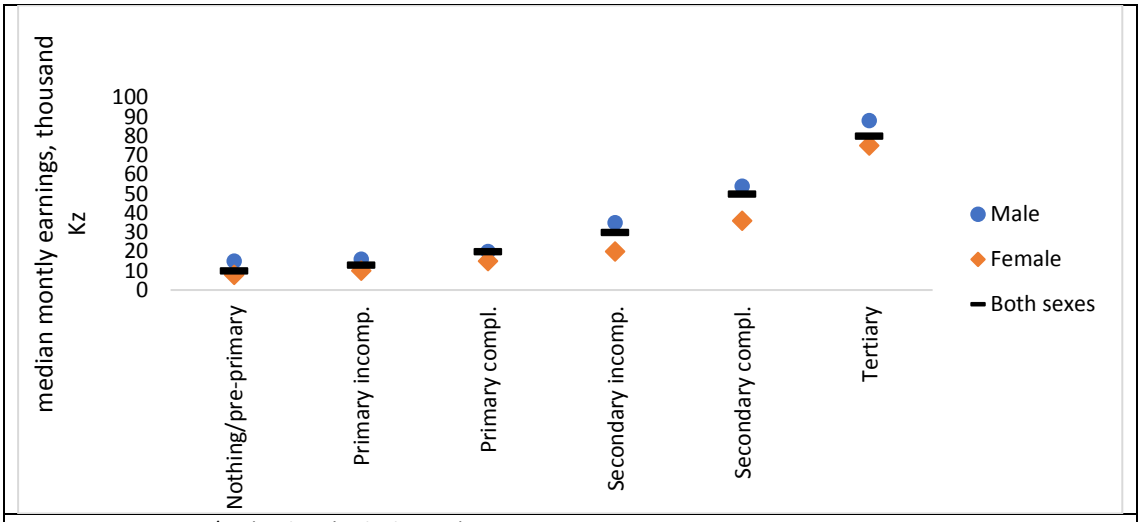
b. Median labor earnings per month, by province



Source: IDREA 2018/19 (authors' calculations)

Labor income increases with education. Those with tertiary education have a median labor income 8 times higher than those with no education (80 thousand kz vs 10 thousand kz). In all levels of education, the median labor income for males is higher than the median labor income for females. This wage gap is higher for higher levels of education.

Figure 81: Median Labor Earnings by month, by gender and educational level

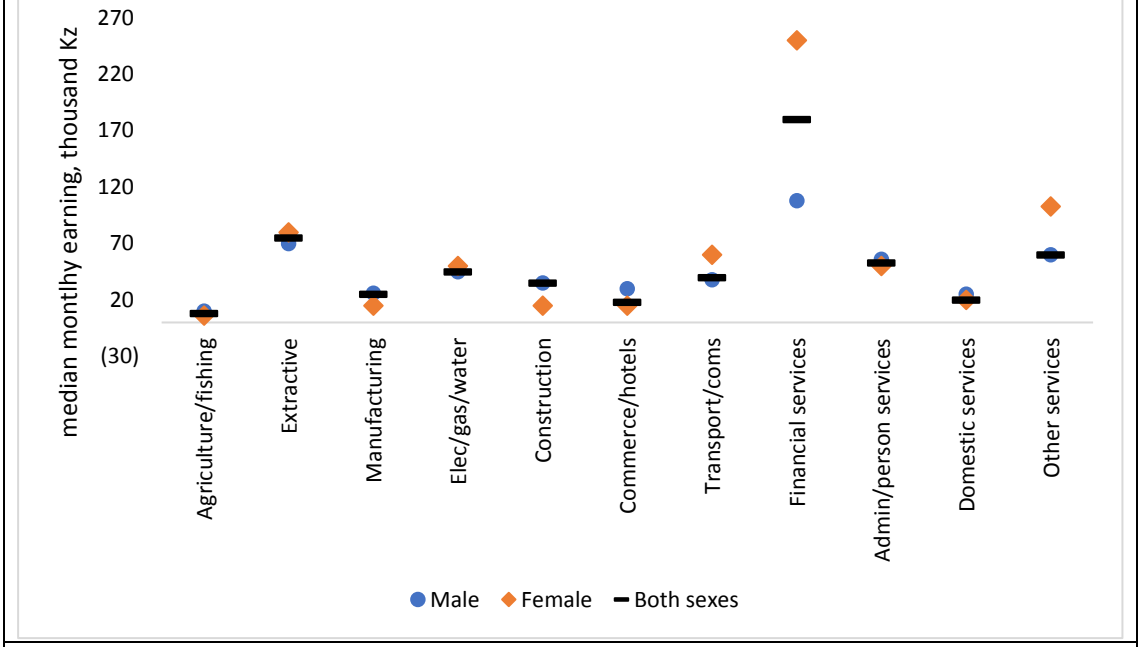


Source: IDREA 2018/19 (authors' calculations)

Among economic sectors, agriculture offers the lowest median income while financial services the highest. The median labor income from agriculture is around 8 thousand kz per month and is lower for females than males (6 vs 10 thousand kz per month). In construction and commerce, males earn twice as much as females. The highest wages are in the financial services sector with females

earning more than males. Female's remuneration in financial services is high and more than twice males (250 vs 108 thousand kz per month).

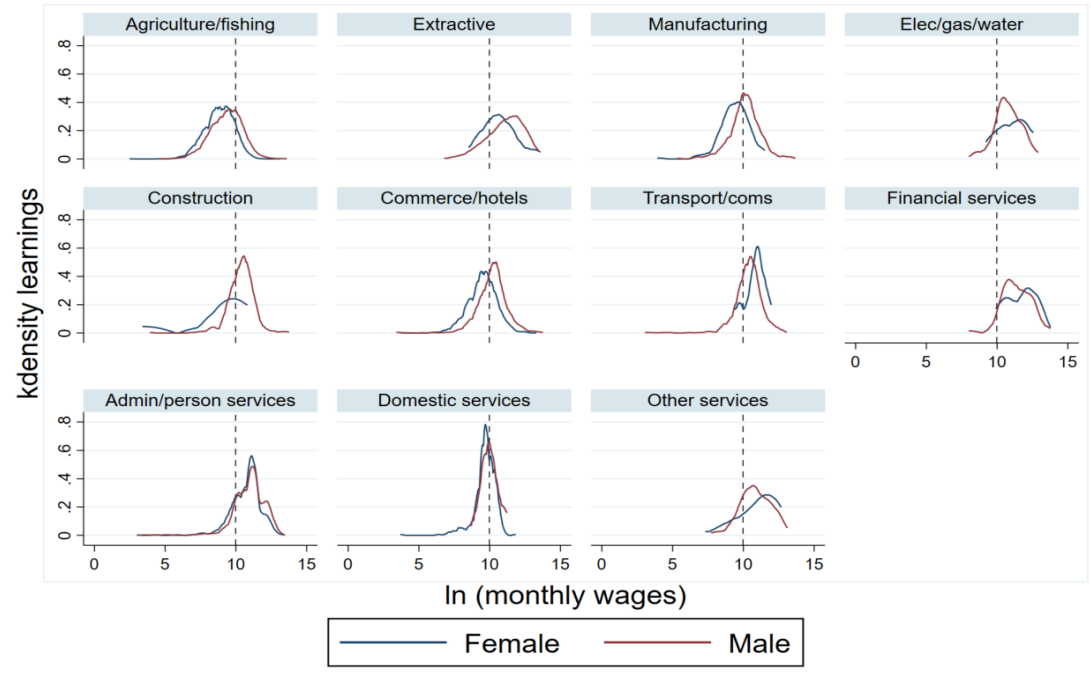
Figure 82: Median labor earnings per month by gender and economic sector



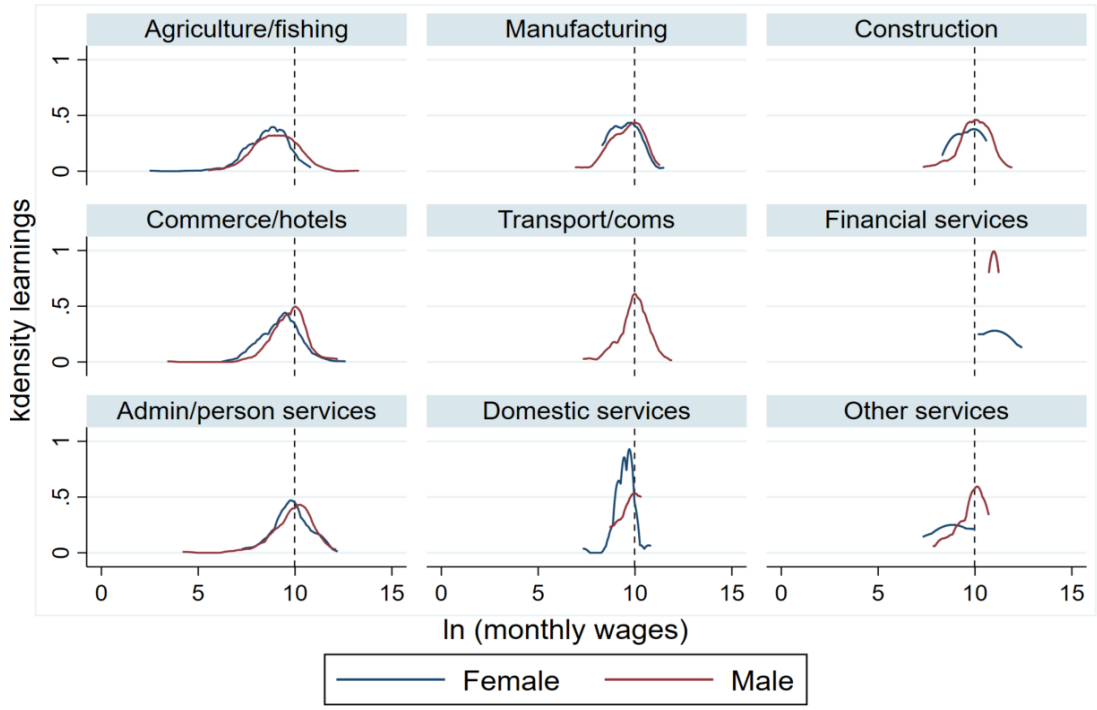
Source: IDREA 2018/19 (authors' calculations)

Figure 83: Distribution of wages by gender within sectors

All



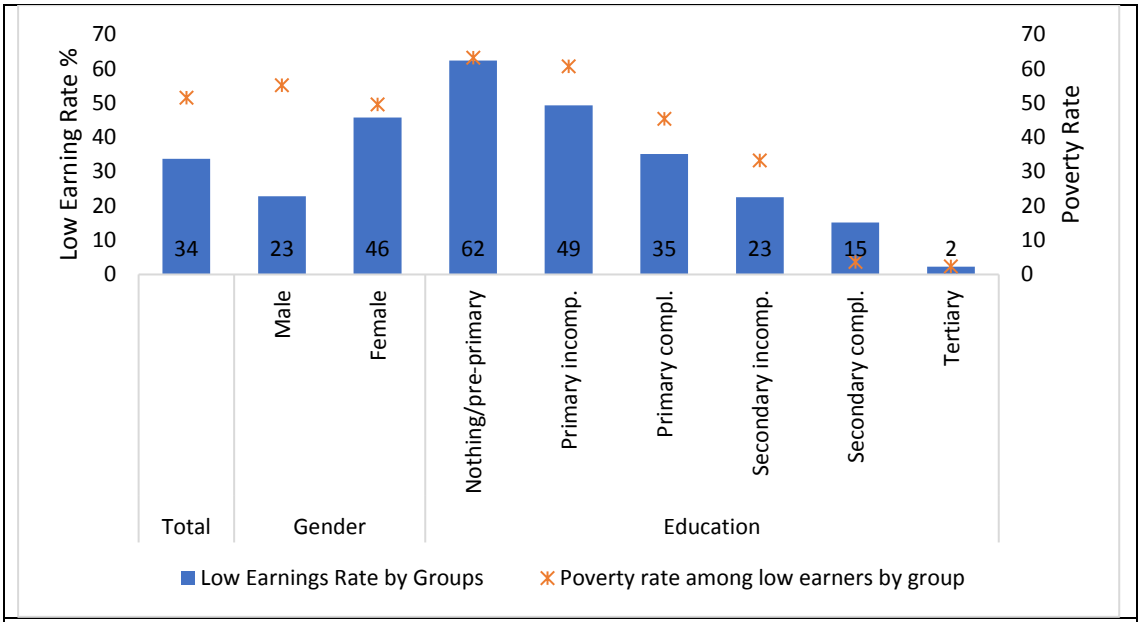
Youth: 15-24 years of age



Note: The dotted line corresponds to the natural logarithm of the minimum wage in 2019: 21,545 kz per month

34 percent of the workers are low earners. Low earning rates are higher among female, and those with lower levels of education. Poverty rates is highly correlated with low earning rates.

Figure 84: Low Earning Rates and Poverty by selected groups



Source: IDREA 2018/19 (authors' calculations)

Labor market policies (minimum wage, insurance)

The Angolan Ministry of Public Administration, Employment and Social Security (MAPTSS) is the leading authority for labor issues. Labor regulations in Angola combine flexibility with strong worker protection. The most important innovation of the new General Labor Law in 2015 (Law No. 7/15, of 15 June 2015) is differentiation of regulation according to size of the business. In particular, the duration of fixed-term contracts, wage premiums for overtime work, night work, and work on rotating shifts, as well as contract termination entitlements are differentiated according to size of the business. This is especially beneficial to micro and small firms who are the most vulnerable in the labor market, but tend to create the most jobs, at least in the formal sector. However, many firms still face rigid procedural requirements to adjust to fluctuations in seasonal demand, or justification thresholds that affect magnitude of and speed with which layoffs can be executed

Labor market programs in Angola fall into two main categories: labor market policy measures that include entrepreneurship support programs and training and labor market policy services that refer to intermediation. There are 10 labor market programs. These programs are mostly implemented by MAPTSS (six entrepreneurship and training), followed by MASAFMU (two entrepreneurship support programs) and INEFOP (two training and labor market intermediation).

In 2019, the Employability Promotion Action Plan (Plano de Acção de Promoção da Empregabilidade, PAPE) was approved, which aims to train more than 250 thousand young people in 3 years. The plan is led by MAPTSS and its objective is to provide tools that can stimulate job creation in the private sector. PAPE is aimed at youths, entrepreneurs (already established and emerging ones) and women. PAPE is based on microcredit, entrepreneurship courses and professional training, as well as the distribution of professional kits. For the implementation of PAPE, the Government approved a budget of 21 billion Kwanzas, corresponding to USD 65.6 million, to be implemented over three years, between 2019-2021. The program is expected to benefit more than 83 thousand young people directly and more than 240 thousand young people indirectly.

On the other hand, to combat informality, the Informal Economy Conversion Program (Programa de Reconversão da Economia Informal, PREI), framed in the 2018-2022 PDN, aims to reduce the

gap between formality and informality in the Angolan economy. The program is led by the Ministry of Economic and Planning and aims to bring together authorities and economic agents who work in the informal sector in order to integrate them into the formal economy. The integration will be materialized by facilitating the creation of companies, which will be preceded by facilitation in obtaining identity cards and bank accounts.

Conclusions

Angola must create more and better jobs. The more educated younger population can help the country move from fragility and toward stability and diversification of the economy. The challenge is to create more productive jobs in the private sector for the burgeoning youth population, who are very large in number, better educated, and are not finding good jobs.

Policy focus and innovation is required to increase productivity in the largest employment sectors, agriculture and services. The agriculture sector needs greater public and private investment. The services sector though increasing in employment share needs to raise its productive capacities perhaps by encouraging foreign investment. Entrepreneurship in both areas needs encouragement.

Active Labor Market Programs (ALMP) can support particularly young people's labor market integration. The objective of such youth-focused Active Labor Market Programs (ALMP) would be to support the productive inclusion of vulnerable youth in rural and urban areas of Angola.

In order to create more and better jobs, Angola needs to pursue a two-pronged strategy. First and foremost, it needs to improve the investment climate and lower cost of doing business to encourage entry and growth by firms. There exists a need to provide adequate incentives for firms to be established and grow, in order to expand job creation, as well as accelerate absorption of workers displaced by structural changes. Second, it needs to reform its labor market institutions to create an adaptable labor market, that is, a market where employers have incentives to hire workers, and workers have incentives and skills to take available jobs

Chapter 5: Investing in human capital

Introduction

Investments in the human capital (especially health and education) of younger household members are fundamental for economic growth and poverty reduction in the long term. Access to basic services is one of many critical ingredients in the production of human capital of children. Other factors include the quality of services accessed and the household income level, which in turn depends on the stock human capital of older household members and the returns they are able to receive for their human capital through markets.

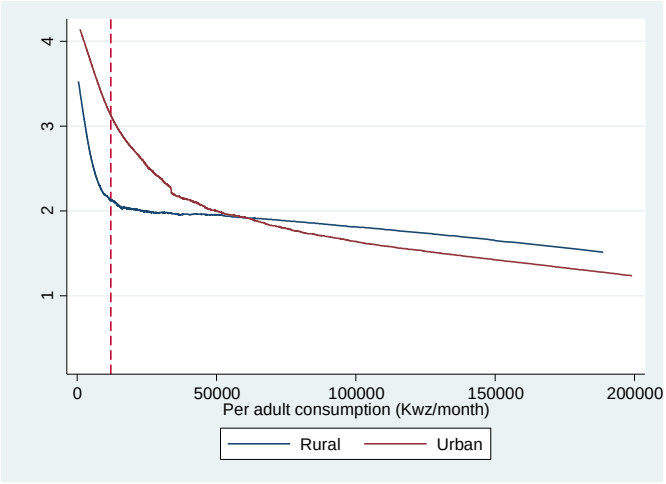
This chapter examines in more detail the underlying determinants of child nutrition in Angola, which has long-term consequences for human capital, economic productivity, and national development overall. An acceleration of the progress toward reducing stunting in Angola requires enlisting more sectors in addition to the health sector, such as agriculture; education; social protection; and water, sanitation, and hygiene (WASH) in the effort to improve nutrition. There are two key areas that the chapter covers. First, it examines the extent to which children have inadequate access to the underlying determinants of nutrition. Second, it examines whether simultaneous access to an adequate level of one or more of the underlying determinants of nutrition is associated with lower stunting.

The empirical approach adopted follows the approach of the recent regional report (World Bank 2018) based on the insights provided by the conceptual framework of the United Nations Children's Fund (UNICEF) for the underlying determinants of undernutrition. The underlying causes of undernutrition are grouped into three clusters: (a) inadequate household food security and care practices, (b) unhealthy household environment (WASH), and (c) inadequate health services.

Food security

Figure 85 shows the relation between total household consumption and the average number of months in which a household reported food shortages, as measured by a locally weighted regression. The figure shows that food shortages are a poverty-specific problem, especially in rural areas, where the number of months of food shortages decreases very steeply up to the poverty line, but is almost flat above the poverty line. This suggests that that other (non-monetary) factors may be at play for those households. Urban households are more likely to report food shortages. It is difficult to know whether this reflects a true disadvantage of urban dwellers in this dimension, or whether it is reflects a greater propensity to self-report food insecurity.

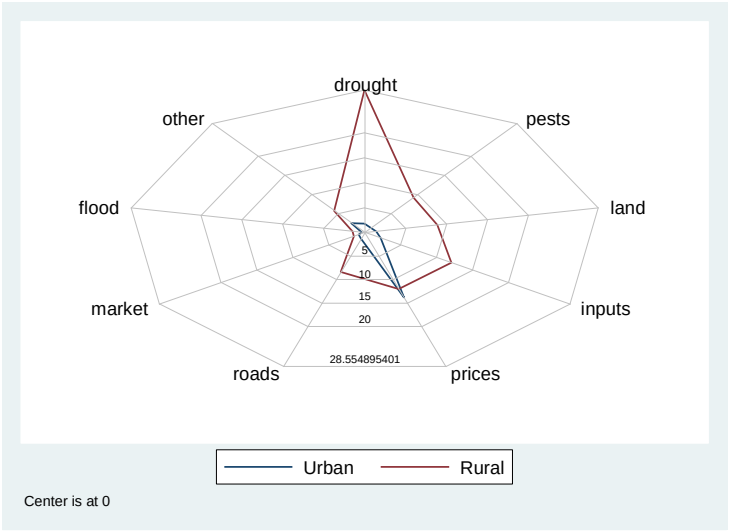
Figure 85: Average number of food shortage months vs. consumption, by area



Source: IDREA 2018/19 (authors' calculations)

In rural areas, the most commonly cited cause for the food shortages is drought (29%), whereas urban dwellers are more likely to blame their food insecurity on prices (14%) (see Figure 86). These may, of course, be two different experiences of the same phenomenon, as droughts in rural areas are likely to lead to price increases in urban areas.

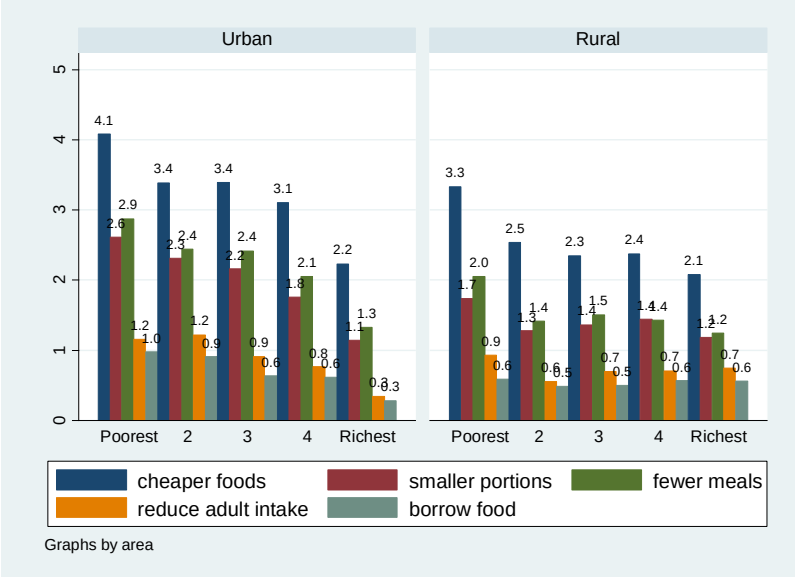
Figure 86: Cause of food shortages, by area



Source: IDREA 2018/19 (authors' calculations)

Figure 87 shows the different coping stragegies employed by households to cope with the food shortages. The most commonly employed strategy is to turn to cheaper or less preferred foods, whereas households are less likely to reduce adult food intake or borrow food from neighbours or family. Food insecurity, as measured by these indicators, appears to be less prevalent in rural areas, but it is also more evenly spread across the population, as there is very little change in coping strategies between the second and top quintile.

Figure 87: Number of days in the past week in which household resorted to coping strategies, by quintile and area

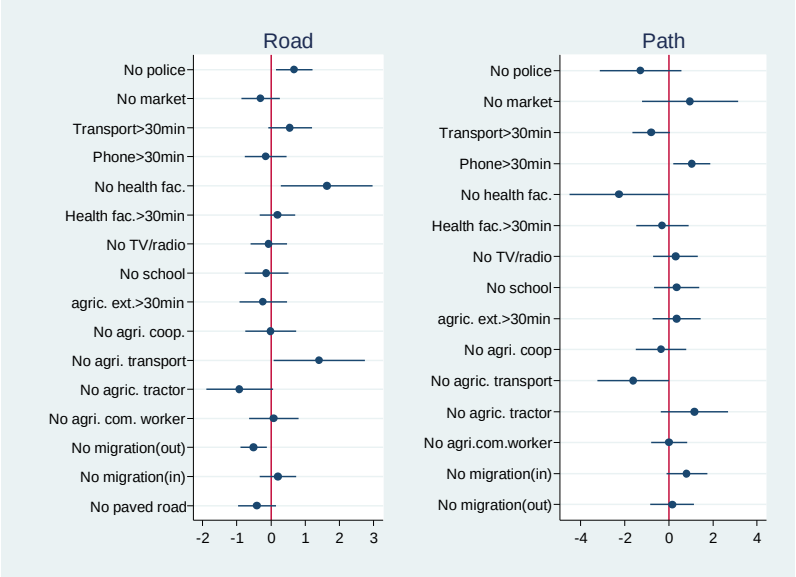


Source: IDREA 2018/19 (authors' calculations)

Figure 88 presents the results of the multivariate regression analysis that was done to see what other factors than income/consumption might be at play in determining food shortages in rural areas (full regression results available in Appendix A).[24] The figure shows that **in communities accessible by road, those without means of transporting agricultural produce and those without access to health facilities are more likely to experience food shortages.**

[24] For this analysis, a Tobit model for truncated dependent variables is used, as all individuals who did not experience food shortages had zero months of food shortage, regardless of how food secure they are.

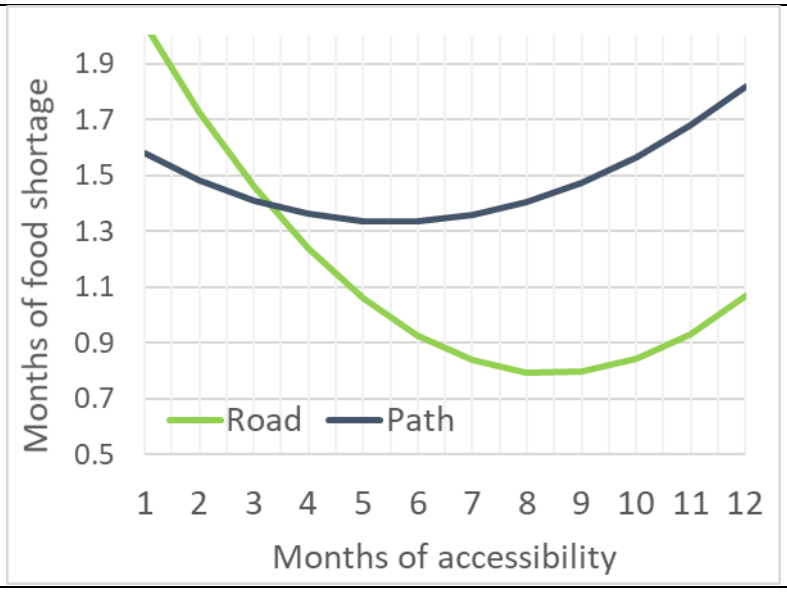
Figure 88: Relation between community characteristics and food shortage months (rural areas only controlling for consumption, etc.), by road - logit coefficients with 95% confidence intervals



Source: IDREA 2018/19 (authors' calculations)

Figure 89 shows that **food shortage is negatively correlated with road access. In areas that are not accessible by road, accessibility appears to be uncorrelated with food shortage – probably reflecting the fact that those areas are inaccessible all year round.** This, together with the earlier information regarding the importance of transport for agricultural transport, suggests that accessibility may be an important factor in determining food security in rural areas, and may explain why even some relatively wealthy households report food shortages in rural areas.

Figure 89: Months of food shortage vs. road access (rural areas only, controlling for relevant characteristics), by area



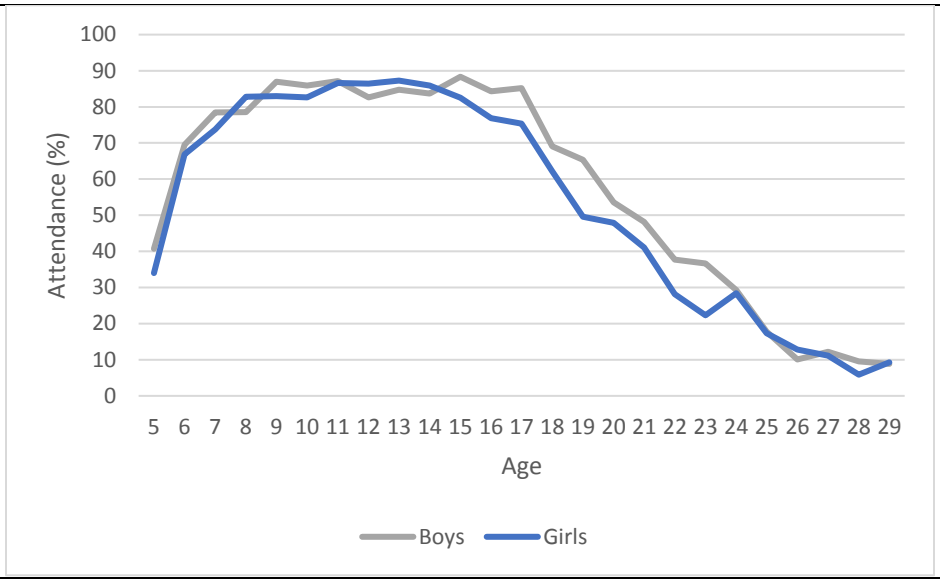
Source: IDREA 2018/19 (authors' calculations)

Child school attendance

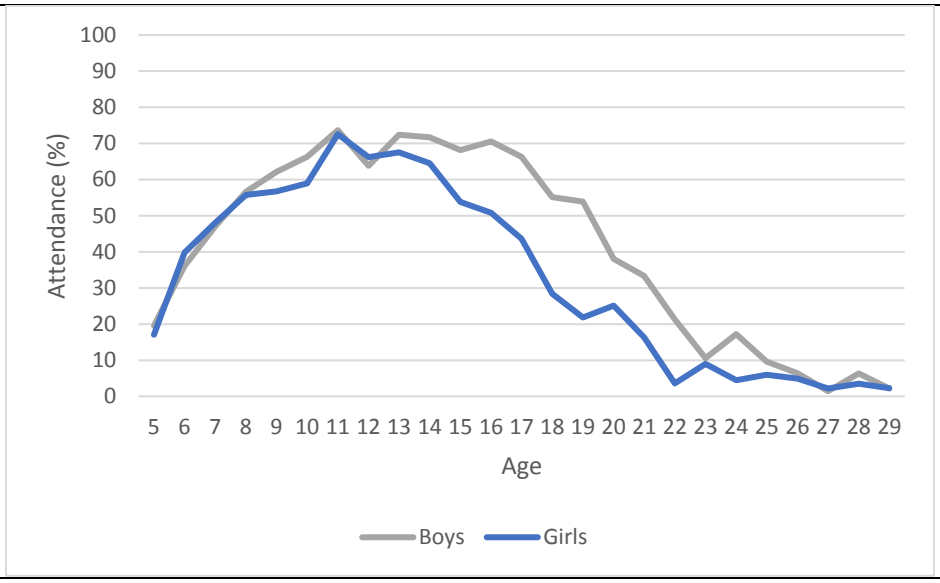
School attendance exhibits the commonly observed humped or "inverse U" pattern with age and at any given age both boys and girls it is generally higher in urban areas than in rural areas and it (see Figure 90). One difference is that school attendance between ages 8 and 16 in urban areas is between 80 and 90 percent whereas in rural areas for the same age groups it reaches a peak at 74 percent at the age of 11 and drops after that age especially among girls. Also, the school attendance rate of boys is higher than that of girls and this gender gap is larger in rural areas than in urban areas. An investigation of some of the factors associated with these observed patterns follows.

Figure 90: School attendance rate by age and by area

a. Urban



b. Rural



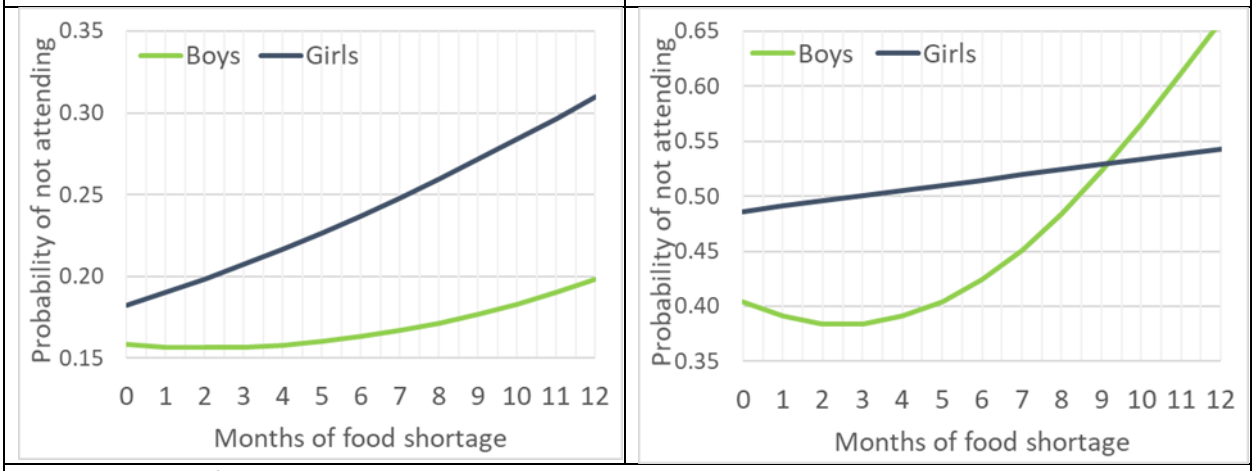
Source: IDREA 2018/19 (authors' calculations)

Food security and child school attendance

Food security is an important wellbeing concern in its own right, but it also has ramifications for other important aspects of wellbeing. Figure 91 focuses on the relation between food shortage and school attendance for children aged 6 to 17, controlling for consumption, as well as parents' education and other relevant demographic characteristics (see Appendix A for details). It shows that food shortages are positively correlated with school drop-out (or non-attendance) in both urban and rural areas. Furthermore, the data appear to indicate that the effect of food shortages on school attendance are worse for girls than for boys in urban areas. In rural areas, girls are more likely to drop out at the start of

a food shortage, whereas boys' likelihood to drop out increases over time and eventually surpasses the girls in longer food shortages.

Figure 91: Probability of not attending school vs. months of food shortages (controlling for consumption, etc.), by sex and area



Source: IDREA 2018/19 (authors' calculations)

Distance from school and child school attendance

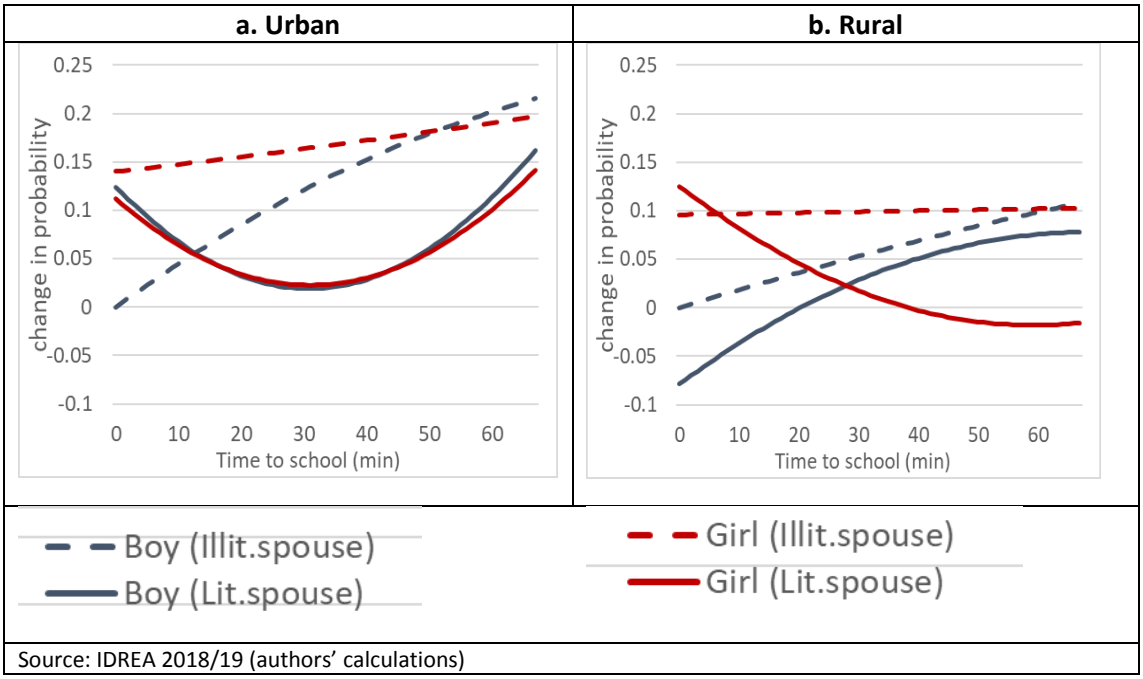
The distance of the school from the household increases the likelihood that the child will be out of school, especially for children of illiterate spouses (Figure 92). Also, girls are more likely to be out-of-school overall, but less vulnerable than boys to dropping out of school because of excessive distance. Figure 93 looks at the probability for children aged 6 to 17 of not attending school, depending on the average distance to school (for the children in the household that are attending), and controlling for differences in consumption and demographic characteristics of the household.[25] The results show that the effect of school distance varies greatly depending on the gender of the child, as well as on whether the spouse (usually a mother) is literate or not. For children of illiterate spouses, distance unambiguously increases the likelihood that the child will be out of school. Girls are more likely to be out-of-school overall, but less vulnerable than boys to dropping out as a result of excessive distance – probably because many of them already dropped out for other reasons.

If the spouse/mother is literate, the relation between school distance and attendance varies between urban and rural areas. In urban areas greater distance to school is associated with higher attendance/lower drop-out up to a distance of around 30 minutes. This may reflect the fact that more motivated parents seek out better schools that are located further away from the home. Above 30 minutes, the drop-out rate begins to increase even for children of literate mothers. Interestingly, these effects are almost identical for boys and girls in urban areas. In rural areas, the likelihood of non-attendance is positively correlated with distance for boys, even when the mother is literate. However, for girls the opposite is true: greater distance is associated with greater attendance. Again, this probably reflects a high level of commitment amongst literate parents who do send their daughters to school.

[25] For households where no children are attending school, the mean distance reported in the cluster was used instead.

Other factors that affect attendance are the type of school (private and public school pupils are more likely to have out-of-school siblings, compared to confessional/NGO schools), as well as the years of education of the parents. Rural children in Lunda Norte and Cabinda are, other things being equal, most likely to be out-of-school (see detailed regression results in Appendix A).

Figure 92: Probability of not attending school vs. time to school (controlling for consumption, etc.), by area, gender and literacy of spouse

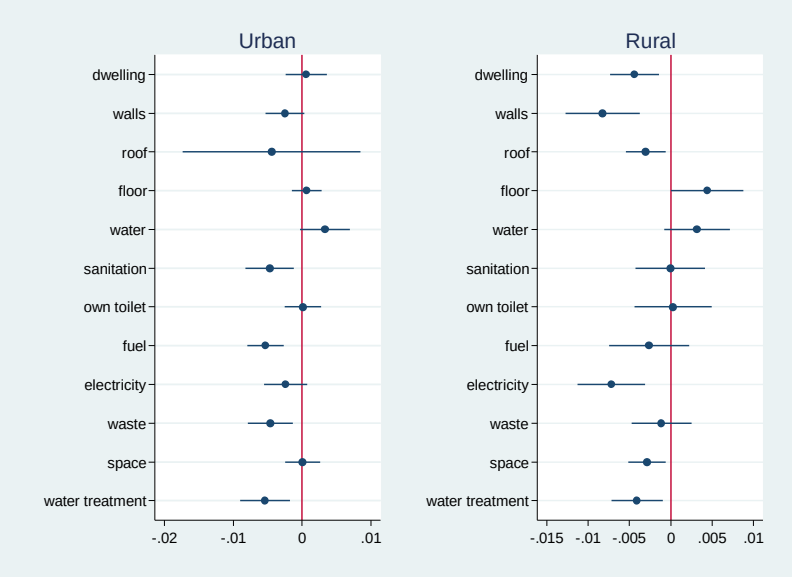


Source: IDREA 2018/19 (authors' calculations)

Housing conditions and child school attendance

Figure 93 looks at the relation between housing conditions and school attendance for children aged 6 to 17, controlling for differences in income/consumption and parents' education, as well as age and other relevant household characteristics. The analysis shows that access to electricity and space (<3 pers./room) significantly reduce the probability of rural children dropping out of school. Adequate construction materials (walls and roof), as well as water treatment are also associated with lower drop-out rates. In urban areas, adequate sanitation, waste management, water treatment and cooking fuel are all associated with lower drop-out rates (see Appendix A for full model results).

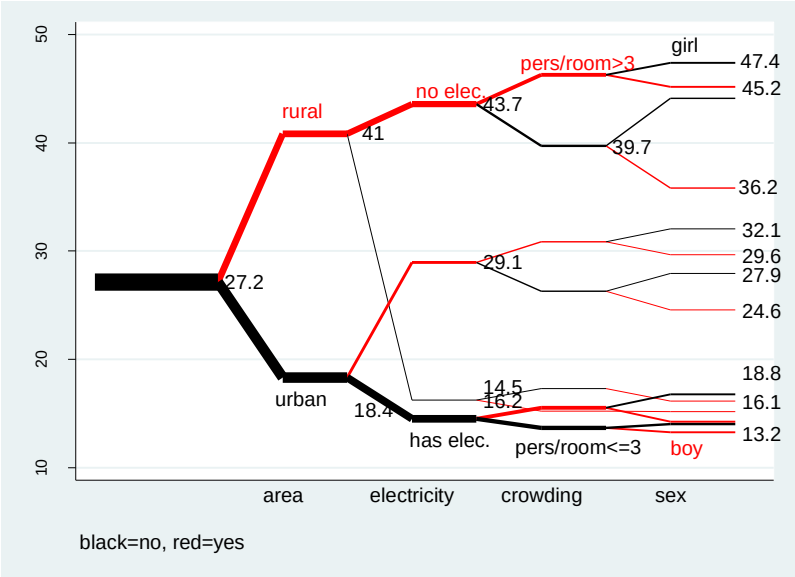
Figure 93: Determinants of school attendance (controlling for consumption, etc.), by area – logit coefficients with 95% confidence intervals



Source: IDREA 2018/19 (authors' calculations)

A rural girl living in a crowded house with no electricity has an almost 50% chance (47.4%) of being out-of-school. That is almost 4 times more than an urban boy living in a spacious house with electricity (13.2%). When several of the above-described risk factors are combined, the risk of school drop-out can become severe as shown in the riskplot below (see Figure 94).

Figure 94: Risk plot - children (6-17) not attending school by cumulated risk factors



Source: IDREA 2018/19 (authors' calculations)

Child undernutrition[26]

Income poverty and inequalities in access to basic services such as health, water, sanitation, and proper care and feeding practices, in the initial stages of children's lives are associated with delayed child growth, in both physical and cognitive terms. The long-term consequences for human capital, economic productivity, and national development overall can even be quantified in economic terms. The chronic malnutrition of children is associated with a high risk of stunting , impaired cognitive development, lower school attendance rates, reduced human capital attainment, and a higher risk of chronic disease and health problems in adulthood (Victora et al., 2010; Black et al., 2013; Hoddinott et al., 2013). Thus, inequities in access to services early in the life of a child also contribute to the intergenerational transmission of poverty. Recent World Bank estimates suggest that the per capita income penalty a country incurs for not having eliminated chronical malnutrition when today's workers were children is around 7 percent of gross domestic product (GDP) per capita, on average. In Sub-Saharan Africa and South Asia, these figures rise to about 9–10 percent of GDP per capita (Galasso et al., 2017).

Despite the extensive oil and gas resources, diamonds, hydroelectric potential, and rich agricultural land in Angola, many children less than 5 years of age have stunted growth, meaning that they are excessively short for their age.[27] Based on the most recent Demographic and Health Survey of 2016, the prevalence of stunting in Angola is 37.6 percent and this rate implies that 1.8 million of the 4.7 million of children under 5 in Angola, are at risk of cognitive and physical limitations that can last a lifetime. [28]

Angola ranks 149th out of 182 countries in the Human Development Index (HDI) of UNDP, and it also stands among the lowest countries in the world in terms of the Human Capital Index (HCI) (0.36) and slightly below the Sub-Saharan African (SSA) average (0.4). The HCI is composed of health (stunting and under-five mortality rate), education, and survival indicators, and its value suggests that a child born in Angola today will only reach 38 percent of their potential productivity when they grow up. In comparison to the other components of the HCI, the persistent and high prevalence of stunting in Angola has been a major contributor to the potential productivity and the low level of HCI. Between 2012 and 2017, the HCI value for Angola remained approximately the same at 0.36 and in 2017, Angola's HCI is lower than the average for its income group.

Key to a successful multi-sectoral approach is having a more holistic/systemic view of gaps in access to adequate levels of the underlying determinants of nutrition: Food & Care, Health, and Water, Sanitation and Hygiene (WASH). For this purpose, the 2016 Demographic and Health Survey (DHS) of Angola is used to provide a more holistic view of the multiple deprivations experienced by children with respect to the underlying drivers of nutrition and the prevalence of stunting.

Specifically, this note provides data-driven answers to the following questions: (i) What is the extent to which children have inadequate access to the underlying determinants of nutrition? and (ii) Is simultaneous access to adequate level of one or more of the underlying determinants of nutrition associated with lower stunting?

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[26] This section draws material from (Skoufias, 2020).

[27] In statistical terms, a child is chronically malnourished (stunted) if his/her height-for-age Z-score (HAZ) is more than 2 standard deviations (sd) below the median height of a healthy reference population (that is, HAZ <-2). Child is classified as severely stunted if HAZ<-3.

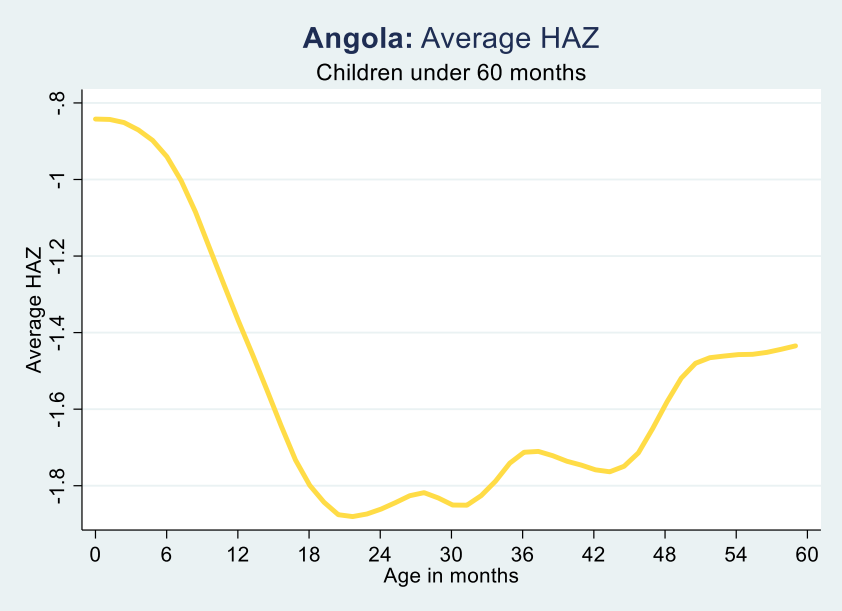
[28]This number rises to 2.13 million children based on the 5.67 million based on the 2019 population estimates from the UN Population Division (2019).

Access to the determinants of nutrition such as food and care, health, and water and sanitation is examined for urban and rural areas, as well as for richer and poorer households within Angola.

This section considers food security jointly with access to the other drivers of nutrition such as access to adequate health and adequate WASH services based on the 2014 MICS. The data limitations in relation to the availability of information on the different dimensions of food security and care and the quality of services are overcome by the more holistic perspective obtained of the relation between the prevalence of stunting and the multiple deprivations experienced by children. Information about the joint distribution of the underlying drivers of nutrition is essential for identifying particularly important gaps (or binding constraints) that, if addressed through joint targeting by the relevant sectors, can serve to strengthen the impacts on nutrition.

The growth faltering profile for children in Angola between 0 and 59 months of age, shows clearly that HAZ decreases rapidly in the first 20 months of life, bottoming out at around 20 months of age, with only minor fluctuations and a slight increase after that age (see Figure 95).[29] As a consequence, the prevalence of stunting increases with age; 23.7 percent of children 6–11 months are stunted, with the prevalence steadily increasing and peaking at 48.6 percent among children 24–35 months.

Figure 95: Growth faltering in Angola (children 0–59 months)



Source/Note: Authors' estimates based on Angola 2016 DHS.

Early pregnancy among adolescent girls, combined with poor maternal health and nutrition and increased incidence of anaemia among female adolescents, contribute to a low birth weight of new born children. Overall, the risk of stunting is 33 percent higher among first-born children of mothers under 18 years in sub-Saharan Africa, and as such, early childbearing is a key driver of malnutrition (Fink et al., 2014). In Angola, childbearing begins early. According to the 2016 DHS, Angolan teenage girls (15- to 19-year-olds) have the highest rate of births per 1,000 girls in the world at 162 births per 1,000 girls.

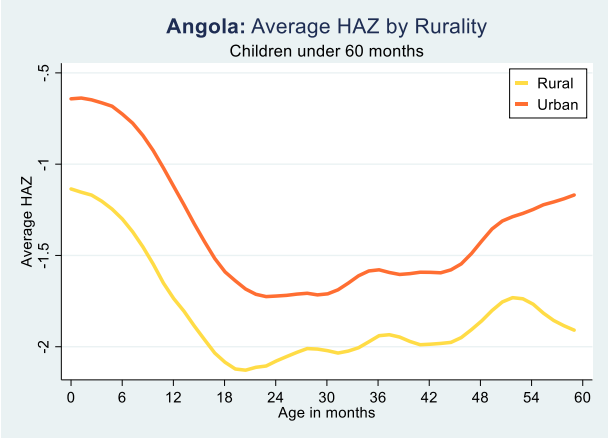
[29] For a recent cross-country study on the determinants of growth faltering, see Rieger and Trommlevora (2016).

This has serious consequences because, relative to older mothers, adolescent girls are more likely to be malnourished and have a low birth weight baby who is then more likely to become malnourished, and be at an increased risk of illness and death, than those born to older mothers. Based on the 2015/2016 DHS, 47.7% of women of reproductive age have anaemia, which is known to further increase the risk of low birth weight which in turn contributes to child stunting.

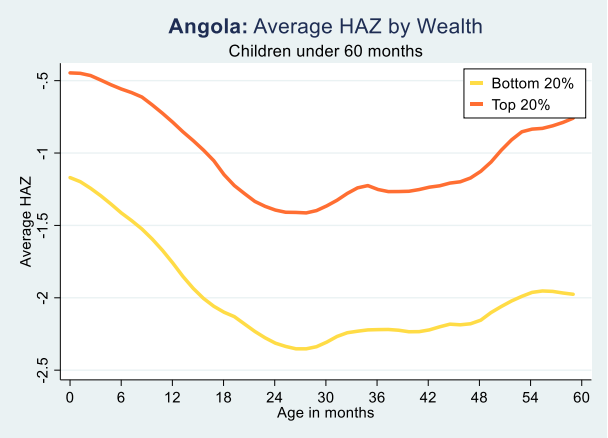
The growth faltering profiles of children under 5 years of age in Angola are steeper in rural areas relative to urban areas, for children in less wealthy households (for example, bottom 20 percent of the wealth distribution), and for children whose mother has a relatively lower level of education (Figure 96). These socioeconomic differences in the patterns of growth faltering serve as preliminary indicators of the groups of children in need of targeted interventions. These target groups are validated further by the differences in the prevalence of stunting among children less than 2 years of age.

Figure 96: Growth faltering in Angola by socioeconomic characteristics (children 0–59 months)

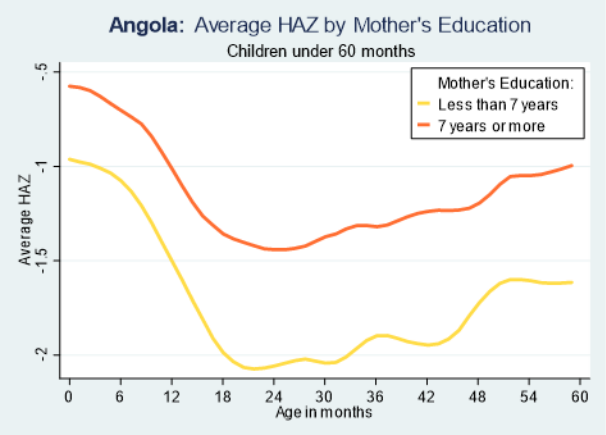
a) Urban vs. Rural



b) Bottom 20% vs. Top 20%s



c) More vs. less educated mothers

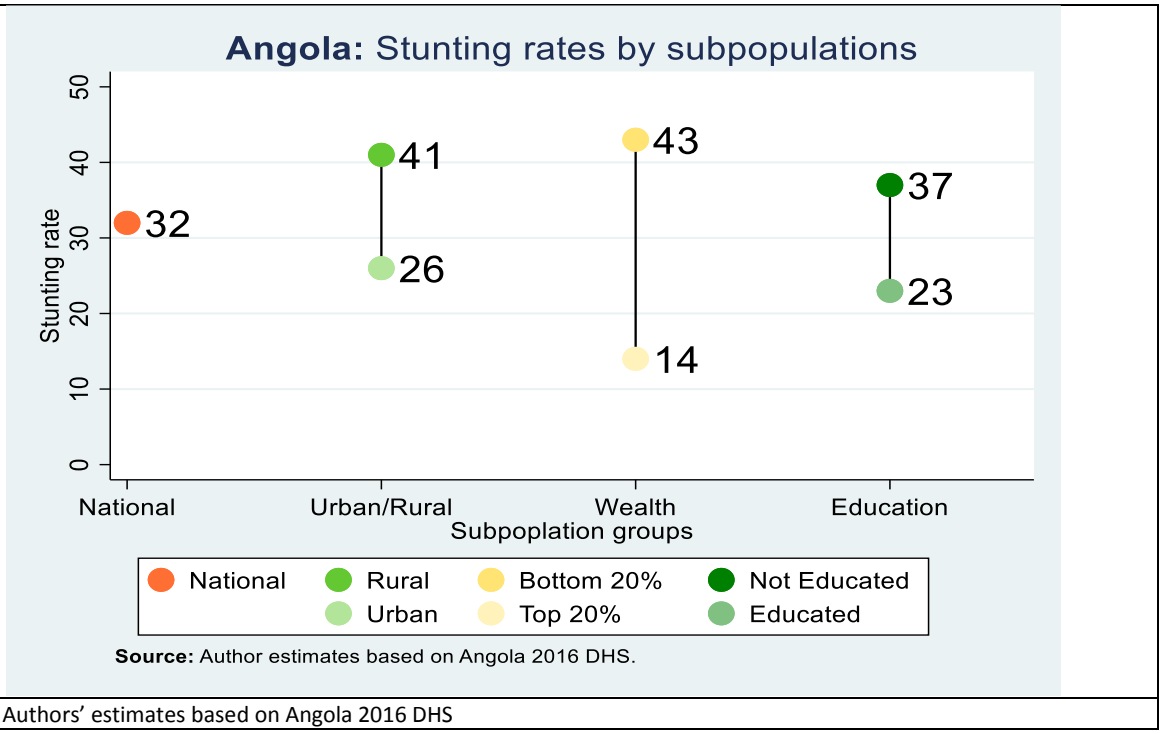


Source: IDREA 2018/19 (authors' calculations)

Given the critical importance of intervening earlier in a child's life to prevent growth faltering, the analysis and discussion in this policy note will focus on the prevalence of stunting rate and on access to the underlying determinants of nutrition among children between 0 and 23 months of age.[30]

Stunting rates among children less than 2 years of age in Angola, are higher in rural areas compared to urban areas, higher among boys compared to girls, and higher among children whose mother has less than 7 years of education (Figure 97). Rural areas have a higher prevalence of stunting than urban areas, 41 percent versus 26 percent, respectively. Differences in stunting levels can be seen according to maternal education as well—23 percent of children whose mothers have more than 7 years of education or higher are stunted, while the prevalence rises to 37 percent of children whose mothers have less than 7 years of education.

Figure 97: Differences in stunting in Angola by socio-economic characteristics

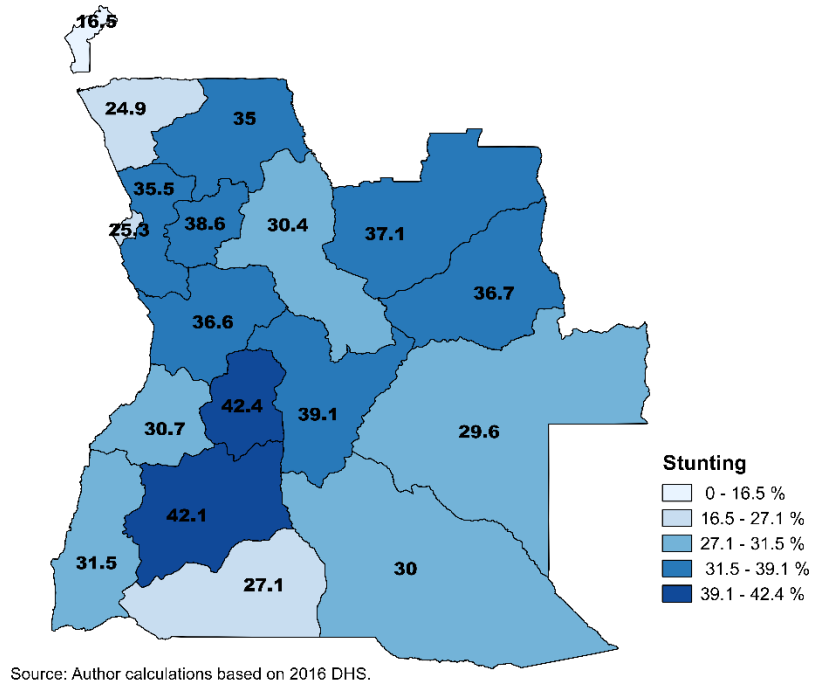


Source: Authors' estimates based on Angola 2016 DHS

Differences in the prevalence of stunting are also stark across provinces. Whereas Angola's national stunting rate of 32 percent is high both in absolute and in relative terms, stunting prevalence varies greatly by region. The prevalence of stunting among children under 24 months of ages is highest in Huambo (42.4 %) and Huila (42.1 %) and lowest in Cabinda (16.5 %) resulting in a difference of 26 percentage points between the most stunted and least stunted region (see Map 4).

[30] An additional reason for focusing on children less than 24 months of age is the fact that the information collected by the DHS on food and care is aimed at the age group. There is no information collected on food consumed for children 24 months of age or older.

Map 4: The prevalence of stunting among children under 24 months of age by province in Angola



Source: Authors' estimates based on Angola 2016 DHS.

There are significant inequalities in Angola in the access to the different indicators of Food and Care, Environment (WASH), and Health. The variety of underlying causes of undernutrition that can be identified in the 2016 DHS of Angola may be classified into three groups: (a) three indicators related to household food security and care practices,[31] (b) five indicators summarizing the household environment (WASH);[32] and (c) five indicators summarizing access and utilization of health services.[33]

Specifically, **health** consists of the following indicators (also summarized by a set of binary variables): (a) mother used prenatal services at least four times while pregnant, (b) child was delivered by a skilled professional, (c) child received a postnatal check within two months of birth, (d) child is compliant with national vaccination schedule, and (e) child sleeps under a mosquito net. Second, **WASH or environment** consists of the following five indicators (also summarized by a set of binary variables): (a)

[31] The measure of food security consists of four broad dimensions: availability, access, utilization, and stability (over time) (Barrett 2009). The best childcare practices are outlined in Engle, Menon, and Haddad (1999). The measures of food security and childcare practices are adapted based on data availability.

[32] This driver summarizes the child's exposure to pathogens in the physical environment where they live and is measured based on the definitions adopted by the WHO/UNICEF Joint Monitoring Program (JMP) and as part of monitoring the Sustainable Development Goals (SDGs). Its components include (1) access to improved drinking water, (2) access to improved sanitation, (3) adequate handwashing practices, and (4) adequate disposal of child's feces, and (5) percentage of household in the child's community without access to any sanitation (i.e. household reverts to open defecation).

[33] This driver summarizes the child's access to skilled medical care to minimize the effects of illness and preventively address health issues, especially those linked with undernutrition, such as diarrheal diseases. The measure encompasses the availability and use of health care services for prenatal, birth, and postnatal care.

access to an improved source of water for drinking, (b) access to basic sanitation, and (c) having adequate disposal of child faeces; (d) living in a community where less than 25 percent of the households openly defecate; and (e) access to a hand washing station with soap. Lastly, **Food and Care** consists of the following indicators, each summarized by a corresponding binary variable (0 = no, 1 = yes): (a) if the child, depending on its age, consumes a minimum acceptable diet (based on types of foods consumed and feeding frequency), [34] (b) whether breastfeeding was initiated within an hour of birth, and (c) whether the child is age-appropriately breastfed at the time of the survey.

Overall, children are less likely to consume an acceptable diet, and more likely to benefit from appropriate child-care practices. Figures 98-100 summarize the extent to which children 0-23 months of age in Angola have access to the specific indicators of Food and Care, Environment (WASH) and Health at the national level, for rural and urban areas in the country, and for children in the wealthiest (T20) and in the poorest (B20) households. Nearly three-fourths of children were immediately breastfed after birth and nearly two-thirds are still appropriately breastfed. The differences in access to appropriate care behaviours across different subpopulation is small. Rural children are three percentage points less likely to be immediately breastfed than urban children, whereas children from the poorest household are two percentage points less likely to be immediately breastfed than children from the wealthiest households. Children living in rural areas or in the poorest households are two and one percentage point more likely to be breastfed than children in urban areas or in wealthiest households, respectively. (See Figure 98).

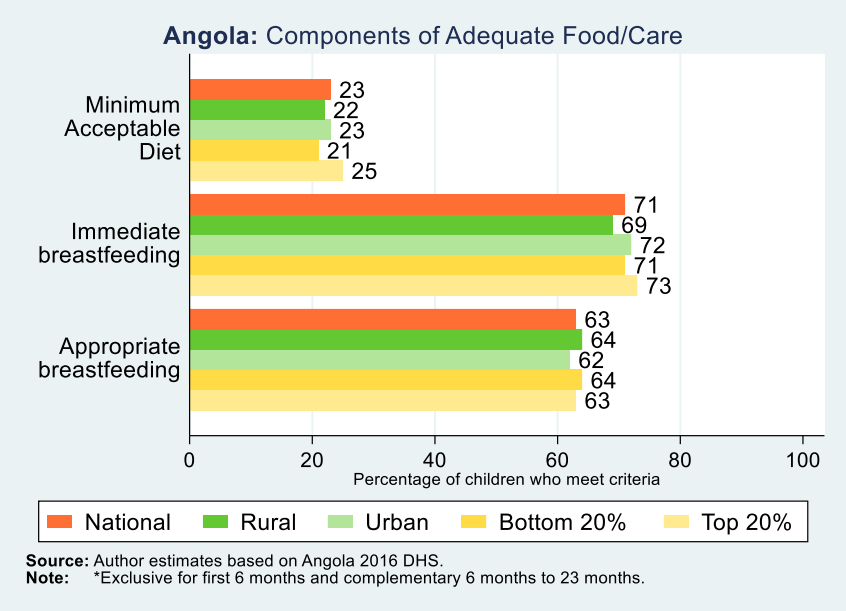
There are large differences in the access to water and sanitation based on location and wealth. While access to improved water is higher (53%) than access to basic sanitation (39%) it still leaves nearly half of the children without access to improved water. Children in urban areas and those in the wealthiest households are far more likely to have access to improved water than children in rural areas or those in the poorest households (34 percentage point and 29 percentage point differences, respectively). Less than one-quarter of children have access to basic sanitation facilities in rural areas or if their household is in the poorest wealth quintile. The differences in access to basic sanitation are large. There is a 59-percentage-point difference between the poorest and wealthiest quintiles and a 32-percentage-point difference between rural and urban households in access to basic sanitation. Even though in the top wealth quintile three-quarters of the children have access to basic sanitation, only one-fifth have their faeces disposed of in a sanitary manner. Handwashing facilities are scarce with only 22 percent of households having access to one. Overall, Angolan children are faced with surroundings that are prone to pathogens. (See Figure 99)

Household wealth and location determine the access and utilization of health care services. Overall about half of Angolan children less than 2 years of age have benefited from a delivery by a skilled professional and have vaccinations up to date. However, the differences in access between urban and rural children are large. They are even larger when comparing children from the wealthiest households to those from the poorest. Whereas 88 percent of mothers from the wealthiest quintile were seen in at least 4 pre-natal check-ups, only 36 percent of mothers form the poorest quintile were seen—a difference of 52 percentage points. The difference in access to births assisted by a skilled professional is even higher at 65 percentage points. The differences for urban and rural mothers are slightly smaller, but still sizable at 33 percentage point difference for pre-natal check-ups and 48 percentage points for

[34] It is important to bear in mind that the Minimum Acceptable Diet (MAD) measure used here is for children under 24 months of age, and it is a composite of the information collected by the DHS on whether children 0-5 months are exclusively breastfed and whether children 6-23 months are receiving the MAD.

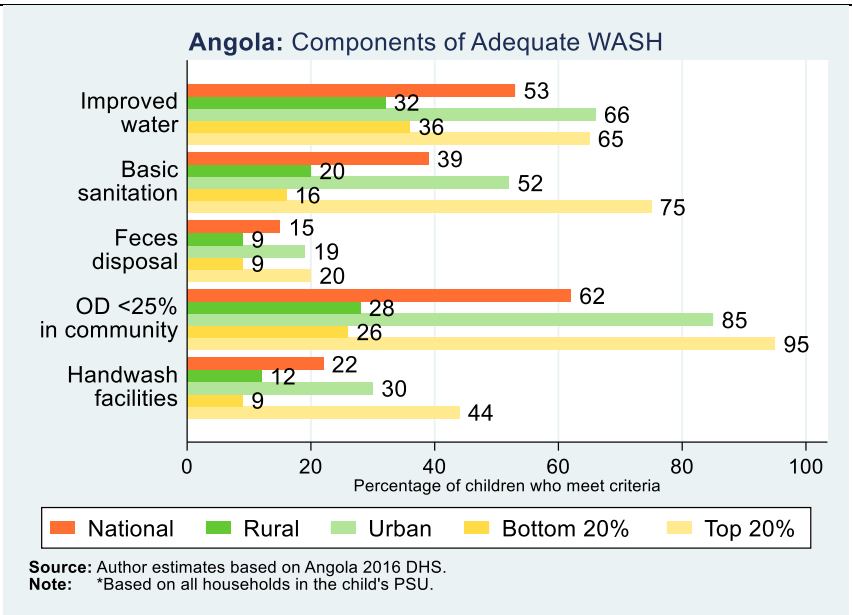
births assisted by a professional. Child vaccination rates are similarly divergent rural children and children from the poorest households are about half as likely to be up to date on their vaccines than urban children and children from the wealthiest households. (See Figure 100)

Figure 98: Access to the different components of food/care (children under 24 months)



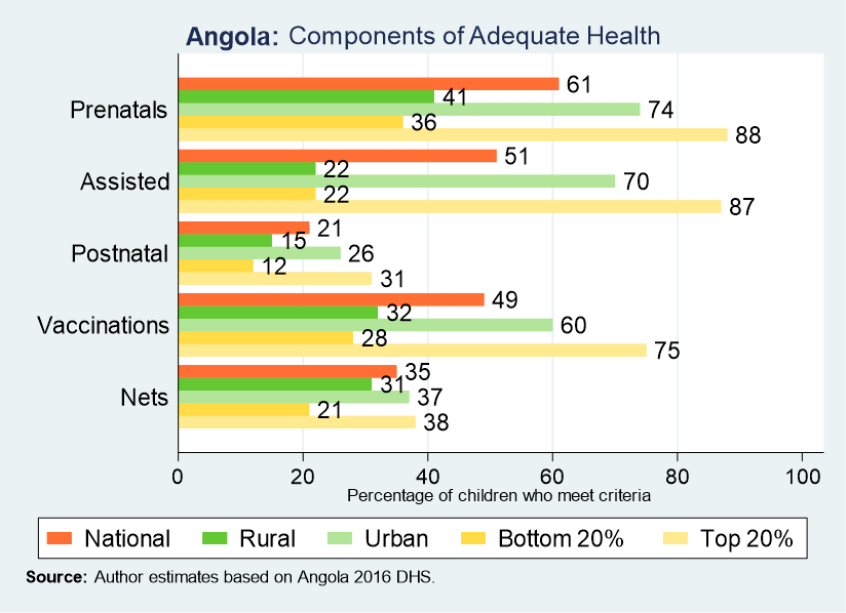
Source: Authors' estimates based on Angola 2016 DHS.

Figure 99: Access to the different components of WASH (children under 24 months)



Source: Authors' estimates based on Angola 2016 DHS.
Note: OD stands for Open Defecation

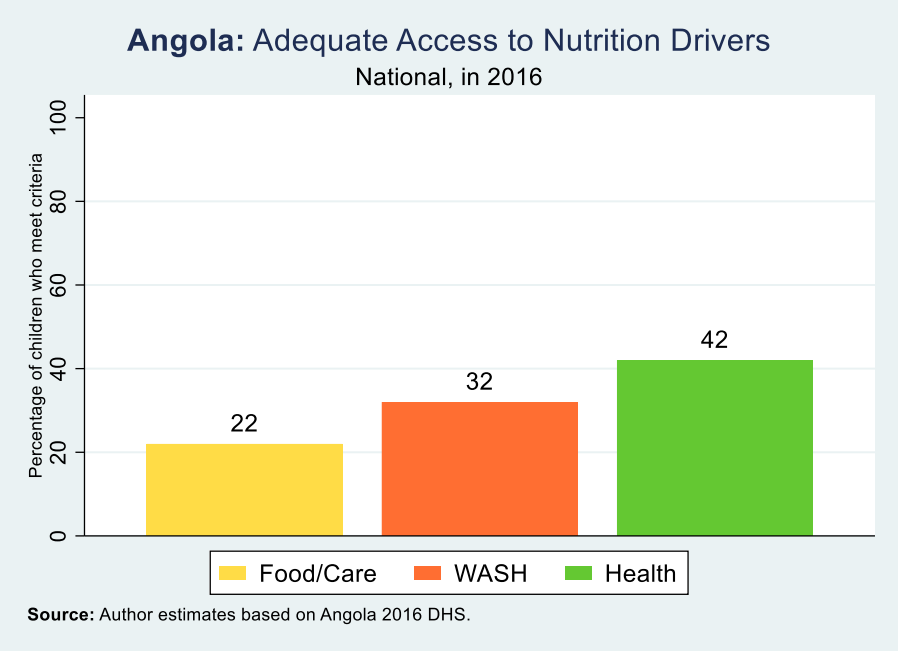
Figure 100: Access to the different components of Health (children under 24 months)



Source: Authors' estimates based on Angola 2016 DHS.

Grouping the indicators (of the underlying causes of undernutrition) in terms of access adequate level to each of the three drivers of nutrition yields a picture that is particularly useful at the sectoral level, in spite of its coarseness (see Figure 101). By necessity, the aggregation of 13 different determinants of nutrition into three aggregate groups (food/care, WASH, and health) involves several decisions that can be questionable. The criteria applied for aggregating the sub-components into broader groups were based on practical considerations. First, the three aggregate groups (food/care, WASH, and health), arguably, correspond to the activities and operations of different sectors. Second, the thresholds used to identify whether a child has access to 'adequate' food/care, 'adequate' WASH, or 'adequate' health were rather lax to allow a sufficient number of children in the different groups and/or combinations of these groups. A more detailed discussion of the caveats associated with such an aggregation is contained in chapter 2 of Skoufias et al. (2019). For the rest of the analysis a child is defined as having adequate food and care if it is adequate in MAD and adequate in any one of the two remaining components of food and care: immediate contact with mother's breast and having age-appropriate breastfeeding. Adequate WASH and adequate health are defined as having access to adequate level in any 3 of the 5 components of WASH or health. Based on the preceding aggregation, 22% of children less than 24 of age have access to adequate food and care, 32 % have access to adequate WASH and 42% access to adequate health (see figure 101).

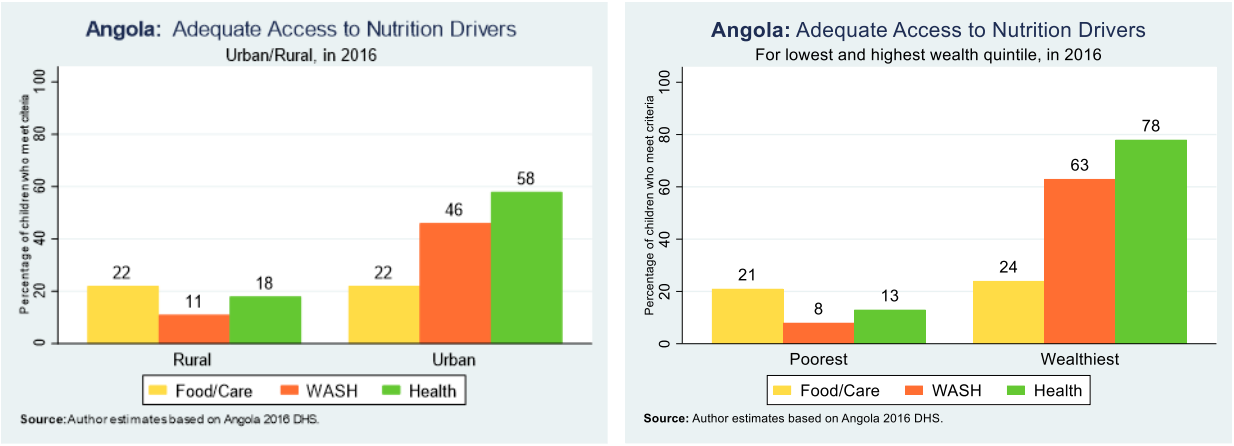
Figure 101: Access to adequate food/care, WASH, and health (children under 24 months)



Source: Authors' estimates based on Angola 2016 DHS

There are inequalities in access to adequate food and care and health between rural and urban areas. The inequalities in access to adequate levels in the drivers of nutrition are especially pronounced between poorer and wealthier households in Angola (Figure 102). The differences in access to adequate levels of drivers is in line with the differences in access to the individual components of the drivers (Figures 98-100).

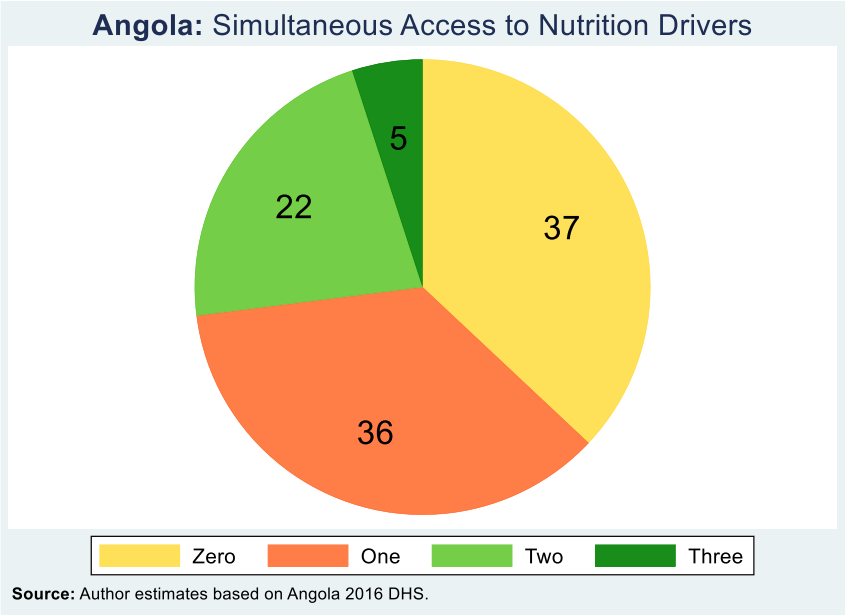
Figure 102: Level of access to Food & Care, WASH, and access and utilization of Health services in Angola (children under 24 months)

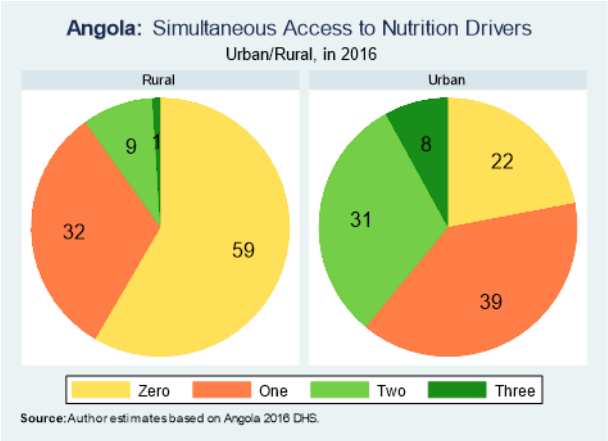


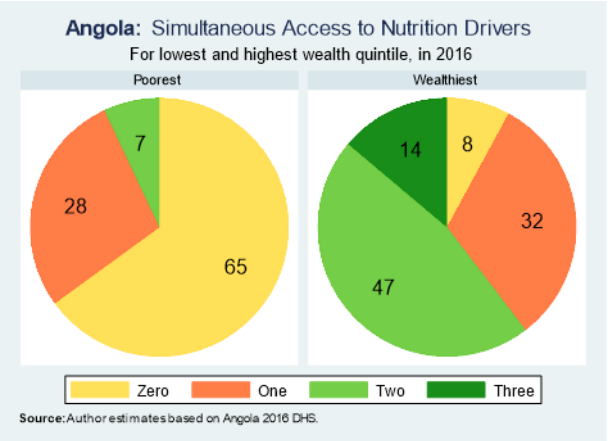
Source: Authors' estimates based on Angola 2016 DHS

Only 5% of the children in Angola, less than 24 months of age, have adequate levels of all three drivers of nutrition at the same time. In contrast, 58% of the children have simultaneous access to adequate levels of one or two nutrition drivers, and 37 % do not have access to an adequate level of any of the three nutrition drivers (Figure 103). These inequities in simultaneous access to nutrition drivers are more pronounced comparing children in urban and rural areas and children in wealthier and less wealthy households. In rural areas, nearly six in ten children do not have access to any of the three drivers and only 1 percent have access to all three. In comparison in urban areas about two in ten children do not have access to any driver and 8 percent have access to all three. The differences are starker when comparing by household wealth. No child in the poorest wealth quintile has access to all three determinants and two-thirds have access to none. In comparison, 14 percent of children in the wealthiest households have access to all three drivers and less than 0ne-tenth have access to none. These differences are driven by access to the health and WASH components.

Figure 103: Simultaneous access to one or more nutrition drivers in Angola (children under 24 months)





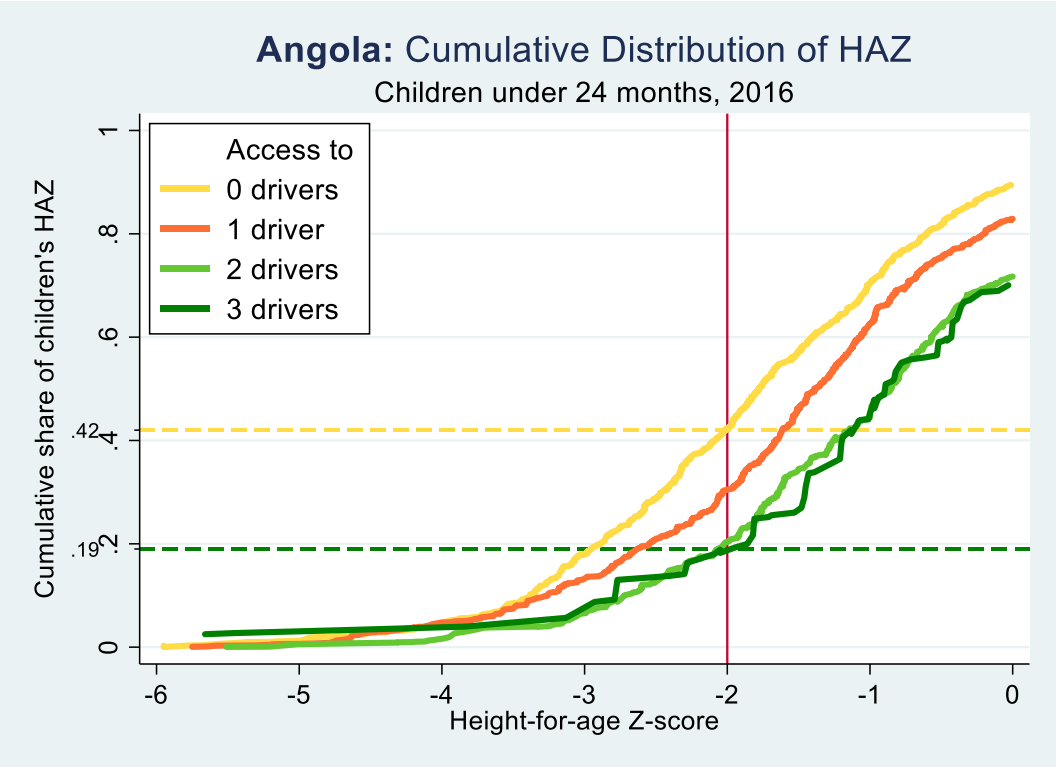


Source: Authors' estimates based on Angola 2016 DHS

In Angola, as in most SSA countries, simultaneous access to more nutrition drivers is associated with lower stunting rates (see Figure 104). Put differently, the prevalence of stunting among children with simultaneous access to adequate levels of all three nutrition drivers is significantly lower than the prevalence of stunting among children who do not have access to adequate level in any of the nutrition drivers. The patterns of correlation between stunting and access are best summarized by the cumulative density function (CDF) of HAZ of groups of children with access to different numbers of nutrition drivers in Angola.[35] The horizontal axis contains the range of values of HAZ scores in the sample of children while the vertical axis is the cumulative fraction of children with HAZ less than a given value of HAZ. The vertical red line at −2 denotes the value of the threshold used to define stunting. A child is considered stunted if his/her HAZ score is less than -2 standard deviations (s.d.) from the reference population. The yellow horizontal line denotes the point of intersection of the CDF of children with access to none of the nutrition drivers with the −2 threshold for stunting while the green horizontal line denotes the point of intersection of the CDF of children with simultaneous access to all three nutrition drivers with the −2 threshold for stunting. Thus, children with access to none of the three drivers have a stunting rate just over 40%, whereas children with access to adequate levels of to two or all three nutrition drivers have a stunting rate of less than 20%. It is important to bear in mind that the patterns emerging from a comparison of the CDF of HAZ of children with access to either one, two or all three drivers of nutrition are simply correlations and do not imply causation.

[35] The CDF is particularly useful because it allows one to make inferences easily about the general relationship between having access to one or more drivers of nutrition not only for the prevalence of stunting (HAZ ≤-2) but also for the prevalence of severe stunting (HAZ ≤-3).

Figure 104: Access to 0 versus 1 or 2 or all 3 drivers of nutrition and the prevalence of stunting (children 0–23 months)



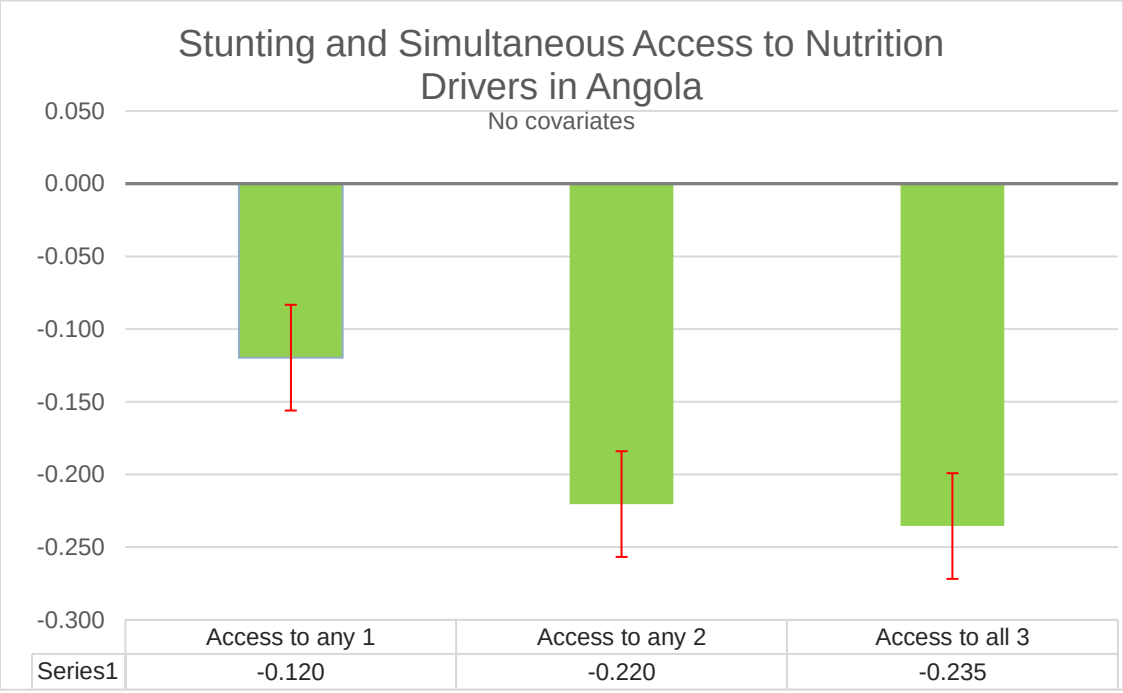
Source: Authors' estimates based on Angola 2016 DHS.

The greatest reduction in stunting in Angola is associated with providing access to any one nutrition driver to the group of children that are most deprived in terms of access to nutrition drivers. In the context of budgetary constraints, these results have important implications for the targeting and the sequencing of sector-specific interventions in target areas (or populations) in Angola.[36] Figure 105 graphs the declines in the stunting rate associated with access to either one, two or all three of the nutrition drivers without controlling for the influence of child and household characteristics. Consider, for example, the choice between allocating the same resources between two groups of children that are otherwise identical except for the number of nutrition drivers they have access to: group A composed of children that have inadequate access to all three nutrition drivers (the reference group), and group B composed of children that have adequate access to only one of the nutrition drivers. The estimated marginal effect of −0.12 associated with "Access to any 1" implies that the probability of stunting for a child with access to any one driver is 12 percentage points lower than the probability of stunting in the reference group of children with inadequate access to all three nutrition drivers (or with access to none). The coefficient −0.22 associated with "Access to any 2" implies that the probability of stunting among children with access to any two of the drivers of nutrition is 22 percentage points lower than the probability of stunting among children with inadequate access to all three nutrition drivers. This implies that there is a decline by 10 percentage points in the probability of stunting associated with having access to two drivers compared to one driver (−0.22−(−0.12) = −0.10). Thus, provided the costs

[36] The full set of estimates under alternative specifications is presented in Appendix E.

associated with providing access to one additional nutrition driver to group B are equal to the costs of providing access to one driver to group A, a slightly greater decline in stunting can be accomplished by targeting the limited resources to provide access to any one driver to group A. A similar argument applies when comparing the marginal effects associated with access to 2 drivers (-0.22) versus access to all 3 drivers (-0.235). The reduction in stunting associated with providing access to all three nutrition drivers to a group (say group C) of children that already have a access to two nutrition drivers is 1.5 percentage points (−0.235−(−0.22) = −0.015) much lower than the decline in stunting associated with providing access to any one driver to group A (12 percentage points) or the decline in stunting associated with providing access to second driver to group B (10 percentage points).

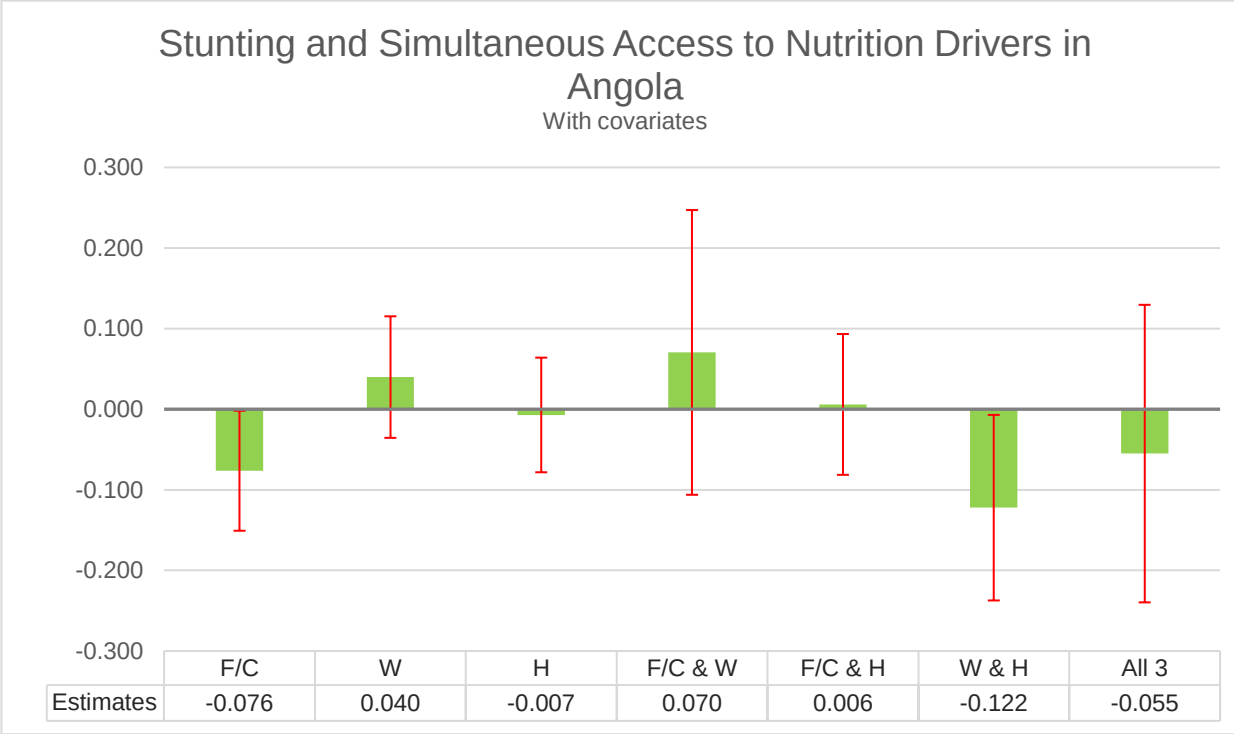
Figure 105: Marginal effects on the probability of stunting of simultaneous access to one or more of the drivers of nutrition: Child level estimates



Source: Authors' estimates based on children less than 24 months old from 2016 Angola DHS.
Notes: Detailed estimates available upon request.

More in depth regression analysis that is more akin to causal inferences, reveals that **increased access to adequate food security and care and simultaneous access to adequate WASH and Health services are associated with a significant reduction in the prevalence of stunting in Angola among children less than 24 months of age.** Controlling for child, parental, and household characteristics as well as for the geographic location of the household within a country, the probability of stunting associated with having simultaneous access to adequate WASH and (W&H) Health decreases by 7.6 percentage points (Figure 106). The apparent greater benefits (in terms of reducing the prevalence of stunting) resulting from the simultaneous provision of access to adequate WASH and Health relative to the provision of adequate food and care (12.2 vs 7.6), need to be weighed against the costs of providing access to this specific combination of these two drivers of nutrition.

Figure 106: Marginal effects on the probability of stunting of simultaneous access to combinations of the different drivers of nutrition: Child level estimates



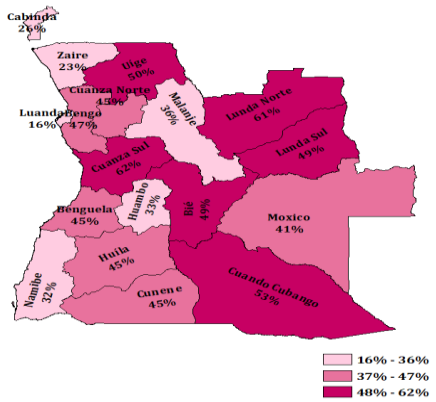
	F/C	W	H	F/C & W	F/C & H	W & H	All 3
Estimates	-0.076	0.040	-0.007	0.070	0.006	-0.122	-0.055

Source: Authors' estimates based on children less than 24 months old from 2016 Angola DHS.
Notes: Detailed estimates available upon request. Regression include child, parental and household characteristics. These are: dummy variables for age (in months), gender, multiple birth, and birth order, the age of the mother, the marital status of the mother, mother's education level (in years), the number of household members, the number of children under 5, the household's wealth quintile, and whether the household lives in an urban/rural area

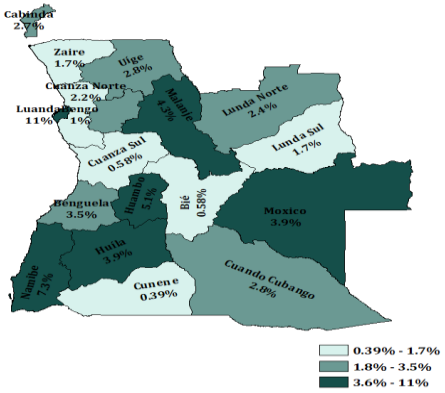
Maps with the prevalence of stunting and access to adequate food and care, WASH and health by region of Angola, are particularly useful for the targeting of nutrition-specific and nutrition-sensitive interventions (see Map 5). The maps of access to adequate WASH, adequate health, and adequate food/care provide information on the overlapping deprivations experienced by children that are essential for identifying important gaps in access, potentially affecting the impact of other nutrition-related interventions. For example, the maps of access to adequate WASH and food/care provide a more holistic view and pinpoint better the geographic areas where inadequacies in WASH or food/care (or in both) may be more prevalent, thus enabling the joint prioritization of operations and improved cost efficiency of interventions. For example, Huíla in the southern part of Angola, has high prevalence of stunting. The maps highlight the fact that Huila has relatively lower access to adequate WASH as well as lower access to adequate health. Along similar lines, the neighbouring region of Brie has a high prevalence of stunting, and like the Huíla, is one of the regions where simultaneous access to all three nutrition drivers is among the lowest in Angola. Alternatively, a region such as Cabinda has a low stunting rate, but relatively higher access to adequate WASH, food/care, and health.

Map 5: Angola: Regional stunting rates and access to food/care, WASH and health (drivers) as defined by indicators

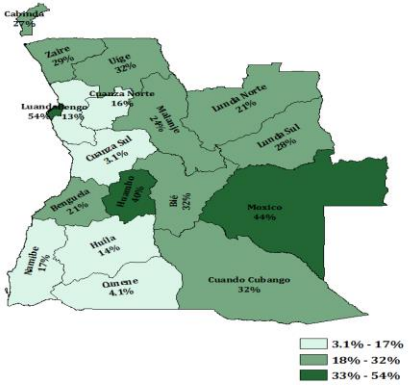
Percent of Children (0-23 months) with Adequate Level in None of the 3 Drivers of Nutrition



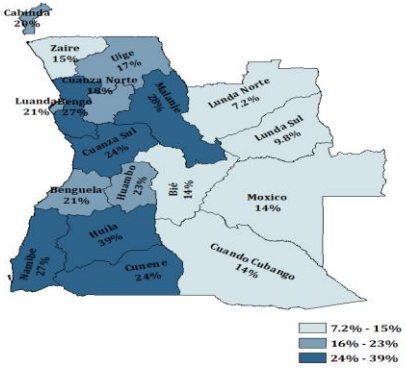
Percent of Children (0-23 months) with Adequate Level in All 3 Drivers of Nutrition



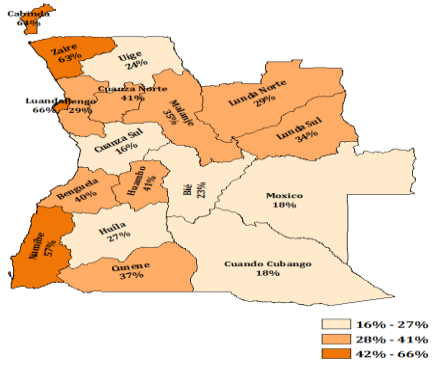
Percent of Children (0-23 months) with Adequate Environment by Region



Percent of Children (0-23 months) with Adequate Food & Care by Region

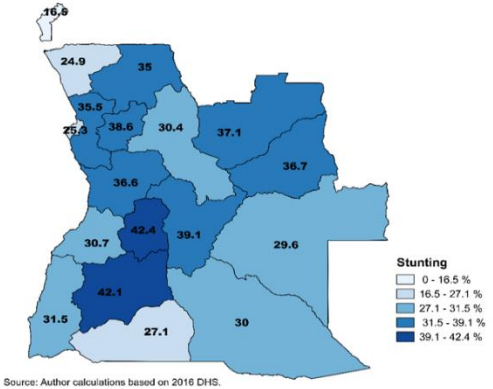


Percent of Children (0-23 months) with Adequate Health by Region



Stunting Rates in Angola (2016)

Children under 24 months of age



Source: Author calculations based on 2016 DHS.

Conclusions

Accessibility appears to play a key role in food security. In areas connected by road, the number of months in which a household experiences food shortages, is strongly correlated with the number of months in which the road is usable. In areas that are not connected by road, accessibility appears to be uncorrelated with food shortage – probably reflecting the fact that those areas are inaccessible all year round. Even when a road exists and is usable, those without means of transporting agricultural produce are more likely to experience food shortages. This suggests that accessibility may be an important factor in determining food security in rural areas and may explain why even some relatively wealth households report food shortages in rural areas.

Accessibility also has knock-on effects on children's education, which itself is a key determinant of future poverty. For children of illiterate spouses, distance increases the likelihood that the child will be out of school. Girls are more likely to be out-of-school overall, but less vulnerable than boys to dropping out as a result of excessive distance – probably because many of them already dropped out for other reasons. If the spouse/mother is literate, the relation between school distance and attendance is a bit more complex: in urban areas greater distance to school is associated with higher attendance up to a distance of around 30 minutes. This may reflect the fact that more motivated parents seek out better schools that are located further away from the home.

Early pregnancy among adolescent girls, combined with poor maternal health and nutrition contribute to child chronic malnutrition. In Angola, childbearing begins early. According to the 2016 DHS, Angolan teenage girls (15 to 19-year-olds) have the highest rate of births per 1,000 girls in the world at 162 births per 1,000 girls. This has serious consequences because, relative to older mothers, adolescent girls are more likely to be malnourished and have a low birth weight baby who is then more likely to become malnourished, and be at an increased risk of illness and death, than those born to older mothers.

Based on the most recent Demographic and Health Survey of 2016, the prevalence of stunting among children between 0 and 23 months of age in Angola is 32 percent. In rural areas 41 percent of the children are stunted meaning that they are excessively short for their age whereas in urban areas only 26 percent are stunted. Children from households in the bottom 20 percent of the wealth distribution have a stunting rate that is 29 percentage points higher than children from households from the top 20 percent of the wealth distribution. Differences in stunting rates can also be seen according to maternal education as well—23 percent of children whose mothers have more than 7 years of education or higher are stunted, while the prevalence rises to 37 percent of children whose mothers have less than 7 years of education.

Differences in the prevalence of stunting are also stark across provinces. The prevalence of stunting among children under 24 months of ages is highest in Huambo (42.4 %) and Huila (42.1 %) and lowest in Cabinda (16.5 %) resulting in a difference of 26 percentage points between the most stunted and least stunted region.

The differences in the prevalence of stunting among children are accompanied by inequalities in access to adequate food and care, health services and WASH services between rural and urban areas. The inequalities in access to adequate levels in the underlying drivers of nutrition, the health sector, agriculture, education, social protection, and water, sanitation, and hygiene (WASH), are especially pronounced between urban and rural areas and poorer and wealthier households in Angola.

An emphasis on reducing poverty is only a necessary but not a sufficient condition for the reduction of chronic malnutrition in Angola. An acceleration of the progress towards reducing chronic malnutrition, requires simultaneous access to the underlying drivers of nutrition. Large scale "nutrition sensitive" interventions in these sectors will have to be able not only to address the key underlying determinants of nutrition effectively, but also contribute to enhancing the impacts of "nutrition-specific" interventions (Black et al., 2013).

Only 5% of the children, less than 24 months of age, have adequate levels of all three drivers of nutrition at the same time. In contrast, 58% of the children have simultaneous access to adequate levels of one or two nutrition drivers, and 37 % do not have access to an adequate level of any of the three nutrition drivers.

In Angola, the greatest reduction in stunting in Angola is associated with providing access to any one nutrition driver to the group of children that are most deprived in terms of access to nutrition drivers. In the context of budgetary constraints, these results have important implications for the targeting and the sequencing of sector-specific interventions in target areas (or populations) in Angola. More in depth regression analysis, reveals that increased access to adequate food security and care and simultaneous access to adequate WASH and Health services are associated with a significant reduction in the prevalence of stunting in Angola among children less than 24 months of age.

Chapter 6: Social Protection in Angola

Social Protection systems can reduce poverty and inequality and build, employ and protect the human capital of those who are poor and vulnerable. They have the potential to help families invest in health and education, earn income and learn skills that help them find good jobs, and cope with shock and unexpected adverse events. They can also create opportunity to empower families to invest in human capital and break the cycle of intergenerational poverty. Numerous studies have demonstrated that social safety nets boost consumption and reduce poverty. In Africa, programs have been shown to increase school attendance substantially, health expenditures, and investments in productive activities.

Social protection interventions have been increasingly used as a primary instrument to protect households exposed to increasing shocks from disasters such as droughts, floods, epidemics and illnesses, international price shocks, conflict, and economic shocks. They create resilience, so that families can manage risk, cope with shocks, and continue to invest in their children, even after tragedy strikes. In Ethiopia, for instance, the government has regularly expanded the PSNP to respond to droughts since 2008. Many countries have used safety net measures to protect the poor from subsidy reforms by introducing new programs (Ghana, Indonesia, Ukraine, Yemen), strengthening their social protection system (Armenia, Brazil, Egypt, India, Indonesia, Iran, Jordan, Nigeria, and Pakistan), and increasing the benefit level of their transfers (Indonesia, Jordan). As of April 3, 2020, a total of 106 countries have introduced or adapted social protection and jobs programs in response to COVID-19.

This chapter analyzes the performance of social protection programs in Angola in terms of the extent to which they manage to realize some of the potentials mentioned above. The spending, coverage, targeting accuracy, and adequacy of the social protection programs and their impacts on poverty, inequality and human capital are examined.

The Social Protection System in Angola is not so effective at reducing poverty or inequality and boosting human capital.

Angola's social protection system is based on Law 7/04 which establishes the legal and institutional framework of social protection of Angola. In its Article 2, the law organizes the system into three pillars or components: Basic Social Protection, Compulsory Social Protection, and Complementary Social Protection. Fuel and utility price subsidies are not part of the statutory social protection system, but expenditure on such subsidies fall under the social protection budget rather than the energy budget as in most countries.

Angola's National Development Plan 2018–2022 includes the key priorities of the social protection policy in Angola in its first Axis "Human Development and Well-being". The axis groups eight policies aiming to reducing poverty and inequality and promoting human development. In 2020, social protection measures will have particular relevance among the policies included in this first axis with the implementation of two cash transfers programs: 'Valor a Crianca' and 'Kwenda', supported by UNICEF and the World Bank respectively.

Table 8: National Development Plan Execution, 2019: Human Development Axis

National Development Plan. First Axis: Human Development	Execution (%)

Human Development	83
Population	70
Education	125
Human Development	82
Health	108
Social assistance and Protection	40
Housing	48
Culture	79
Sport	110
Source: State Budget law, 2020	

Institutional arrangements and financing of programs is complex.

Despite progress, Angola's social protection system is still highly fragmented, with a variety of small-scale programs and activities involving a wide range of institutions. The Ministry of Social Action, Family, and Promotion of Women (Ministério da Acção Social, Família e Promoção da Mulher, MASFAMU) is the main institution responsible for coordinating the implementation of social policies in Angola). Angola's 2025 Strategy the Integrated Local Development and Poverty Reduction Program (Programa Integrado de Desenvolvimento Local e Combate à Pobreza - PIDLCP), comprising several interventions and coordinated by MASFAMU, aims to lift 3 million Angolans out of poverty by 2022. Municipalities receive a monthly budget of 25 million kwanzas to implement multi-sectoral interventions. However, there are persistent challenges with the implementation, harmonization and effectiveness of programs

To reduce program fragmentation and duplication, Angola has, over the last year, reorganized its social safety net interventions by consolidating and unifying programs that accomplish similar objectives. MINARS, which was the government institution with the primary responsibility for social protection programs, and the Ministry of Family and Promotion of Women (*Ministério da Família e Promoção da Mulher,* MINFAMU) were merged into the new MASFAMU. Programs that used to be implemented by these ministries as well as other government institutions were also merged into larger, less fragmented programs. MASFAMU consolidated a total of 44 programs and projects into 12 programs. However, an additional effort needs to be made to consolidate activities in two of the three major programs with the greatest impact. Such consolidation should be based on a rigorous evaluation of the programs.

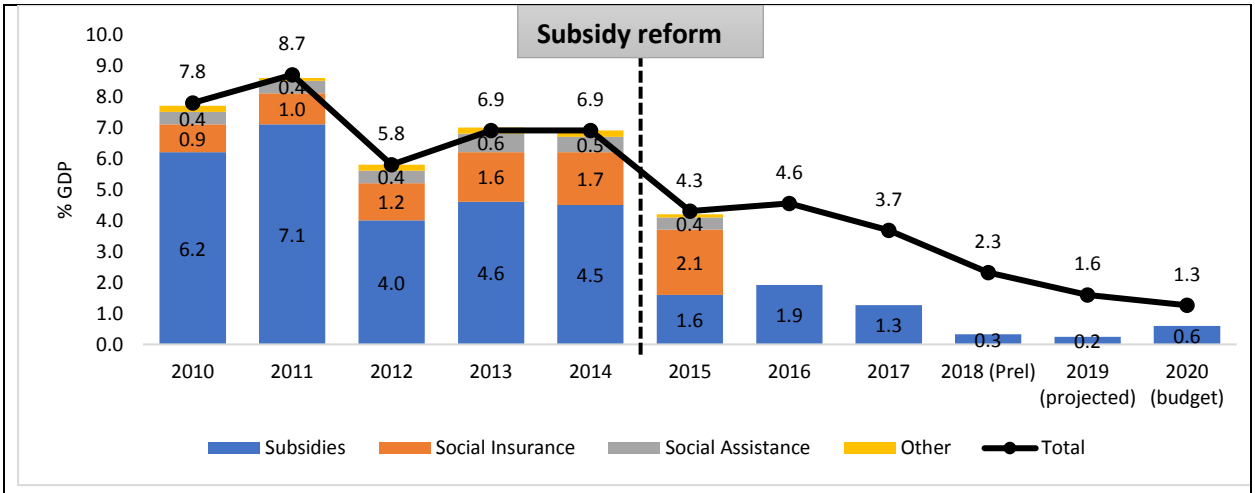
MASFAMU is leading the consolidation of the social protection sector and building the key blocks for a social protection system. In May 2019, the government approved the decree for the creation of the Social Registry (*Cadastro Social Único - Decreto Presidencial n.º 136/19, de 5 de Maio)* under the coordination of MASFAMU which is a key tool to support outreach, intake, registration, and determination of potential eligibility for social programs. MASFAMU is leading the Municipalization of Social Action (Municipalização da Accäo Social) which promotes a decentralized operational model of social action, with social services that are closer to citizens and promote social inclusion. It involves

elaboration of participatory social diagnosis of vulnerability in the community/municipality; registry of individual into the SIGAS (Sistema de Informação e Gestão da Acção Social) for reference to community services and projects; elaboration of the Municipal Social Charters (contains the list of different services/state, private, social facilities, and opportunities); elaboration of the Municipalities of Social Action's plans to promote and offer services designed/adapted to the diagnosis of vulnerability; continuous follow-up; and evaluation. However, at the present these initiatives are not fully functional and are unfunded. Social Protection Spending

Social protection spending has decreased significantly and is highly regressive. Social protection spending (including pensions, subsidies and social assistance) decreased in the past few years from 7.8 percent of GDP in 2010 to 1.6 percent of GDP in 2019 - from 19 percent to less than 5 percent of total government expenditure. The share of social assistance spending increased in war-related assistance rather than social assistance targeted to the poor and vulnerable. Price subsidies have historically represented the largest share of social protection budget, but since 2015, social insurance (military and social security pensions for the public sector) accounts for the bulk of social protection spending. The contributory pension schemes account for 70 percent of expenditure in the sector. Only 0.3 percent of GDP was dedicated to social assistance targeting the poorest, which is significantly below the average allocation for Africa (1.3 percent).

Overall, the poor and the young do not seem to be well served by Angola's social protection system and the country's social protection spending could be much better aligned with its social needs. Social protection spending disproportionally benefits the elderly who represent only 2 percent of the total population. The share of social protection spending targeting the elderly accounts for 57 percent of the total social protection spending (Figure 108b) with contributory pensions accounting for 50 percent of total social protection spending and war-related social pension for 7 percent. This contrasts with the demographic composition of Angola where the population ages 65 or more represents only 2 percent of the total population. The remaining social protection spending (43 percent of total social protection spending) targets either families or specific vulnerable groups such as children.

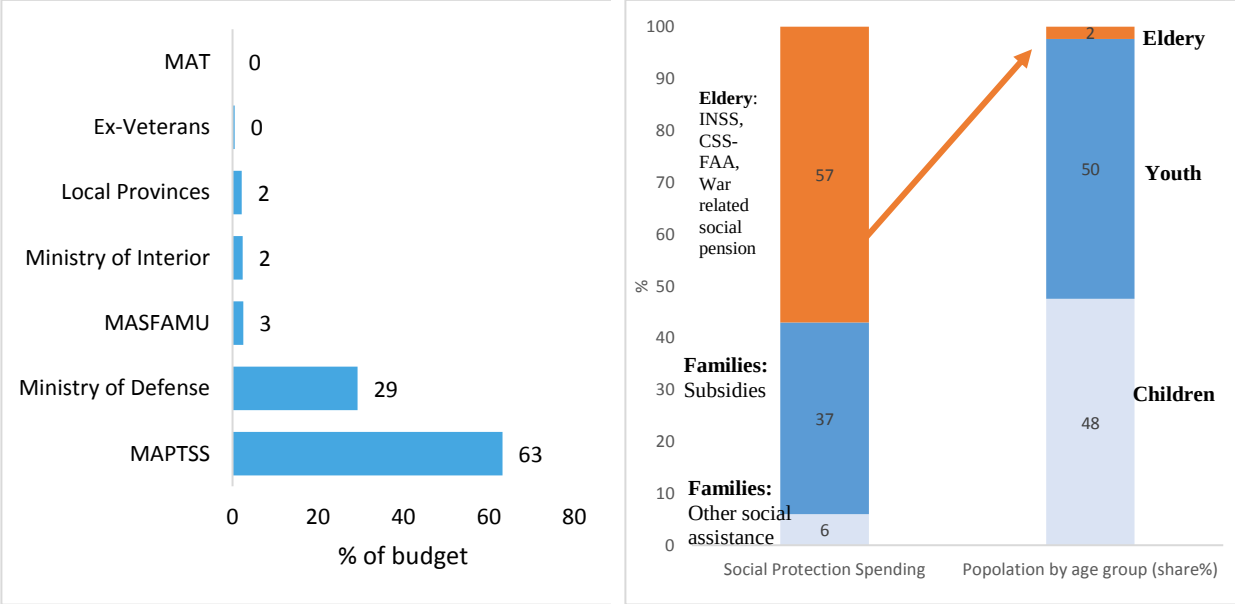
Figure 107: Social Protection Spending as % of GDP 2010-2020



Source: IDREA 2018/19 (authors' calculations)

Figure 108: Social Protection Spending

a. Social Protection Spending by Institution **b. Social Protection Spending and population by age group**



Source: IDREA 2018/19 (authors' calculations)

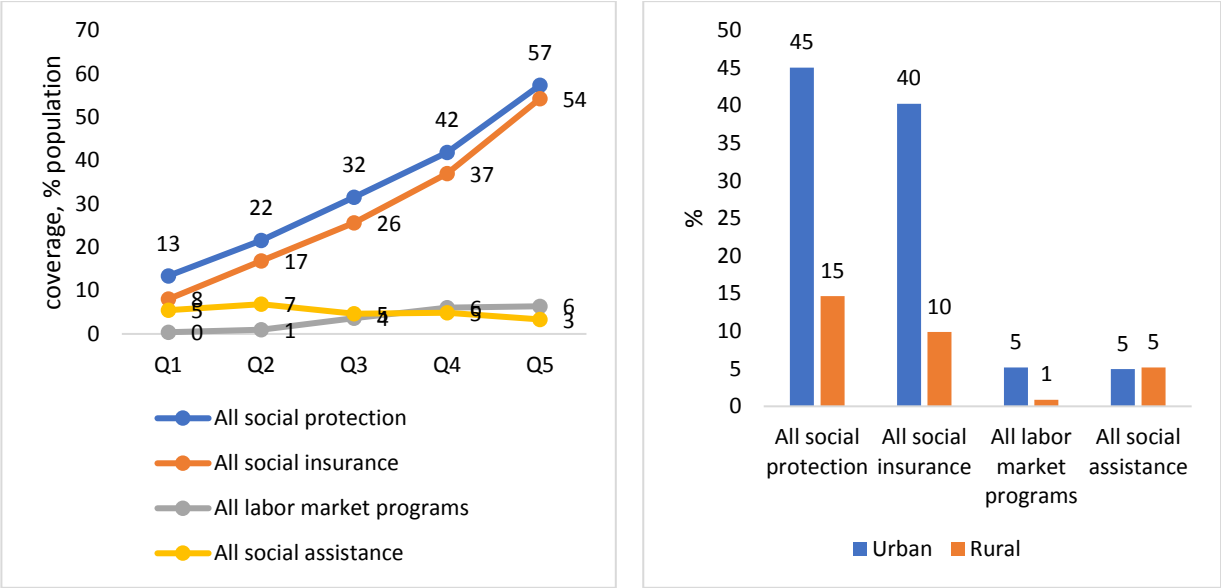
In 2020, the budget allocation for social sector increased and represents 40.7% of the total government expenditure (excluding debt). The 2020 budget is valued at Kz 15 970.6 billion, reflecting an increase of 53.5% compared to 2019. Social Sector will absorb 40.7% of the spending, about 27.6% more than last year. However, as a share of GDP, the social spending remains almost the same. The budget allocation for social Protection, slightly increased from 516 thousand of million kz in 2019 to 531.5 thousands of million kz in 2020. However, the allocation as a shared of GDP and government expenditure, reduced. Moreover, the government is in the process of revising downwards the 2020 budget given the decline in the oil prices.

Social Protection programs

Social protection system is regressive, and coverage of the poor is very low (Figure 109). Most of the social protection coverage comes from contributory pensions which benefit more those in the formal sector. Among the poorest quintile, only 13 percent of the population benefit from social protection and mainly through social insurance benefits. Social assistance and labor market programs have very low coverage. Overall, coverage is higher in urban than rural areas, except for social assistance programs.

Figure 109: Social Protection and Labor program coverage

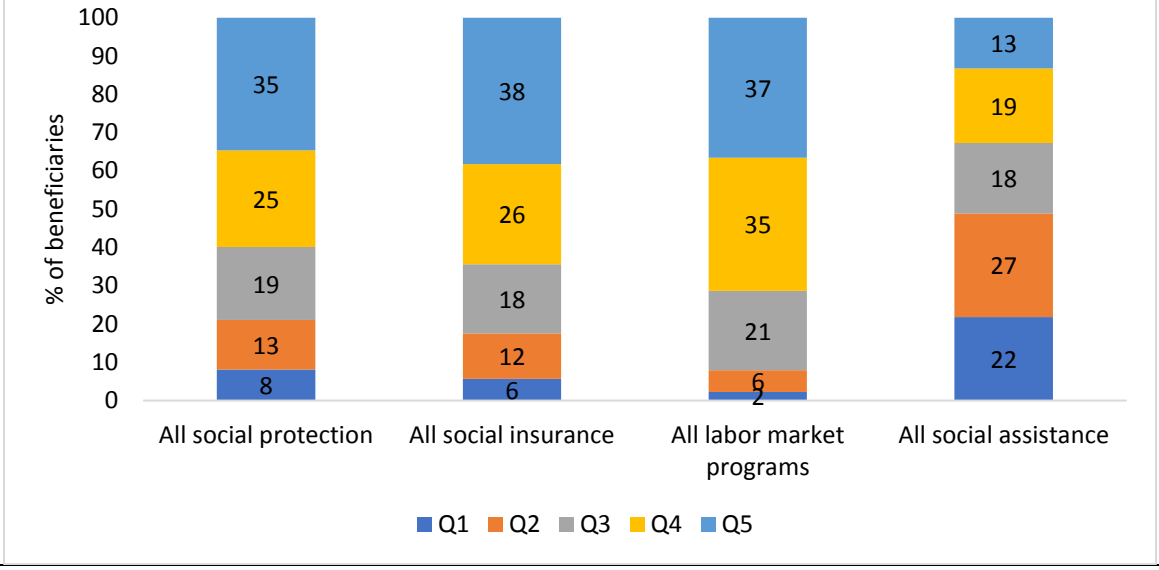
a. Coverage by quintile **b. Coverage by R/U area**



Note: Programs captured in IDREA: Retirement Pension, Medical/Life insurance, Professional training, development or learning course (INEFOP), School meal, Informal credit (Kixiquila), Credits from NGOs, Cooperatives, Kikuia, Donations, Private/Remittances transfers

More than half of social protection beneficiaries are in the top two quintiles (Figure 110). This is driven by social insurance and labor market programs since most of their beneficiaries belong to the richest quintiles. Despite that social assistance programs aim to benefit the poor and vulnerable, less than 50 percent of the beneficiaries of such programs belong to the 2 poorest quintiles. Therefore, there is an opportunity to improve the targeting of social assistance programs.

Figure 110: Targeting Accuracy

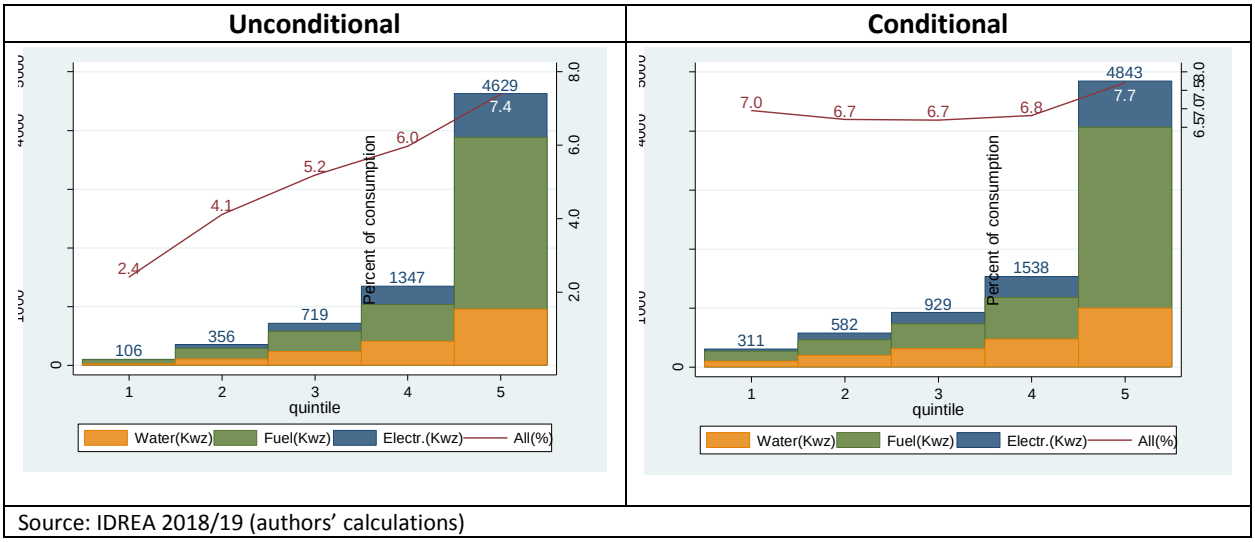


Source: IDREA 2018/19 (authors' calculations)

Subsidies

Angola's price subsidies disproportionately benefit rich households and urban areas (Figure 111). Angola subsidizes fuel, electricity, water, and transportation. Less than 3% of public electricity users and less the 5% of all households that own fuel-dependent assets belong to the poorest quintile. On average, top-quintile households spend more than 3 times as much on subsidized goods as the second-richest quintile and 43 times more than the poorest quintile. However, amongst households that have access to subsidized goods, the share of total consumption going to subsidized goods is fairly constant around 7% across quintiles. Fuel is by far the largest contributor to this situation, accounting for almost two thirds of households' expenditures on subsidized goods. Water is the second-largest subsidized item, accounting for a quarter of households' expenditures on subsidized goods. Urban households allocate more of their household consumption to subsidized products than rural household, 6.5% compared to 2.6%.

Figure 111: Per capita expenditures (Kz/month and % of total cons.), by quintile



Source: IDREA 2018/19 (authors' calculations)

The government has embarked on a bold subsidy reform since September 2014, reducing spending on price subsidies from 4.6 percent of GDP in 2013 to 1.3 percent of GDP in 2017. Domestic retail fuel prices (set by the government) have not been adjusted since December 2015. The government discontinued water subsidies in 2018 (Decreto Executivo 230/18). In July 2019, electricity tariffs were adjusted (Decreto Executivo 705/15). The continuity of the subsidy reform is associated with the implementation of a large-scale cash transfer program to compensate around 1 million families from the shock of the subsidy reform. The cash program is one of the components of a social protection project for USD 320 million financed by the World Bank.

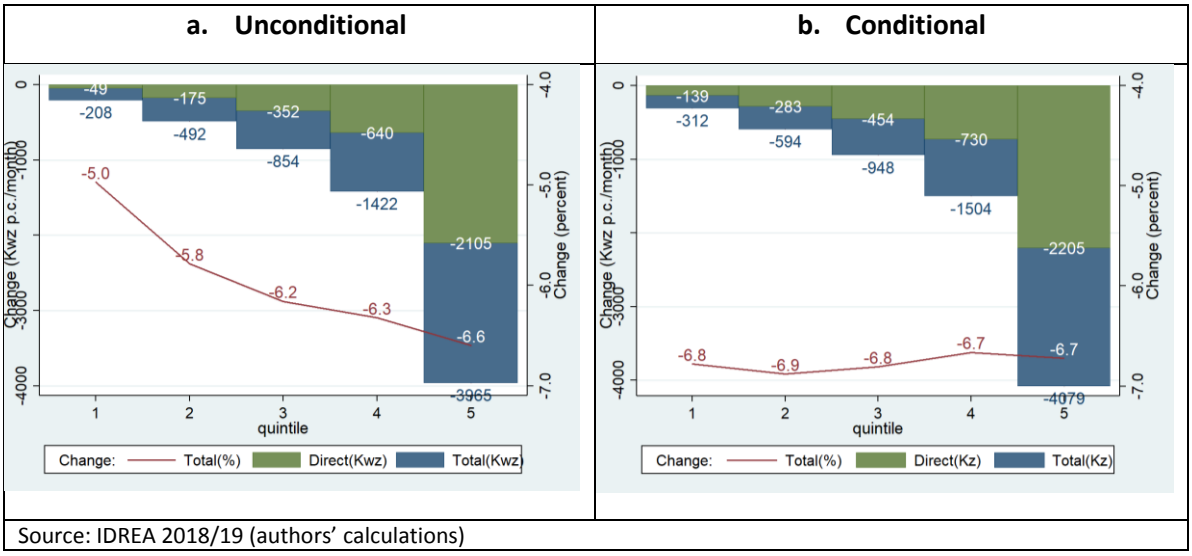
In order to estimate the likely impact of changing or removing public subsidies for water, electricity and fuel, micro-simulations were carried out. Two types of impacts were modelled, namely, direct impacts and indirect impacts. Direct impacts due to increases in the price of fuel, water and electricity, indirect impacts on the consumer prices of other goods and services produced using these factors as input.

The planned subsidy reforms could lead to a significant loss of purchasing power of between 5% and 7% for all quintiles in Angola and a 2 percentage points increase in the national poverty rate. Among those who have access, the reform would mostly impact those in the top quintiles than the bottom quintile (4,079 kz per person per month compared to 312 kz per person per month) but as a share of their consumption, the impact is almost the same, 7% change of total consumption. The fuel subsidy reform will account for the largest loss in purchasing power between 44% to 66% of the total loss and almost two thirds of the indirect impact. The proposed reforms could lead to a 3 percentage point increase in the national poverty rate from 32.3% to 35.4 %. Amongst households that currently have access to public subsidies, the impact would be even larger, raising the poverty rate by one fifth to 19.8% (from 16.5%).

Urban areas will be more negatively impacted than rural areas, both in absolute terms and proportional to current poverty rates (Figure 112). Poverty rate in urban area will increase from 17.8% to 21.1, rural areas will experience an increase of 54.7% to 57.6%. This reflects the significantly larger share of subsidized consumption, particularly of water and electricity. Benguela is the province that would see the largest hike in poverty rates as a result of the planned reforms (+8.4 percentage points).

This reflects the fact that this is a relatively poor province with a high share of fuel consumption. Other provinces that would see large (more than 4 percentage points) increases in their poverty rates are: Kwanza Norte and Sul, and Lunda Sul. In all three provinces, it is fuel prices that play the biggest role, followed closely by electricity in the case of Kwanza Norte.

Figure 112: Direct and indirect impact of planned reforms, by consumption quintile



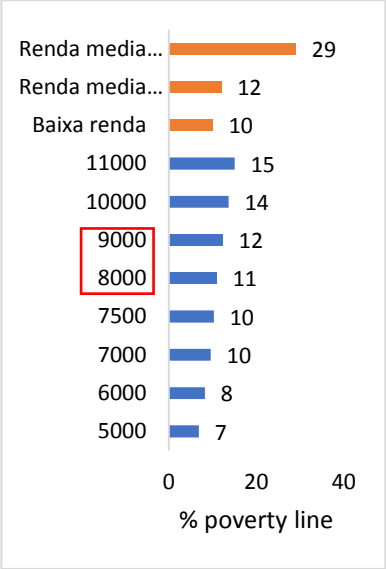
Source: IDREA 2018/19 (authors' calculations)

After the reform, the government's intention is to channel the savings obtained to the promotion of direct subsidies for low-income families. In order to mitigate the effect of changes in the prices of these essential goods on the most vulnerable families, the Government intends to directly allocate financial resources to social safety net programs for the poor. In doing this, the government should consider rechanneling part of the savings from the energy subsidy reform to well-targeted social safety net programs and reassess the social protection expenditures of the military. By using 10 percent of the 2014–2015 savings from the fuel subsidy reforms, the government could double the spending on non-war related social assistance and rapidly scale up the coverage of the safety net programs.

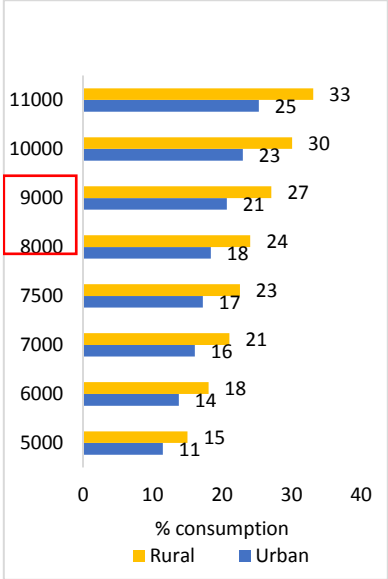
The temporary cash transfer program to mitigate the impact of the subsidy reform would contribute to help poor households smooth consumption as they adjust to the direct and indirect effects of the subsidy removal, increases in basic goods and services prices (Figure 113). The cash transfer was designed to reach one million households with a cash transfers that would last for 12 months, in the form of six bimonthly payments of AOA 10,000 per household. The value of the transfer was revised in January 2020 given the availability of the new household survey. The new value is set on AOA 25,000 quarterly (between 8000 to 9000 kz) which is value that represents around 11-12% of the poverty line (of a household with 6 individuals), 20% the consumption of households in the bottom quintile, and it's aligned with the expected impact amount of the of the subsidy reform. The geographical targeting would thus focus on provincial capitals and the municipalities that concentrate the highest number of urban households in the bottom two quintiles. Given the products affected by the planned price subsidy reform (water, electricity, transport and fuel), urban areas and areas along the economic coastal corridor are likely to be most affected.

Figure 113: Benefit value (generosity) of the temporary cash transfer program

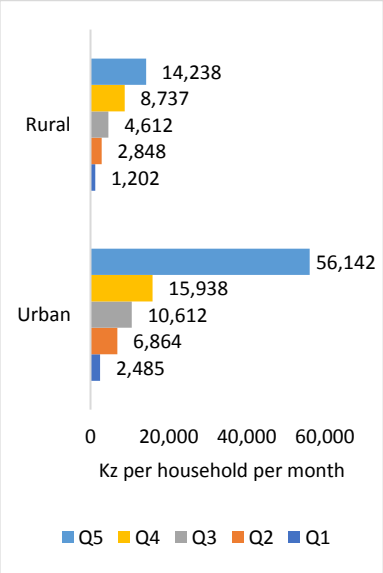
a. Benefit Values as % of the poverty line



b. Benefit values as % of consumption of the bottom quintiles



c. Monthly spending by households in subsidized products



Source: IDREA 2018/19 (authors' calculations)

Contributory Pensions

Social insurance includes contributory pay-as-you-go (PAYG) defined benefit (DB) pensions and other social insurance benefits and allowances. It comprises old-age, early retirement, survivor, and occupational/work injury pensions, along with survivor, maternity, breastfeeding, death, funeral, old-age, and family grants, benefits, and allowances. MAPTSS's National Social Security Institute (Instituto Nacional de Segurança Social, INSS) administered formal private sector workers (including the self-employed) and civil servants' social insurance schemes. Military personnel pension benefits are administered by the Social Security Fund of the Angolan Armed Forces (Caixa de Segurança Social das Forcas Armadas De Angola, CSS-FAA).

Contributory pensions (and other social insurance schemes) spending make up the better part of social protection spending. Nominal and real increases spending between 2010 and 2015 were absorbed almost entirely by government contributions to contributory pensions. The recent increase in spending on pensions for the elderly and veterans benefited a small portion of the population, largely targeted the better-off, and does not necessarily enhance human development of the next generation. Social insurance spending in Angola is 1.5 percent of GDP, which is more than twice the average spending in the Africa region of 0.7 percent of GDP.

Social Safety Net Programs

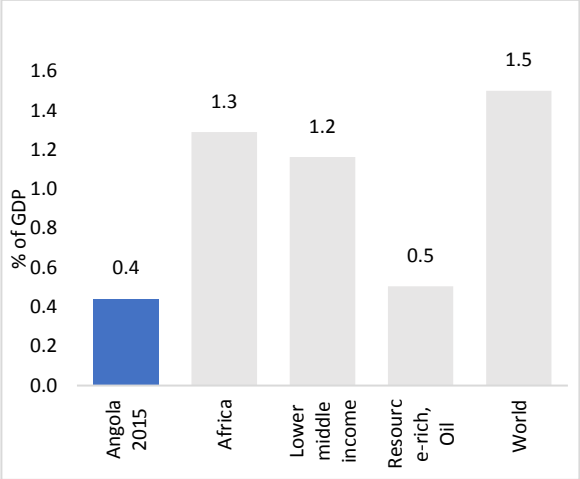
The social assistance financing envelope covers war-related non-contributory benefits and other non-contributory transfers targeted to the poor and vulnerable. War-related non-contributory assistance

benefits civilians and soldiers who became disabled during the civil war, as well as surviving relatives of fallen soldiers and civilians, and the families of those missing. Other non-contributory transfers targeted to the poor and vulnerable include people with disabilities and/or at risk of social exclusion, as part of food security, natural disaster preparedness and mitigation, nutrition, and other small-scale programs overseen by MASFAMU.

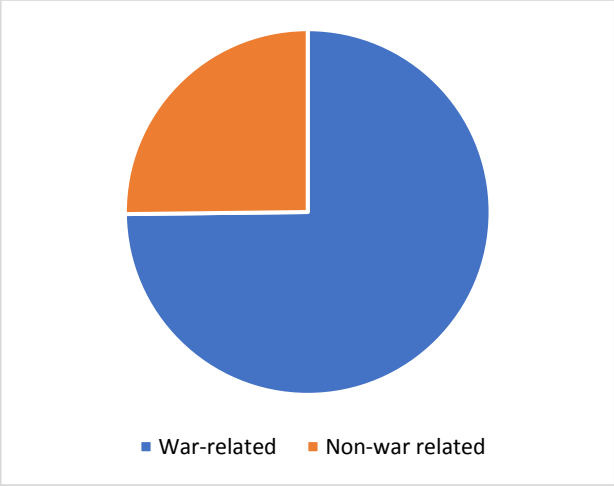
Social assistance spending remained low during the past few years with non-war social assistance spending decreasing overtime. As a share of GDP, social assistance spending decreased from 0.6 percent of GDP in 2013 to 0.4 percent of GDP in 2015 well below the levels in other country group comparators. The government budget for 2020 suggests that less than 0.1 percent of the GDP is allocated to social assistance. In 2019, preliminary numbers suggest that 75 percent of total social assistance spending was allocated to war-related social programs driven by the demining and reintegration of ex-militaries programs. The largest non-war-related program are Support to Vulnerable Families (the Kikuia Card (*Cartão Kikuia*)) and the Child Value cash transfer program (Valor a Crianca) representing 12 and 8 percent of total social assistance spending. The rest of the programs have limited budget allocation.

Figure 114: Social Assistance spending and composition

a. Social Assistance Spending as % of GDP Angola and other country groups



b. Social Assistance Composition, 2019

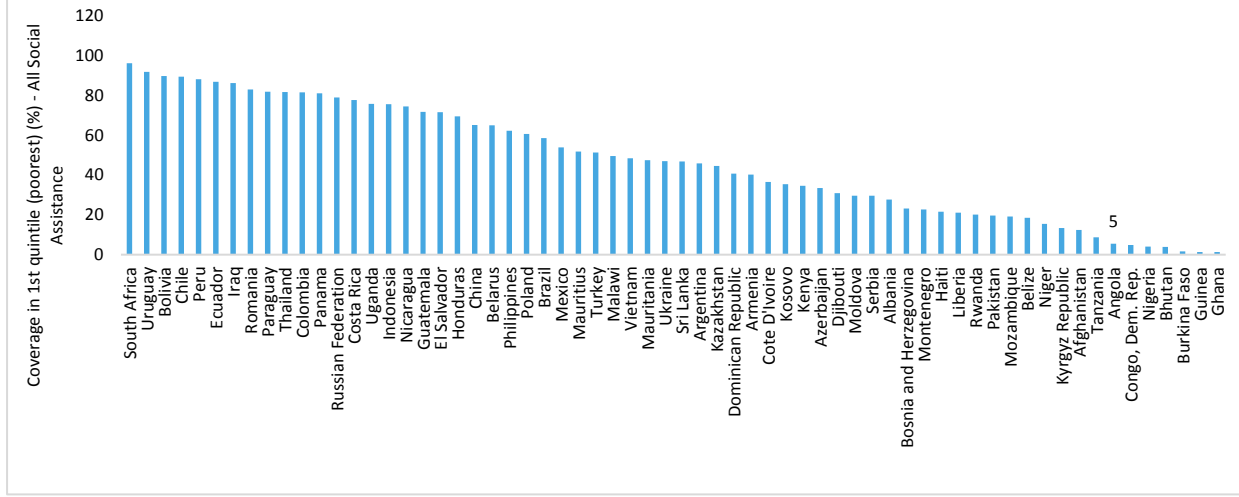


Source: IDREA 2018/19 (authors' calculations)

Coverage of the poor is very low.

Angola's social safety net programs are small and scattered. Angola implements 28 social safety net programs, with little funding. The number of beneficiaries and thus coverage is low. Only 5% of those in the poorest quintile are covered by safety nets programs. The program with the largest coverage is school feeding followed by Cartao Kikuia. The poor barely benefit from the training programs implemented by INEFOP as they benefit mostly people from the top quintiles. Angola is among the countries with the lowest social assistance coverage of the poorest populations.

Figure 115: Coverage of Social Assistance Programs in Angola and other countries



Source:

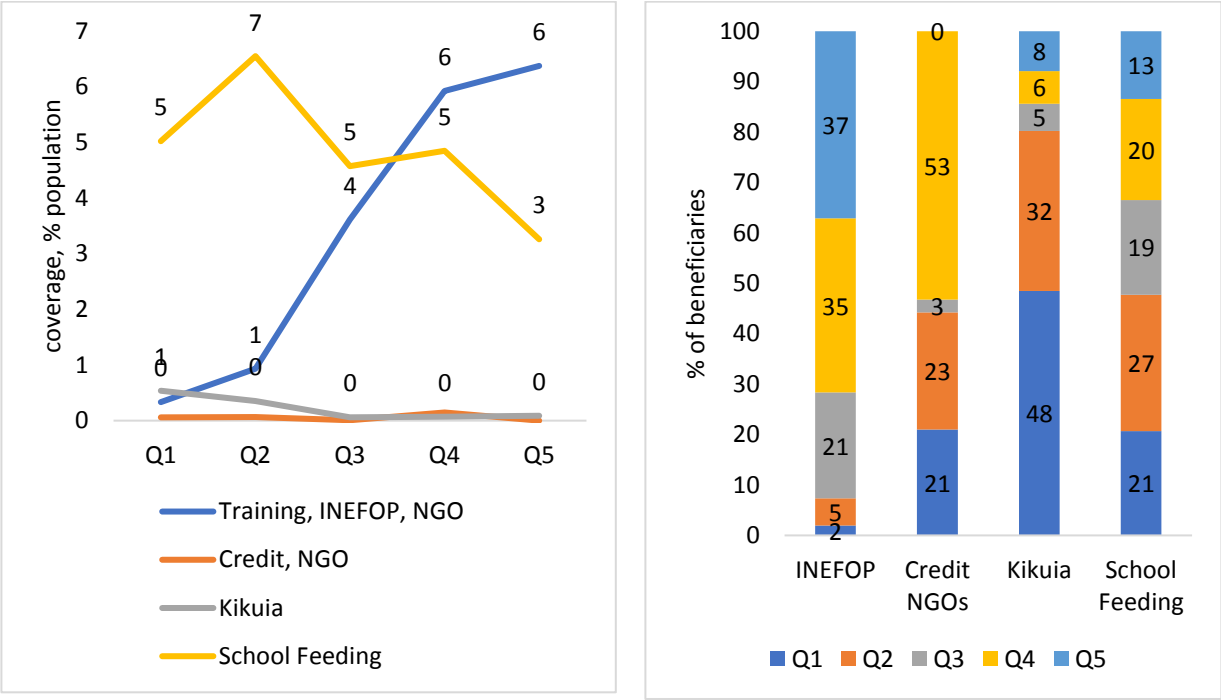
Programs Do Not Successfully Target the Poor.

The target population of the social assistance programs is unclear, and some programs cover at the same time different vulnerable groups. The same program can be directed toward children, the elderly, people with disabilities, women, and/or all at the same time. For instance, the Family Strengthening and Protection Program and Strengthening of Family Competencies (*Programa de Valorização e Proteção da Família e Reforço das Competências Familiares*) targets at the same time the elderly through 'food, clothing, and medical assistance and home cares', the disabled through 'locomotion and technical aids', victims of calamities through 'emergency support the victims of disaster', and vulnerable families and the youth through 'sensitization'. Therefore, it is unclear what the objective of this program is, which benefits can be expected, and who is the target population, which makes it even more difficult to monitor and evaluate the program's effectiveness.

Targeting criteria is mostly based on categorical groups. Most programs target a category of beneficiaries that is so broad that coverage remains low. The *Cartão Kikuia* program is the only program that introduced poverty criteria. However, the criteria were never based on available data or poverty maps, and the decision and selection processes were not documented. Despite this, the program has the better targeting accuracy of all the programs included here as more than 70 percent of its beneficiaries belong to the 2 poorest quintiles.

Figure 116: Coverage and accuracy of Social Safety Net (SSN) programs

a. Coverage of SSN programs by quintile **b.: Targeting accuracy SSN programs**



Source: IDREA 2018/19 (authors' calculations)

Low generosity of benefits and not regular basis.

Program benefits are often not provided in a reliable manner, and the number of beneficiaries and expenditures has overall declined in recent years. All programs experienced a significant decrease in the number of beneficiaries in the last few years. For instance, the Milk and Porridge (*Leite e Papa*), an ex-MINARS (*Ministério da Assistência e Reinserção Social* [Ministry of Social Assistance and Reinsertion]) program, was one of the programs that experience the largest decrease from 28,436 children in 2013 to 2,188 in 2017. The Support Program for Rural Women (*Programa de Apoio e promocao de a Mulher Rural*) is one of the most important social assistance programs but also one of the most unstable: from 55,693 beneficiary families in 2013, it declined to 6,406 families in 2014 and increased to 62,259 families in 2015, and it then further decreased to 344 families in 2016 and 0 families in 2017.

The benefits offered by programs are generally training, services, work and food basket, and professional kits. Several implementation failures have been found. For instance, the Milk and Porridge (*Leite e Papa*) program faced delays and failures in delivery of the goods, the distance to the place of delivery of goods, and generally a lack of accountability and transparency of service delivery. Similar problems were found in the school feeding program. An evaluation of the program found disparities in the number of meals distributed to students by school and municipality. Beneficiaries from the *Cartão Kikuia* program found that their cards were not reloaded as expected, goods were often not available, and choice of goods was limited.

Despite the consolidation of programs, there is still duplication of benefits. For instance, the Protection Program and Strengthening of Family Competencies (*Programa de Valorização e Proteção da Família e Reforço das Competências Familiares*) gives food baskets to vulnerable families while the *Cartão Kikuia* gives a credit card to buy a food basket. Both the Support to Rural Women (*Programa de Apoio e promocao de a Mulher Rural*) and the Economic and Productive Structuring of Rural Communities (*Estruturação Económica e produtiva das Comunidades Rurais*) provide professional kits.

Programs are not effective in reducing poverty and inequality and boosting human capital.

Program impacts have not been rigorously assessed. Administrative data is difficult to get and usually does not allow for accurate monitoring and accounting for activities, beneficiaries, and costs. Delimitation of functions and responsibilities among implementing agencies has not been clearly established, which has resulted in a lack of accountability for resource management and results.

Two flagship safety net programs.

Transferências Sociais Monetárias – Valor Criança"

The Child Value Program was launched in August, within the framework of the Project to Support Social Protection in Angola (APROSOC) with UNICEF. This program consists of social cash transfers that are expected to cover around 20,000 children equivalent to 14 thousand families from 6 municipalities: Bié, Chinguar and Catabola; Moxico, Luchazes and Camanongue; do Uíje, Uíje and Damba. Its main objective is to reduce poverty and social vulnerability of needy Angolan families. The project is led by the MASFAMU, has technical support in the implementation from UNICEF, and has EUR 9 million financing from the European Union. Transfers are made quarterly and will benefit up to 3 children per family, as long as they are under 5 years old, with a monthly fee of Kz 3 000 per child.

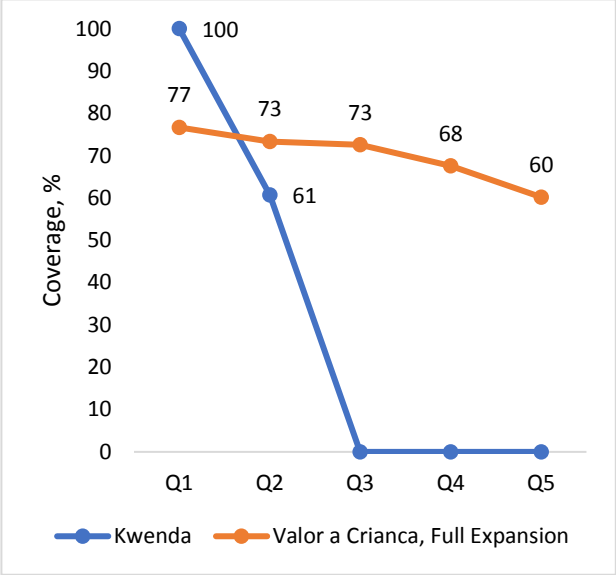
Kwenda Program

The objective of the cash transfer program "Kwenda" is to provide a temporary cash transfer program that aims to mitigate the impact of the subsidy reform on poor populations. The initial target of the program was 1 million households financed by the World Bank. The government plans to expand the coverage of the cash transfer to 600 thousand more families reaching in total 1.6 million households which is the estimated number of poor households in Angola. The cash transfers would last for 12 months. The monthly payment was established at 5000 kz per family but given more recent estimations and data availability, this amount was increased to 8500 kz per family. The cash would contribute to help household's smooth consumption as they adjust to the direct and indirect effects of the subsidy removal, increases in basic goods and services prices. The program will have national coverage. The government is planning the pilot phase in 5 municipalities to test the delivery mechanisms and inform the expansion of the program to the rest of the country.

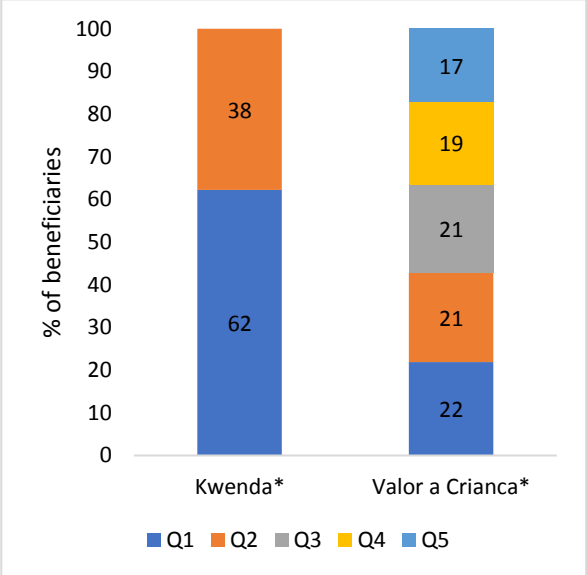
The government is planning the expansion of these programs at the national level, and the simulated coverage impacts are big. Valor a Crianca is categorically targeted while Kwenda program is poverty targeted. Figures 117a and 117b show the coverage and targeting accuracy of the cash transfer programs assuming their full expansion. Kwenda program will cover 100 percent of the poorest quintiles and 61 percent of the second quintile. Valor a crianca will not reach all families in the poorest quintiles given that not all households have children from 0 to 5 years old which is the eligibility criteria to benefit from to the program. Kwenda program will concentrate fully in the 2 bottom quintiles while Valor a Crianca will be distributed in all quintiles benefiting in the same manner the richest and the poorest populations.

Figure 117: Coverage and targeting accuracy of cash transfers

a. Simulated coverage of cash transfers



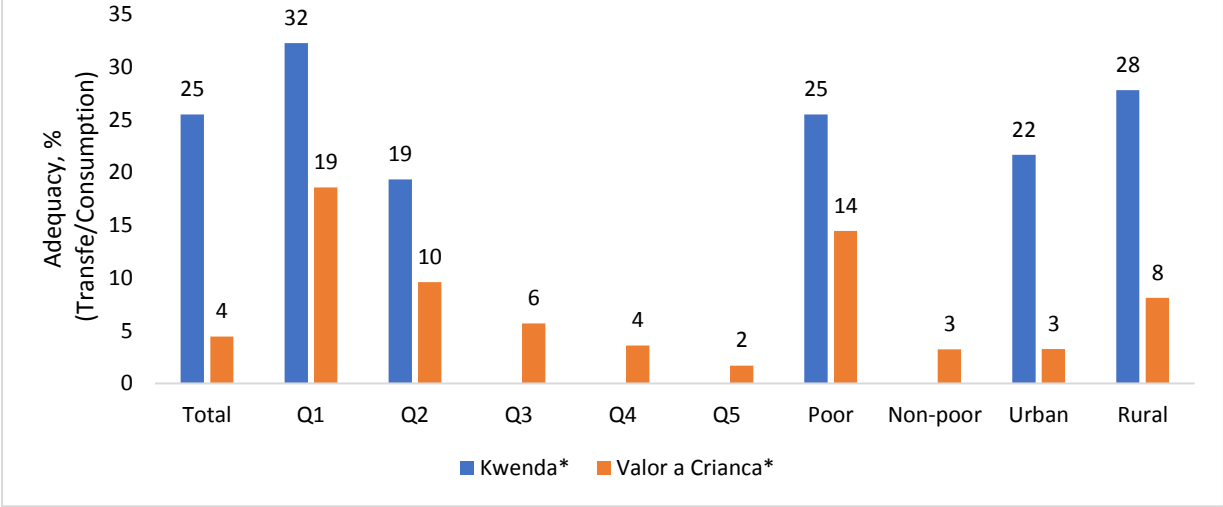
b. Simulated targeting accuracy of cash transfers



Source: IDREA 2018/19 (authors' calculations)

The Kwenda cash program is on average more generous than Valor a Crianca (Figure 118). The Kwenda benefit is flat and is the same for every household, 8500 kz per month. Valor a Crianca gives benefit per child, therefore, the amount a household receives depends on their number of children. As a share of consumption among beneficiaries in the poorest quintiles, the Kwenda program represents 32% of household consumption while valor a crianca represents 19%. The generosity of the program decreases with consumption levels. In the top quintiles, the transfer amount of Valor a crianca is very low compared to their consumption levels.

Figure 118: Simulated Adequacy of the cash transfers

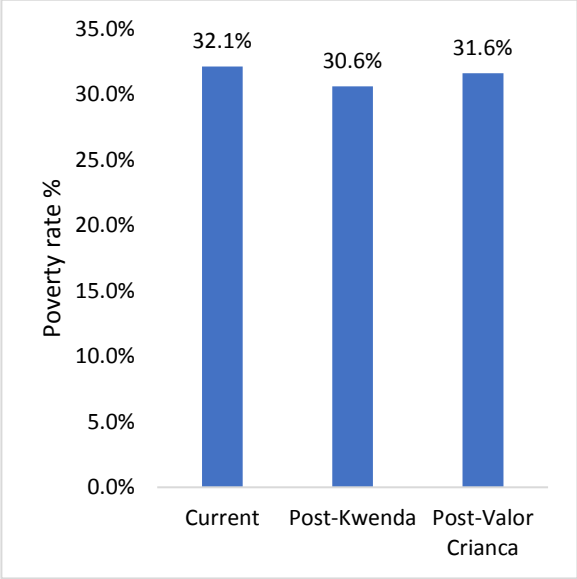


Source: IDREA 2018/19 (authors' calculations)

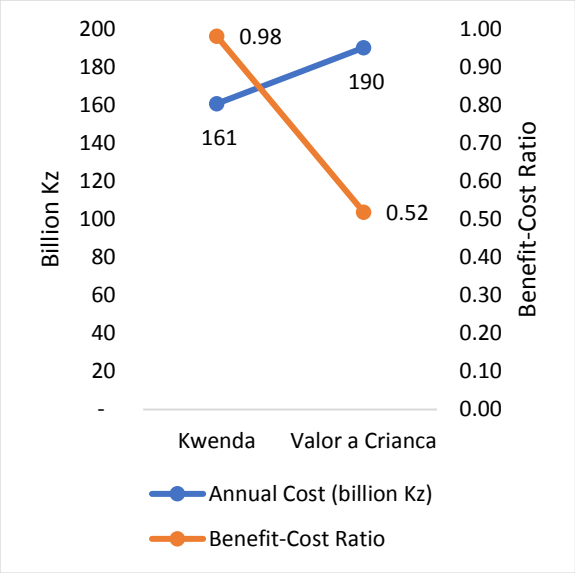
The simulated poverty impacts of both programs show that Kwenda cash transfer has the potential to have a higher poverty impact than Valor a Crianca (Figure 119). With the Kwenda program, the poverty headcount can be reduced from 32.1% to 30.6%, whereas the Valor a Crianca program reduces the poverty headcount to 31.6%. Also, the cost of full expansion of the Kwenda program is lower than the cost of Valor a Crianca. Therefore, with less resources the Kwenda program can achieve larger poverty reduction outcomes; 98 percent of the total amount spent in Kwenda will go towards reducing the poverty gap of poor households while only 52 percent of the amount spent in Valor a Crianca will contribute to reducing poverty.

Figure 119: Simulated Impacts of cash transfers

a. Simulated Poverty Impacts of Cash transfers



b. Simulated Cost-benefits of cash transfers



Source: IDREA 2018/19 (authors' calculations)

Conclusions

Angola has made important progress in establishing a social protection system. The creation of the social registry, investments in information and monitoring systems, consolidation of programs, and introduction of two cash transfer programs are among the most outstanding changes in the past couple of years. In addition, the shift from inefficient, universal price subsidies to effective poverty-targeted social safety nets, and social services to foster investments in human and productive capital and increase the opportunities of poor households to participate fully in the country's development is also remarkable.

However, the sector continues to have limited coverage, insufficient financing, and is highly fragmented. Only 5 percent of the poorest population are covered by safety nets. Moreover, safety net programs are mostly focused on ex-militaries and ex-veterans benefits. Very little is left for the poor and vulnerable especially the youth and children. Aligning the sectors priority with the demographic and poverty needs are imperative**.**

Increasing financing and strengthening the key building blocks of the social protection system should be a priority in the social protection agenda. Government needs to continue its effort in consolidating its Social Registry, defining targeting mechanisms, and a payment system for the cash transfer programs. The delivery systems will allow for a better use of existing resources and promote cost efficiency by improving effectiveness and coordination of interventions, minimizing inclusion errors and reducing operational costs. The social assistance sector requires an increased in budget allocation. The savings of the subsidy reform and the financial support of the cash transfer program to mitigate the impact of the reform could allow the GoA to redirect additional funds for safety nets programs in the short and medium-term.

Support to decentralization is key for the implementation of social protection policies and programs in Angola. Municipalities need to take a leading role in the implementation of social programs. In this sense, support to decentralization of social programs through support to municipalities would be key to ensure effectiveness and efficiency of the system.

The scope of the future expansion of the social safety net system depends on high-level political ownership, and the subsidy reform offers a unique window of opportunity. The political attractiveness of social safety net programs can evolve quickly and may help garnering more support for reforms. By including the social safety net project as an explicit part of macroeconomic policy and subsidy reform the GoA demonstrates its commitment to both diversify and modernize the economy and protect the poor during the transition.

Chapter 7: The potential poverty and human capital impacts of the COVID-19 pandemic and collapsing oil prices in Angola[37]

Intoduction

Angola has high levels of socioeconomic vulnerability to the crisis emerging from. In Angola, there is a considerable fraction of households above the poverty threshold (the non-poor) that are vulnerable to falling into poverty as a consequence of the collapsing oil prices and the COVID-19 pandemic. Moreover, the depth of poverty among poor households (their distance from the poverty threshold) may be further increased by low asset holdings and limited access to basic services, especially in rural areas.

Domestic spread of COVID-19 in Angola is thought to be limited so far, though available data is probably insufficient. Confirmed cases stand at 45 and two fatalities as of May 11. The first local transmission case was confirmed on April 28. The State of Emergency was declared on March 25 and renewed on May 8, which includes social distancing measures to contain the domestic spread of COVID-19 and that have reduced the economic activity. The observation of other countries' experience, however, does not exclude a deterioration of the health situation in Angola.

The immediate effects of the collapsing oil prices and the COVID-19 pandemic will be felt mostly in urban areas through a decline in labor income due to job losses, and reduced hours of work, illness and out-of-pocket health care expenditures. The combination of these two shocks also poses a serious threat to food security in Angola because food price increases are likely to reduce significantly the purchasing power of poor and vulnerable households.

With a current poverty rate of 32.3 percent, these two shocks can raise the poverty headcount in 2020 by 6 percentage points, from 32 to 38 percent at the national level. In the short-term, the combination of these two shocks is likely to increase the number of poor households more in the urban areas than in the rural areas.

Options such as ensuring food security, scaling up safety nets for the urban poor, and mitigating the negative effects on human capital, are discussed.

Linkages between the economic crisis and household welfare

Angola is being negatively affected by the COVID-19 outbreak and collapsing global oil price. The economy is extremely oil dependent and the loss in oil revenue associated with the lower oil price and production will require strong fiscal adjustments and strengthening of non-oil revenue. The fall in the oil price tends to trigger currency depreciation (the kwanza has depreciated by about 13 percent since the beginning of March, on top of the 54 percent depreciation in 2019) which will lead to inflation, especially food inflation.

[37] In this chapter useful inputs were received from from Cornelius Fleischhaker, Carmen Carpio, Aleix Serrat Capdevila, and Leandro Costa.

Domestic spread of COVID-19 in Angola is thought to be limited so far, though available data is probably insufficient. There were only 45 confirmed cases and two fatalities as of May 11. The first local transmission case was confirmed on April 28. The State of Emergency was declared on March 25 and renewed on May 8, which includes social distancing measures to contain the domestic spread of COVID-19 and that have reduced the economic activity. The observation of other countries' experience, however, does not exclude a deterioration of the health situation in Angola

The COVID-19 pandemic is likely to affect people's welfare across four broad channels encompassing direct and indirect impacts on labor income, non-labor income, consumption, and service disruption (Figure 120).

- The effects on labor income will be mostly caused by the earnings lost due to deaths and illness, out-of-pocket health care expenditures, and most substantially, the loss of earnings and employment shocks even for individuals who do not fall ill, particularly the poor and near poor working in informal sectors;

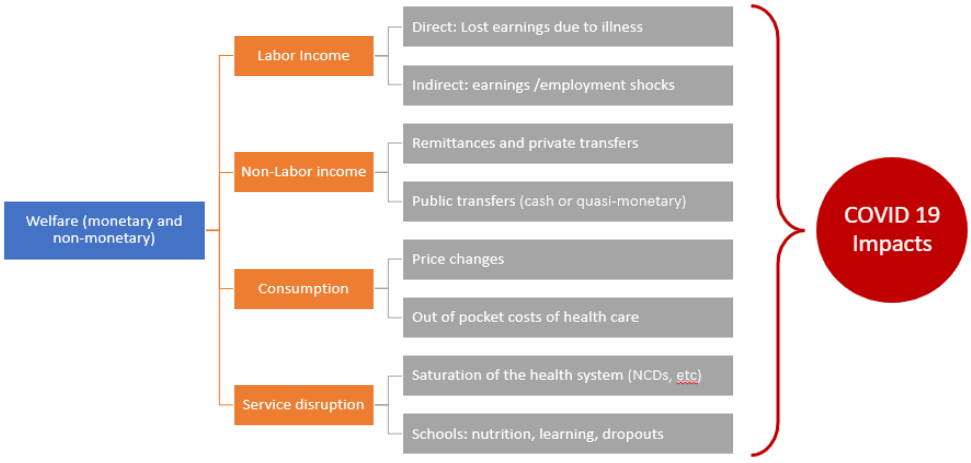
- The effects on non-labor income, which will be concentrated among a more limited number of households, will be primarily the loss of remittances and private transfers due to disrupted migration, and potentially lower public transfers;

- Currency depreciation[38] and producer and consumer price effects caused by the massive disruption in the functioning of markets due to the slowdown in international trade, reduced physical connectivity across and within countries, the shutdown of global and local value chains and the plunge in FDI;

- Finally, disruptions to service delivery are expected to have negative medium- to longer-term effects–above all on human capital and asset losses–particularly health, education and nutrition services.

[38] The strong depreciation of the kwanza (about 70 percent since a move to a floating exchange rate began in 2018) and high pass-through in the import dependent Angolan economy put significant pressure on prices. Inflation is expected to increase from 17 percent in 2019 to 28 percent in 2020

Figure 120: Linkages between the COVID-19 economic crisis and household welfare



Source: World Bank

Potential Poverty Impacts

Producer and consumer price effects, and food insecurity

Angola imports more than 80 percent of its food needs. Disruptions of global value chains, lower revenues from the oil sector due to low global demand and low global oil prices and depreciation in the exchange rate may lead to higher import prices such as food. Average inflation is projected to increase from 16.9 percent in 2019 to 28.6 percent in 2020**.** The measures used to constrain the spread of the virus will create upwards pressure on prices through at least two channels: 1) supply shocks as production chains are affected (including production of local farmers) and 2) demand shocks as individuals seek to stockpile in anticipation of expected scarcity.

Consumption budgets of poor and vulnerable households in Angola are particularly susceptible to increases in food prices. On average, rural and urban households allocate 62.4 and 43.5 percent of their expenditures to food purchases, respectively, and these shares are even higher for poorer households.

The 2018/19 IDREA reveals that, 55 percent of the households surveyed experienced lack of food in the last 12 months, and 66 percent experiencing food insecurity in the past 7 days. The potential effects of disruptions in the global value chains and increases in the prices of food suggest that the COVID pandemic poses a serious threat to food security in Angola.

Impacts of Income and Employment Shocks

The latest growth projections for Angola indicate that the GDP will decline by 2.3 percent in 2020 driven by a reduction in both the oil and non-oil sector. With an even lower average oil price in 2020 (though still higher than the spot price as of April 23), the economic recession would be more severe, with a projected GDP contraction of 5.2 percent, higher inflation and even greater fiscal needs. **Large negative effects are expected on employment and incomes. In a scenario where the responses are not swift,**

the pandemic lasts longer, and global conditions take more time to normalize, the disruption will be more severe.

As documented in chapter XXX, about 45 percent of the workforce in Angola is engaged in agriculture, followed by commerce/hotels 23 percent and services 15 percent. The employment share of the more productive manufacturing sector remains low (see Figure XX). The oil sector employs only 1 percent of the total employees. The breakdown across sectors varies between rural and urban areas, with agriculture dominating in the former and services concentrating most of the workers in the latter.

Overall, 70 percent of the employed workers in Angola are employed in the informal sector.[39] Informality is higher for females than males (75 vs 66 percent) and increases with age. Moreover, the rate of informal employment is above 70 percent in commerce/hotels, agriculture, manufacturing and construction (see Figure XXX). Social distancing measures and the shutdown of firms are expected to reduce economic output, employment and incomes mainly in the main cities. Given the gender structure of informal employment in Angola, the COVID-19 crisis is likely to have relatively larger negative effect on female workers in the informal sector in services.

Non-labor Income

Non-labor income includes remittances, private transfers and public transfers. Angolan migrants abroad and domestically will be impacted by continued business closures and diminished economic activity through fewer hours of work or job cuts, which in turn is going to affect remittance transfers. While this reduction will translate into an additional negative non-labor income shock in Angola, the magnitude of the impact brought about by sluggish foreign remittances will likely be much lower than in other parts of the region. Non labor income from public transfers is very low and regressive as it is mostly targeted to ex-militaries and ex-veterans and pensioners from the contributory sector. Public transfers might be disrupted as has happened in the past given the government fiscal constraints. Finally, non-labor income will be affected as inflation increases.

The lack of data makes it difficult to quantify the flows of domestic migration and transfers in Angola, but the little information from the IDREA survey indicates that households who have been migrants for more than two years are less likely to be poor. The disruption in migration potentially caused by a lockdown due to the COVID is not likely to be an important factor.

Short-term poverty impacts

The map of monetary poverty for Angola at the municipality level based on the 2018-19 IDREA and the 10 percent population sample of the 2014 Census constructed in collaboration with INE (see chapter 1) can be expanded to generate a "vulnerability to poverty" map by identifying at the municipality level the fraction of the population vulnerable to falling below the poverty line. Increasing the national poverty line (PL) by 50 percent (or some other fraction that can be adjusted accordingly based on the financial resources available for relief of those affected by the crisis) will generate a new set of poor households. The households or individuals that are currently below the

[39] An informal worker is defined as: working without a written contract, in a company not registered with public agencies, and does not benefit from any social security benefits (paid annual leave, health insurance, etc.)

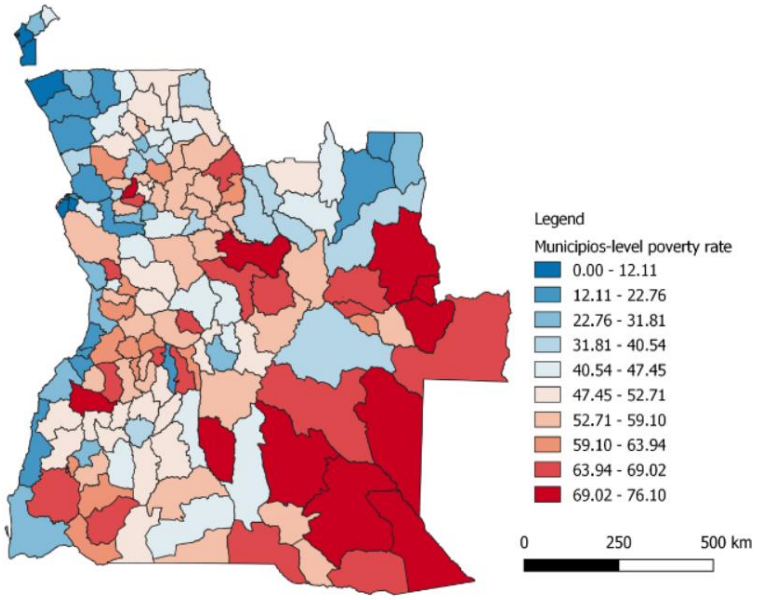
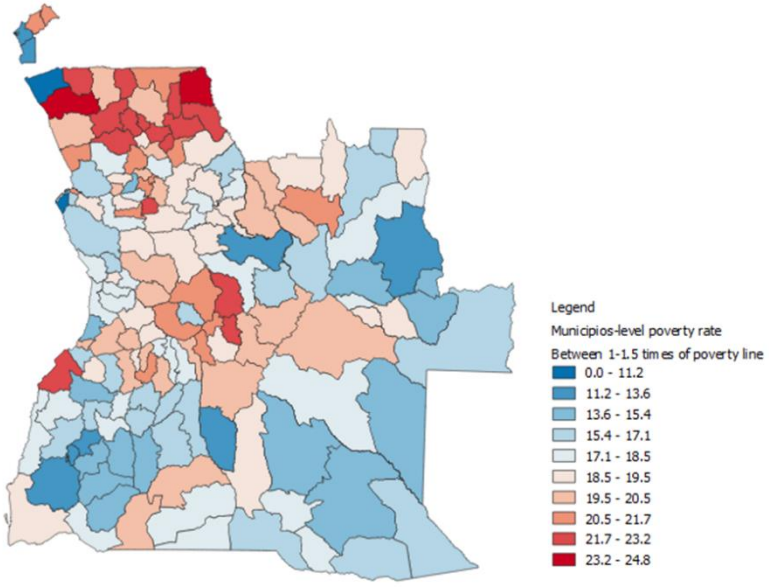
poverty line, the “poor”, and the households or individuals that are “vulnerable to poverty” who are above the poverty line and below a threshold othat is a multiple of the poverty line (e.g. 1.5xPL). [40]

The comparison of the poverty map (Figure 121 panel a) against the vulnerability to poverty map (Figure 121 panel b) reveals that the municipalities with a high vulnerability rate are different from the municipalities where the currently poor are concentrated. For example, the municipalities with high poverty rates are in the eastern and south-eastern regions of the country. In contrast, the municipalities where the population that is vulnerable to falling below the poverty line as a consequence of COVID-19 is mainly in municipalities in the northern region of the country.

The availability of a poverty and a vulnerability map at the municipality level for Angola can be used for targeting geographically the coverage of social protection programs and other types of operations aimed at supporting either the “old” poor or exclusively the “vulnerable to poverty or new poor” or both. The knowledge of the main characteristics of the vulnerable households, is also operationally useful for the design of targeting schemes at the household rather than at the municipality level.

[40] A detailed comparison of the main characteristics of the poor individuals and individuals vulnerable to poverty such as age, gender, marital status household size; number of children, adults, and elderly in the household, dependency ratio, education level, occupation, sector of employment, municipality of residence, housing characteristics, and assets owned is available upon request.

Figure 121: Estimates of the fraction of population below the poverty line and the fraction of population vulnerable to poverty at the municipality level based on the 10% Census sample, national sample

a. The fraction of population below the poverty line (% of population below the national poverty line (PL))	b. The fraction of population vulnerable to poverty (% of population between the national poverty line (PL) and 1.5*PL)
	

Source: Authors' calculations based on the 2018-19 IDREA and the 10% sample of the 2014 Population and Housing Census of Angola

To get a better sense of some of the key characteristics of the non-poor but vulnerable households that are just above the poverty line it is useful to see the distribution of some of the characteristics across deciles of the distribution of consumption in Angola, such as whether households live in an urban or rural area, whether they are informally employed and the sector of employment. With a baseline poverty rate (prior to the crisis) equal to 32.3 percent households above but closer to the poverty such as those located at the 30th , 40th and 50th percentile of the distribution (table rows shaded in blue) are more likely to fall below the poverty line in the case of the crisis.

Table 9 reveals that the majority of the households just above the poverty i.e. between 30th and 40th percentile of the distribution, are primarily in rural areas and informally employed, whereas Table 10 reveals that the households in the 30th to the 50th percentile of the distribution are primarily in agriculture, the commerce/hotel sector and all other services (composed of admin/personal services, domestic services and other services excluding financial services).

Table 9: Area, and type of employment of household head by consumption decile

	Percent of households	
Consumption decile	**Rural areas**	**With head working in Informal employment**
1	76	77
2	66	75
3	57	73
4	53	68
5	41	68
6	35	61
7	29	56
8	21	54
9	17	50
10	9	40

Table 10: Sector of employment of household head by consumption decile

	Percent of households (based on head's employment) in…				
Consumption decile	**Agriculture/ fishing**	**Commerce/ hotels**	**All other Services (excl Financial)**	**Transport Communication sectors**	**All other sectors**
1	83	5	7	1	4
2	70	9	13	3	6
3	64	11	15	2	8
4	56	14	18	4	8
5	42	20	20	7	11
6	35	22	22	7	13
7	31	22	26	7	13
8	20	23	30	13	14
9	14	26	34	8	18
10	6	25	40	8	20
Source: IDREA 2018/19 (author's calculations)					

Rather than trying to pin down the poverty impacts to a specific number, Figure 6 below presents estimates of the impact of the dual crisis on the poverty rate that are believed to provide reasonable bounds of the impacts of the dual crisis on poverty. The recent Macroeconomic and Poverty Outlook (MPO) for Angola forecasts a 1.0 percent increase in real GDP at constant factor prices in 2020 in the agricultural sector, and a 2.0 and a 3.2 percent decrease in industry and services, respectively. Therefore different scenarios about the short-term reduction in consumption per capita across households are assumed between 5 and 15 percent while allowing for some heterogeneity in the impacts based on whether the head of the household works in the formal or informal sector and whether the main sector of employment of the household head is in agriculture. Informal workers in commerce and services are expected to be among the hardest hit by the measures to contain the spread of the virus, while those working in agriculture and fishing, which is also predominantly informal, may be affected less than other informal workers.

Specifically, estimates of the poverty impacts of the COVID-19 pandemic are obtained based on the following scenarios:

- Scenario A assumes that the consumption of all households with a head employed as an informal worker (except in agriculture) declines by 10 percent and the consumption of all households where the head is employed in the formal sector declines by 5 percent. The consumption of households with a head and his spouse employed as an informal worker in the agricultural sector is assumed to stay unaffected (i.e., the same as in the baseline).

- Scenario B assumes that the consumption of all households with a head employed as an informal worker declines (except in agriculture) by 15 percent and the consumption of all households where the head is employed in the formal sector declining by 10 percent. The consumption of households with a head and his spouse employed as an informal worker in the agricultural sector is assumed to stay unaffected (i.e., the same as in the baseline).

- Scenario C assumes a decline in the consumption of households with a head and his spouse employed as an informal worker in the agricultural sector that is smaller (declining by 5 percent) than the 10 percent decline in the consumption of everybody else in the informal sector, and a 5 percent decline in the consumption of those engaged in the formal sector.

- Scenario D, which is more extreme, assumes a decline in the consumption of households with a head and his spouse employed as an informal worker in the agricultural sector that is smaller (declines by 10 percent) than the 15 percent decline of everybody else in the informal sector, and a 10 percent decline in the consumption of those engaged in the formal sector.

Thus, under scenarios A and B the consumption of agricultural households is not affected at all, whereas under the more pessimistic scenarios C and D, the consumption of agricultural households also declines but less than others working in the informal sector.

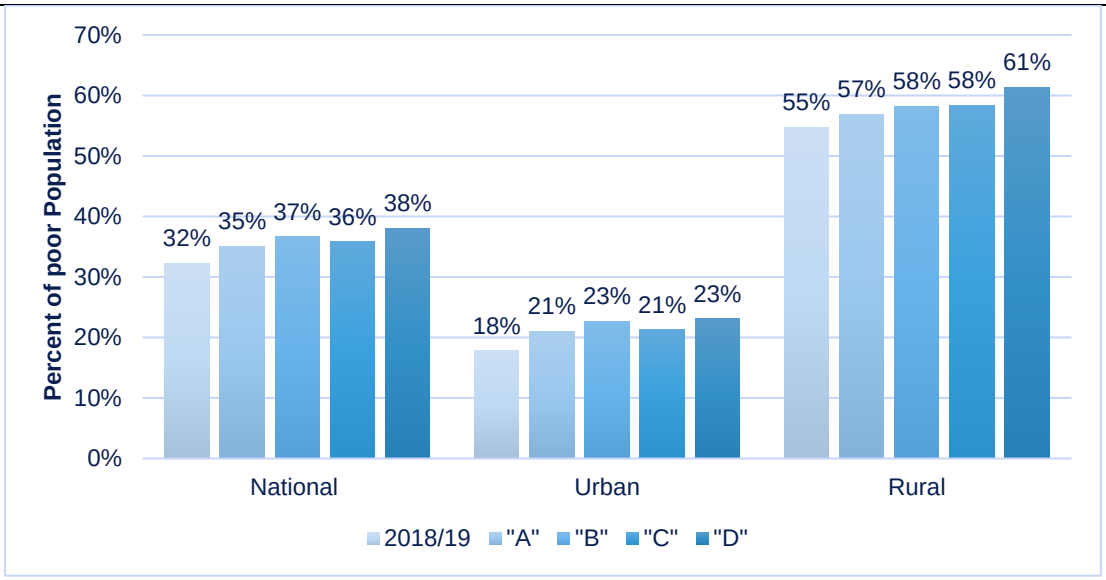
The results shown in Figure 122 underscore the high levels of vulnerability of Angola. **Under the optimistic scenario A**, where those working informally in agriculture are not affected at all, and the consumption of those in the formal sector declines by 5 percent and for the rest working in the informal sector by 10 percent, the poverty headcount in 2020 increases by 3 percentage points, from 32 to 35 percent, at the national level, by 3 percentage points in urban areas (from 18 to 21 percent), and by 2 percentage points in rural areas, (from 55 to 57 percent). These poverty impact estimates imply an

increase in the number of poor by 622,491 individuals in the urban areas and 216,783 individuals in the rural areas.

Under the more extreme scenario D, where the consumption of all households working in the formal sector declines by 10 percent and the consumption of all those in the informal sector declines by 15 percent while allowing for a smaller impact on those engaged in agriculture (only a 10 percent decline instead of 15 percent decline), would raise the poverty headcount in 2020 by 6 percentage points, from 32 to 38 percent, at the national level, by 5 percentage points in urban areas, from 18 to 23 percent, and by 6 percentage points in rural areas, from 55 to 61 percent. These poverty impact estimates imply an increase in the number of poor people in urban areas by 1,023,634 individuals and by 664,988 individuals in the rural areas. **Irrespective of the poverty scenario, the short-term impacts of the COVID-19 crisis are likely to increase the number of poor households more in the urban areas than in the rural areas.**

A comparison of the poverty rates under scenarios A and C or B and D reveals that the assumption of no impacts vs. some smaller impacts on the consumption of agricultural households has no apparent impacts on the poverty rate in urban areas, and it increases the headcount poverty rate the national level and in the rural areas by 1 percentage point (compare poverty rates in A and C at the national level and rural areas). However, the differences in the poverty impacts between scenarios B and D are larger in the rural areas (58 percent under scenario B vs. 61 percent under scenario D).

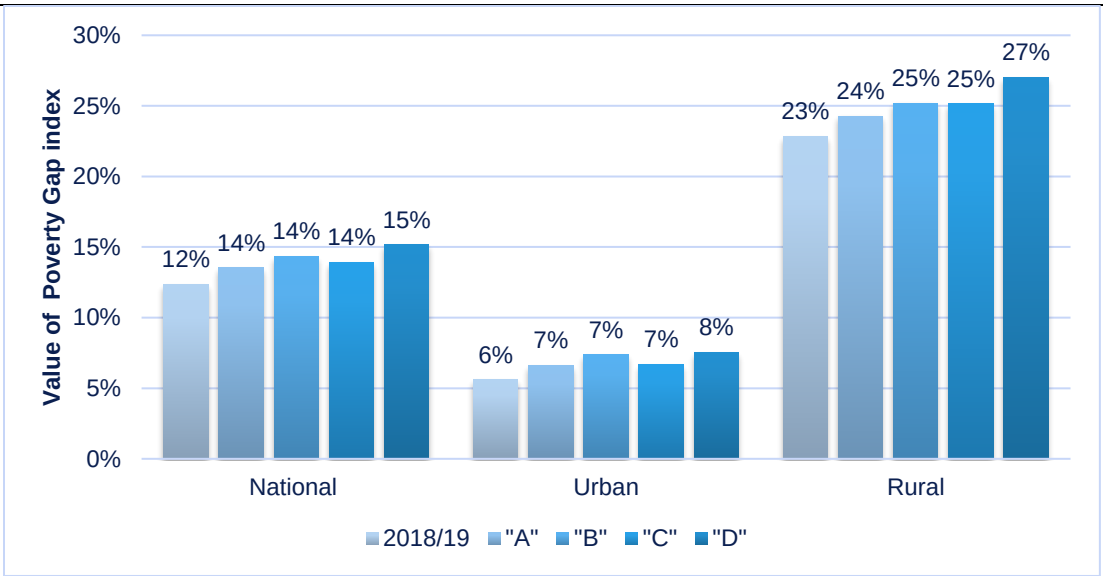
Figure 122: The impacts of COVID-19 on Poverty Headcount-Short-term Scenarios



Source: Author's estimates based on IDREA 2018/19

The value of the poverty gap index (or FGT(1)) that measures the average shortfall in consumption per adult equivalent as a percentage of the poverty line, also increases at the national level as well as in urban and rural areas under all scenarios compared to the baseline .

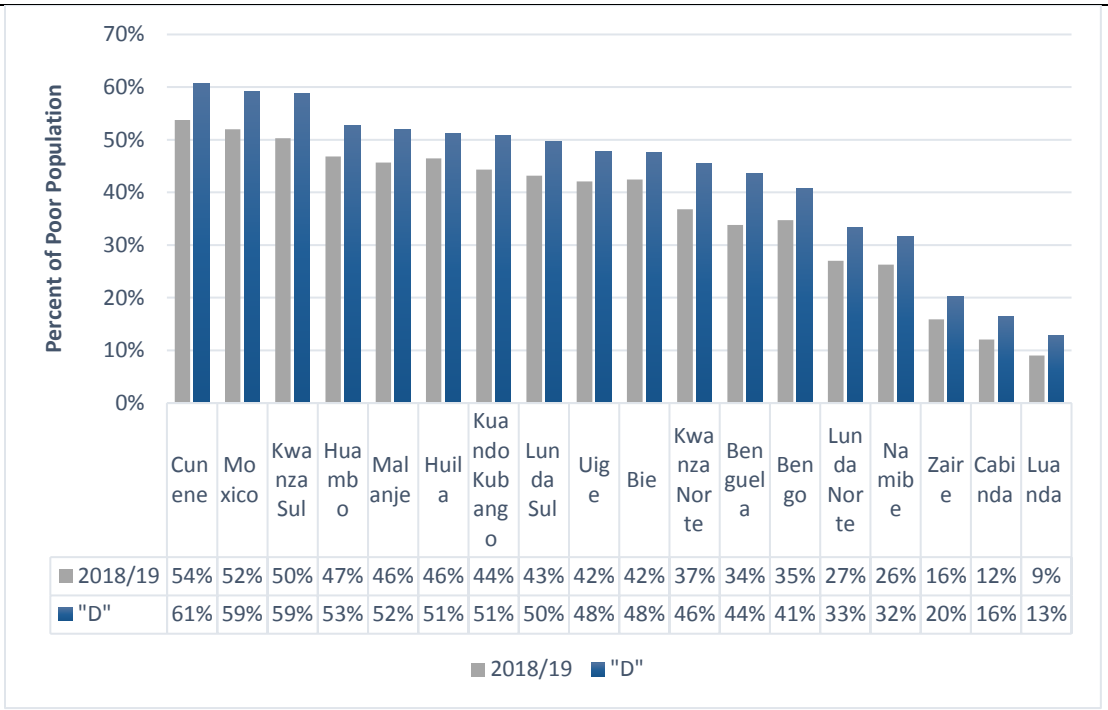
Figure 123: The short-term impacts of COVID-19 on the average shortfall as percentage of the poverty line (Poverty Gap Index) under different scenarios



Source: Authors' estimates based on IDREA 2018/19

Figure 124 below presents the estimated poverty impacts of the COVID-19 pandemic, by province for the case D. In Figure 124 provinces are arranged from left to right based on the provinces with the highest estimated poverty rate under scenario D on the left and the lowest poverty rate on the right.

Figure 124: The impacts of COVID-19 on Poverty Headcount-by province



Source: Authors' estimates based on IDREA 2018/19

Direct and indirect human capital effects

Health

Worldwide, Angola ranks among the last in terms of human resources in the health sector, with only one physician, 23 health care workers and 63 nurses per 100,000 people.[41] Poor households in urban areas of Angola are less likely to consult a medical professional when sick, and are more likely to cite financial constraints as the reason for not consulting. In rural areas, poor households are also more likely to cite supply-side constraints, such as waiting times, or lack of medicines or medical personnel, as the reason for not consulting. In urban areas, poor households are less likely to have health insurance, and are less likely to use private health facilities.

The productivity losses and earnings costs associated with illness and inability to work are likely to increase if the corona virus spreads widely. In urban and peri-urban areas, there may be significant pockets of vulnerable people who could become seriously ill – the old and those with co-morbidities – living in informal settlements (slums), without support and unable to access care.

The progression of COVID-19 in Angola from that of imported cases only to now experiencing local transmission raises concern of the continued strain the Angola health system will face. This, together with the country's limited capacity for testing and diagnosis, and shortcomings in the implementation of

[41] The prevalence of HIV in Angola is one of the lowest in Sub-Saharan Africa (nearly 330,000, in 2018, people are living with HIV/AIDS) https://www.unaids.org/en/regionscountries/countries/angola.

containment measures contribute to not having a clear understanding of the extent of the pandemic and how to effectively direct resources for testing and containment. The scarcity and poor quality of health services poses a significant challenge to identifying and isolating positive cases of COVID-19 and the capacity to treat those infected who are severely ill. Underdeveloped sanitation facilities also undermine efforts to limit the spread of infection. Moreover, possible disruptions in the water supply (for users connected to piped system) or difficulties in getting/buying water from other sources and informal providers, all adds up to an increased risk of infection, especially in peri urban areas. Also, disruptions in water supply and hygiene can also lead to increased risk of other outbreaks such as cholera (as in recent past) among the poor. Equipment and materials for infection prevention and control (IPC) and diagnosis of COVID-19 are available in the country. However, the equipment and materials needed for case management and intensive care to treat severe cases of COVID-19 are lacking[42]. It is precisely because of this relatively weak health care system that proactive measures to prevent the spread of the virus will be critical.

Education and school feeding

Schools have closed as a means of containing the spread of the virus. Unlike in other countries where schools have moved to teaching students online, there is much more limited capability for Angola to do this (see Figure 8 below). The Ministry of Education in partnership with the national TV started to offer classes on the TV and the radio but with limitations. Therefore, In absence of a robust government response, the COVID-19 pandemic will further increase learning poverty and the opportunity gaps between rich and poor, resulting in devastating long-term consequences.

In the short run, **school closure** (a) will stop academic learning and increase learning poverty, particularly among most vulnerable populations (girls and the poorest), (b) may reduce attachment to schooling (due to prolonged school closures), contributing to drop out, (c) may increase student vulnerability and violence and adolescent fertility; (d) will negatively affect student nutrition (while school feeding only covers a small fraction of schools in Angola, it is nonetheless a very important source of nutrition for students in disadvantaged communities who do benefit from school meals) and children's physical and mental health. As part of the World Bank support to the drought affected provinces, a targeted school feeding program is being designed to use locally available food products and in parallel is already implementing urgent actions to ensure children identified as chronically malnourished are receiving care and treatment.

In short and medium run, **Economic shocks and repeated/prolonged school closures** will result in higher dropout rates, particularly among vulnerable children, who without access to home-based learning, will fall behind reducing their attachment to school and the likelihood that they will return to school. Children are likely to experience and witness more violence as a result of deteriorating socio-economic conditions.

In the long run, **permanent effects** on human capital, including an increase in learning poverty on a large-scale, exacerbation of inequalities, and an increased likelihood of social instability.

[42] Angola MINSA. Quantificação e Previsão de Suprimentos Essenciais - COVID-19 Equipamentos, Medicamentos Essenciais, e Consumiveis, Abril 2020, actualizado 8 de Maio de 2020.

Possible Policy Responses

On April 09th 2020, the Government adopted a Presidential Decree 98/20 defining a package of measures to mitigate the impact of Covid-19 on the economy. The government is planning to provide tax relief and provide liquidity through lines of credit, among other measures to help firms cope with the crisis. However, with the exception of a financing line for microcredit, the measures do not support informal microenterprises, which are likely to suffer from the crisis. To compensate families, the government announced a food basket distribution, and the implementation of the cash transfer program "Kwenda". The government also announced a restriction on utility providers which does not allow for the suspension of water and electricity provisions to households due to a lack of payment. However, this measure has caused liquidity issues, which could impact their ability to continuously deliver services.

Both the poor and those who will now experience a sudden loss of livelihood (particularly informal workers in urban areas) will need social protection and jobs interventions to protect their welfare and livelihoods from the crisis. The response should provide temporary income support to compensate partially for loss of income of informal worker particularly women in urban areas working in the service sector. One major constraint is the fact that Angola's social safety net programs tend to be small and scattered. Angola currently implements 28 social safety net programs, with little funding. The number of beneficiaries and thus coverage is low. Only 5 percent of those in the poorest quintile are covered by safety nets programs. The target population of the social assistance programs is unclear, and some programs cover at the same time different groups.

Two cash transfers are providing immediate support to mitigate the impact of the COVID-19 on poor households. The Ministry of Social Affairs, Family, and Women's Promotion (MASFAMU) announced that the Child Grant (supported by UNICEF) implemented in Bie, Moxico, and Uige provinces will be topped up (from 3000 to 5000 Kwanzas, or approximately US$6 to US$10 monthly) and a double payment will be made. The cash transfer "Kwenda" program (financed by the WB) was included as part of the package of measures to mitigate the impact of the COVID-19 in urban and peri urban areas with the objective to reach 1.6 million families with cash transfers of 25000 kwanzas quarterly for a year. The pilot of the program is expected to start by June which will be used to test the basic delivery systems to scale up the program at national level. The pilot includes a total of 5 thousand families in 5 municipalities namely Nzeto (Zaire), Ombanja (Cunene), Cambundi Katembo (Malanje), Cuito Cuanavale (Cuando Cubango) and Caculo (Huila). By the end of 2020, the program aims to reach 300 thousand families.

The feasibility of digital payments: For the immediate and short-term response, existing payment mechanisms will be used to deliver cash in order to comply with social distancing guidelines. In urban areas, electronic payments to bank accounts might be the preferred option and payment mechanism can include pre-paid or ATM cards. In rural areas, with very limited financial systems, the cash transfer payments are likely to be delivered in cash or near-cash methods. The government of Angola is already working to foster the adoption of digital payments in the country, and the crisis may represent an opportunity to fast track changes already in the works. However, digital payments might not be adopted universally in the short term as the legal framework, digital instruments and payment infrastructures are not yet fully ready to be deployed in particular to the segments of the population targeted by these interventions. In addition, the fact that 12.3 percent of the households in bottom quintile in rural areas and 26.8 percent of the households in urban areas (see Figure 43 above) have mobile phones limits the scope of using digital payments as a means of compensating the extreme poor households. However, the option of using digital payments to compensate the "new poor" from the COVID-19 crisis, i.e. the

households currently situated in the 2nd and 3rd quintiles of the distribution where the households vulnerable to COVID-19 crisis are likely to come from seems more feasible.

In the medium term, it is important that the government continues strengthening the social protection system to improve efficiency and effectiveness of interventions. This includes: expanding the social registry, and securing data-sharing protocols with existing functional registries (social insurance, health, national ID, etc; developing an adequate payment mechanism using appropriate technology to expand digital and direct safety nets cash payments; and ensuring a functioning grievance redress mechanisms. In anticipation of forthcoming shocks (such as lean seasons, upcoming reforms, etc.) make social safety nets more Shock-Responsive by developing means of targeting and distributing relief to those affected. Lastly, ensure Government financing for the core programs and Contingent Financing.

In addition to providing relief through social assistance for those who do lose their jobs and see their livelihoods significantly affected, the government can consider facilitating alternative employment and employability support (Active Labor Market Programs, ALMP). These measures can support job search and reintegration to work. Such interventions can include economic inclusion efforts for poor and vulnerable groups to provide opportunities for self-employment, wage employment and resilience, including by switching to remote-working jobs or to sectors where there is high demand due to the virus. Productive inclusion programs, reforming labor codes/regulations to allow work flexibility. Offering training courses of short duration (entrepreneurship, IT skills, etc.) through scholarships or targeted fee waivers, and microcredits for youth particularly, women, can also be considered. Public works can provide temporary employment to laid-off workers. Other measures include: create matching services to re-deploy staff or assets to support public health and offer financial support and/or supplies to businesses to manage the costs of physically dealing with the effects of the virus, such as deep clean services.

Target incentives to encourage worker retention among firms and provide capital (loans and grants) to formal and informal firms to help them recover in the aftermath of the pandemic. For example, employment subsidies can help firms bridge a period of inactivity while retaining employees who might otherwise be laid off and face a potentially long unemployment episode. This could help reduce job losses and ensure a quicker recovery of these firms once the crisis subsides. For many firms, especially informal firms with little access to financial resources, policies to inject capital and help firms re-start business once the pandemic subsides could also help contribute to a faster economic rebound. Additional policy options include:

- Partnerships with existing micro-credit and micro-savings organizations to reach informal firms where the majority of the poor work.
- **Provide partial wage subsidies** to enterprises/directly to workers in impacted sectors to minimize lay-offs (replacement of unemployment benefits)
- Temporarily **waive tax payments** and social security contributions
- Provide regulatory forbearance to banks so that they can **reschedule loans**

COVID-19 policy response includes measures in health and education to protect and preserve human capital. Policy actions should prioritize the food security and health of the population in the short-term and mitigating the negative effects on human capital in the medium term.

Stabilize food prices and ensure availability. Due to border closures, speculation, and the interruption of agricultural supply chains, food prices are likely to rise, with negative impacts on the poor, especially in urban areas. Even many rural households are not food secure and purchase food during the lean season to get by. Therefore, these households are very sensitive to price changes and there has already been outrage and concern over the affordability of basic foodstuffs over the last week as food prices have started to skyrocket. Policies to ensure the reliable and consistent supply of basic foodstuffs to markets and monitor the prices reflected to consumers are necessary to avoid scarcity of food and/or middlemen and traders taking advantage of the crisis to jack up prices. For this, actions to guarantee that supply chains remain operational and that new policy restrictions do not impede access to basic goods and seasonal labor flows is a very high priority, even if this requires special screening and permits for health security. Additionally, the government could consider temporary subsidies for food staples and other essentials (such as soap) during this period in which many people have lost jobs, wages, or income due to the suspension of formal and informal economic activity.

Ensuring water, sanitation and hygiene services is a key part of the pandemic response. The WB is working with the GoA to support water utilities (piped network water) in strengthening the capacity to maintain the service in the face of an epidemic, with contingency plans, repairs, support, etc. In addition, the Luanda utility (EPAL) has been mobilizing tanker trucks to provide water (for free) in public places and areas without water connections.

On health, short-term policies need to prioritize the quantification of COVID-19 equipment, ensuring platform donor coordination and increasing capacity for prevention, diagnosis and treatment. In the short-term, the country should commit to maintaining updated its quantification of the COVID-19 equipment and materials needs and to have it serve as the platform for donor coordination. The quantification was conducted under the leadership of the Ministry of Health in partnership with the World Bank, WFP, and UNDP. This quantification exercise identified the country's COVID-19 needs for equipment and materials for an immediate and urgent response. It also collects information on what is being provided (financing/donations) by key partners. As a result of this work, Angola has been able to meet its needs area for IPC yet continues to require support for case management and intensive care. Also, the country should continue to increase its capacity for prevention, diagnosis and treatment. The country has received donations from Jack Ma, the Ali Baba Foundation, the World Health Organization (WHO), oil companies, and other private companies mainly to fill the gap for IPC equipment. There continues to be a gap for materials and equipment for case management and intensive care treatment.

Building on the COVID-19 investments, the government can strengthen the overall health system preparedness and response capacity in the medium term. The country shall build on the initial COVID-19 investments in the areas of supporting the operationalization of processes and purchase of materials and equipment and build on these investments to strengthen the overall health system preparedness and response capacity. Key activities which have been initiated and will need to be enhanced include the operationalization of the Emergency Operations Center, the integration of the regional laboratory network, implementation of the Joint External Evaluation (JEE) recommendations. In the medium-term, the performance-based financing methodology being piloted under the Bank-financed health project, will be applied to a nutrition package targeting provinces most affected by the chronic malnutrition crisis and further strained from COVID-19 impacts. The goal of the package is to target children

identified as being malnourished and at-risk to provide treatment and care and safeguard children from falling further into severe forms of malnutrition.

To make up for this lost period of education and ensure that children's human capital development is not further jeopardized, the government should consider the following:

- In the short term, strengthening remote learning strategies in television and radio, and consider large-scale book distribution for those last-mile families that don't have access to learning materials and include actions to prevent/mitigate the risks of GBV.

- Prepare for the eventual reopening of schools with strong focus on hygiene, ensuring that all schools are equipped with soap and clean water. As soon as appropriate, school construction activities can serve as an economic stimulus/jobs program to help with the economic crisis.

- Once COVID-19 is under control and schools re-open, policies to incentivize children to go back to school are critical. This could entail one-time cash transfers/subsidies/scholarships contingent on re-enrollment and attendance particularly to vulnerable girls to return to schools. Another option would be to roll out school feeding programs, which typically motivate children (and their parents) to attend school and can also be a way to ensure ongoing nutritional support for children in the medium-term. Other measures include: a performance-based grant to schools to create incentives to reduce drop outs of vulnerable students; a catch-up program to help the most vulnerable kids get caught up for school; a path for girls who get pregnant while school is out to come back to school.

- In the medium/longer term, a strong focus should be placed on using the time schools are closed to upskill teachers through telephone and SMS support.

ANNEX A

APPENDIX A: Regression results

A.1 Geographic location (with control variables)

Survey: Logistic regression

Number of strata = 18 Number of obs = 11,966
Number of PSUs = 471 Population size = 29,368,650
Design df = 453
F(71, 383) = 35.23
Prob > F = 0.0000

FGT0	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	-.0439731	.2377285	-0.18	0.853	-.5111607	.4232145
Zaire	-.3516136	.2833217	-1.24	0.215	-.9084016	.2051743
Uige	1.246814	.2765665	4.51	0.000	.7033017	1.790327
Kwanza Norte	.841785	.3174919	2.65	0.008	.2178453	1.465725
Kwanza Sul	1.173962	.2576654	4.56	0.000	.6675937	1.680329
Malanje	.9573035	.2994425	3.20	0.001	.3688347	1.545772
Lunda Norte	.2846173	.2596834	1.10	0.274	-.2257163	.794951
Benguela	1.093163	.2730931	4.00	0.000	.5564765	1.62985
Huambo	1.01934	.2635707	3.87	0.000	.5013669	1.537313
Bie	.777332	.3842739	2.02	0.044	.0221513	1.532513
Moxico	1.318521	.3146682	4.19	0.000	.7001303	1.936911
Kuando Kubango	1.181469	.2939797	4.02	0.000	.6037356	1.759202
Namibe	.746982	.2896381	2.58	0.010	.1777811	1.316183
Huila	1.139221	.2447538	4.65	0.000	.6582271	1.620214
Cunene	.7985534	.2109933	3.78	0.000	.3839062	1.213201
Lunda Sul	1.415961	.2360292	6.00	0.000	.9521131	1.879809
Bengo	.7725515	.3315692	2.33	0.020	.1209468	1.424156
area						
Rural	.8780989	.4433377	1.98	0.048	.0068453	1.749353
province#area						
Cabinda#Rural	.157407	.6279178	0.25	0.802	-1.076586	1.3914
Zaire#Rural	.4477319	.618056	0.72	0.469	-.7668808	1.662345
Uige#Rural	-.705921	.521985	-1.35	0.177	-1.731734	.3198916
Kwanza Norte#Rural	.2616551	.5442233	0.48	0.631	-.8078604	1.331171
Kwanza Sul#Rural	-.4570288	.5000017	-0.91	0.361	-1.439639	.5255818
Malanje#Rural	-.1582905	.4942197	-0.32	0.749	-1.129538	.8129573
Lunda Norte#Rural	-.1939045	.5268776	-0.37	0.713	-1.229332	.8415231
Benguela#Rural	-.1470883	.565176	-0.26	0.795	-1.25778	.9636038
Huambo#Rural	-.3814507	.4743151	-0.80	0.422	-1.313582	.5506802
Bie#Rural	-.5764787	.522463	-1.10	0.270	-1.603231	.4502732
Moxico#Rural	.1072892	.5262654	0.20	0.839	-.9269352	1.141514
Kuando Kubango#Rural	-.2618132	.5190493	-0.50	0.614	-1.281856	.75823
Namibe#Rural	-.4827704	.5532475	-0.87	0.383	-1.57002	.6044797
Huila#Rural	-.8578787	.4836153	-1.77	0.077	-1.808287	.0925291
Cunene#Rural	.0796761	.4772109	0.17	0.867	-.8581458	1.017498
Lunda Sul#Rural	-.2187048	.564868	-0.39	0.699	-1.328792	.891382
Bengo#Rural	.1171656	.5564653	0.21	0.833	-.9764082	1.210739
hhsize	.1535289	.2218994	0.69	0.489	-.282551	.5896088
hhsize2	-.0109117	.0139664	-0.78	0.435	-.0383586	.0165353
tmp_u18	.3631865	.1516462	2.39	0.017	.0651692	.6612038
tmp_u182	-.0145409	.0140637	-1.03	0.302	-.0421791	.0130973
tmp_o64	-.0334771	.3167348	-0.11	0.916	-.655929	.5889749
tmp_o642	-.0717359	.183167	-0.39	0.696	-.4316983	.2882266
tmp_fem	-.1011158	.0731455	-1.38	0.168	-.2448624	.0426309
tmp_fem2	.0117068	.008917	1.31	0.190	-.0058171	.0292306
tmp_agehd	.0601895	.0162806	3.70	0.000	.0281947	.0921843
tmp_agehd2	-.0006606	.0001658	-3.98	0.000	-.0009864	-.0003348
tmp_agesp	-.0077896	.0123186	-0.63	0.527	-.0319982	.016419
tmp_agesp2	.0002473	.0001793	1.38	0.168	-.000105	.0005996
DIS_femhd						
Female head	-.4284093	.1793537	-2.39	0.017	-.7808777	-.0759408
DIS_marital						
Never married	-.0405425	.2306147	-0.18	0.861	-.4937498	.4126648
Unmarried	.3632381	.2807296	1.29	0.196	-.1884559	.914932
EDU_alfabhead						
Illiterate	.384216	.1133671	3.39	0.001	.1614253	.6070068
Partially	.5600138	.2996738	1.87	0.062	-.0289096	1.148937
tmp_yearseduhd	-.1821795	.0422814	-4.31	0.000	-.2652716	-.0990874
tmp_yearseduhd2	.0033193	.0026731	1.24	0.215	-.0019339	.0085725
EMP_employhd						
Employed	.1098263	.177386	0.62	0.536	-.2387752	.4584278
Self-employed	-.2476606	.2068241	-1.20	0.232	-.6541143	.1587932
Family/other	.5123902	.24509	2.09	0.037	.0307358	.9940445
Unemployed	.3079119	.2090459	1.47	0.141	-.1029082	.718732
EMP_employerhd						
Public	-.7238449	.4118034	-1.76	0.079	-1.533127	.085437
Private	-.1063234	.3908842	-0.27	0.786	-.8744947	.6618479
Self-employed	.0593631	.3674901	0.16	0.872	-.6628337	.7815599
Family/NGO	.0964102	.4141472	0.23	0.816	-.7174779	.9102982
EMP_sectorlhd						
Agriculture/fishing	.2588523	.3184893	0.81	0.417	-.3670474	.884752
Extractive	-.6463982	.4567535	-1.42	0.158	-1.544017	.2512205
Manufacturing	-.4739828	.3537834	-1.34	0.181	-1.169243	.2212774
Construction	-.3212926	.3585773	-0.90	0.371	-1.025974	.3833888
Commerce	-.6498636	.351289	-1.85	0.065	-1.340222	.0404947
Transport/coms	-.8583516	.3855961	-2.23	0.027	-1.616131	-.1005726
Other services	-.1993927	.3579383	-0.56	0.578	-.9028183	.5040329
tmp_hoursworked	.0000404	.0000494	0.82	0.414	-.0000567	.0001376
tmp_hoursworked2	-4.35e-09	6.00e-09	-0.72	0.469	-1.61e-08	7.44e-09
_cons	-3.899803	.5571634	-7.00	0.000	-4.994748	-2.804857

A.2 Distance to market

Survey: Logistic regression

Number of strata	= 18	Number of obs	= 4,294
Number of PSUs	= 104	Population size	= 10,877,854
		Design df	= 86
		F(42, 45)	= 30.29
		Prob > F	= 0.0000

FGT0	Linearized Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	.9721656	.531493	1.83	0.071	-.0844075	2.028739
Zaire	.796863	.5819603	1.37	0.174	-.3600358	1.953762
Uige	1.148922	.4999909	2.30	0.024	.1549725	2.142871
Kwanza Norte	1.799407	.5091962	3.53	0.001	.7871587	2.811656
Kwanza Sul	1.751571	.5121978	3.42	0.001	.7333551	2.769786
Malanje	1.668456	.5076378	3.29	0.001	.6593051	2.677606
Lunda Norte	1.144888	.5946036	1.93	0.057	-.0371449	2.326921
Benguela	2.194306	.533903	4.11	0.000	1.132942	3.25567
Huambo	1.722069	.5018667	3.43	0.001	.7243911	2.719747
Bie	1.629187	.5303735	3.07	0.003	.5748392	2.683535
Moxico	2.857466	.4923854	5.80	0.000	1.878636	3.836295
Kuando Kubango	1.963009	.4948326	3.97	0.000	.9793145	2.946704
Namibe	1.047632	.54552	1.92	0.058	-.0368256	2.13209
Huila	1.39118	.5003388	2.78	0.007	.3965398	2.385821
Cunene	1.524522	.5363112	2.84	0.006	.458371	2.590674
Lunda Sul	2.347191	.5417763	4.33	0.000	1.270175	3.424207
Bengo	1.425461	.574437	2.48	0.015	.283518	2.567404
area						
Rural	-.2258329	.7152401	-0.32	0.753	-1.647683	1.196017
hhsize	.1677752	.1618342	1.04	0.303	-.1539406	.489491
hhsize2	-.0094749	.0095943	-0.99	0.326	-.0285478	.009598
tmp_u18	.4015707	.1448743	2.77	0.007	.1135702	.6895713
tmp_u182	-.0249305	.0115041	-2.17	0.033	-.0477999	-.0020611
tmp_o64	.0493182	.4039341	0.12	0.903	-.7536763	.8523127
tmp_o642	-.0462595	.2238944	-0.21	0.837	-.4913468	.3988279
tmp_fem	-.0994009	.1029479	-0.97	0.337	-.3040545	.1052527
tmp_fem2	.019996	.0160096	1.25	0.215	-.0118301	.0518221
tmp_agehd	.005731	.0154243	0.37	0.711	-.0249316	.0363936
tmp_agehd2	-.0001264	.0001611	-0.78	0.435	-.0004466	.0001939
tmp_agesp	.0637302	.0297455	2.14	0.035	.0045982	.1228623
tmp_agesp2	-.0004912	.000385	-1.28	0.205	-.0012565	.0002741
DIS_femhd						
Female head	.1048996	.2358431	0.44	0.658	-.363941	.5737403
DIS_marital						
Never married	-.2674763	.31166	-0.86	0.393	-.8870359	.3520832
Unmarried	-.1980649	.3148446	-0.63	0.531	-.8239552	.4278255
_IDIS_hassp_0	-61.17471	28.92191	-2.12	0.037	-118.6696	-3.679853
tmp_time2market	.0351733	.0166412	2.11	0.037	.0020918	.0682549
COM_road						
Unpaved road	.6675454	.2348132	2.84	0.006	.2007522	1.134339
Path/other	.7097446	.2277911	3.12	0.002	.2569108	1.162578
COM_road#c.tmp_time2market						
Unpaved road	-.0305807	.0188174	-1.63	0.108	-.0679886	.0068271
Path/other	-.0468951	.020316	-2.31	0.023	-.0872819	-.0065083
c.tmp_time2market#c.tmp_time2market	-.0002443	.0001936	-1.26	0.210	-.0006293	.0001406
COM_road#c.tmp_time2market#c.tmp_time2market						
Unpaved road	.0002121	.0002122	1.00	0.320	-.0002097	.000634
Path/other	.0004078	.0002383	1.71	0.091	-.0000659	.0008814
_cons	-5.012582	.9955727	-5.03	0.000	-6.991715	-3.033449

A.3 Demographic characteristics

Survey: Logistic regression

Number of strata	= 18	Number of obs	= 10,803
Number of PSUs	= 471	Population size	= 28,278,107
		Design df	= 453
		F(40, 414)	= 31.93
		Prob > F	= 0.0000

FGT0	Linearized Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	-.019466	.2419557	-0.08	0.936	-.4949608	.4560288
Zaire	.0171327	.2909102	0.06	0.953	-.5545683	.5888337
Uige	.801724	.2165997	3.70	0.000	.3760591	1.227389
Kwanza Norte	1.29281	.2857419	4.52	0.000	.7312659	1.854354
Kwanza Sul	1.393211	.2164929	6.44	0.000	.9677558	1.818666
Malanje	1.315741	.2418592	5.44	0.000	.8404361	1.791046
Lunda Norte	.7683833	.3076871	2.50	0.013	.1637122	1.373054
Benguela	1.204378	.2370387	5.08	0.000	.7385466	1.67021
Huambo	1.306017	.2179618	5.99	0.000	.8776753	1.734359
Bie	1.121305	.2826546	3.97	0.000	.5658276	1.676782
Moxico	1.831291	.3386111	5.41	0.000	1.165848	2.496735
Kuando Kubango	1.60715	.227434	7.07	0.000	1.160194	2.054107
Namibe	.7467593	.2666835	2.80	0.005	.222669	1.27085
Huila	1.046427	.2045519	5.12	0.000	.6444387	1.448415
Cunene	1.03846	.2019371	5.14	0.000	.64161	1.435309
Lunda Sul	1.798051	.2177984	8.26	0.000	1.370031	2.226072
Bengo	1.018592	.2744885	3.71	0.000	.4791631	1.558021
area						
Rural	1.283649	.0968152	13.26	0.000	1.093386	1.473911
hhsize	.4758522	.1745777	2.73	0.007	.1327696	.8189348
hhsize2	-.0226085	.0116305	-1.94	0.053	-.0454649	.0002478
tmp_fem	-.1164357	.0934182	-1.25	0.213	-.3000226	.0671512
tmp_fem2	.0180731	.0118569	1.52	0.128	-.0052282	.0413743
DIS_marital						
Never married	-.3805991	.2123283	-1.79	0.074	-.7978698	.0366716
Unmarried	.200264	.2196132	0.91	0.362	-.231323	.6318509
DEMO_migrany						
Not in past 2yrs	-.5237828	.0751241	-6.97	0.000	-.6714179	-.3761478
Moved in past 2yrs	-.4339833	.2521878	-1.72	0.086	-.9295864	.0616198
tmp_agehd	-.0160618	.0255031	-0.63	0.529	-.0661809	.0340572
tmp_agehd2	.000126	.0002494	0.51	0.614	-.0003641	.0006161
tmp_agesp	.1019335	.0293369	3.47	0.001	.0442803	.1595868
tmp_agesp2	-.0010074	.0003387	-2.97	0.003	-.001673	-.0003417
shr_age	-.0090101	.0186856	-0.48	0.630	-.0457312	.0277111
shr_age2	-.0003293	.0004484	-0.73	0.463	-.0012105	.000552
DIS_femhd						
Female head	-1.709561	.8110089	-2.11	0.036	-3.303368	-.1157545
DIS_femhd#c.tmp_agehd						
Female head	.0981043	.0357431	2.74	0.006	.0278614	.1683473
DIS_femhd#c.tmp_agehd2						
Female head	-.0009948	.0003629	-2.74	0.006	-.001708	-.0002817
DIS_femhd#c.tmp_agesp						
Female head	-.0001772	.0003637	-0.49	0.626	-.000892	.0005375
DIS_femhd#c.tmp_agesp2						
Female head	-.0001274	.0001942	-0.66	0.512	-.000509	.0002542
DIS_femhd#c.shr_age						
Female head	-.0211434	.0202621	-1.04	0.297	-.0609628	.018676
DIS_femhd#c.shr_age2						
Female head	.0006621	.0004435	1.49	0.136	-.0002094	.0015337
_IDIS_hassp_0	-98.33713	28.47074	-3.45	0.001	-154.2882	-42.38603
_cons	-5.606379	.5943165	-9.43	0.000	-6.774338	-4.438419

A.4 Deprivations

Survey: Linear regression

Number of strata	= 18	Number of obs	= 11,965
Number of PSUs	= 471	Population size	= 29,365,270
		Design df	= 453
		F(53, 401)	= 313.88
		Prob > F	= 0.0000
		R-squared	= 0.7503

MPI_score	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf.	Interval]
lnpc	-8.400951	3.815589	-2.20	0.028	-15.8994	-.9024997
lnpc2	.1641106	.1860888	0.88	0.378	-.2015938	.529815
province						
Cabinda	3.7978	1.050106	3.62	0.000	1.734116	5.861484
Zaire	7.199309	.7537513	9.55	0.000	5.718026	8.680592
Uige	8.438762	1.665903	5.07	0.000	5.164907	11.71262
Kwanza Norte	4.741846	1.22038	3.89	0.000	2.343538	7.140154
Kwanza Sul	10.42869	1.276297	8.17	0.000	7.920496	12.93689
Malanje	6.151851	1.823206	3.37	0.001	2.568861	9.734841
Lunda Norte	20.07845	.8523904	23.56	0.000	18.40332	21.75358
Benguela	3.954717	1.374299	2.88	0.004	1.253925	6.655509
Huambo	1.172713	.9967119	1.18	0.240	-.7860403	3.131465
Bie	9.355002	.9621562	9.72	0.000	7.464159	11.24585
Moxico	10.15325	1.471882	6.90	0.000	7.260682	13.04581
Kuando Kubango	13.76748	1.174469	11.72	0.000	11.4594	16.07556
Namibe	4.817243	1.577293	3.05	0.002	1.717524	7.916963
Huila	11.52236	1.633422	7.05	0.000	8.312334	14.73238
Cunene	21.70395	1.595347	13.60	0.000	18.56875	24.83915
Lunda Sul	15.94771	1.597543	9.98	0.000	12.80819	19.08722
Bengo	3.185581	1.021955	3.12	0.002	1.17722	5.193943
area						
Rural	14.85004	.9186987	16.16	0.000	13.0446	16.65548
hhsize	-1.189214	.3374357	-3.52	0.000	-1.852347	-.5260803
hhsize2	.037874	.0176099	2.15	0.032	.0032668	.0724812
tmp_u18	1.390778	.3909113	3.56	0.000	.6225538	2.159003
tmp_u182	-.0219933	.0313119	-0.70	0.483	-.0835279	.0395413
tmp_o64	-1.606644	1.504041	-1.07	0.286	-4.562407	1.34912
tmp_o642	.4056867	.8809731	0.46	0.645	-1.325614	2.136988
tmp_fem	.7201781	.3572944	2.02	0.044	.0180179	1.422338
tmp_fem2	-.0787035	.044871	-1.75	0.080	-.1668846	.0094775
tmp_agehd	-.1458368	.077941	-1.87	0.062	-.2990076	.007334
tmp_agehd2	.0007776	.0007958	0.98	0.329	-.0007862	.0023415
tmp_agesp	-.0477176	.1075346	-0.44	0.657	-.2590461	.1636108
tmp_agesp2	.0017786	.0013734	1.30	0.196	-.0009203	.0044776
DIS_femhd						
Female head	-4.900066	1.092071	-4.49	0.000	-7.046219	-2.753912
DIS_marital						
Never married	-2.53867	1.047304	-2.42	0.016	-4.596847	-.4804921
Unmarried	-.0968157	.883961	-0.11	0.913	-1.833989	1.640357
EMP_sectorlhd						
Agriculture/fishing	.4258845	.7087635	0.60	0.548	-.9669879	1.818757
Extractive	-3.638758	1.343541	-2.71	0.007	-6.279105	-.9984116
Manufacturing	-3.756949	1.007211	-3.73	0.000	-5.736335	-1.777564
Construction	-4.790763	.8975929	-5.34	0.000	-6.554726	-3.026801
Commerce	-5.308543	.6243174	-8.50	0.000	-6.53546	-4.081625
Transport/coms	-4.790142	.9319595	-5.14	0.000	-6.621642	-2.958641
Other services	-5.551983	.5548388	-10.01	0.000	-6.64236	-4.461605
DEMO_migrhd						
Not in past 2yrs	-2.091329	.5261918	-3.97	0.000	-3.125409	-1.05725
Moved in past 2yrs	-.3150425	.9476146	-0.33	0.740	-2.177308	1.547223
tmp_yearseduhd	-2.985145	.205001	-14.56	0.000	-3.388016	-2.582274
tmp_yearseduhd2	.1422414	.0117406	12.12	0.000	.1191687	.1653142
tmp_yearsedusp	-.7744926	.1931729	-4.01	0.000	-1.154119	-.3948664
tmp_yearsedusp2	.0271989	.0117352	2.32	0.021	.0041368	.0502611
DIS_femhd#c.tmp_yearseduhd						
Female head	-.0190121	.2705261	-0.07	0.944	-.550654	.5126298
DIS_femhd#c.tmp_yearseduhd2						
Female head	-.0140826	.0165673	-0.85	0.396	-.0466409	.0184757
DIS_femhd#c.tmp_yearsedusp						
Female head	-.0247024	.0094011	-2.63	0.009	-.0431776	-.0062271
DIS_femhd#c.tmp_yearsedusp2						
Female head	.0273686	.0098602	2.78	0.006	.0079912	.046746
DIS_hasspouse	-748.4758	181.6665	-4.12	0.000	-1105.49	-391.4621
_cons	856.9178	177.9791	4.81	0.000	507.1506	1206.685

A.5 Education (controlling for employment)

```
Survey: Logistic regression

Number of strata   =        18                Number of obs     =      11,956
Number of PSUs     =       471                Population size   =  29,325,301
                                              Design df         =         453
                                              F(  73,    381)   =       29.31
                                              Prob > F          =      0.0000
```

FGT0	Linearized Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	.0265848	.2279993	0.12	0.907	-.4214827	.4746524
Zaire	-.1506188	.2861063	-0.53	0.599	-.712879	.4116414
Uige	.9395599	.2047732	4.59	0.000	.5371367	1.341983
Kwanza Norte	.8141737	.2872603	2.83	0.005	.2496455	1.378702
Kwanza Sul	.8858407	.2146409	4.13	0.000	.4640253	1.307656
Malanje	.8842984	.2294267	3.85	0.000	.4334258	1.335171
Lunda Norte	.126661	.3250523	0.39	0.697	-.5121364	.7654585
Benguela	1.058059	.2564821	4.13	0.000	.5540163	1.562101
Huambo	.8282751	.2202994	3.76	0.000	.3953394	1.261211
Bie	.4465616	.240892	1.85	0.064	-.0268428	.919966
Moxico	1.402815	.2522482	5.56	0.000	.9070927	1.898536
Kuando Kubango	1.099356	.2364065	4.65	0.000	.634766	1.563945
Namibe	.639133	.2712182	2.36	0.019	.1061311	1.172135
Huila	.6631922	.2144165	3.09	0.002	.2418178	1.084567
Cunene	1.055522	.2077721	5.08	0.000	.6472052	1.463839
Lunda Sul	1.307397	.2080311	6.28	0.000	.8985714	1.716223
Bengo	1.050353	.2860317	3.67	0.000	.4882395	1.612467
area						
Rural	-.1868979	.1819459	-1.03	0.305	-.5444606	.1706648
hhsize	.0734957	.232592	0.32	0.752	-.3835975	.530589
hhsize2	-.0079513	.0136866	-0.58	0.562	-.0348483	.0189458
tmp_u18	.4555097	.1696038	2.69	0.008	.1222018	.7888175
tmp_u182	-.0178623	.0141628	-1.26	0.208	-.0456953	.0099706
tmp_o64	.113785	.3188669	0.36	0.721	-.512857	.7404269
tmp_o642	-.0736821	.1843875	-0.40	0.690	-.4360431	.288679
tmp_fem	-.1079663	.0733612	-1.47	0.142	-.2521367	.0362042
tmp_fem2	.0112253	.009267	1.21	0.226	-.0069863	.0294369
tmp_agehd	.0423698	.0186618	2.27	0.024	.0056953	.0790443
tmp_agehd2	-.0005555	.0001787	-3.11	0.002	-.0009068	-.0002043
tmp_agesp	.0394784	.0264761	1.49	0.137	-.0125529	.0915097
tmp_agesp2	-.0003445	.0003205	-1.07	0.283	-.0009744	.0002854
_IDIS_femhd_1	-.143063	.1592934	-0.90	0.370	-.4561087	.1699826
_IDIS_marit_1	-.3508585	.238711	-1.47	0.142	-.8199768	.1182599
_IDIS_marit_3	.2220684	.2781296	0.80	0.425	-.3245159	.7686527
_IDIS_hassp_0	25.0151	44.38456	0.56	0.573	-62.21007	112.2403
_IDIS_hasot_1	.1269798	.1280593	0.99	0.322	-.1246842	.3786439
tmp_yearseduhd	-.2055666	.0460448	-4.46	0.000	-.2960545	-.1150786
tmp_yearseduhd2	.0073292	.0044209	1.66	0.098	-.0013589	.0160172
tmp_yearsedusp	-.0532349	.0364831	-1.46	0.145	-.124932	.0184622
tmp_yearsedusp2	-.0110854	.0041281	-2.69	0.008	-.0191979	-.0029728
area#c.tmp_yearseduhd						
Rural	.0653062	.0533713	1.22	0.222	-.0395799	.1701922
area#c.tmp_yearseduhd2						
Rural	-.002958	.0055907	-0.53	0.597	-.0139449	.0080289
area#c.tmp_yearsedusp						
Rural	-.0043	.0041868	-1.03	0.305	-.0125279	.0039279
area#c.tmp_yearsedusp2						
Rural	.0051952	.0041823	1.24	0.215	-.003024	.0134144

EMP_employhd						
Employed	.0948973	.1731666	0.55	0.584	-.2454122	.4352069
Self-employed	-.2280546	.2099179	-1.09	0.278	-.6405883	.1844792
Family/other	.3528633	.2490781	1.42	0.157	-.1366285	.8423552
Unemployed	.2380367	.212737	1.12	0.264	-.1800371	.6561105
EMP_employsp						
Employed	-.1398899	.2414304	-0.58	0.563	-.6143524	.3345725
Self-employed	-.4077036	.257252	-1.58	0.114	-.9132591	.0978518
Family/other	.0156216	.2105192	0.07	0.941	-.3980937	.429337
Unemployed	.0666192	.1987097	0.34	0.738	-.323888	.4571265
999	0	(omitted)				
EMP_employerhd						
Public	-.3336824	.5315236	-0.63	0.530	-1.37824	.7108756
Private	.2681686	.5186489	0.52	0.605	-.7510877	1.287425
Self-employed	.3731412	.4938139	0.76	0.450	-.5973091	1.343592
Family/NGO	.4471644	.5236423	0.85	0.394	-.581905	1.476234
EMP_employersp						
Public	-.6347115	.6375894	-1.00	0.320	-1.887711	.6182884
Private	-.4389123	.5597033	-0.78	0.433	-1.538849	.6610247
Self-employed	-.5499032	.525073	-1.05	0.296	-1.581784	.481978
Family/NGO	-.5122429	.5080761	-1.01	0.314	-1.510722	.4862357
999	0	(omitted)				
EMP_sector1hd						
Agriculture/fishing	-.240579	.4485484	-0.54	0.592	-1.122073	.6409149
Extractive	-.9842198	.5559148	-1.77	0.077	-2.076712	.1082721
Manufacturing	-.7301908	.4688233	-1.56	0.120	-1.651529	.1911477
Construction	-.5265845	.477764	-1.10	0.271	-1.465493	.4123242
Commerce	-1.005262	.4716553	-2.13	0.034	-1.932166	-.0783585
Transport/coms	-1.161439	.4906447	-2.37	0.018	-2.125661	-.1972173
Other services	-.5725726	.4751098	-1.21	0.229	-1.506265	.3611201
EMP_sector1sp						
Agriculture/fishing	.8545853	.4380523	1.95	0.052	-.0062814	1.715452
Extractive	.7713367	.7723726	1.00	0.318	-.7465411	2.289215
Manufacturing	.5056765	.5249673	0.96	0.336	-.5259969	1.53735
Construction	1.791826	.6835853	2.62	0.009	.4484338	3.135217
Commerce	.1128922	.4573419	0.25	0.805	-.7858827	1.011667
Transport/coms	1.539987	.9184436	1.68	0.094	-.2649522	3.344925
Other services	.3551935	.500669	0.71	0.478	-.6287286	1.339116
999	0	(omitted)				
_cons	-2.806767	.5176822	-5.42	0.000	-3.824123	-1.78941

A.6 Education, by sex of the household head

Survey: Logistic regression

Number of strata	= 18	Number of obs	= 11,956
Number of PSUs	= 471	Population size	= 29,325,301
		Design df	= 453
		F(48, 406)	= 30.69
		Prob > F	= 0.0000

FGT0	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	.0500673	.2193036	0.23	0.820	-.3809113	.4810459
Zaire	.3403143	.2766895	1.23	0.219	-.2034398	.8840684
Uige	.9115382	.2152132	4.24	0.000	.4885981	1.334478
Kwanza Norte	1.154776	.2800522	4.12	0.000	.6044132	1.705139
Kwanza Sul	1.162246	.204954	5.67	0.000	.7594672	1.565024
Malanje	1.108308	.2213409	5.01	0.000	.6733251	1.54329
Lunda Norte	.3228583	.319895	1.01	0.313	-.305804	.9515206
Benguela	1.276706	.2647617	4.82	0.000	.7563928	1.79702
Huambo	1.11067	.2149062	5.17	0.000	.6883333	1.533007
Bie	.7876606	.2421529	3.25	0.001	.3117782	1.263543
Moxico	1.704726	.2743964	6.21	0.000	1.165478	2.243974
Kuando Kubango	1.281917	.2268085	5.65	0.000	.8361901	1.727645
Namibe	.6167482	.2522415	2.45	0.015	.1210395	1.112457
Huila	.8421756	.211783	3.98	0.000	.4259767	1.258375
Cunene	1.034619	.1891639	5.47	0.000	.6628716	1.406367
Lunda Sul	1.398373	.2008924	6.96	0.000	1.003577	1.79317
Bengo	.9138732	.2918353	3.13	0.002	.3403542	1.487392
area						
Rural	.7166296	.0833884	8.59	0.000	.5527536	.8805056
hhsize	.0969825	.2108019	0.46	0.646	-.3172885	.5112535
hhsize2	-.0085327	.0125053	-0.68	0.495	-.0331082	.0160429
tmp_u18	.3936366	.1573554	2.50	0.013	.0843995	.7028736
tmp_u182	-.0150354	.0129936	-1.16	0.248	-.0405707	.0104999
tmp_o64	.0779444	.2994408	0.26	0.795	-.5105209	.6664098
tmp_o642	-.0355412	.173184	-0.21	0.837	-.3758849	.3048024
tmp_fem	-.112537	.0762351	-1.48	0.141	-.2623554	.0372813
tmp_fem2	.0119321	.0097371	1.23	0.221	-.0072033	.0310676
tmp_agehd	.0346586	.0182517	1.90	0.058	-.0012098	.070527
tmp_agehd2	-.0004561	.0001708	-2.67	0.008	-.0007917	-.0001205
tmp_agesp	.040032	.0285073	1.40	0.161	-.0159909	.0960549
tmp_agesp2	-.0003621	.0003424	-1.06	0.291	-.001035	.0003107
_IDIS_femhd_1	1.025572	.8081582	1.27	0.205	-.5626326	2.613776
_IDIS_marit_1	-.3033593	.2146864	-1.41	0.158	-.7252642	.1185456
_IDIS_marit_3	.2076949	.243444	0.85	0.394	-.2707247	.6861146
_IDIS_hassp_0	.2244187	47.85138	0.00	0.996	-93.81382	94.26265
_IDIS_hasot_1	.0426768	.1212388	0.35	0.725	-.1955833	.280937
EDU_alfabhead						
Illiterate	.2946537	.1810961	1.63	0.104	-.061239	.6505464
EDU_alfabspouse						
Illiterate	.1563127	.1402603	1.11	0.266	-.119329	.4319543
999	0	(omitted)				
tmp_yearseduhd	-.1129179	.068855	-1.64	0.102	-.2482327	.0223969
tmp_yearseduhd2	.0016167	.0048963	0.33	0.741	-.0080056	.0112391
tmp_yearsedusp	-.0260085	.0427275	-0.61	0.543	-.1099772	.0579603
tmp_yearsedusp2	-.0132467	.0040864	-3.24	0.001	-.0212773	-.0052161
DIS_femhd						
Female head	0	(omitted)				
EDU_alfabhead#DIS_femhd						
Illiterate#Female head	.1433069	.2719816	0.53	0.599	-.3911953	.6778091
EDU_alfabspouse#DIS_femhd						
Illiterate#Female head	-.9646999	.6151645	-1.57	0.118	-2.17363	.2442303
999#Female head	215.2647	156.3052	1.38	0.169	-91.9086	522.4379
DIS_femhd#c.tmp_yearseduhd						
Female head	.0138386	.0740319	0.19	0.852	-.13165	.1593273
DIS_femhd#c.tmp_yearseduhd2						
Female head	-.0030165	.0035296	-0.85	0.393	-.0099528	.0039199
DIS_femhd#c.tmp_yearsedusp						
Female head	-.2345967	.1665756	-1.41	0.160	-.5619535	.0927601
DIS_femhd#c.tmp_yearsedusp2						
Female head	.0177132	.0106781	1.66	0.098	-.0032715	.0386979
_cons	-3.798237	.5426234	-7.00	0.000	-4.864608	-2.731865

A.7 School attendance (urban)

Survey: Logistic regression

Number of strata = 18 Number of obs = 7,915
Number of PSUs = 444 Population size = 28,208,014
Design df = 426
F(50, 377) = 6.73
Prob > F = 0.0000

notattending	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	.2219355	.2813178	0.79	0.431	-.3310082	.7748792
Zaire	-.669413	.3542619	-1.89	0.059	-1.365732	.0269059
Uige	-.6479461	.3215895	-2.01	0.045	-1.280046	-.0158465
Kwanza Norte	-.4954288	.311055	-1.59	0.112	-1.106822	.1159648
Kwanza Sul	-.103034	.4662097	-0.22	0.825	-1.019392	.8133237
Malanje	-.1442296	.2556142	-0.56	0.573	-.6466516	.3581924
Lunda Norte	.0515019	.3164377	0.16	0.871	-.5704718	.6734756
Benguela	-.7052596	.283425	-2.49	0.013	-1.262345	-.1481741
Huambo	-.5859751	.2953565	-1.98	0.048	-1.166513	-.0054375
Bie	.2042404	.3112678	0.66	0.512	-.4075714	.8160523
Moxico	.0562047	.3633172	0.15	0.877	-.6579127	.7703222
Kuando Kubango	.3105412	.2924879	1.06	0.289	-.2643579	.8854402
Namibe	-.2877261	.2862327	-1.01	0.315	-.8503302	.2748781
Huila	-.6891158	.4056213	-1.70	0.090	-1.486384	.1081524
Cunene	-.0610006	.4970614	-0.12	0.902	-1.037999	.9159975
Lunda Sul	-.0455932	.3473775	-0.13	0.896	-.7283804	.637194
Bengo	-.5404906	.3082547	-1.75	0.080	-1.14638	.0653989
hhsize	-.0289042	.2163568	-0.13	0.894	-.454164	.3963556
hhsize2	.0056292	.0111653	0.50	0.614	-.0163168	.0275752
tmp_u18	.5509518	.1960523	2.81	0.005	.1656015	.9363021
tmp_u182	-.03533	.0156605	-2.26	0.025	-.0661116	-.0045485
tmp_o64	-.6142268	.6646571	-0.92	0.356	-1.920642	.6921887
tmp_o642	.3682082	.4550037	0.81	0.419	-.5261236	1.26254
tmp_fem	.033712	.1311443	0.26	0.797	-.2240584	.2914825
tmp_fem2	-.0127121	.0143216	-0.89	0.375	-.040862	.0154378
tmp_agehd	-.0435173	.0524006	-0.83	0.407	-.1465132	.0594786
tmp_agehd2	.0006345	.000537	1.18	0.238	-.000421	.0016901
tmp_agesp	-.1093563	.0534262	-2.05	0.041	-.2143681	-.0043446
tmp_agesp2	.0011582	.0006481	1.79	0.075	-.0001157	.0024321
DIS_femhd						
Female head	.5266273	.3259569	1.62	0.107	-.1140568	1.167311
_IDIS_hassp_0	0	(omitted)				
_IDIS_hasot_1	-.0793214	.1750195	-0.45	0.651	-.4233306	.2646878
tmp_time2school	.0186958	.0118649	1.58	0.116	-.0046252	.0420167
tmp_time2school2	-.0000739	.000089	-0.83	0.407	-.0002488	.000101
EDU_alfabspouse						
Literate	.5067974	.3909185	1.30	0.196	-.2615718	1.275167
EDU_alfabspouse#c.tmp_time2school						
Literate	-.0466847	.0203475	-2.29	0.022	-.0866786	-.0066908
EDU_alfabspouse#c.tmp_time2school2						
Literate	.0005281	.000182	2.90	0.004	.0001703	.0008859
S103						
Feminino	.5755261	.3123896	1.84	0.066	-.0384908	1.189543
S103#c.tmp_time2school						
Feminino	-.0155556	.0151848	-1.02	0.306	-.0454021	.0142909
S103#c.tmp_time2school2						
Feminino	.0000846	.0001288	0.66	0.512	-.0001686	.0003378
EDU_alfabspouse#S103						
Literate#Feminino	-.6278364	.4549715	-1.38	0.168	-1.522105	.266432
EDU_alfabspouse#S103#c.tmp_time2school						
Literate#Feminino	.0200786	.0240767	0.83	0.405	-.0272452	.0674025
EDU_alfabspouse#S103#c.tmp_time2school2						
Literate#Feminino	-.0001604	.0002102	-0.76	0.446	-.0005736	.0002527
tmp_yearseduhd	-.0275516	.0207421	-1.33	0.185	-.0683211	.013218
tmp_yearsedusp	-.025313	.0261398	-0.97	0.333	-.0766921	.026066
lnpc	-3.447151	.8928648	-3.86	0.000	-5.20212	-1.692182
lnpc2	.1551467	.0467518	3.32	0.001	.0632538	.2470397
EDU_schoolmeal						
1	-.5263576	.2903129	-1.81	0.071	-1.096982	.0442665
999	.5418209	.2719594	1.99	0.047	.0072715	1.07637
EDU_schooltype						
Private	.4622152	.3317991	1.39	0.164	-.1899519	1.114382
Public	.7129588	.4041345	1.76	0.078	-.0813872	1.507305
_cons	17.23372	4.029616	4.28	0.000	9.313319	25.15413

A.8 School attendance (rural)

Survey: Logistic regression

Number of strata = 18 Number of obs = 3,899
Number of PSUs = 101 Population size = 16,264,314
Design df = 83
F(50, 34) = 31.36
Prob > F = 0.0000

notattending	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	.6012465	.3874083	1.55	0.124	-.169293	1.371786
Zaire	-.2702079	.4995464	-0.54	0.590	-1.263786	.7233699
Uige	-.2913526	.398045	-0.73	0.466	-1.083048	.5003429
Kwanza Norte	-.3416618	.3764133	-0.91	0.367	-1.090333	.4070091
Kwanza Sul	.2710287	.4130143	0.66	0.513	-.5504402	1.092498
Malanje	.2421628	.3730337	0.65	0.518	-.4997862	.9841118
Lunda Norte	.5844629	.3859865	1.51	0.134	-.1832487	1.352174
Benguela	.0671942	.3960959	0.17	0.866	-.7206245	.855013
Huambo	-.3368388	.403475	-0.83	0.406	-1.139334	.4656568
Bie	.3926135	.3686427	1.07	0.290	-.340602	1.125829
Moxico	.4276543	.3816159	1.12	0.266	-.3313644	1.186673
Kuando Kubango	.5572482	.4168855	1.34	0.185	-.2719203	1.386417
Namibe	-.0949951	.3843623	-0.25	0.805	-.8594761	.669486
Huila	-.161354	.4079701	-0.40	0.693	-.97279	.6500821
Cunene	.0675013	.389189	0.17	0.863	-.7065799	.8415824
Lunda Sul	-.5738606	.4678647	-1.23	0.223	-1.504425	.3567035
Bengo	-.1826191	.3757339	-0.49	0.628	-.9299386	.5647004
area						
Urban	0	(empty)				
Rural	0	(omitted)				
hhsize	-.5961126	.1546958	-3.85	0.000	-.9037963	-.2884289
hhsize2	.0241394	.0055409	4.36	0.000	.0131189	.03516
tmp_u18	.8764377	.1803986	4.86	0.000	.5176322	1.235243
tmp_u182	-.0539957	.0132817	-4.07	0.000	-.0804125	-.027579
tmp_o64	-.3346574	.3237232	-1.03	0.304	-.9785298	.3092149
tmp_o642	.204258	.2102132	0.97	0.334	-.2138477	.6223636
tmp_fem	-.0248884	.1636108	-0.15	0.879	-.3503038	.3005269
tmp_fem2	.005504	.0186809	0.29	0.769	-.0316516	.0426596
tmp_agehd	.0576704	.0363787	1.59	0.117	-.0146853	.1300261
tmp_agehd2	-.000631	.0003634	-1.74	0.086	-.0013538	.0000918
tmp_agesp	.0113978	.0485606	0.23	0.815	-.0851873	.107983
tmp_agesp2	-.0001389	.0005607	-0.25	0.805	-.0012541	.0009764
DIS_femhd						
Female head	-.0817604	.2142553	-0.38	0.704	-.5079056	.3443847
_IDIS_hassp_0	0	(omitted)				
_IDIS_hasot_1	.2208308	.1645259	1.34	0.183	-.1064045	.5480661
tmp_time2school	.0075569	.0072563	1.04	0.301	-.0068756	.0219895
tmp_time2school2	-.0000149	.0000491	-0.30	0.762	-.0001125	.0000826
EDU_alfabspouse						
Literate	-.316593	.3960757	-0.80	0.426	-1.104372	.4711856
EDU_alfabspouse#c.tmp_time2school						
Literate	.0108305	.0192949	0.56	0.576	-.0275462	.0492072
EDU_alfabspouse#c.tmp_time2school2						
Literate	-.0001189	.0001371	-0.87	0.388	-.0003917	.0001538
S103						
Feminino	.3879722	.2625163	1.48	0.143	-.1341622	.9101066
S103#c.tmp_time2school						
Feminino	-.0071215	.0089015	-0.80	0.426	-.0248262	.0105831
S103#c.tmp_time2school2						
Feminino	.0000147	.0000628	0.23	0.815	-.0001102	.0001397
EDU_alfabspouse#S103						
Literate#Feminino	.4396722	.4968825	0.88	0.379	-.5486071	1.427951
EDU_alfabspouse#S103#c.tmp_time2school						
Literate#Feminino	-.0309921	.0215044	-1.44	0.153	-.0737636	.0117793
EDU_alfabspouse#S103#c.tmp_time2school2						
Literate#Feminino	.0002859	.000141	2.03	0.046	5.40e-06	.0005664
tmp_yearseduhd	-.0727784	.0207554	-3.51	0.001	-.1140601	-.0314967
tmp_yearsedusp	-.0692916	.0325895	-2.13	0.036	-.1341108	-.0044723
lnpc	-.9656323	1.030044	-0.94	0.351	-3.014348	1.083084
lnpc2	.0406698	.0588224	0.69	0.491	-.0763257	.1576652
EDU_schoolmeal						
1	-.2097654	.2444394	-0.86	0.393	-.6959456	.2764148
999	1.436631	.3100405	4.63	0.000	.8199732	2.053289
EDU_schooltype						
Private	-.0795093	.4575616	-0.17	0.862	-.9895809	.8305622
Public	1.088838	.3485824	3.12	0.002	.3955215	1.782154
_cons	1.755596	4.188083	0.42	0.676	-6.574333	10.08553

A.9 Consulting health professional while sick (urban)

Survey: Logistic regression

Number of strata	= 18	Number of obs	= 5,277
Number of PSUs	= 448	Population size	= 13,346,269
		Design df	= 430
		F(41, 390)	= 7.17
		Prob > F	= 0.0000

hlt_didnotconsult	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	-.4210395	.2126996	-1.98	0.048	-.8390998	-.0029792
Zaire	.5831091	.1657562	3.52	0.000	.257316	.9089023
Uige	.3183478	.2249469	1.42	0.158	-.1237844	.7604801
Kwanza Norte	.0414167	.1817051	0.23	0.820	-.3157239	.3985573
Kwanza Sul	-.1012046	.2096415	-0.48	0.630	-.5132543	.310845
Malanje	-.8865757	.2171837	-4.08	0.000	-1.31345	-.4597019
Lunda Norte	.4298291	.1495122	2.87	0.004	.1359635	.7236948
Benguela	-.101183	.1365183	-0.74	0.459	-.3695091	.1671432
Huambo	-.4164498	.2003339	-2.08	0.038	-.8102053	-.0226944
Bie	-.3254868	.2298872	-1.42	0.158	-.7773293	.1263556
Moxico	-1.200478	.2411889	-4.98	0.000	-1.674534	-.7264226
Kuando Kubango	-.1765128	.183641	-0.96	0.337	-.5374585	.184433
Namibe	.2103407	.1707156	1.23	0.219	-.1252002	.5458817
Huila	.2081012	.241739	0.86	0.390	-.2670359	.6832384
Cunene	-.2122332	.2499829	-0.85	0.396	-.7035737	.2791073
Lunda Sul	-.3559945	.2089912	-1.70	0.089	-.7667659	.0547769
Bengo	-.7760621	.261248	-2.97	0.003	-1.289544	-.2625802
hhsize	-.0261045	.1243823	-0.21	0.834	-.2705775	.2183685
hhsize2	.0020914	.0074101	0.28	0.778	-.0124733	.016656
tmp_u18	.0832879	.1097367	0.76	0.448	-.1323993	.298975
tmp_u182	-.0082085	.0114686	-0.72	0.475	-.03075	.014333
tmp_o64	1.007833	.5242485	1.92	0.055	-.0225754	2.038241
tmp_o642	-.5498673	.3533956	-1.56	0.120	-1.244465	.1447304
tmp_fem	-.1550884	.0984825	-1.57	0.116	-.3486554	.0384786
tmp_fem2	.0197791	.0109388	1.81	0.071	-.001721	.0412793
tmp_agehd	.0160761	.0274011	0.59	0.558	-.0377807	.0699328
tmp_agehd2	-.0002799	.0002942	-0.95	0.342	-.0008581	.0002983
tmp_agesp	-.0262487	.0398479	-0.66	0.510	-.1045696	.0520721
tmp_agesp2	.000541	.0005198	1.04	0.299	-.0004807	.0015627
DIS_femhd						
Female head	-.1445919	.2341221	-0.62	0.537	-.6047579	.3155741
DIS_marital						
Never married	.2577007	.2884675	0.89	0.372	-.3092811	.8246826
Unmarried	.3512127	.2676005	1.31	0.190	-.174755	.8771805
_IDIS_hassp_0	640.1999	321.965	1.99	0.047	7.379004	1273.021
lnpc	.1254719	1.083529	0.12	0.908	-2.004201	2.255145
lnpc2	-.036675	.0564786	-0.65	0.516	-.1476835	.0743335
DIS_hasspouse	0	(omitted)				
tmp_yearseduhd	.0460117	.2595768	0.18	0.859	-.4641854	.5562089
tmp_yearsedusp	-.6155698	.3154888	-1.95	0.052	-1.235662	.0045223
1.HLT_hasinsurance	-.1040668	.4032725	-0.26	0.796	-.8966973	.6885637
HLT_healthfacility						
Other Hospital	.5503157	.1528441	3.60	0.000	.2499012	.8507303
Central Hospital	.7285929	.1578053	4.62	0.000	.4184272	1.038759
Private	.7778521	.1708625	4.55	0.000	.4420224	1.113682
_cons	1.47131	5.183253	0.28	0.777	-8.716354	11.65898

A.10 Consulting health professional while sick (rural)

```
Survey: Logistic regression

Number of strata   =        18                  Number of obs     =      2,907
Number of PSUs     =       101                  Population size   =  7,978,407
                                                Design df         =         83
                                                F(  49,     35)   =      24.16
                                                Prob > F          =     0.0000
```

hlt_didnotconsult	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	-.3995357	.4390829	-0.91	0.365	-1.272854	.4737825
Zaire	.5841494	.436616	1.34	0.185	-.2842624	1.452561
Uige	.6088318	.3238468	1.88	0.064	-.0352865	1.25295
Kwanza Norte	-.0665686	.3258038	-0.20	0.839	-.7145793	.5814422
Kwanza Sul	-.1579143	.3188738	-0.50	0.622	-.7921415	.4763129
Malanje	-.4663202	.382036	-1.22	0.226	-1.226174	.2935339
Lunda Norte	1.392039	.2976389	4.68	0.000	.8000475	1.984031
Benguela	-.5540429	.414037	-1.34	0.185	-1.377546	.2694599
Huambo	-.7787107	.3377015	-2.31	0.024	-1.450385	-.1070359
Bie	-.3226141	.3228625	-1.00	0.321	-.9647746	.3195464
Moxico	-.464795	.3797323	-1.22	0.224	-1.220067	.2904772
Kuando Kubango	-.2049119	.3359926	-0.61	0.544	-.8731876	.4633638
Namibe	.0712397	.3278368	0.22	0.829	-.5808144	.7232939
Huila	-.5064759	.4057644	-1.25	0.215	-1.313525	.3005732
Cunene	-.489895	.3871996	-1.27	0.209	-1.260019	.2802293
Lunda Sul	-.4201757	.4754766	-0.88	0.379	-1.365879	.525528
Bengo	-.7460289	.3220903	-2.32	0.023	-1.386653	-.1054042
area						
Urban	0	(empty)				
Rural	0	(omitted)				
hhsize	-.2104672	.1518014	-1.39	0.169	-.5123941	.0914598
hhsize2	.008527	.0075071	1.14	0.259	-.0064042	.0234583
tmp_u18	.1874841	.1545833	1.21	0.229	-.1199759	.4949442
tmp_u182	-.0108712	.0120099	-0.91	0.368	-.0347585	.0130161
tmp_o64	-.1006299	.4708533	-0.21	0.831	-1.037138	.8358783
tmp_o642	-.0432751	.2729039	-0.16	0.874	-.58607	.4995197
tmp_fem	-.1843731	.1432964	-1.29	0.202	-.4693839	.1006377
tmp_fem2	.024324	.0188249	1.29	0.200	-.013118	.061766
tmp_agehd	.0074066	.0186917	0.40	0.693	-.0297704	.0445836
tmp_agehd2	-.0000142	.0001931	-0.07	0.942	-.0003983	.0003699
tmp_agesp	-.0008423	.029114	-0.03	0.977	-.058749	.0570644
tmp_agesp2	.0001228	.0003608	0.34	0.735	-.0005949	.0008405
DIS_femhd						
Female head	-.0263107	.2766388	-0.10	0.924	-.5765342	.5239128
DIS_marital						
Never married	.1074446	.3912092	0.27	0.784	-.6706549	.885544
Unmarried	.2567232	.3724627	0.69	0.493	-.4840902	.9975366
_IDIS_hassp_0	601.2011	431.9469	1.39	0.168	-257.9238	1460.326
lnpc	-.3699168	1.097863	-0.34	0.737	-2.553522	1.813688
lnpc2	-.0081932	.0626841	-0.13	0.896	-.1328693	.116483
DIS_hasspouse	0	(omitted)				
tmp_yearseduhd	-.658828	.5821336	-1.13	0.261	-1.816668	.4990123
tmp_yearsedusp	-.601217	.4273854	-1.41	0.163	-1.451269	.2488354
1.HLT_hasinsurance	.0965431	.8980044	0.11	0.915	-1.689551	1.882638
HLT_healthfacility						
Other Hospital	.1157121	.1266419	0.91	0.364	-.1361735	.3675977
Central Hospital	.0921302	.2228293	0.41	0.680	-.3510684	.5353287
Private	.6698336	.1860114	3.60	0.001	.2998644	1.039803
tmp_time2health	-.0114793	.0105582	-1.09	0.280	-.0324791	.0095205
tmp_time2health2	.0000897	.0000576	1.56	0.123	-.0000248	.0002042
COM_road						
Unpaved road	-.2520126	.2778286	-0.91	0.367	-.8046025	.3005773
Path/other	-.3037168	.2613619	-1.16	0.249	-.8235551	.2161215
COM_road#c.tmp_time2health						
Unpaved road	.0131152	.0131612	1.00	0.322	-.0130618	.0392923
Path/other	.0193175	.0106927	1.81	0.074	-.0019498	.0405848
COM_road#c.tmp_time2health2						
Unpaved road	-.000086	.0000708	-1.22	0.228	-.0002268	.0000547
Path/other	-.0000953	.0000645	-1.48	0.143	-.0002237	.000033
_cons	4.616125	4.954995	0.93	0.354	-5.23916	14.47141

A.11 Employment

Survey: Logistic regression

Number of strata	= 18	Number of obs	= 7,482
Number of PSUs	= 471	Population size	= 21,220,843
		Design df	= 453
		F(56, 398)	= 22.34
		Prob > F	= 0.0000

FGT0	Linearized Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	-.2079074	.3171631	-0.66	0.512	-.831201	.4153862
Zaire	-.2736952	.2924371	-0.94	0.350	-.848397	.3010065
Uige	.8370808	.2375867	3.52	0.000	.3701719	1.30399
Kwanza Norte	1.226175	.2552507	4.80	0.000	.7245527	1.727798
Kwanza Sul	1.070813	.2415858	4.43	0.000	.5960448	1.545581
Malanje	1.201715	.2534217	4.74	0.000	.7036867	1.699743
Lunda Norte	.7782902	.3272978	2.38	0.018	.1350797	1.421501
Benguela	.7886337	.3191492	2.47	0.014	.161437	1.41583
Huambo	.9843479	.2373276	4.15	0.000	.5179483	1.450747
Bie	.7742922	.2842991	2.72	0.007	.2155834	1.333001
Moxico	1.775396	.2563355	6.93	0.000	1.271642	2.27915
Kuando Kubango	1.480205	.2473928	5.98	0.000	.9940255	1.966385
Namibe	.5326644	.3270066	1.63	0.104	-.1099738	1.175303
Huila	.764257	.2195858	3.48	0.001	.3327238	1.19579
Cunene	1.019796	.2534452	4.02	0.000	.5217215	1.51787
Lunda Sul	1.641052	.2365451	6.94	0.000	1.17619	2.105913
Bengo	1.214879	.2960653	4.10	0.000	.6330476	1.796711
area						
Rural	.8645018	.1290329	6.70	0.000	.6109245	1.118079
hhsize	.0108411	.1276938	0.08	0.932	-.2401046	.2617869
hhsize2	-.0057466	.0072424	-0.79	0.428	-.0199795	.0084864
tmp_u18	.529381	.1226568	4.32	0.000	.2883341	.770428
tmp_u182	-.0251954	.0110807	-2.27	0.023	-.0469714	-.0034193
tmp_o64	.0873768	.3288783	0.27	0.791	-.5589396	.7336932
tmp_o642	-.020637	.1819812	-0.11	0.910	-.3782691	.3369952
tmp_fem	-.1019958	.0916149	-1.11	0.266	-.2820387	.0780472
tmp_fem2	.0172648	.0113515	1.52	0.129	-.0050433	.0395728
tmp_agehd	-.0235077	.0281233	-0.84	0.404	-.078776	.0317605
tmp_agehd2	.0001694	.000266	0.64	0.525	-.0003534	.0006921
tmp_agesp	.1101251	.0290061	3.80	0.000	.0531218	.1671284
tmp_agesp2	-.0010157	.0003053	-3.33	0.001	-.0016157	-.0004157
DIS_femhd						
Female head	-.1834842	.2118191	-0.87	0.387	-.5997542	.2327858
_IDIS_hassp_0	0	(omitted)				
EMP_employerhd						
Public	-1.030965	.4415576	-2.33	0.020	-1.898721	-.1632098
Private	.0930263	.4096734	0.23	0.820	-.7120698	.8981225
Self-employed	.3933118	.3858997	1.02	0.309	-.3650639	1.151688
Family/NGO	.3574696	.4495943	0.80	0.427	-.5260797	1.241019
EMP_sectorlhd						
Agriculture/fishing	.3684343	.3326936	1.11	0.269	-.28538	1.022249
Extractive	-.6268369	.4800441	-1.31	0.192	-1.570227	.3165527
Manufacturing	-.5864995	.3517838	-1.67	0.096	-1.27783	.1048311
Construction	-.3678281	.3704402	-0.99	0.321	-1.095823	.3601664
Commerce	-.7025606	.376578	-1.87	0.063	-1.442617	.037496
Transport/coms	-.9125978	.3946872	-2.31	0.021	-1.688243	-.1369527
Other services	-.1256169	.3754858	-0.33	0.738	-.863527	.6122933
tmp_hoursworked	.0005136	.0003026	1.70	0.090	-.0000811	.0011083
EMP_employhd						
Employed	-.1398567	.2240208	-0.62	0.533	-.5801056	.3003923
Self-employed	-.6662246	.2417897	-2.76	0.006	-1.141393	-.1910559
Family/other	.1004688	.3095088	0.32	0.746	-.5077824	.70872
Unemployed	.4258607	.2810426	1.52	0.130	-.1264484	.9781697
EMP_employhd#c.tmp_hoursworked						
Employed	-.0004175	.0003167	-1.32	0.188	-.0010398	.0002048
Self-employed	-.0004064	.0003476	-1.17	0.243	-.0010895	.0002766
Family/other	-.000832	.000345	-2.41	0.016	-.00151	-.0001539
Unemployed	.0000889	.0005603	0.16	0.874	-.0010123	.0011901
c.tmp_hoursworked#c.tmp_hoursworked	-8.80e-08	4.28e-08	-2.05	0.041	-1.72e-07	-3.75e-09
EMP_employhd#c.tmp_hoursworked#c.tmp_hoursworked						
Employed	8.13e-08	4.38e-08	1.86	0.064	-4.78e-09	1.67e-07
Self-employed	8.30e-08	4.52e-08	1.84	0.067	-5.83e-09	1.72e-07
Family/other	1.30e-07	4.85e-08	2.68	0.008	3.45e-08	2.25e-07
Unemployed	-1.04e-08	7.16e-08	-0.14	0.885	-1.51e-07	1.30e-07
_cons	-4.954135	.4775599	-10.37	0.000	-5.892643	-4.015628

A.12 School attendance vs. housing conditions (urban)

```
Survey: Logistic regression

Number of strata   =        18                Number of obs     =      12,332
Number of PSUs     =       448                Population size   =  40,969,446
                                              Design df         =         430
                                              F(  57,    374)   =        9.57
                                              Prob > F          =      0.0000
```

notattending	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	-.5418202	.2644101	-2.05	0.041	-1.061517	-.0221232
Zaire	-.923735	.3293767	-2.80	0.005	-1.571124	-.2763464
Uige	-1.718103	.2792791	-6.15	0.000	-2.267025	-1.169181
Kwanza Norte	-1.564999	.273702	-5.72	0.000	-2.102959	-1.027039
Kwanza Sul	-1.07365	.5321368	-2.02	0.044	-2.119563	-.0277372
Malanje	-.8655922	.2773602	-3.12	0.002	-1.410743	-.3204419
Lunda Norte	-.3988765	.2959801	-1.35	0.178	-.9806241	.1828712
Benguela	-1.654027	.3032727	-5.45	0.000	-2.250108	-1.057945
Huambo	-1.780861	.245186	-7.26	0.000	-2.262773	-1.298949
Bie	-.5429907	.348003	-1.56	0.119	-1.226989	.1410079
Moxico	-.8560817	.2277925	-3.76	0.000	-1.303807	-.4083564
Kuando Kubango	-.1945131	.2738297	-0.71	0.478	-.7327244	.3436982
Namibe	-.8614545	.3210026	-2.68	0.008	-1.492384	-.2305252
Huila	-1.603041	.3275371	-4.89	0.000	-2.246814	-.9592677
Cunene	-1.062931	.3061966	-3.47	0.001	-1.664759	-.4611031
Lunda Sul	-1.080997	.219174	-4.93	0.000	-1.511782	-.6502111
Bengo	-1.112346	.2547175	-4.37	0.000	-1.612993	-.6117001
hhsize	-.0175037	.1424406	-0.12	0.902	-.2974701	.2624627
hhsize2	.0006994	.007841	0.09	0.929	-.0147121	.0161108
tmp_u18	.1152695	.1276993	0.90	0.367	-.1357229	.3662619
tmp_u182	-.0157193	.0107958	-1.46	0.146	-.0369384	.0054997
tmp_o64	-.73533	.4971749	-1.48	0.140	-1.712525	.2418653
tmp_o642	.2527533	.3669833	0.69	0.491	-.468551	.9740575
tmp_fem	-.0848199	.1208862	-0.70	0.483	-.3224212	.1527814
tmp_fem2	.0064564	.0144907	0.45	0.656	-.0220251	.0349379
tmp_agehd	-.0580098	.0255272	-2.27	0.024	-.1081834	-.0078363
tmp_agehd2	.0005566	.0002661	2.09	0.037	.0000335	.0010797
tmp_agesp	-.1002543	.0434195	-2.31	0.021	-.1855951	-.0149136
tmp_agesp2	.0013707	.0005314	2.58	0.010	.0003262	.0024151
DIS_femhd						
Female head	.0798151	.1916991	0.42	0.677	-.2969688	.456599
DIS_marital						
Never married	-.8032188	.304744	-2.64	0.009	-1.402192	-.2042456
Unmarried	.0549323	.213402	0.26	0.797	-.3645086	.4743731
_IDIS_hassp_0	131.6225	47.80876	2.75	0.006	37.65456	225.5904
S104	-.692605	.0930599	-7.44	0.000	-.8755138	-.5096962
age2	.0288453	.004067	7.09	0.000	.0208515	.036839
hou_imprdwelling	.0005852	.0015199	0.39	0.700	-.0024021	.0035725
hou_imprwalls	-.0024778	.0014297	-1.73	0.084	-.0052878	.0003322
hou_imprroof	-.0044391	.0065583	-0.68	0.499	-.0173294	.0084511
hou_imprfloor	.0006711	.0011059	0.61	0.544	-.0015025	.0028447
hou_imprwater	.0033294	.001845	1.80	0.072	-.0002969	.0069558
hou_imprsanitation	-.0047005	.0017787	-2.64	0.009	-.0081966	-.0012045
hou_owntoilet	.0000986	.001351	0.07	0.942	-.0025569	.0027541
hou_imprfuel	-.005297	.0013483	-3.93	0.000	-.0079471	-.0026468
hou_electricity	-.0023973	.0015949	-1.50	0.134	-.005532	.0007375
hou_imprwaste	-.004603	.0016604	-2.77	0.006	-.0078666	-.0013395
hou_space	.0000775	.001306	0.06	0.953	-.0024894	.0026444
hou_imprtreatment	-.0053937	.0018358	-2.94	0.003	-.009002	-.0017854
lnpc	-.8499093	1.642141	-0.52	0.605	-4.07753	2.377712
lnpc2	.0114718	.0903179	0.13	0.899	-.1660477	.1889913
tmp_yearseduhd	-.0016648	.0358914	-0.05	0.963	-.0722093	.0688796
tmp_yearseduhd2	-.0003984	.0020572	-0.19	0.847	-.0044418	.003645
tmp_yearsedusp	-.0348536	.0173507	-2.01	0.045	-.0689563	-.0007509
tmp_watertime	-.0209278	.0084303	-2.48	0.013	-.0374975	-.0043581
tmp_watertime2	.0001198	.0000777	1.54	0.124	-.0000329	.0002724
S103						
Feminino	.1254569	.0792535	1.58	0.114	-.0303155	.2812293
S103#c.tmp_watertime						
Feminino	.0067467	.008617	0.78	0.434	-.0101901	.0236834
S103#c.tmp_watertime2						
Feminino	-.0000223	.0000923	-0.24	0.809	-.0002037	.0001592
_cons	15.60959	7.280399	2.14	0.033	1.299992	29.91919

A.13 School attendance vs. housing conditions (rural)

Survey: Logistic regression

Number of strata	= 18	Number of obs	= 6,885
Number of PSUs	= 106	Population size	= 26,486,370
		Design df	= 88
		F(57, 32)	= 76.81
		Prob > F	= 0.0000

notattending	Linearized Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	.2760236	.4213464	0.66	0.514	-.5613139	1.113361
Zaire	-1.238511	.745732	-1.66	0.100	-2.720496	.2434749
Uige	-1.111244	.4641448	-2.39	0.019	-2.033634	-.1888536
Kwanza Norte	-1.243369	.4744235	-2.62	0.010	-2.186186	-.3005517
Kwanza Sul	.0292311	.5445612	0.05	0.957	-1.05297	1.111432
Malanje	-.4464631	.4963699	-0.90	0.371	-1.432894	.5399678
Lunda Norte	.0834714	.4641595	0.18	0.858	-.8389481	1.005891
Benguela	-.4665797	.42655	-1.09	0.277	-1.314258	.3810989
Huambo	-.692356	.4501721	-1.54	0.128	-1.586978	.2022664
Bie	-.1691707	.456116	-0.37	0.712	-1.075605	.737264
Moxico	.2141225	.481341	0.44	0.658	-.7424415	1.170687
Kuando Kubango	-.4713343	.4535168	-1.04	0.302	-1.372604	.429935
Namibe	-.3134077	.4978168	-0.63	0.531	-1.302714	.6758986
Huila	-1.14092	.4781633	-2.39	0.019	-2.091169	-.1906711
Cunene	-.1994282	.5226419	-0.38	0.704	-1.238069	.8392128
Lunda Sul	-1.113649	.4880732	-2.28	0.025	-2.083592	-.1437062
Bengo	-1.15084	.4474026	-2.57	0.012	-2.039959	-.2617215
area						
Urban	0	(empty)				
Rural	0	(omitted)				
hhsize	-.3123993	.1180351	-2.65	0.010	-.5469692	-.0778294
hhsize2	.0137815	.0056846	2.42	0.017	.0024845	.0250785
tmp_u18	.2156262	.1627878	1.32	0.189	-.1078804	.5391328
tmp_u182	-.0116477	.0115111	-1.01	0.314	-.0345237	.0112282
tmp_o64	-.0921074	.3535265	-0.26	0.795	-.794667	.6104521
tmp_o642	.0060411	.2855406	0.02	0.983	-.5614108	.5734931
tmp_fem	.1029735	.1412039	0.73	0.468	-.1776395	.3835866
tmp_fem2	-.014043	.0149173	-0.94	0.349	-.0436879	.015602
tmp_agehd	.0266231	.0189205	1.41	0.163	-.0109774	.0642237
tmp_agehd2	-.0003177	.0001902	-1.67	0.098	-.0006956	.0000602
tmp_agesp	-.0556932	.0300909	-1.85	0.068	-.1154926	.0041062
tmp_agesp2	.0006261	.0003578	1.75	0.084	-.000085	.0013372
DIS_femhd						
Female head	-.0240173	.2319061	-0.10	0.918	-.4848819	.4368472
DIS_marital						
Never married	.4181515	.3857925	1.08	0.281	-.34853	1.184833
Unmarried	.2945928	.333155	0.88	0.379	-.3674826	.9566683
_IDIS_hassp_0	171.3491	43.65133	3.93	0.000	84.60128	258.097
S104	-.9797329	.0675531	-14.50	0.000	-1.113981	-.8454852
age2	.0401796	.0028769	13.97	0.000	.0344624	.0458967
hou_imprdwelling	-.0043926	.0014863	-2.96	0.004	-.0073463	-.0014389
hou_imprwalls	-.0082395	.0022507	-3.66	0.000	-.0127123	-.0037668
hou_imprroof	-.0030406	.0012136	-2.51	0.014	-.0054523	-.0006288
hou_imprfloor	.0044038	.0022006	2.00	0.048	.0000306	.0087769
hou_imprwater	.0031647	.0019908	1.59	0.115	-.0007916	.0071211
hou_imprsanitation	-.0000559	.0021093	-0.03	0.979	-.0042478	.0041359
hou_owntoilet	.0002691	.0023514	0.11	0.909	-.0044039	.004942
hou_imprfuel	-.0026267	.002435	-1.08	0.284	-.0074658	.0022123
hou_electricity	-.0071801	.0020614	-3.48	0.001	-.0112768	-.0030835
hou_imprwaste	-.0011154	.0018283	-0.61	0.543	-.0047487	.0025179
hou_space	-.0028692	.0011451	-2.51	0.014	-.0051449	-.0005935
hou_imprtreatment	-.0040705	.0015641	-2.60	0.011	-.0071788	-.0009623
lnpc	-1.583983	.9971613	-1.59	0.116	-3.565631	.397666
lnpc2	.082577	.0562604	1.47	0.146	-.0292287	.1943827
tmp_yearseduhd	-.1617082	.0446932	-3.62	0.000	-.2505266	-.0728899
tmp_yearseduhd2	.0063393	.0043825	1.45	0.152	-.0023701	.0150487
tmp_yearsedusp	-.1184366	.0321878	-3.68	0.000	-.1824031	-.0544702
tmp_watertime	-.0092588	.0050603	-1.83	0.071	-.0193151	.0007975
tmp_watertime2	.0000559	.0000253	2.21	0.030	5.69e-06	.0001062
S103						
Feminino	.1956246	.0941005	2.08	0.041	.0086197	.3826296
S103#c.tmp_watertime						
Feminino	.0018803	.0046181	0.41	0.685	-.0072972	.0110577
S103#c.tmp_watertime2						
Feminino	-.0000206	.0000256	-0.80	0.424	-.0000716	.0000304
_cons	15.79278	4.428391	3.57	0.001	6.992283	24.59327

A.14 Months of food shortage vs. community infrastructure

```
Survey: Tobit regression

Number of strata   =        18                  Number of obs     =       4,294
Number of PSUs     =       104                  Population size   =  10,877,854
                                                Design df         =          86
                                                F(  72,     15)   =     1972.25
                                                Prob > F          =      0.0000
```

tmp_insuffmths	Linearized Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	.7777804	1.104972	0.70	0.483	-1.418832	2.974393
Zaire	1.984598	.8236052	2.41	0.018	.3473254	3.621871
Uige	-.3764907	.8927581	-0.42	0.674	-2.151235	1.398254
Kwanza Norte	.4509706	.9316544	0.48	0.630	-1.401097	2.303038
Kwanza Sul	-2.314851	.8115981	-2.85	0.005	-3.928254	-.701447
Malanje	1.196143	.7856765	1.52	0.132	-.3657298	2.758016
Lunda Norte	-.757774	.9310224	-0.81	0.418	-2.608585	1.093037
Benguela	-3.029235	.8893902	-3.41	0.001	-4.797285	-1.261186
Huambo	-4.76817	.7956828	-5.99	0.000	-6.349935	-3.186405
Bie	-3.0408	.8072638	-3.77	0.000	-4.645587	-1.436013
Moxico	-3.758854	.7777531	-4.83	0.000	-5.304976	-2.212732
Kuando Kubango	-1.556869	.8269994	-1.88	0.063	-3.20089	.0871514
Namibe	-.1288781	.89015	-0.14	0.885	-1.898438	1.640682
Huila	-.3687945	.8964948	-0.41	0.682	-2.150967	1.413378
Cunene	-2.548674	.9551705	-2.67	0.009	-4.44749	-.6498581
Lunda Sul	.438394	1.006862	0.44	0.664	-1.563181	2.439969
Bengo	-1.816005	.8717488	-2.08	0.040	-3.548984	-.0830252
area						
Rural	1.672975	1.711315	0.98	0.331	-1.729005	5.074956
hhsize	.1519437	.1633567	0.93	0.355	-.1727987	.4766861
hhsize2	-.0129188	.007166	-1.80	0.075	-.0271643	.0013266
tmp_u18	.027905	.164299	0.17	0.866	-.2987106	.3545206
tmp_u182	.0077249	.0138387	0.56	0.578	-.0197855	.0352353
tmp_o64	.3278322	.6989544	0.47	0.640	-1.061643	1.717308
tmp_o642	-.2084996	.293799	-0.71	0.480	-.7925527	.3755534
tmp_fem	-.3017919	.2035741	-1.48	0.142	-.7064839	.1029001
tmp_fem2	.0218165	.0262885	0.83	0.409	-.0304434	.0740764
tmp_agehd	-.0089403	.0362697	-0.25	0.806	-.0810421	.0631616
tmp_agehd2	.0002428	.0004135	0.59	0.559	-.0005792	.0010648
tmp_agesp	.0169239	.0575475	0.29	0.769	-.0974767	.1313245
tmp_agesp2	-.0003967	.0006431	-0.62	0.539	-.0016752	.0008818
DIS_femhd						
Female head	.5074829	.411179	1.23	0.220	-.3099138	1.32488
DIS_marital						
Never married	1.397842	.5981738	2.34	0.022	.2087116	2.586972
Unmarried	1.191953	.6185704	1.93	0.057	-.0377237	2.421631
_IDIS_hassp_0	-17.55855	55.83097	-0.31	0.754	-128.5469	93.42975
lnpc	-3.230478	1.493317	-2.16	0.033	-6.199095	-.2618621
lnpc2	.1318648	.0808627	1.63	0.107	-.0288849	.2926145
tmp_roadmths	-.3345727	.1788182	-1.87	0.065	-.6900514	.0209061
tmp_roadmths2	.022395	.0103332	2.17	0.033	.0018533	.0429367
com_nopolice						
No police	.6816584	.2684392	2.54	0.013	.1480189	1.215298
com_nomarket						
No market	-.3009119	.2842652	-1.06	0.293	-.8660125	.2641886
100.com_o30min2transp	.5574644	.3220314	1.73	0.087	-.0827127	1.197642
100.com_o30min2phone	-.1504047	.3073192	-0.49	0.626	-.7613352	.4605257
100.com_nohltfacil	1.631852	.675781	2.41	0.018	.2884442	2.97526
100.com_o30min2hlt	.1857031	.2610623	0.71	0.479	-.3332715	.7046778
100.com_notvradio	-.0645629	.2694857	-0.24	0.811	-.6002826	.4711569
100.com_noschool	-.1300232	.3213947	-0.40	0.687	-.7689348	.5088883
100.com_o30min2agri	-.2314086	.3487945	-0.66	0.509	-.9247891	.4619719
100.com_noagricoop	-.008519	.3715819	-0.02	0.982	-.7471994	.7301613
100.com_noagritrsp	1.407377	.6701812	2.10	0.039	.0751014	2.739654
100.com_noagritract	-.9167837	.4915522	-1.87	0.066	-1.893957	.0603898
100.com_noagricomwrk	.0813666	.3661949	0.22	0.825	-.6466048	.8093379
100.com_nooutmigr	-.513356	.1946661	-2.64	0.010	-.9003394	-.1263726
100.com_noinmigr	.1974483	.2688213	0.73	0.465	-.3369506	.7318473
100.com_nopavedroad	-.4109217	.2810892	-1.46	0.147	-.9697085	.1478651

COM_road						
Path/other	-.46243	1.134014	-0.41	0.684	-2.716776	1.791916
COM_road#c.tmp_roadmths						
Path/other	.2273927	.2255325	1.01	0.316	-.2209511	.6757364
COM_road#c.tmp_roadmths2						
Path/other	-.0106456	.0166147	-0.64	0.523	-.0436745	.0223832
com_nopolice#COM_road						
No police#Path/other	-1.279986	.9317326	-1.37	0.173	-3.132209	.5722375
com_nomarket#COM_road						
No market#Path/other	.9574541	1.094354	0.87	0.384	-1.218049	3.132957
com_o30min2transp#COM_road						
100#Path/other	-.8086295	.4301581	-1.88	0.064	-1.663755	.0464965
com_o30min2phone#COM_road						
100#Path/other	1.039936	.4179857	2.49	0.015	.2090079	1.870864
com_nohltfacil#COM_road						
100#Path/other	-2.27003	1.129708	-2.01	0.048	-4.515815	-.0242442
com_o30min2hlt#COM_road						
100#Path/other	-.296899	.599172	-0.50	0.622	-1.488014	.8942156
com_notvradio#COM_road						
100#Path/other	.2992572	.5053882	0.59	0.555	-.7054213	1.303936
com_noschool#COM_road						
100#Path/other	.3427742	.5155333	0.66	0.508	-.682072	1.36762
com_o30min2agri#COM_road						
100#Path/other	.3416148	.5484889	0.62	0.535	-.748745	1.431975
com_noagricoop#COM_road						
100#Path/other	-.3535112	.5743176	-0.62	0.540	-1.495217	.7881943
com_noagritrsp#COM_road						
100#Path/other	-1.617752	.8182874	-1.98	0.051	-3.244454	.0089493
com_noagritract#COM_road						
100#Path/other	1.157533	.7687055	1.51	0.136	-.370603	2.685669
com_noagricomwrk#COM_road						
100#Path/other	.0069521	.4095031	0.02	0.986	-.807113	.8210172
com_nooutmigr#COM_road						
100#Path/other	.819007	.4695792	1.74	0.085	-.1144855	1.7525
com_noinmigr#COM_road						
100#Path/other	.153195	.4991578	0.31	0.760	-.8390978	1.145488
com_nopavedroad#COM_road						
0#Path/other	0	(empty)				
100#Path/other	0	(omitted)				
_cons	18.97081	6.797402	2.79	0.006	5.458025	32.4836
/sigma	3.740804	.2425094	15.43	0.000	3.258712	4.222897

1,903 left-censored observations at tmp_insuff~s <= 0
2,391 uncensored observations
0 right-censored observations

A.15 School attendance vs. months of food shortage

Survey: Logistic regression

Number of strata	= 18	Number of obs	= 7,117
Number of PSUs	= 107	Population size	= 27,133,828
		Design df	= 89
		F(45, 45)	= 86.11
		Prob > F	= 0.0000

notattending	Linearized Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
province						
Cabinda	.1499365	.4674898	0.32	0.749	-.7789557	1.078829
Zaire	-.6575272	.677661	-0.97	0.335	-2.004025	.6889708
Uige	-.5298415	.4956588	-1.07	0.288	-1.514705	.4550219
Kwanza Norte	-.9526444	.4949431	-1.92	0.057	-1.936086	.030797
Kwanza Sul	.6326903	.5541619	1.14	0.257	-.4684176	1.733798
Malanje	.0425636	.4993157	0.09	0.932	-.9495661	1.034693
Lunda Norte	.7151111	.464949	1.54	0.128	-.2087326	1.638955
Benguela	-.0937429	.4786154	-0.20	0.845	-1.044742	.8572556
Huambo	-.3569947	.4914147	-0.73	0.469	-1.333425	.6194358
Bie	.4800351	.4682764	1.03	0.308	-.4504201	1.41049
Moxico	.831726	.4747127	1.75	0.083	-.1115179	1.77497
Kuando Kubango	.3831921	.4738517	0.81	0.421	-.5583411	1.324725
Namibe	.0626671	.5005911	0.13	0.901	-.9319968	1.057331
Huila	-.2693112	.4714705	-0.57	0.569	-1.206113	.6674906
Cunene	.5919215	.4840269	1.22	0.225	-.3698297	1.553673
Lunda Sul	-.7259305	.4880199	-1.49	0.140	-1.695616	.2437545
Bengo	-.6740064	.465353	-1.45	0.151	-1.598653	.2506402
area						
Urban	0	(empty)				
Rural	0	(omitted)				
hhsize	-.3229648	.1046583	-3.09	0.003	-.5309186	-.115011
hhsize2	.0136381	.0046017	2.96	0.004	.0044947	.0227815
tmp_u18	.2540265	.1596941	1.59	0.115	-.0632824	.5713353
tmp_u182	-.0144673	.0113228	-1.28	0.205	-.0369655	.0080309
tmp_o64	-.2002725	.3421659	-0.59	0.560	-.880149	.4796039
tmp_o642	.0727206	.2797509	0.26	0.796	-.4831385	.6285798
tmp_fem	.0688663	.1262569	0.55	0.587	-.1820034	.319736
tmp_fem2	-.0086844	.0134013	-0.65	0.519	-.0353125	.0179436
tmp_agehd	.0221033	.0150936	1.46	0.147	-.0078873	.0520939
tmp_agehd2	-.0003033	.0001417	-2.14	0.035	-.0005848	-.0000218
tmp_agesp	-.0615401	.0325143	-1.89	0.062	-.1261453	.0030651
tmp_agesp2	.0006777	.0003864	1.75	0.083	-.00009	.0014454
DIS_femhd						
Female head	-.0961168	.2256976	-0.43	0.671	-.544573	.3523395
DIS_marital						
Never married	.2643395	.4177001	0.63	0.528	-.5656217	1.094301
Unmarried	.303504	.3459609	0.88	0.383	-.3839129	.990921
_IDIS_hassp_0	200.8965	48.44005	4.15	0.000	104.6472	297.1459
S104	-.9530988	.0651496	-14.63	0.000	-1.08255	-.8236478
age2	.0390553	.0027751	14.07	0.000	.0335413	.0445693
lnpc	-1.1585	.8981692	-1.29	0.200	-2.943143	.626143
lnpc2	.0527725	.0505183	1.04	0.299	-.0476062	.1531511
tmp_yearseduhd	-.1802288	.047811	-3.77	0.000	-.2752282	-.0852294
tmp_yearseduhd2	.0056227	.0046162	1.22	0.226	-.0035496	.0147951
tmp_yearsedusp	-.1424163	.0369146	-3.86	0.000	-.2157647	-.0690679
tmp_insuffmths	-.0664788	.0439027	-1.51	0.134	-.1537124	.0207549
tmp_insuffmths2	.0133573	.0054188	2.46	0.016	.0025902	.0241244
S103						
Feminino	.1736427	.0787929	2.20	0.030	.0170828	.3302025
S103#c.tmp_insuffmths						
Feminino	.0857945	.0501618	1.71	0.091	-.0138758	.1854648
S103#c.tmp_insuffmths2						
Feminino	-.0133608	.0057749	-2.31	0.023	-.0248355	-.0018862
_cons	13.37312	3.991086	3.35	0.001	5.442919	21.30332

APPENDIX B: Statistical Appendix[43]

Geographic

Table B.1: Poverty incidence (%), by region and area

Criteria	Group	Mean	Variance	Obs.	Low (95%)	Hi (95%)
Province	Cabinda	12.1	7.4	667	6.7	17.4
	Zaire	15.9	19.7	686	7.2	24.6
	Uige	42.1	6.8	595	37.0	47.2
	Luanda	9.0	1.8	1364	6.4	11.6
	Kwanza N.	36.8	60.3	634	21.6	52.0
	Kwanza S.	50.3	11.2	605	43.7	56.8
	Malanje	45.7	51.7	624	31.6	59.8
	Lunda N.	27.0	55.3	624	12.4	41.6
	Benguela	33.8	33.3	654	22.5	45.1
	Huambo	46.8	18.0	630	38.5	55.1
	Bie	42.5	56.4	597	27.7	57.2
	Moxico	52.0	99.6	589	32.4	71.6
	Kuando Kub.	44.4	41.2	628	31.8	56.9
	Namibie	26.3	36.5	653	14.4	38.1
	Huila	46.4	18.0	600	38.1	54.8
	Cunene	53.8	8.9	544	47.9	59.6
	Lunda S.	43.2	25.0	659	33.4	53.0
	Bengo	34.7	39.2	621	22.4	47.0
Area	Urban	17.8	1.2	7410	15.6	20.0
	Rural	54.7	2.1	4564	51.9	57.6
	National	32.3	4.3	11974	28.2	36.4

[43] Unless otherwise specified, all statistics are defined at the household level. For instance, % ill means percent of household where at least one member has been ill in the past 30 days. Unless otherwise specified, all mentions of "quintiles" refer to national quintiles of real total household consumption per capita.

Demographic

Table B.2: Poverty incidence (%), by characteristics of the household head

Criteria	Group	Mean	Variance	Obs.	Low (95%)	Hi (95%)
Sector of employment	No work	29.8	9.7	1760	23.7	35.9
	Agriculture	57.2	1.8	4083	54.5	59.8
	Mining	0.0	0.0	1	0.0	0.0
	Manufacturing	17.8	7.6	651	12.4	23.2
	Services	16.0	1.6	5356	13.6	18.5
Education	No education	57.7	3.2	2243	54.2	61.2
	Primary only	43.2	3.9	3836	39.3	47.1
	Lower sec.	25.9	3.8	2307	22.1	29.7
	Upper sec.+	9.0	2.1	3461	6.1	11.9
	Other, N/R	55.6	24.6	126	45.9	65.4
Literacy	Illiterate	56.8	3.1	3317	53.3	60.2
	Partly literate	50.8	31.5	172	39.8	61.8
	Literate	23.8	2.7	8484	20.6	27.1
Marital status	Never married	15.3	7.4	877	10.0	20.7
	Married/union	32.8	5.3	7916	28.3	37.3
	Formerly married	34.0	5.8	3181	29.2	38.7
Age	<25	23.5	5.7	1001	18.9	28.2
	25-34	26.7	5.0	3385	22.3	31.0
	35-44	34.4	5.9	2903	29.6	39.2
	45-54	35.7	8.2	2187	30.0	41.3
	55-64	35.4	8.0	1405	29.8	40.9
	>64	33.6	8.5	1092	27.9	39.4
Sex	Male	31.8	5.1	8326	27.3	36.2
	Female	33.8	4.7	3645	29.6	38.0

Table B.3: Demographic indicators, by poverty status

	Non-poor					Poor				
Indicator	Mean	Variance	Obs.	Low (95%)	Hi (95%)	Mean	Variance	Obs.	Low (95%)	Hi (95%)
Household size (persons)	6.2	0.0	8633	6.0	6.3	7.0	0.0	3341	6.7	7.2
Share of members under 18 (%)	51.9	0.0	8633	51.0	52.7	61.9	0.0	3341	60.8	63.0
Share of members over 64 (%)	2.7	0.0	8633	2.2	3.1	2.4	0.0	3341	2.1	2.7
Share of female members (%)	51.9	0.0	8633	51.3	52.5	51.7	0.0	3341	50.9	52.6
Average age of members (years)	12.0	0.0	6680	11.6	12.4	10.6	0.0	3057	10.2	10.9

Multidimensional poverty

Table B.4: Multidimensional poverty indicators, by poverty status

	Non-poor					Poor				
Indicator	Mean	Variance	Obs.	Low (95%)	Hi (95%)	Mean	Variance	Obs.	Low (95%)	Hi (95%)
MPI score	28.6	2.0	8633	25.8	31.4	55.1	2.4	3341	52.1	58.1
MPI poor (depr.>1/3 of weighted indic.) (%)	36.6	9.0	8633	30.7	42.4	85.3	4.2	3341	81.3	89.3
1+mem.(12+y) incomplete primary edu.(%)	13.9	2.3	8633	10.9	16.9	43.8	6.0	3341	39.0	48.6
1+mem.(5-14 yrs) not attending school (%)	30.2	1.2	8633	28.0	32.4	61.3	3.8	3341	57.5	65.1
1+mem.(15-24)not employed nor in educ.(%	53.7	2.7	8633	50.5	56.9	45.6	5.8	3341	40.9	50.3
1+mem.(25-64) unemployed (%)	7.2	0.3	8633	6.0	8.3	8.4	1.5	3341	6.0	10.8
Working hhd member < 1/5 (%)	29.2	1.3	8633	26.9	31.5	30.4	6.2	3341	25.5	35.3
Unimproved water+inadeqate treatment (%)	20.0	6.7	8633	14.9	25.1	53.2	10.5	3341	46.9	59.6
Unimproved sanitation (%)	18.8	7.4	8633	13.5	24.2	53.5	25.0	3341	43.7	63.3
Use solid fuel (%)	32.8	10.6	8633	26.4	39.1	81.5	6.6	3341	76.4	86.5
No access to public grid (%)	49.4	8.1	8633	43.9	55.0	89.9	2.2	3341	87.0	92.8
Unimpr. walls, floor or roof (%)	46.7	9.2	8633	40.7	52.7	87.5	4.0	3341	83.6	91.5

Table B.5: Dimensional deprivations (% of individuals living in household deprived in…), by province

	EDUCATION		EMPLOYMENT		HOUSING					
	Completion	Attendance	Youth	Adult	Dependenc	Water	Sanitation	Fuel	Electricity	Building
Cabinda	8.7	34.9	64.9	18.0	35.3	9.4	2.5	27.1	27.9	50.4
Zaire	5.6	26.8	59.6	1.7	21.3	23.4	23.5	56.7	59.0	59.0
Uige	18.6	41.9	49.7	5.7	23.7	58.3	42.7	80.2	81.5	84.9
Luanda	4.0	28.4	62.8	6.2	34.5	1.1	2.2	4.2	29.5	7.3
Kwanza Norte	15.8	32.8	43.9	3.7	17.9	28.6	46.1	43.0	55.3	86.1
Kwanza Sul	52.5	53.9	28.6	4.8	24.3	50.9	59.4	76.0	84.9	91.6
Malanje	27.7	49.0	46.7	5.4	23.8	36.6	46.7	58.9	67.2	86.0
Lunda Norte	36.5	53.7	49.6	20.1	45.3	55.6	34.3	73.6	85.3	91.3
Benguela	18.4	29.7	48.7	5.3	23.4	21.4	30.0	39.3	64.2	43.8
Huambo	33.0	40.7	38.6	5.5	22.7	34.4	5.0	71.9	79.6	84.3
Bie	44.3	54.1	36.2	2.7	20.5	54.6	26.1	78.4	92.2	91.0
Moxico	40.6	51.6	37.1	4.4	19.7	52.8	34.8	75.2	76.4	85.2
Kuando Kubango	32.5	50.1	49.1	9.0	28.7	50.2	45.8	58.9	82.8	92.3
Namibe	17.0	40.1	60.3	4.3	31.8	15.9	42.0	24.7	40.4	54.0
Huila	35.4	47.1	51.5	3.9	18.9	54.1	70.0	73.1	80.4	91.8
Cunene	40.9	64.1	64.4	37.2	77.8	53.4	85.9	86.2	88.2	87.3
Lunda Sul	29.3	40.5	56.2	21.9	53.4	35.7	32.0	71.3	68.8	86.2
Bengo	18.2	35.7	46.1	4.2	16.5	28.9	34.3	45.2	71.0	69.5
Total	**23.5**	**40.3**	**51.1**	**7.6**	**29.6**	**30.7**	**30.0**	**48.5**	**62.5**	**59.9**

Education

Table B.6: Education indicators, by poverty status

	Non-poor					Poor				
Indicator	Mean	Variance	Obs.	Low (95%)	Hi (95%)	Mean	Variance	Obs.	Low (95%)	Hi (95%)
Rural pop (%)	26.2	12.5	8633	19.2	33.1	66.4	15.9	3341	58.6	74.2
1+ school>30 mins (%)	33.9	1.6	5218	31.4	36.4	33.3	4.0	2030	29.4	37.3
1+ walks to school (%)	93.8	0.4	5218	92.5	95.1	99.6	0.0	2030	99.3	99.8
1+ in public school (%)	71.4	3.7	5218	67.6	75.2	89.8	1.7	2030	87.2	92.4
1+ not attending (%)	38.2	2.4	5295	35.2	41.2	67.4	4.5	2709	63.3	71.5
1+ gets school meal (%)	10.4	0.9	3319	8.5	12.3	9.4	1.4	1710	7.0	11.7
Illiterate head (%)	15.7	1.6	8633	13.3	18.2	43.4	3.6	3341	39.7	47.1
Illiterate spouse (%)	30.3	4.9	5224	25.9	34.6	71.2	3.2	2258	67.7	74.7
Illiterate other (%)	7.1	1.0	2860	5.1	9.0	29.6	6.0	1136	24.8	34.4
Educ.<primary (head) (%)	10.6	0.8	8633	8.8	12.4	29.6	2.5	3341	26.5	32.7
Educ.<primary (spouse) (%)	19.4	1.8	5224	16.8	22.1	50.1	5.1	2258	45.6	54.5
Educ.<primary (other ad.) (%)	1.4	0.1	5918	0.9	1.8	4.3	0.5	2600	2.9	5.7
Years of educ. (head)	8.0	0.0	8624	7.6	8.4	4.0	0.0	3337	3.7	4.4
Years of educ. (spouse)	6.2	0.1	5222	5.7	6.6	2.1	0.0	2257	1.9	2.3
Years of educ. (other)	9.2	0.0	2859	8.8	9.5	5.4	0.0	1136	4.9	5.8

Health

Table B.7: Health indicators, by poverty status

	Non-poor					Poor				
Indicator	Mean	Variance	Obs.	Low (95%)	Hi (95%)	Mean	Variance	Obs.	Low (95%)	Hi (95%)
1+ hhd mem. used private health care (%)	23.5	1.3	8633	21.3	25.8	11.1	1.5	3341	8.7	13.5
1+ hhd mem. ill in past 30 days (%)	76.6	0.8	8633	74.8	78.4	77.3	2.2	3341	74.4	80.3
1+ hhd mem. ill but did not consult medic (%	34.9	1.4	6204	32.6	37.2	52.5	3.3	2462	48.9	56.1
No hhd mem. has health insurance (%)	96.2	0.3	8633	95.1	97.3	99.7	0.0	3341	99.5	100.0
1+ did not consult for financial reasons (%)	34.5	4.3	2153	30.4	38.6	38.8	4.9	1301	34.4	43.1
1+ did not consult due to poor quality (%)	11.8	1.9	2153	9.1	14.4	21.8	6.4	1301	16.9	26.8

Employment

Table B.8: Employment indicators, by poverty status

	Non-poor					Poor				
Indicator	Mean	Variance	Obs.	Low (95%)	Hi (95%)	Mean	Variance	Obs.	Low (95%)	Hi (95%)
Hhd head does unpaid work (%)	0.8	0.0	8633	0.4	1.1	2.7	0.6	3341	1.1	4.2
Spouse does unpaid work (%)	6.0	1.0	5224	4.0	7.9	18.5	11.8	2258	11.8	25.2
1+ hhd mem. does unpaid work (%)	0.7	0.0	7900	0.4	1.1	2.3	0.5	3036	1.0	3.7
Hhd head is unemployed (%)	2.1	0.1	8633	1.6	2.6	4.4	0.5	3341	3.0	5.8
Spouse is unemployed (%)	5.8	0.2	5224	4.9	6.7	5.1	0.5	2258	3.7	6.5
No hhd mem. is employed (%)	8.0	0.4	8633	6.8	9.2	9.8	3.0	3341	6.5	13.2
Total hours worked by hhd.>40hrs/week (%)	6.9	0.8	8633	5.1	8.6	7.1	1.0	3341	5.2	9.1
Total minutes worked by hhd. per week	439.9	4088.8	8633	314.6	565.2	450.1	4282.7	3341	321.9	578.4

Housing

Table B.9: Housing indicators, by poverty status

	Non-poor					Poor				
Indicator	Mean	Variance	Obs.	Low (95%)	Hi (95%)	Mean	Variance	Obs.	Low (95%)	Hi (95%)
Improved dwelling (house, apartment) (%)	69.5	8.3	8633	63.9	75.2	35.5	21.5	3341	26.5	44.6
Improved walls (stone, cement, brick) (%)	55.4	9.5	8633	49.4	61.5	14.4	4.3	3341	10.3	18.5
Improved roof (cement, zinc) (%)	93.9	1.4	8633	91.6	96.2	76.8	10.6	3341	70.4	83.2
Improved floor (not earth) (%)	68.1	8.8	8633	62.3	73.9	20.0	5.9	3341	15.2	24.8
Impr. water (tap, protected source/well)(%)	35.8	3.9	8633	31.9	39.7	26.8	4.7	3341	22.5	31.0
Impr. sanitation (Latrine, WC w/sewage) (%)	81.2	7.4	8633	75.8	86.5	46.5	25.0	3341	36.7	56.3
Own toilet (not shared) (%)	53.9	4.8	8633	49.6	58.2	31.1	13.9	3341	23.8	38.4
Impr. fuel (not solid fuel) (%)	67.2	10.6	8607	60.8	73.6	17.9	6.1	3316	13.0	22.8
Access to electricity (%)	62.9	8.4	8633	57.2	68.6	14.1	3.0	3341	10.8	17.5
Impr. waste managmt (bin,burried,burnt) (%)	43.3	5.6	8633	38.7	47.9	18.7	7.1	3341	13.5	24.0
Pers./room<=3 (%)	61.5	1.3	8362	59.3	63.7	43.9	5.7	3243	39.3	48.6
Time to water (return)>30 minutes (%)	9.0	1.9	8447	6.3	11.7	19.5	4.8	3316	15.2	23.8
Impr. water treatment (boil,ceramic,chlorine	80.0	6.7	8633	74.9	85.1	46.8	10.5	3341	40.4	53.1
Time to water (minutes)	11.5	1.5	8447	9.1	13.9	23.8	4.3	3316	19.7	27.8
Pers./room	3.3	0.0	8362	3.2	3.3	4.1	0.0	3243	3.9	4.2

Assets

Table B.10: Assets, by poverty status

	Non-poor					Poor				
Indicator	Mean	Variance	Obs.	Low (95%)	Hi (95%)	Mean	Variance	Obs.	Low (95%)	Hi (95%)
Stove (units)	0.6	0.0	8633	0.5	0.6	0.1	0.0	3341	0.1	0.2
Fridge (units)	0.2	0.0	8633	0.1	0.2	0.0	0.0	3341	0.0	0.0
Chest (units)	0.4	0.0	8633	0.3	0.4	0.0	0.0	3341	0.0	0.0
Microwave (units)	0.0	0.0	8633	0.0	0.1	0.0	0.0	3341	0.0	0.0
Washing machine (units)	0.1	0.0	8633	0.1	0.2	0.0	0.0	3341	0.0	0.0
Iron (units)	0.3	0.0	8633	0.3	0.4	0.0	0.0	3341	0.0	0.1
Air condition (units)	0.1	0.0	8633	0.1	0.2	0.0	0.0	3341	0.0	0.0
Generator (units)	0.1	0.0	8633	0.1	0.1	0.0	0.0	3341	0.0	0.0
CD player (units)	0.2	0.0	8633	0.2	0.2	0.0	0.0	3341	0.0	0.0
Radio (units)	0.2	0.0	8633	0.2	0.2	0.1	0.0	3341	0.1	0.2
TV (units)	0.6	0.0	8633	0.6	0.7	0.1	0.0	3341	0.1	0.2
Satellite dish (units)	0.4	0.0	8633	0.4	0.5	0.0	0.0	3341	0.0	0.1
Computer (units)	0.1	0.0	8633	0.1	0.1	0.0	0.0	3341	0.0	0.0
Landline (units)	0.1	0.0	8633	0.0	0.1	0.0	0.0	3341	0.0	0.0
Mobile phone (units)	1.3	0.0	8633	1.1	1.4	0.3	0.0	3341	0.2	0.4
Bicycle (units)	0.0	0.0	8633	0.0	0.0	0.0	0.0	3341	0.0	0.0
Motorcycle (units)	0.1	0.0	8633	0.1	0.1	0.1	0.0	3341	0.0	0.1
Carriage (units)	0.0	0.0	8633	0.0	0.0	0.0	0.0	3341	0.0	0.0
Car/truck (units)	0.1	0.0	8633	0.1	0.1	0.0	0.0	3341	0.0	0.0
Plough (units)	0.1	0.0	8633	0.0	0.1	0.1	0.0	3341	0.1	0.2
Boat (no engine) (units)	0.0	0.0	8633	0.0	0.0	0.0	0.0	3341	0.0	0.0
Boat (with engine) (units)	0.0	0.0	8633	0.0	0.0	0.1	0.0	3341	0.0	0.2
Cows (units)	0.8	0.1	8633	0.2	1.3	1.2	0.1	3341	0.5	1.9
Total number of items (weighted by value)	20.2	4.0	8633	16.2	24.1	10.2	6.8	3341	5.1	15.4

Food security

Table B.11: Food security indicators, by poverty status

	Non-poor					Poor				
Indicator	Mean	Variance	Obs.	Low (95%)	Hi (95%)	Mean	Variance	Obs.	Low (95%)	Hi (95%)
Worried about food in past 7 days (%)	66.2	2.4	8633	63.2	69.3	69.8	8.0	3341	64.2	75.3
Coping strategy index>=10 (%)	43.0	2.4	8633	40.0	46.1	50.7	8.2	3341	45.1	56.3
Food shortage in past 12 months (%)	54.7	2.7	8633	51.5	57.9	61.5	11.1	3341	55.0	68.0
CSI score	15.0	0.4	8633	13.8	16.2	18.8	1.7	3341	16.3	21.4
Number of months of food shortage	1.9	0.0	8633	1.8	2.1	2.6	0.0	3341	2.3	3.0

Community (rural only)

Table B.12: Community characteristics (rural only), by poverty status

	Non-poor					Poor				
Indicator	Mean	Variance	Obs.	Low (95%)	Hi (95%)	Mean	Variance	Obs.	Low (95%)	Hi (95%)
No police (%)	84.9	8.1	2308	79.3	90.4	90.8	1.6	1986	88.3	93.3
No market (%)	79.6	13.0	2308	72.5	86.7	83.4	6.5	1986	78.4	88.4
Public transp.>30min. (%)	28.0	13.8	2384	20.8	35.3	30.3	12.9	2024	23.2	37.3
Public phone.>30min. (%)	49.6	13.2	2308	42.5	56.7	51.7	21.2	1986	42.7	60.8
No health facility (%)	4.7	1.5	2384	2.3	7.1	2.6	0.6	2024	1.1	4.0
Public health>30min. (%)	37.9	32.2	2384	26.7	49.0	41.1	32.4	2024	29.9	52.2
No tv/radio (%)	21.7	14.2	2384	14.3	29.1	23.5	11.3	2024	17.0	30.1
No school (%)	29.6	14.2	2384	22.2	37.0	33.4	13.5	2024	26.2	40.5
Public agri.>30min. (%)	54.7	12.2	2384	47.8	61.5	56.2	10.7	2024	49.8	62.7
No agric. coop (%)	85.7	3.8	2384	81.9	89.5	85.4	3.4	2024	81.8	89.0
No agri. tranport (%)	93.0	4.3	2384	88.9	97.1	94.9	2.6	2024	91.8	98.1
No agri. tractor (%)	95.6	1.8	2384	93.0	98.2	97.5	0.4	2024	96.2	98.8
No agri. community worker (%)	39.5	26.3	2384	29.4	49.5	39.3	33.4	2024	28.0	50.6
No migration out (%)	26.7	17.9	2384	18.4	35.0	26.8	16.0	2024	18.9	34.6
No migration in (%)	48.4	39.0	2384	36.2	60.7	53.8	26.3	2024	43.7	63.8
No paved road (%)	78.1	11.6	2384	71.4	84.8	83.6	2.8	2024	80.4	86.9
Time to school (min)	25.2	0.3	8313	24.1	26.3	28.6	2.5	3103	25.5	31.7
Distance to market (km)	27.9	3.9	1863	24.0	31.8	29.4	0.0	1689	29.4	29.4
Distance to pub. transport (km)	18.5	2.9	2308	15.1	21.8	19.9	2.7	1986	16.7	23.2
Distance to pub. phone (km)	32.9	4.7	2308	28.7	37.2	35.3	7.0	1986	30.1	40.5
Time to health facility (min)	31.0	9.7	2133	24.9	37.1	31.0	10.3	1807	24.8	37.3
Months of accessible roads	8.4	0.6	2308	6.8	9.9	8.4	0.5	1986	7.0	9.9
Number of health entitites	5.2	0.0	2384	5.0	5.4	5.7	0.0	2024	5.6	5.9
Number of schools	0.9	0.0	2304	0.7	1.1	0.8	0.0	1982	0.7	0.9
Distance to agric. assist (km)	36.0	5.7	2308	31.3	40.6	37.9	6.6	1986	32.8	42.9

APPENDIX C: The Components of the Global MPI

Dimension	Indicator	Deprived if ...	Weight
Health	Nutrition	Any person under 70 years of age for whom there is nutritional information is undernourished.[a]	1/6
	Child mortality	Any child has died in the family in the five-year period preceding the survey.	1/6
Education	Years of schooling	No household member ages 10 years or older has completed six years of schooling.	1/6
	School attendance	Any school age child is not attending school up to the age at which he or she would complete grade 8.	1/6
Living standards	Cooking fuel	A household cooks with dung, agricultural crop, shrubs, wood, charcoal, or coal.	1/18
	Sanitation	The household's sanitation facility is not improved (according to SDG guidelines) or it is improved but shared with other households.[c]	1/18
	Drinking water	The household does not have access to improved drinking water (according to SDG guidelines) or safe drinking water is at least a 30-minute walk (round trip) from home.[d]	1/18
	Electricity	The household has no electricity.	1/18
	Housing	The household has inadequate housing: the floor is of natural materials or the roof or walls are of natural or rudimentary materials.[e]	1/18
	Assets	The household does not own more than one of these assets: radio, TV, telephone, computer, animal cart, bicycle, motorbike, or refrigerator and does not own a car or truck.	1/18

Note: The global MPI is related to the following SDGs: SDG 1: No poverty, SDG 2: Zero hunger, SDG 3: Health and well-being, SDG 4: Quality education, SDG 6: Clean water and sanitation, SDG 7: Affordable and clean energy, SDG 11: Sustainable cities and communities.

a. Adults 20 to 70 years of age are considered malnourished if their body mass index (BMI) is below 18.5 m/kg^2. Those 5 to 20 years of age are identified as malnourished if their age-specific BMI cutoff is below −2 standard deviations. Children under 5 years of age are considered malnourished if their HAZ (stunting) or weight-for-age (underweight) is below −2 standard deviations from the median of the reference population. In a majority of the countries, BMI-for-age covered people ages 15–19 years, as anthropometric data were only available for this age group; if other data were available, BMI-for-age was applied to all individuals above 5 years and under 20 years of age.

++Data source for age children start compulsory primary school: DHS, MICS or national country survey reports, or http://data.uis.unesco.org/.

c. A household is considered to have access to improved sanitation if it has some type of flush toilet or latrine, or ventilated improved pit or composting toilet, provided that they are not shared. If the country survey report uses other definitions of 'adequate' sanitation, we follow the survey report.

d. A household has access to clean drinking water if the water source is any of the following types: piped water, public tap, borehole or pump, protected well, protected spring, or rainwater, and it is within 30 minutes' walk (round trip). If the survey report uses other definitions of 'safe' drinking water, we follow the country survey report.

e. Deprived, if floor is made of mud/clay/earth, sand, or dung or if dwelling has no roof or walls or if either the roof or walls are constructed using natural materials such as cane, palm/trunks, sod/mud, dirt, grass/reeds, thatch, bamboo, sticks, or rudimentary materials such as carton, plastic/polythene sheeting, bamboo with mud/stone with mud, loosely packed stones, adobe not covered, raw/reused wood, plywood, cardboard, unburnt brick, or canvas/tent.

APPENDIX D: Measuring Household Vulnerability

The method used to estimate vulnerability to poverty is based on Gunther and Hartgen (2009) who integrated a two-level hierarchical model (for example, Hox 2010) into Chaudhuri's (2002, 2003) method to estimate vulnerability from cross-sectional or short-panel data resolving the problem of missing lengthy panel data (see, for example, Chaudhuri, Jalan, and Suryahadi 2002 for applications). The two key features of the model are the following: (a) the error term in the consumption regression or the unexplained variance in the consumption of otherwise identical households is decomposed into household-specific and community-specific shocks to household consumption and (b) the variance of these two types of shocks is then modelled as a function of observable household and community characteristics.

Specifically, let $i = 1, \dots, N$ denote households at level one, and $j = 1, \dots, J$ denote communities at level two, with households being nested within communities. Consumption of household i in community j is specified as

$$lnc_{ij} = \beta_{0j} + \beta_{1j} X_{ij} + e_{ij}. \quad (1)$$

where X_{ij} denotes the observed characteristics of household i in community j and β_{0j} and β_{1j} are coefficients (constant term and slopes terms, respectively) that are allowed to vary by community j. Specifically, both the constant term and the slope coefficients are assumed to be affected by community observed characteristics Z_j, and community unobserved factors denoted by u_{0j} and u_{1j},

$$\beta_{0j} = \gamma_{00} + \gamma_{01} Z_j + u_{0j}. \quad (2)$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11} Z_j + u_{1j}. \quad (3)$$

Substituting (2) and (3) into (1) yields the regression equation (4) below

$$lnc_{ij} = \gamma_{00} + \gamma_{01} Z_j + (\gamma_{10} + \gamma_{11} Z_j) X_{ij} + u_{0j} + u_{1j} X_{ij} + e_{ij}. \quad (4)$$

or after rearranging, expression (4a).

$$lnc_{ij} = \gamma_{00} + \gamma_{01} Z_j + (\gamma_{10} + u_{1j}) X_{ij} + \gamma_{11} Z_j X_{ij} + u_{0j} + e_{ij}. \quad (4a)$$

Based on equation (4), e_{ij}captures the idiosyncratic shocks experienced by the household, and $u_{0j} and\ u_{1j} X_{ij}$ capture the community-level covariate shocks, with u_{0j} summarizing the **direct** effect of covariate shocks affecting the intercept of each community and thus all households in the same community in the same manner, and $u_{1j} X_{ij}$ summarizing the **indirect** effect of covariate shocks that varies based on household observed characteristics. Alternatively, based on equation (4a) one can think of the specification as introducing random components to the coefficient of X_{ij} that varies across communities j (i.e., a random coefficient model).

Two key steps are involved in the estimation of this model. Firstly, equation (4a) may be estimated using Stata's command "mixed" with the random intercepts and coefficients option.

Secondly, the squared residuals e_{ij}^2 and u_{0j}^2 derived from equation (4a) in the first step above are regressed on X_{ij} and Z_j, and their interactions.

- $\sigma_{e_{ij}}^2 = e_{ij}^2 = \theta_0 + \theta_1 Z_j + \theta_3 X_{ij} Z_j + \eta_{ij}$
- $\sigma_{u_{0j}}^2 = u_{0j}^2 = \tau_0 + \tau_1 Z_j + \zeta_j$
- $\sigma_{u_{0j}+e_{ij}}^2 = \left(u_{0j} + e_{ij}\right)^2 = \pi_0 + \pi_1 Z_j + \pi_3 X_{ij} Z_j + +\omega_{ij}$

Assuming consumption is log-normally distributed, then one can estimate the probability of consumption falling below the poverty line z based on the expression below.

$$\widehat{v_{ij}} = P\left(lnc_{ij} < lnz \mid X, Z\right) = \phi\left(\frac{lnz - \widehat{lnc_{ij}}}{\sqrt{\widehat{\sigma_{u_{0j}+e_{ij}}^2}}}\right)$$

The identification of the vulnerable households requires setting a threshold for the probability of being vulnerable to poverty. In the empirical literature a household is classified as vulnerable if the household has a likelihood of being poor greater than or equal to 50% (i.e. falling below the poverty line at least once in the next two years).[44] This is equivalent to saying that a household is considered vulnerable if the probability of falling below the poverty line in any given year is 29%.[45] Ultimately the choice of the threshold has an impact on who is considered vulnerable. As the threshold increases (decreases), and the required probability of falling under the poverty line increases (decreases), fewer (more) households are going to be identified as vulnerable.[46]

The expression above is also useful for highlighting how vulnerability can be decomposed into different sources. Replacing $\widehat{\sigma_{u_{0j}+e_{ij}}^2}$ in the denominator by $\widehat{\sigma_{u_{0j}}^2}$, yields an estimate of the vulnerability to poverty from covariate or community-level shocks. Along similar lines, replacing $\widehat{\sigma_{u_{0j}+e_{ij}}^2}$ in the denominator by $\widehat{\sigma_{e_{ij}}^2}$, yields an estimate of vulnerability to poverty from idiosyncratic shocks.

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[44] The 0.5 probability threshold is justified in the following arguments provided by Pritchett *et al.* (2000, p. 5) and by Suryahadi and Sumarto (2003, p. 48): "First, this is the point where the expected consumption coincides with the poverty line. Second, it is intuitive to say a household is "vulnerable" if it faces at least 50% probability of falling into poverty. Third, if a household is just at the poverty line and faces a mean zero shock, then this household has a one period ahead vulnerability of 0.5. This implies that, in the limit, as the time horizon goes to zero, then being *in current poverty* and being *currently vulnerable to poverty* coincide."

[45] Let $P = Prob\left(\ln c_{ij} > lnz\right)$ denote the probability of being <u>above</u> the poverty line in any given year. Assuming the poverty status of a household is independent over time, the probability of being vulnerable to poverty at least once in the next 2 years, (i.e. using the 50% threshold), is then given by $v_{ij,t+2} = 1 - P^2 \geq 0.5$. Solving this for P yields $P = 0.71$ which implies that the probability of falling <u>below</u> the poverty line in any given year is 0.29 (=1-0.71).

[46] For example, consider the extreme threshold of 0 (i.e., any household with a nonzero probability of falling below the poverty line is vulnerable). Such a threshold would in fact categorize all households as vulnerable, which would not be useful in identifying those with more immediate needs.

Two main caveats associated with the method are important to bear in mind: (i) the cross-sectional variance is assumed to estimate future intertemporal variance in consumption. This implicitly assumes that the variance in consumption of a particular household is constant over time; (ii) there is no measurement error in consumption and/or no time-invariant unobserved fixed effects. If there is a measurement error, it can lead to an overestimate of the variance of consumption, and especially of the impact of idiosyncratic shocks on consumption. In principle, this can be addressed by checking the robustness of the vulnerability estimates under alternative assumptions about the proportion of the estimated variance of consumption due to measurement errors.

APPENDIX E: Marginal effects on the probability of stunting

Table E.1: The marginal effect on the probability of stunting of access to adequate level in 1 or 2 or all 3 of the underlying drivers of nutrition: Angola

VARIABLES	No covariates	Including child, parental, and household covariates
Aany1: Adequate in any 1 driver	-0.120***	-0.015
	(0.032)	(0.028)
Aany2: Adequate in any 2 drivers	-0.220***	-0.039
	(0.035)	(0.035)
Aall3: Adequate in all 3 drivers	-0.235-***	0.046
	(0.062)	(0.087)
Observations	2,553	2,553

Source: Authors' estimates based on children less than 24 months old from Angola DHS 2016.
Note: Marginal effects are based on the coefficient estimates obtained from the logit model in equation (2).
***p < 0.01, **p < 0.05, *p < 0.1.
All regressions include child, parental, and household characteristics that consist of the following variables: dummy variables for age of child (in months), if child is female,, birth order, time interval since last birth, the age of the mother, mother's education level (in years), the number of household members, the number of children under 5 years of age, the household's wealth quintile, and whether the household lives in a rural area.
***p < 0.01, **p < 0.05, *p < 0.1.

Table E.2: The marginal effect on the probability of stunting of access to adequate level in combinations of the underlying drivers of nutrition: Angola

VARIABLES	No covariates	Including child, parental, and household covariates
Food/care determinant (FC)	-0.110***	-0.076**
	(0.042)	(0.038)
WASH determinant (W)	-0.015	0.040
	(0.043)	(0.038)
Health determinant (H)	-0.104***	-0.007
	(0.035)	(0.036)
Food/care and WASH (FC_W)	-0.109	0.070
	(0.100)	(0.090)
Food/care and health (FC_H)	-0.116**	0.006
	(0.052)	(0.045)
WASH and health (W_H)	-0.302***	-0.122**
	(0.057)	(0.059)
All 3	-0.321***	-0.055
	(0.095)	(0.094)
Observations	2,553	2,553

Source: Authors' estimates based on children less than 24 months old from Angola DHS 2016.
Note: Marginal effects are based on the coefficient estimates obtained from the logit model in equation (2).
***p < 0.01, **p < 0.05, *p < 0.1.
All regressions include child, parental, and household characteristics that consist of the following variables: dummy variables for age of child (in months), if child is female,, birth order, time interval since last birth, the age of the mother, mother's education level (in years), the number of household members, the number of children under 5 years of age, the household's wealth quintile, and whether the household lives in a rural area.

APPENDIX F: Social Assistance Programs in Angola

Social Protection Programs	Description	Target population	Institution	2019 Budget	2019 Executed	Share of total spending	Beneficiaries
1. Programa Integrado de Desenvolvimento Local e Combate à Pobreza			Coordinated by MASFAMU	607	49	2	
1.1 Programa de Reintegração Sócio-económica e Produtiva de Ex-militares	Improved social housing, placement in formal employment, assistance to war-disabled former military personnel, assistance to former military personnel over 60 years with basic food baskets, assistance to widows and dependents of former soldiers.	Ex-militaries and their families	MASFAMU / Institute of Social and Professional Reintegration of Former Military Personnel	1,771	957	35	1,457 ex-militaries
1.2 Programa de Municipalização da Acção-Social	Includes CASIS, SIGAS, Social Registry.		MASFAMU	313	-	0	CASIS: 19. Social Registry: 61,000 people
1.2.1 Valor a Criança (Financiamento da União Europeia)	Cash transfer for families with children under 5	Families with children under 5	MASFAMU, UNICEF	221	221	8	11,473 children
1.3 Projecto de Estruturação Económica e Produtiva das Comunidades Rurais			MASFAMU	34	6	0	578 people
1.4 Projeto de apoio a famílias em situação de alta vulnerabilidade (Cartão Social - Kikuia)	Electronic cards for exchanging products at specific stores for 10,000 kz per family per month	Vulnerable households	MASFAMU	64	313	12	2,606 families
1.5 Projecto de Requalificação de aldeias rurais	Construction of communities to reallocate families	Families in risk areas	MASFAMU	24	2	0	N/A
1.6 Programa de Apoio à Mulher Rural	Training, inputs for work, access to microcredits, formation of midwives	Vulnerable women in rural areas	MASFAMU	79	5	0	2,844 women
1.7 Projecto Desenvolvimento Comunitário			MASFAMU	51	13	0	N/A
1.8 Merenda Escolar	School feeding	Children in primary school	MED	-	-	0	

Outros Programas			MASFAMU	-	-	0	
2. Programa Nacional de Desminagem			**MASFAMU/Demining Executive Committee**	**2,197**	**1,067**	**39**	
3. Programa de Protecção e promoção dos direitos da criança	**Protection and promotion of rights, milk and porridge, monthly basic basket of goods and financial support (Guardian Mothers)**	**Vulnerable children, orphans**	**MASFAMU**	**215**	**4**	**0**	
3.1 Leite e Papa			MASFAMU/INAC	304	106	4	994 children
3.2 Sensibilizacao sobre os dereitos da crianca			MASFAMU	-	-	0	91,593 individuals
3.3 Criancas localizadas e Reunificadas			MASFAMU	-	-	0	735 children
3.4 Violencia contra crianca			MASFAMU	-	-	0	6,822 resolved cases
3.5 Redes de Proteção de direitos da criança			MASFAMU	-	-	0	237 networks created
4. Projecto de Apoio às Vítimas de Violência	**Services: shelters, counselling centers, and domestic violence line**	**Victims of domestic violence**	**MASFAMU**	**60**	**13**	**0**	**110 actions to raise awareness, professional trainings 89.**
5. Programa de Promoção do Género e Empoderamento da Mulher	**Training and sensitization–work with communities' creation of gender database**	**Communities**	**MASFAMU**	**10**	**-**	**0**	**0**
6. Programa de Valorização da Família e Reforço das Competências Familiares	**Awareness campaigns, basic food basket, locomotion and technical aids, care homes**	Vulnerable families, youth at risk, elderly, disabled people, and victims of calamities	**MASFAMU**	**160**	**-**	**0**	**0**
OGE + UE			MASFAMU	5,504	2,706	100	
OGE			MASFAMU	5,325	2,196	81	

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