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# Young Adults and Labor Markets in Africa

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## ABSTRACT

# Young Adults and Labor Markets in Africa\*

Every year millions of young adults join the labor market in Africa. This paper uses the Jobs of the World Database to compare their job prospects to those of their counterparts in other low-income regions. We show that employment rates are similar at similar levels of development but young adults in Africa are less likely to have a salaried job, especially when the size of their cohort is large. Building on existing evidence on the impacts of interventions targeting both the demand and supply sides of the labor market, we discuss policy priorities for boosting the growth of salaried job creation in the region.

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# 1 Introduction

Today, one of every five people who start looking for their first job is born in Africa. By 2050, it will be one in three (Figure 1). The large share of young Africans seeking employment is the outcome of different fertility trends across the world: fertility has been falling everywhere, but much more slowly in Africa (Lam et al. 2019). It is no exaggeration to say that the economic and political future of the continent, as well as the outcome of the fight against global poverty, depend on the job opportunities available to the children born in Africa today.

This paper presents and discusses facts about African labor markets, focusing on young labor market entrants in Africa and how they fare compared to older generations and to their counterparts in other low- and middle-income regions of the world.

To study macro patterns with micro data, we construct a new dataset of labor market indicators that can be aggregated at the geography, age, wealth and gender level. Our starting point is the Jobs of the World Project (Bandiera, Elsayed and Smurra, 2022), which harmonizes and collates the universe of Demographic and Health Surveys (ICF, 1990-2017) and IPUMS censuses since 1990 (Minnesota Population Center, 2020) in the public domain. We focus on countries for which we have sufficiently detailed information on respondents' occupations and keep only the latest wave available for each country. We study the employment patterns of the “young adults” group, defined as individuals aged 18-24.<sup>1</sup> Our final sample covers 68 low- and middle-income countries: 28 in Africa and 40 in other regions. These comprise a total population of 593 million people in Africa and 1.18 billion people in the rest of the world. Our set of comparison countries is drawn from all other regions except North America, with South Asia the least represented (one country, Nepal, out of 6) and Latin America and the Caribbean the most (22 out of 25 countries). Our sample covers a wide range of national incomes: real GDP per capita ranges from \$1,051 (Liberia 2008) to \$18,051 (Mauritius 2011) in the set of African countries and from \$1,656 (Haiti 2003) to \$19,285 (Romania 2011) in the comparison group of other countries.

The key pattern that emerges from this dataset is that the development process entails a transformation in the organization of labor: a myriad of micro-entrepreneurs turn into salaried workers hired by large firms. We show that this pattern starts with the youngest cohorts everywhere but in Africa, where young workers are as likely as their parents' generation to hold a salaried job. We then discuss possible explanations and policies to address this issue.

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<sup>1</sup>For more details on the Jobs of the World Project and the data used in this paper, see the Online Appendix and the Documentation contained in the article's Replication Package.

## 2 Jobs and Development

To begin, we document the evolution of jobs along the path of development and ask whether African countries are “on track” given their income levels, that is, if the organisation of labor follows the same path as that of other countries conditional on income.

Figure 2 reports the share of young adults in different employment categories for 28 countries in Africa and our comparison group of 40 other low- and middle-income countries. For each group, the left panel of the figure shows the share of 18-24-year-old individuals who do any work whether paid or unpaid, with the remainder (students, unemployed workers and home-makers) categorized as not working.<sup>2</sup> The right panel then shows the composition of young workers’ employment, according to their main sector of occupation (agriculture or manufacturing/services) and type of employment (self-employed or salaried). We classify individuals working for themselves or for family members as self-employed, and those who work for someone else for pay as salaried workers.

### **Young Adults in Africa Are Equally Likely to Work, but Less Likely to Get Paid**

As the left panel of the figure makes clear, the 18–24-year-old population is almost equally split between those at work and those not working in both sets of countries. The main difference between Africa and the rest of the sample is the incidence of unpaid work. The share of those in unpaid work is 15.6 percent, over twice as large as in the group of comparison countries. The share of those in paid work is 32.4 percent in Africa compared to 41.5 percent in the comparison group. Disaggregating these results by gender largely mirrors our findings from the pooled sample (see Figure A3 in the Appendix).

### **Young Adults in Africa are Less Likely to Have an Employer**

In the right panel of Figure 2, we divide workers (both paid and unpaid) into four groups: self-employed and salaried in both sectors of occupation. Here, we classify unpaid workers as self-employed, since these are typically individuals participating in household farm work or in the family business without monetary remuneration. Paid workers, on the other hand, are made up of employees earning regular wages and self-employed individuals who report taking home some monetary revenue from their activity.

We find a striking difference in the organization of labor across the two sets of countries: only 25.5 percent of labor market entrants in Africa have a salaried job compared to 68.8

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<sup>2</sup>Our characterisation of workforce participation does not distinguish between unemployed individuals and those out of the labor force. In particular, the Demographic and Health Surveys do not collect information on whether people not engaged in any economic activity are in fact looking for work. This distinction is crucial to the International Labor Organisation’s definition of unemployment.

percent in our comparison group. This pattern also holds within sectors: the share of salaried jobs is over twice as large outside of Africa, both in agriculture (25.6 percent of young workers in agriculture have salaried jobs compared to 11.2 percent in Africa) and in manufacturing and services (83.5 percent of young workers in these sectors have salaried jobs compared to 39.2 percent in Africa).

It will come to no surprise that agriculture employs a larger share of the population in Africa, where 49 percent of 18-24-year-old workers cite agriculture as their primary sector of occupation compared to only 25.4 percent in the comparison group of other low-income countries. Indeed, merging our sample of country-year observations with the World Development Indicators database reveals that in Africa, agriculture accounts for 20.2 percent of GDP on average - almost twice the average share in our comparison group (10.4 percent) (World Bank 2021).

If we split non-agricultural employment into manufacturing and services, we find that 16.9 percent of 18-24-year-old workers are employed in manufacturing in Africa compared to 25.6 percent in the low-income countries outside of Africa, and 31.8 percent of workers in this age group are employed in services in Africa compared to 48.7 percent in the comparison group (see Figure A4 in the Appendix).

Our database also allows us to break down employment patterns by occupational skill groups for 63 out of the 68 countries in our sample. Here, we can distinguish between high-skilled professionals, white-collar workers (e.g. clerks) and blue-collar workers. We find that part of the higher share of salaried jobs in the employment structure of the comparison group of other low-income countries is also attributable to a higher prevalence of high-skilled jobs, of which the share is over twice as large in those countries as in Africa (12.9 percent versus 5.9 percent), and, to a lesser extent, white-collar jobs, which make up 25.8 percent of the workforce compared to 23.3 percent in Africa (see Figure A5 in the Appendix).

### **Young Adults in Richer Countries are More Likely to Have a Salaried Job**

Are job differences due to differences in the level of development between African and other countries? To investigate this question, Figure 3 plots the shares of young workers in the four employment categories against GDP per capita. On the Y-axis are country averages of these employment indicators for the 18-24-year-old population in our dataset. The X-axis plots the natural logarithm of real GDP per capita (in 2017 US dollars).

Two patterns emerge from Figure 3. First, the process of development entails a shift in the organization of labor from self-employment to salaried jobs. This shift is more than just the structural change from agriculture to manufacturing and services: as the figure shows, higher levels of GDP per capita are associated with a fall in self-employment and rise in salaried employment within both agriculture and manufacturing/services. Perhaps the most striking

change observed along the development path is a rapid rise in salaried jobs in manufacturing and services (shown in the second panel).

These findings resonate with those in Jensen (2021), who shows that the employee share increases as GDP grows. This is also in line with the view that economic growth stems from the expansion of the formal sector (Schoar 2010; La Porta and Shleifer, 2008, 2014).

The fact that self-employment is the dominant activity in low-income countries implies a different interpretation of unemployment and labor force participation. Feng et al. (2021) document that unemployment is largely a feature of advanced economies, while Donovan et al. (2021) show that a large share of workers in poorer countries frequently transition between self-employment and ‘non-employment’.

Second, Figure 3 suggests that the differences presented in Figure 2 are largely in line with GDP differences between Africa and the rest of the world. The African countries with higher per capita income levels, such as Botswana, have a similar structure as non-African countries at similar levels of GDP per capita: that is, around 80 percent of 18–24-year-old workers in salaried employment in manufacturing and services and less than 5 percent of workers in this age group in self-employment in agriculture. Likewise, the employment structure of the lowest-income countries outside of Africa is similar to that of African countries at similar levels of development. For example, 45 percent and 41 percent of 18-24-year-old workers in Haiti are engaged in self-employment in agriculture and manufacturing and services respectively, with only 12 percent in salaried jobs in total.

The data at the country level indicate that Africa is on average on the same development track as other regions. African countries are much poorer, but according to the patterns presented in Figure 3, their employment structures will eventually undergo a similar shift towards salaried jobs with future economic growth. Broken down by cohort, however, the data tells a different story.

### **Salaried Jobs are More Common among the Young, but not in Africa**

Figure 4 plots the mean shares of each of the same four employment categories as in Figures 2 and 3 by age cohort, separately for Africa and our comparison group of other low-income countries. Out of Africa, agriculture is essentially flat across age cohorts while participation in manufacturing and services varies sharply with age. The second and fourth panels show that the age gradient is positive for self-employment and negative for salaried jobs in these sectors: older people are more likely to be self-employed and less likely to have salaried jobs in these countries. This is likely due to positive trends in economic growth bringing about new salaried job opportunities for the younger cohorts, as suggested by the positive association between GDP per capita and salaried employment rates depicted in Figure 3.

In Africa, this pattern seems largely absent. While Africa’s age-occupation profiles mirror



those of the other countries for agriculture, they are essentially flat for manufacturing and services in the second and fourth panels. In particular, the trend presented in the second panel indicates that labor market entrants are no more likely to hold a salaried job than their older counterparts. This is particularly puzzling in light of existing evidence that many African economies seem to have undergone some structural change in recent decades (Diao et al. 2017).<sup>3</sup>

The key takeaway of Figure 4 is thus that the jobs of many young people in Africa do not differ from that of their parents' generation. This casts doubt on the prediction that youth employment in the region will naturally follow the same path of transformation associated with economic growth that has been observed in other countries.

A key difference between Africa and other regions is that the number of young entrants to the labor market is much higher in Africa. Is this responsible for the patterns we see or is it a consequence of the lack of salaried jobs? In principle, the relationship between cohort size and employment structure can go both ways. Indeed, the number of people in the same cohort determines the number of people competing for the same jobs. At the same time, the absence of salaried jobs lowers the cost of having children, likely keeping fertility high (Zipfel 2021). If both forces are at play, they will feed off each other keeping African youths trapped in a cycle of bad jobs and high fertility. We investigate this next.

### 3 Cohort Size and the Competition for Salaried Jobs

A major difference between Africa and the comparison group of low- and middle-income countries in our database is the large size of the young cohort entering the labor market for the first time. This is a result of the region's slow demographic transition: since its onset, the fertility decline has been less steep in Africa relative to other developing regions, as recognized by demographers (Bongaarts and Casterline 2013; Bongaarts 2017).

We calculated the share of young people aged 15-24 out of the population aged 15-49 using data from the UN World Population Prospects. For the world as a whole, in 2020, the average share of the 15-24 age group is 31 percent. For the countries of Africa, the share is 40 percent. In our own dataset, when we list the countries where the share of the 15-24 age group as part of the 15-49 age group is highest, 7 of the top ten countries are in Africa: Eswatini (50 percent, 2006), Lesotho (46 percent, 2009), Honduras (45 percent, 2001), Zambia (44 percent, 2010), Cameroon (44 percent, 2005), Burkina Faso (44 percent, 1996), Mali (44 percent, 2009), Nicaragua (43 percent, 2005), Guinea (43 percent, 2014), and Guatemala (43 percent, 2014). Indeed, 21 of the top 30 countries in this ranking are in Africa.

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<sup>3</sup>This study documents a shift out of agriculture by rural females over the age of 25 who have a primary education since the beginning of the twenty-first century in sub-Saharan Africa.



Does the probability of finding a job depend on the size of one's age cohort? The answer depends on the several factors that determine the pool of workers who compete for the same job, that is, whether workers of different ages are substitutes. For low-skilled jobs with low returns to experience, the relevant pool is not tied to age; if experience matters, it is.

To shed light on the link between cohort size and the jobs of young adults we use variation in the share of youths across provinces - the smallest geographical level at which DHS surveys are representative - within African countries. This sample covers a total of 345 provinces across 28 countries. The number of provinces per country ranges from 3 (Malawi) to 34 (Guinea), with the median at 10. The share of the 18-24 age group across these regions varies between 21.6 percent and 43.3 percent.

Figure 5 plots the province-level averages of each employment indicator against the share of the working-age province population who are aged 18-24 for all African provinces in our sample, as well as the fitted values from local polynomial regressions. It shows that the youth bulge is associated with a decrease in the share of salaried employment outside of agriculture among young workers (as shown in the second panel) and an increase in self-employment in both sectors (as shown in the third and fourth panels). That is, individuals born in large cohorts are less likely to find a salaried job when they join the labor force.

Figure 6 replicates the analysis across wealth quintiles.<sup>4</sup> In the left-hand graph, the share of workers in salaried agriculture jobs is small everywhere, but the poorest are particularly more likely to engage in this type of employment. The probability is relatively higher for regions with small cohorts and converges to a level very close to that of other quintiles as the young cohorts' share of the working-age population increases. In the second figure, individuals born in larger cohorts are less likely to have a salaried job in manufacturing and services regardless of their wealth, but the gradient is steeper for the middle classes. The poorest are unlikely to have these jobs regardless of cohort size, while the top quintiles are also unaffected for the opposite reason: they are most likely to have these jobs regardless of cohort size. Wage employment falls especially for the second, third, and fourth quintiles, and the second converges to the bottom. Thus, it seems that wealth acts as a buffer, as the probability that richer individuals have higher-quality jobs is less sensitive to cohort size than those in the lower wealth classes.

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<sup>4</sup>A major advantage of our dataset is that it uses detailed data about household assets and dwelling characteristics to construct household-level wealth proxies. We use these to create wealth quintiles (sufficiently large bins to ensure socioeconomic differentiation) for each country-year sample for which the relevant variables exist. A large proportion of households in low-income countries are intergenerational, which explains why we observe young adults in each quintile.

## 4 What Can Policy Do?

Young labor market entrants in Africa are at a disadvantage relative to their counterparts in other low-income settings because their supply of labor outstrips demand. What can be done? Creating new jobs for the young is a policy priority everywhere, hence we can draw lessons from a large number of evaluations. Policies can be divided in three groups: those that give workers skills that make them more attractive to prospective employers, those that increase the demand for labor, and those that help firms and workers to match.

### **Supply-side Policies: Vocational Skill Training and Apprenticeships**

Vocational skills training programs are a very commonly used tool to improve young adults' employment opportunities. Their rationale is that the demand for skilled workers is strong, and that the lack of skills impedes young workers to fill these vacancies. These programs come in different durations, on different topics and are implemented in a variety of settings and countries. Randomised evaluations of skills programs indicate that most of these policies have a modest impact on employment. McKenzie (2017a) provides an overview of these programs across developing countries. "Modest" means that three out of 100 trainees find a job they would have not found without the intervention and that out of 14 experiments, only one had a statistically significant impact on earnings. Increasing the supply of skilled workers does not seem sufficient to create its own demand, at least not when implemented at the scale that is commonly evaluated.

Do vocational skills training programs have equally modest effects in Africa? The answer is much more nuanced. There are studies that find modest effects, like Cho et al. (2013) who evaluate a vocational training program in Malawi. There are, however, also studies that find large effects, for instance Honorati (2015) in Kenya and Alfonsi et al. (2020) in Uganda. The programs in these two studies stood out for being much longer (three months technical training coupled with three months internship in Kenya and six months of vocational training in Uganda) and both were delivered by high quality providers. In Alfonsi et al. (2020), outcomes were measured for a longer time period, which is key as the effects are shown to grow over time. This suggests that if these training interventions are properly administered, they could be a helpful tool towards getting young people into good jobs.

Why is Africa different? Besides accidental differences in program quality, the selection of trainees is likely to differ. This is because most young African adults are jobless (or at best engaged in low-quality jobs), so these programs treat people from the entire support of the ability distribution whereas, in richer countries the most able find employment on their own, and skill training programs treat individuals with lower returns.

Another common form of supply-side intervention is subsidies to firm training or apprentice-

ships. Externalities in human capital investment put a cap on firms' willingness to train workers because once the skills are embodied in workers, other firms can benefit without contributing to the cost. Subsidies are meant to compensate for that. The meta-analysis in McKenzie (2017a) indicates modest effects for these programs too. One possible reason is that firms are generally reluctant to train workers even with generous wage subsidies, especially those in high-skill sectors: Alfonsi et al. (2020) find evidence along these lines in their study of Uganda, as do Caicedo et al. (2021) in Colombia.

### **Demand-side Policies: Boosting Firm Growth to Create Jobs**

To expand the pool of salaried jobs available to young labor market entrants, another set of policies seek to relax constraints to firm entry and growth. Where subsistence self-employment dominates the employment structure, this involves subsidizing access to business training, capital and labor.

Business training programs have proven to be largely ineffective in creating jobs (McKenzie and Woodruff 2014; Mackenzie et al. 2020). Africa is no exception in this regard. Premand et al. (2012), for example, provide evidence from Tunisia that although entrepreneurship trainings increase the likelihood of starting a new business and reduce the chance of business failure, the increases in self-employment are likely to be offset by reductions in wage employment, pointing to a partial substitution between the two types of work.

Similarly, microcredit has had only very limited effects on the growth of microenterprises on average. A meta-study of seven randomized evaluations of micro-finance shows that benefits concentrate among the larger and more profitable firms (Meager 2019). Of these, two studies are based in Africa. In rural Ethiopia, Tarozzi et al. (2015) show no evidence that microcredit improves labor market outcomes despite a substantial increase in borrowing. On the contrary, in Morocco, the take-up rate of microcredit in rural areas tends to be extremely low, despite the availability of no formal credit alternatives (Crepon et al. 2015). However, among those who take up the microcredit, there are proportionally higher – albeit highly heterogeneous – impacts on self-employment investments and profits. These gains are offset by correspondingly large declines in employment income stemming from a fall in labour supplied outside the household.

A plausible alternative to create jobs and spur salaried employment would be to subsidize existing firms to hire workers. However, not many studies point to the existence of hiring frictions constraining firm size in developing countries. In Sri Lanka, offering wage subsidies to micro-enterprises to hire new workers had low take-up and only increased employment for as long as the subsidy remained in place (de Mel et al. 2019). One possibility is that firms are unable to find workers with the right skill set. Anderson and McKenzie (forthcoming) show that in Nigeria, helping firms recruit an accounting or marketing specialist improved business practices, increased product innovations activities, and raised profits and sales.

The average effects of programs seeking to boost microenterprise growth hide substantial heterogeneity. For instance, firms in manufacturing tend to be more responsive to wage subsidies and interventions seem to be more effective for firms that are well-managed in the first place. This is in line with estimated returns to capital for microenterprises that, for instance, have been found to vary from negative to 13.8 percent per month in Sri Lanka (de Mel et al. 2008).

Indeed, recent research on Tanzania suggests that programs directed at stimulating entrepreneurship in low-income countries must take into account the very heterogeneous nature of these small firms. Using one of the only representative surveys of small firms in Africa, Diao, Magalhaes and Mcmillan (2018) document that the share of the rural labor force working in nonfarm employment tripled (from 6.8 percent to 20.5 percent) between 2002 and 2012. But they also find extreme dispersion in labor productivity among these businesses, with many being less productive than agricultural activities. In another study, Diao, Kweka and McMillan (2018) find that 94 percent of the country’s labor productivity growth over that period came from a very small subset of informal firms that share characteristics with firms in the formal sector.

If most self-employed workers in low-income countries run businesses out of necessity while for a small fraction with entrepreneurial talent it is a calling, a policy priority is to focus on identifying these “gazelles” (Grimm et al. 2012; Jayachandran 2021). Targeting entrepreneurship interventions towards this group could have important multiplier effects if the “out-of-necessity” microentrepreneurs eventually get hired by the firms whose growth was fostered by these policies. The results of a large-scale national business plan competition in Nigeria lend support to this recommendation. Random assignment of grants provided each winner with approximately US\$50,000. Winning these grants led to firm entry and growth, including increases of over 20 percentage points in the likelihood of a firm having ten or more workers (McKenzie 2017b).

Increasing the size of the market firms cater can also be a way to boost salaried employment growth. McCaig and Pavcnik (2018) show that in Vietnam, a low-income country with significant self-employment, an increase in access to export markets promoted employment in larger firms.<sup>5</sup>

Another way of generating salaried jobs is by attracting foreign firms. This can increase labor demand directly or indirectly through its effects on domestic firms. In Costa Rica, Méndez-Chacon and Van Patten (2021) find that domestic firms experience a 26 percent increase in their number of employees after selling to multinational buyers. In Africa, a recent paper by Mendola et al. (2021) finds a clear positive association between proximity to multinational

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<sup>5</sup>The positive impacts of offering firms access to foreign markets extend to increased profits and improvements in product quality, as indicated by an experiment on small rug manufacturers in Egypt which randomly assigned the opportunity to export to high-income markets (Atkin et al. 2017).

enterprises and employment.<sup>6</sup>

### **Matching Demand and Supply**

Other market failures, resulting from information frictions, impede efficient matching of skilled workers to existing jobs. Information asymmetries in credit markets affect both workers, who cannot afford to invest in skills, and firms that cannot afford to invest to expand their business and hence have low labor demand. They directly increase how firms perceive the cost of hiring labor, especially for new entrants whose type is unknown to the firm. Evidence of this includes the use of entrance fees as screening mechanisms in West African apprenticeships. In Ghana, most firms claim that these serve to force young workers to signal investment in the apprenticeship (Hardy and McCasland, 2021).

Interventions that allow workers to signal their skills in a credible way relax this information constraint, namely, they reduce the uncertainty of employers on workers' type and make it worthwhile for them to hire. For example, Abebe et al. (2021b) in their study in Addis Ababa look at the effects of a job application workshop that includes advice on how to apply and interview, along with standardized personal selection tests that offer a verifiable measure of skills. Young workers randomly assigned to the workshop were significantly more likely to find stable salaried jobs. Bassi and Nansamba (2021), using a randomized trial in Uganda, find that making the results of a verifiable test of noncognitive skills available to both workers and employers encourages hiring. Assessing the skills of jobseekers and giving them their assessment results in a certificate they can credibly share with firms also increased employment in South Africa (Carranza et al. 2021).

These policies might also change workers' expectations and, through these, outcomes. Bandiera et al. (2021) show that vocational training makes young workers in Uganda more optimistic about finding employment in high-wage firms, thus they are more likely to search and more likely to be employed in such firms. In the same setting, an offer to introduce workers to firms backfired by lowering expectations, limiting search and, consequently, increasing the likelihood of working for a lower wage in low-wage firms.

### **Expanding Job Search**

Enabling young liquidity-constrained workers to expand their search is perhaps the most promising route. Paying application costs (about 4.50 US dollars) turned out to be as effective as doubling the wage rate in increasing the quality and the number of applicants for a clerical job in Ethiopia's capital city of Addis Ababa (Abebe et al. 2021a). Similarly, interventions as

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<sup>6</sup>A recent review of the effects of foreign direct investment (FDI) on local jobs also suggests that FDI is associated with an increase in the number of 'good jobs' in developing countries, because the jobs created by foreign firms tend to pay more and tend to offer more training than local firms, and FDI inflows boost the aggregate productivity of the host country (Javorcik 2015).

simple as subsidising the search for salaried jobs have also had some positive results. Examples include the reimbursement of travel costs to attend an interview or to find a job in a nearby city. Offering transport subsidies for young jobseekers in Addis Ababa, where salaried jobs are typically advertised in the city centre, had large positive effects on the probability of finding a formal job (Franklin 2018; Abebe et al. 2021b). A small transfer covering the bus fare was sufficient to induce a large number of households to send one of their members to work in the city during the lean season in Bangladesh, resulting in higher consumption and regular migration even after the transfer was removed (Bryan et al. 2014).

Progress in digital technology has opened up employment possibilities globally. The arrival of fast internet has been shown to increase employment rates on the continent due to the technology’s impact on firm entry, productivity, and exports (Hjort and Poulsen 2019). The expansion of the internet network encouraged firm entry, primarily in sectors with a reliance on information and communications technology such as finance, in South Africa. More broadly, the spread of information and communications technology in Africa in recent years holds promise for creating jobs and reallocating workers into higher-return occupations in Africa. For example, in Kenya, the expansion of the mobile money technology M-PESA has led women to shift away from agriculture and into business (Jack and Suri 2016).

Merging country-level means from our dataset with internet use data across African countries provided by the Internet Telecommunications Union yields correlations that corroborate these findings.<sup>7</sup> In countries where internet use is more widespread, young adults are more likely to have a salaried job. Most importantly, internet access can undo, in part, the effect of large cohorts.

This is illustrated in Figure 7, which we construct from our final merged sample covering 22 African countries. The grey bar plots the average share of 18-24-year-old workers who have salaried jobs in manufacturing and services in the latest year available in the dataset: 26.1 percent. The light-green bar in the middle plots this average for the countries characterized by relatively large young cohorts compared to the region median and relatively low internet penetration (Guinea 2014, Mali 2009, Rwanda 2012, Cameroon 2005, Lesotho 2009, Kenya 2008). This number is lower than the overall average by close to 9 percentage points, at 17 percent. Finally, the last bar in dark green plots the average share of young adults in salaried jobs outside of agriculture for countries with relatively large cohorts but above-median rates of internet use (Benin 2013, Egypt 2006, Namibia 2006, Senegal 2013 and Zambia 2010). For this group, the average lies at 31.3 percent, so 5 percentage points above the regional average in this sample. The positive association between young adults’ chance of finding a salaried job outside of agriculture and the spread of internet therefore seems present in the data even for

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<sup>7</sup>The percentage of households using internet is a country-year-level indicator provided by ITU World Telecommunication/ICT Indicators Database. This data was retrieved from Hjort and Poulsen (2019b).

relatively large cohorts.

### **Lessons from Theory: Multiple Equilibria and Big Push Policies**

Taken together, active labor market policies tend to yield stronger outcomes in Africa compared to other developing countries. However, looking at the broader picture across low-income countries, the evidence from active labor market policies seems puzzling: the average worker does not fare better after being trained and firms do not hire more workers even when the cost of labor is low. At the same time, grants as cheap as a bus ticket or a standardized test may transform the lives of those who receive them by connecting them to jobs at a tiny fraction of the cost of vocational training. This disparate set of findings can be connected in a coherent picture if the underlying economic model has multiple equilibria and poverty traps.

The existence of multiple equilibria implies that there is a threshold of resources below which individuals are trapped in the low equilibrium and above which they escape. Micro interventions that tap into a pool of misallocated resources, such as credit-constrained job-seekers in Ethiopia, can have huge effects because they allow large groups of people to move from one equilibrium to another.

At the macro level, the low-productivity equilibrium has many small firms and only a few low-wage salaried jobs. Market failures create a vicious circle: if firm owners cannot borrow to invest, there will be a handful of firms, and among these, only low-productivity, poorly managed firms can survive because entrepreneurs with higher growth potential cannot enter the market (Bandiera et al. 2017b; Bloom et al. 2010). Besides its implications for the misallocation of entrepreneurial talent, the lack of labor specialisation keeps productivity and wages low. In the high-productivity equilibrium, larger firms employ the majority of the population. Individuals with entrepreneurial talent can access funds to start their own firm and at any point in time only the most productive firms are present in the market. Because skills are rewarded, individuals have incentives to invest, and because wages are high, they can afford to.

### **Big Push Policies**

The existence of these multiple equilibria can explain why apparently identical active labor market policy programs can have very different effects and why the same program can have very different effects on apparently identical people: changes that shift people across equilibria have very large and permanent effects. The facts presented in this paper suggest that many African countries may be in the low equilibrium, where improving the supply of skilled workers is ineffective because the demand for salaried labor is low.

Big push policies that seek to assist the low-productivity firms that exist in a low-productivity equilibrium often do not help move the economy to the high equilibrium. Policies that enable people with entrepreneurial talent to start and grow firms or facilitate the exit



of low productivity firms all have the potential to shift the economy to the high productivity equilibrium. Examples of such policies include large credit expansion (Burgess and Pande, 2005) and large-scale infrastructure investment in transport, energy and communications. In Ethiopia, bundled investments in roads and electrification shifted labor out of agriculture and into manufacturing and services (Moneke 2020). In Indonesia, electrification has been shown to foster positive selection by driving the least productive firms out of the market to be replaced by new, more productive, entrants (Kassem 2020). In addition, better access to foreign capital reduces misallocation of resources in the economy and stimulates growth and employment, with the highest gains recorded in areas where local capital markets were least developed (Bau and Matray 2021). Since family ownership lowers the quality of management practices (Bandiera et al. 2017b; Lemos and Scur 2019), tax policies aimed at curbing intra-family transfers of businesses could also lead to improvements in long-term productivity. These could come in different shapes, including wealth taxes, inheritance taxes, or a reduction in the exemptions that family firms often enjoy (Tsoutsoura 2015). Other ‘big-push’ institutional policies include improvements in contract enforcement that allow owners to delegate management to professionals (Grobovšek 2020).

Taken together, both empirical evidence and lessons from theory suggest that a policy focus on the creation of institutions and infrastructure that support firms in growing to larger sizes can help broaden the pool of salaried employment opportunities available to labor market entrants in Africa.

## 5 Conclusion

Many African economies are in a vicious circle, where most people run subsistence enterprises because there are no salaried jobs and there are no salaried jobs because most enterprises operate at subsistence levels and are not profitable enough to expand. Up-skilling young labor market entrants will not make subsistence entrepreneurs any more likely to hire them, and subsidising subsistence entrepreneurs will not make them more productive. These policies fail because they take the organization of labor as given. But no high-income economy is made of a myriad of entrepreneurs running tiny firms. Rather, most economic activity takes place in large organisations that put together workers with complementary skills.

How do we get there? “Getting there” requires incentives for microenterprises to merge, which will only happen if there is sufficient demand. This can be subsidised by the state, e.g. via procurement. The alternative is to give workers access to international markets where salaried jobs are easily available. Until recently this required migration, which came with high transaction costs. Today, services can be provided online. If young African workers can sell

their services to high-income countries, their earnings will create the boost in demand that their countries need to jump-start growth and a modernised organisation of labor.

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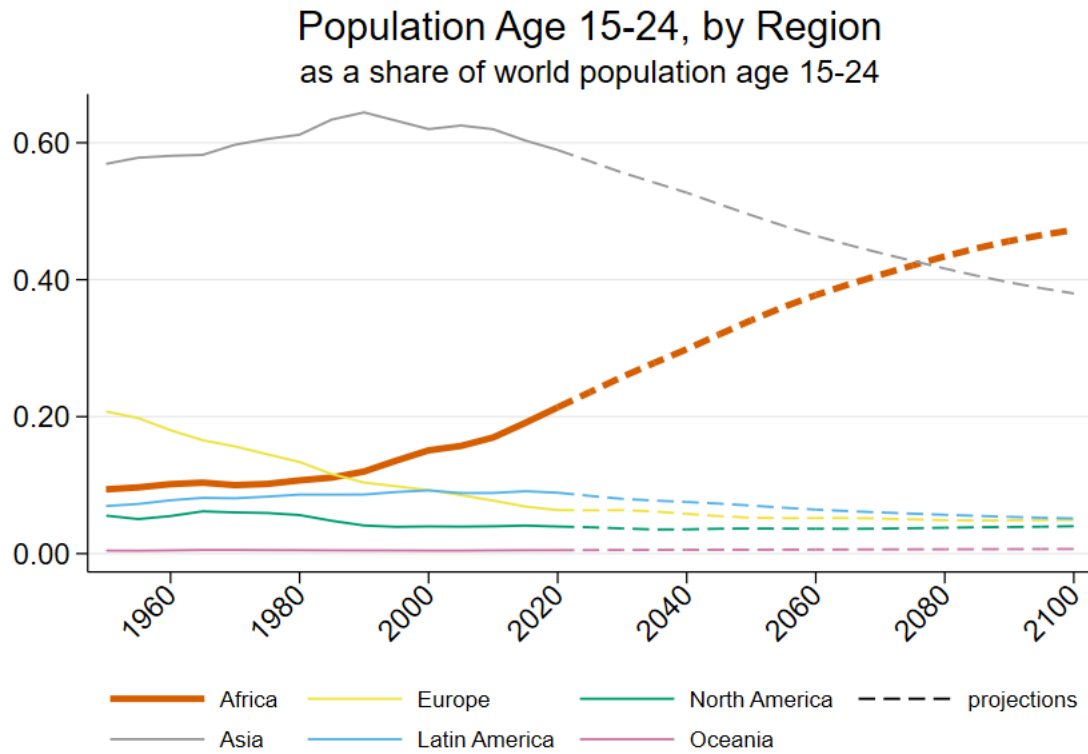
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## Figures

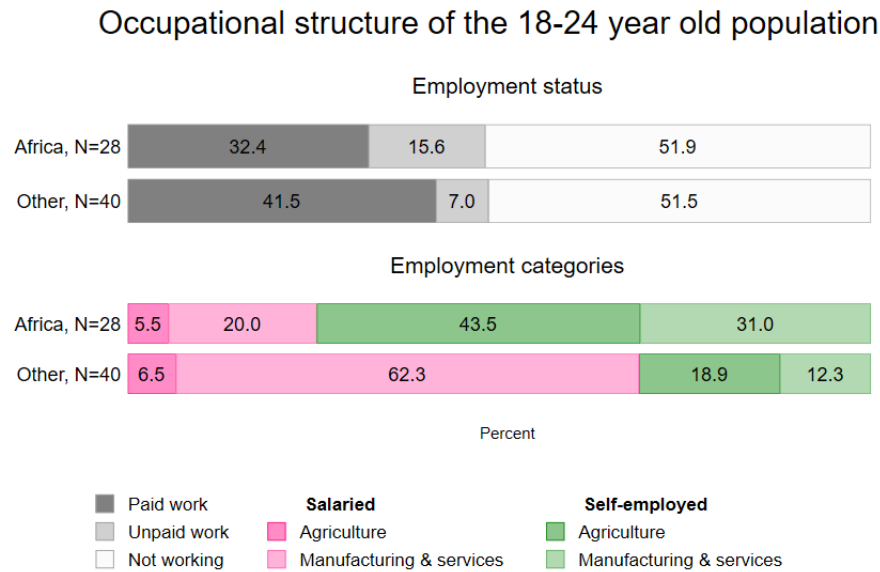
Figure 1



**Source:** UN World Population Prospects (2019).

**Note:** Regional shares of the world's total 15-24-year-old population, constructed from population estimates and projections from the UN World Population Prospects, 2019 (<https://population.un.org/wpp/>). Regions correspond to the geographical units coded in the source data. The figure refers to the cohort aged 15-24 as population estimates and projections are provided for 5-year bands. In the remainder of the paper, where we examine aggregates produced from microdata, we focus on the 18-24 age group. An analogous version of this graph, with absolute population sizes, is provided in Figure A1 in the Appendix.

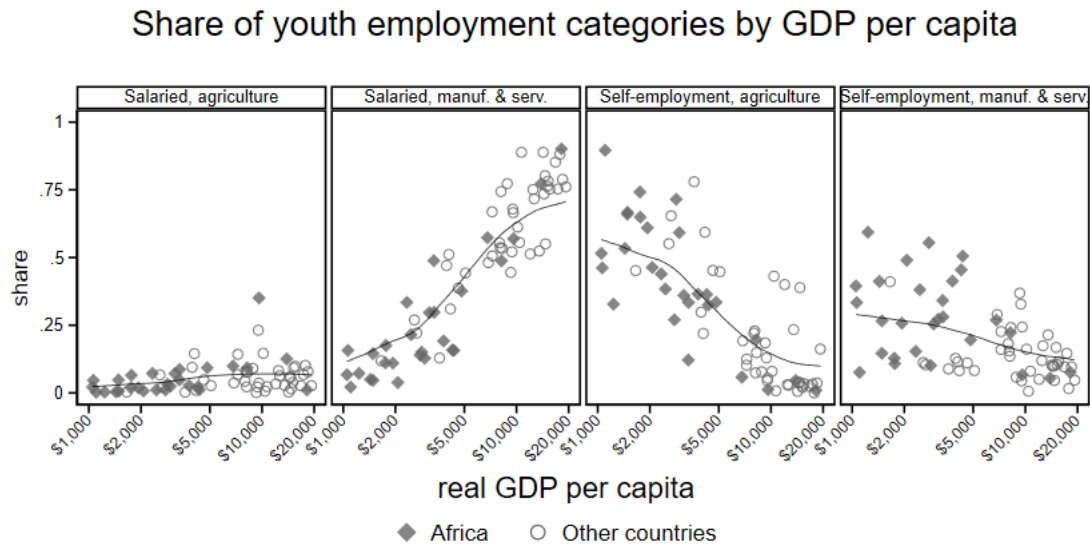
Figure 2



**Source:** Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

**Note:** Regional aggregates for the 18-24-year-old population in 68 low-income countries (28 from Africa and 40 from other regions) constructed from the latest sample available for each country the set of Demographic and Health Surveys and IPUMS censuses that contain the relevant labor outcomes for our exercise. The left panel plots the relative shares of three ‘extensive margin’ categories: fraction of individuals aged 18-24 (i) working for pay, (ii) in unpaid work and (iii) not working. The right panel plots the relative shares of four employment categories (defined according to sector and type of work), restricting the sample to working individuals (paid and unpaid). Regional averages are computed using countries’ population size as weights; for the unweighted version, see Figure A2 in the Appendix.

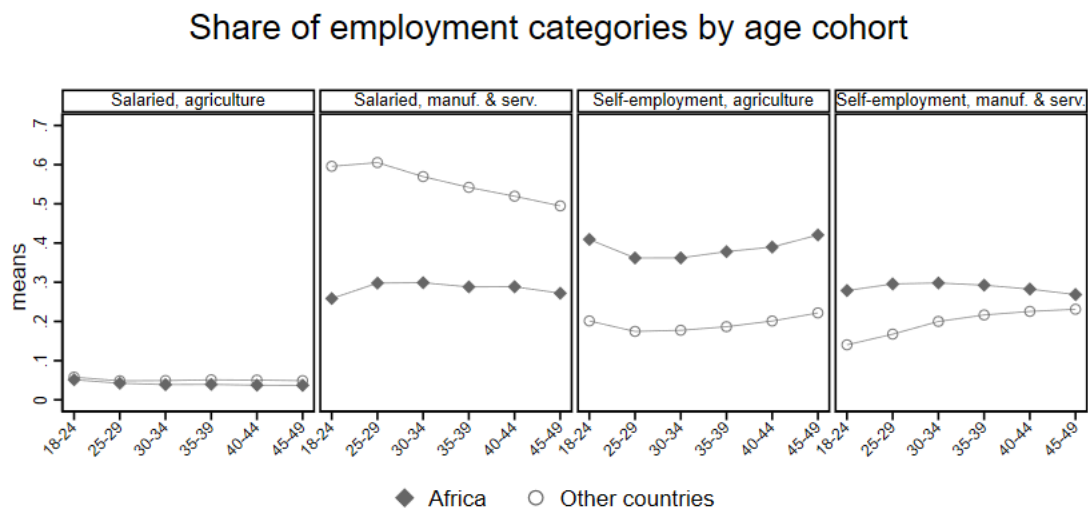
Figure 3



**Source:** Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

**Note:** Country-level aggregates for the 18-24-year-old population in 68 low-income countries (28 countries from Africa and 40 countries from the rest of the world) constructed from the latest sample available for each country in our dataset. Samples are selected if they contain the following information for both men and women: whether the individual engages in any economic activity at the time of the survey or census, type of employer (self/family/someone else), paid/unpaid work, and sector of occupation. The X-axis displays real GDP per capita at constant 2017 national prices (in mil. 2017 US\$) in logarithmic scale.

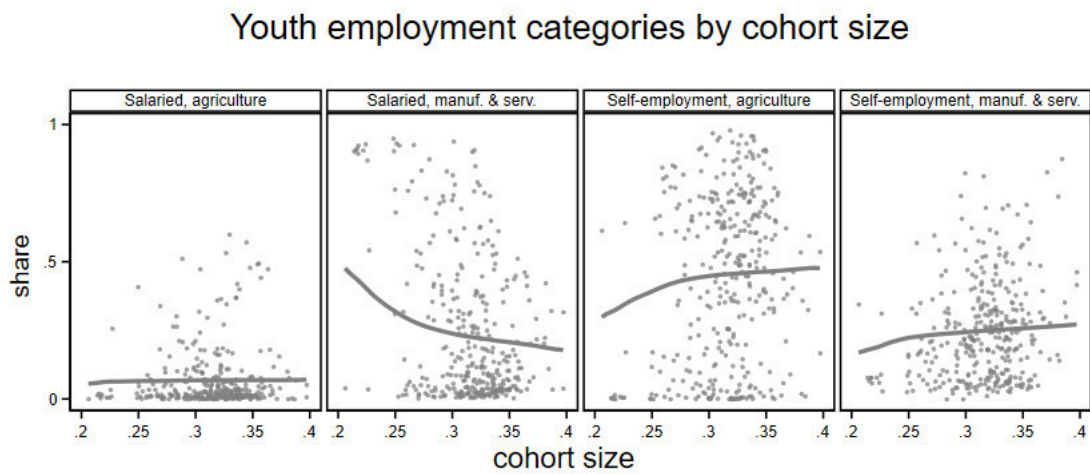
Figure 4



**Source:** Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

**Note:** Country-year-age cohort aggregates for 68 low-income countries (28 countries from Africa and 40 countries from the rest of the world) constructed from the latest sample available for each country in our dataset. Samples are selected if they contain the following information for both men and women: labor force participation, type of employer (self/family/someone else), paid/unpaid work, and sector of occupation. Each aggregate is constructed as a share of labor market participants within each age cohort.

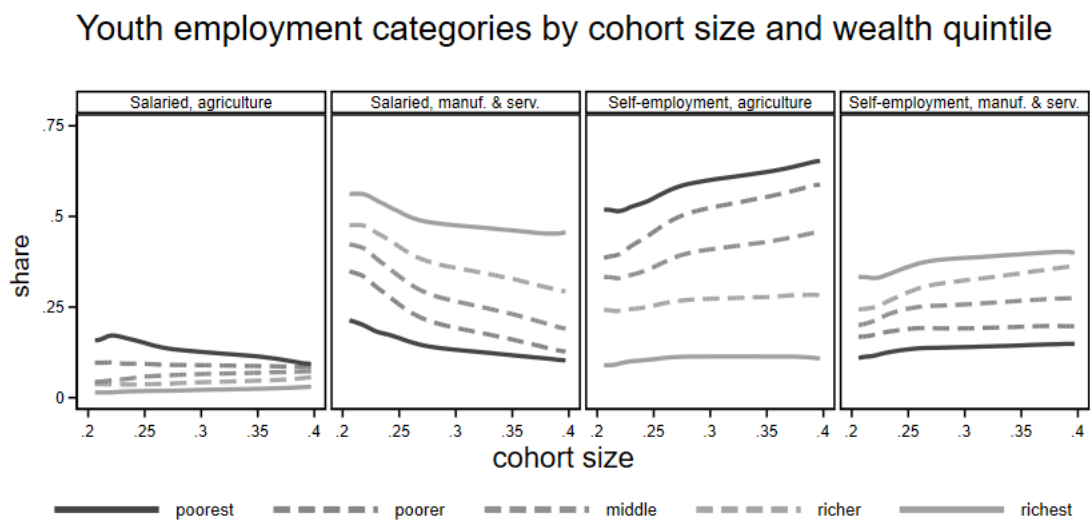
Figure 5



**Source:** Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

**Note:** Scatterplot of 345 province-level aggregates for 28 African countries constructed from the latest sample available for each country in our dataset. The X-axis plots the share of young people aged 18-24 relative to the overall sample aged 18-49 in a province, as a measure of cohort size. Samples are selected if they contain the following information for both men and women: labor force participation, type of employer (self, family or someone else), paid/unpaid work, and sector of occupation. Each outcome plotted on the Y-axis is constructed as a share of 18-24-year-old workers in each province. Lines plot the smoothed values of local polynomial regression estimates with an Epanechnikov kernel of optimal bandwidth.

Figure 6

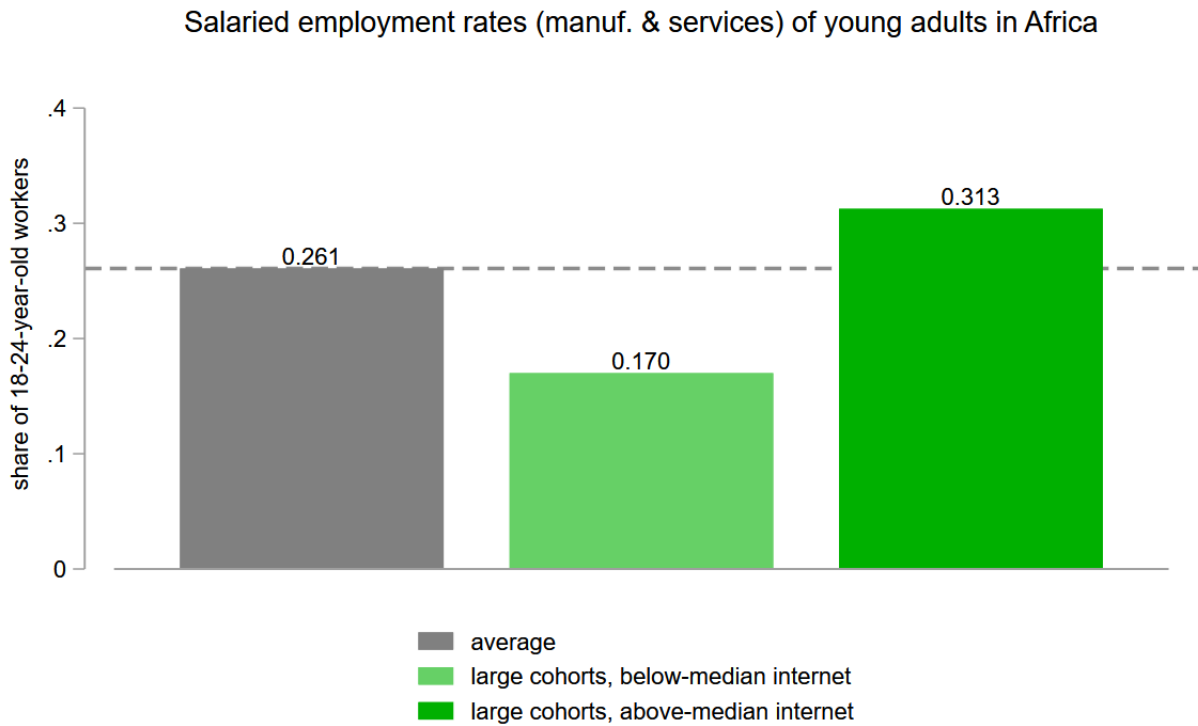


**Source:** Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

**Note:** Each graph plots a set of local polynomial regression estimates on a sample of 1,471 aggregates at the province-wealth quintile level. These cover 296 region cells from 26 African countries. Province is the term we use to refer to the largest subnational unit in each country (the smallest geographical level at which DHS surveys are representative). The X-axis plots the share of young people aged 18-24 in a province-wealth quintile cell relative to the overall sample aged 18-49 in this cell. Each outcome plotted on the Y-axis is constructed as a share of 18-24-year-old workers in each province-wealth quintile cell.



Figure 7



**Source:** Demographic and Health Surveys and IPUMS (harmonized via the Jobs of the World Project) and ITU World Telecommunication/ICT Indicators Database.

**Note:** Africa-region means for a sample of 22 African countries constructed by merging the Jobs of the World Database with the Internet Telecommunications Union data at the country-year level. We keep only the latest survey year available for each country. The first bar plots the average of the country-level shares of 18-24-year-old workers with salaried jobs in manufacturing/services. The second bar plots the average share in the group of countries with above-median cohort size and below-median levels of internet penetration, defined as the percentage of households using internet. The third bar plots the average share in the countries with above-median cohort size and above-median levels of internet penetration.

# Appendix

## A Jobs of the World Project

The Jobs of the World Project is a publicly available resource built to enable researchers to analyse comparable labor market outcomes across countries and time using micro data. At the core of the project is the collation and harmonisation of all available Censuses (IPUMS) and Demographic and Health Surveys (DHS) for low and middle income countries. The two sources combined provides coverage of countries representing about 81 percent of the world's population, and more than 90 percent of the population in low- and middle-income countries. A key innovation is the construction of comparable wealth measures that allow researchers to analyse labor market outcomes across wealth classes. The project has three outputs:

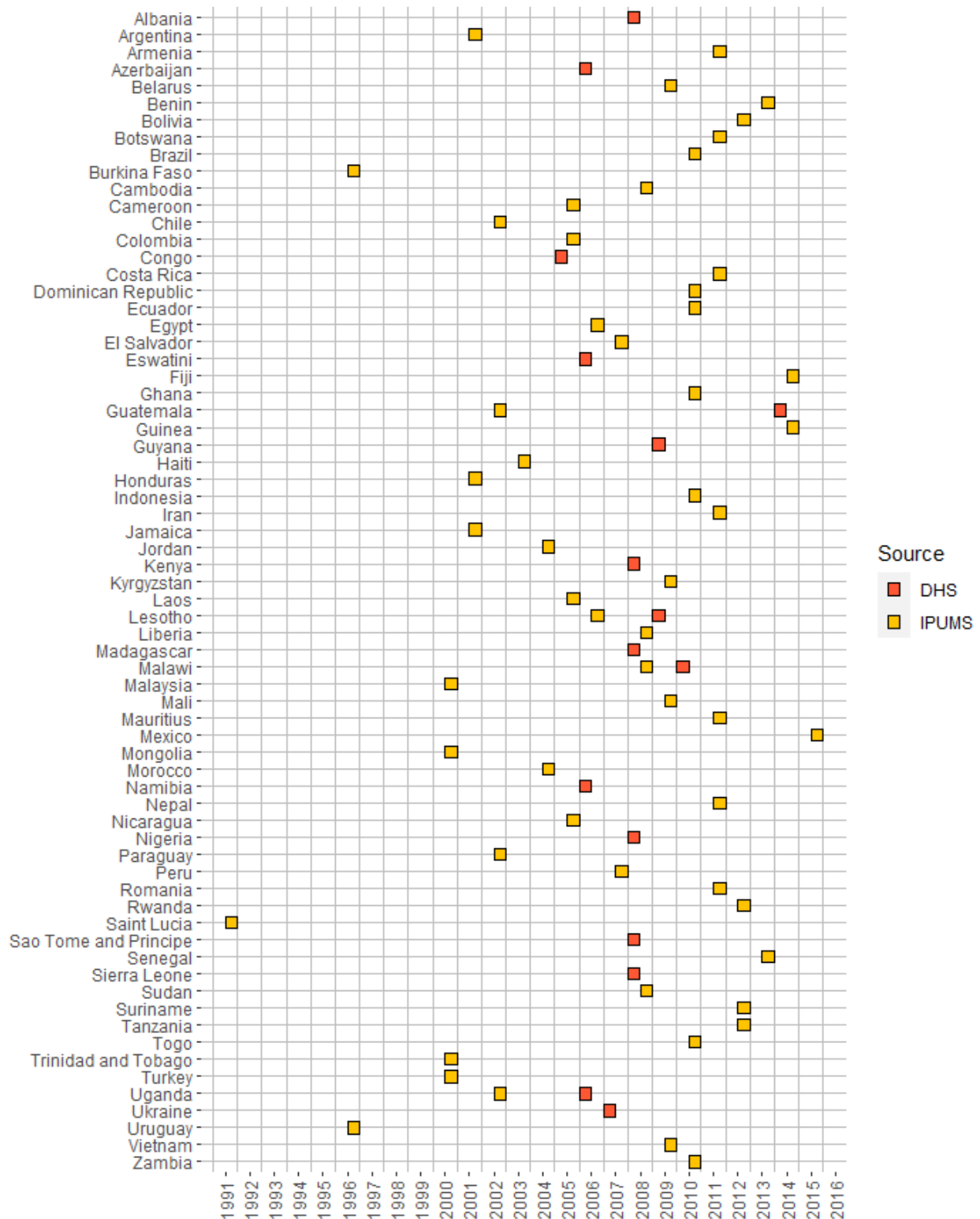
1. codes that allow researchers to implement the harmonisation and produce customised data sets from publicly available IPUMS International Censuses and Demographics and Health Surveys.
2. the Jobs of the World Data (JWD). The database focuses on a wide range of labor market characteristics including, but not limited to: labor force participation, type of employment (e.g., waged or self-employment), sector of employment (e.g., agriculture, manufacturing, or service), skill level (e.g., managers and professionals, white collar, or blue collar)
3. web platform to build downloadable maps and charts based on JWD.

More information on each of these elements and downloadable resources are available on the JWP website.<sup>8</sup>

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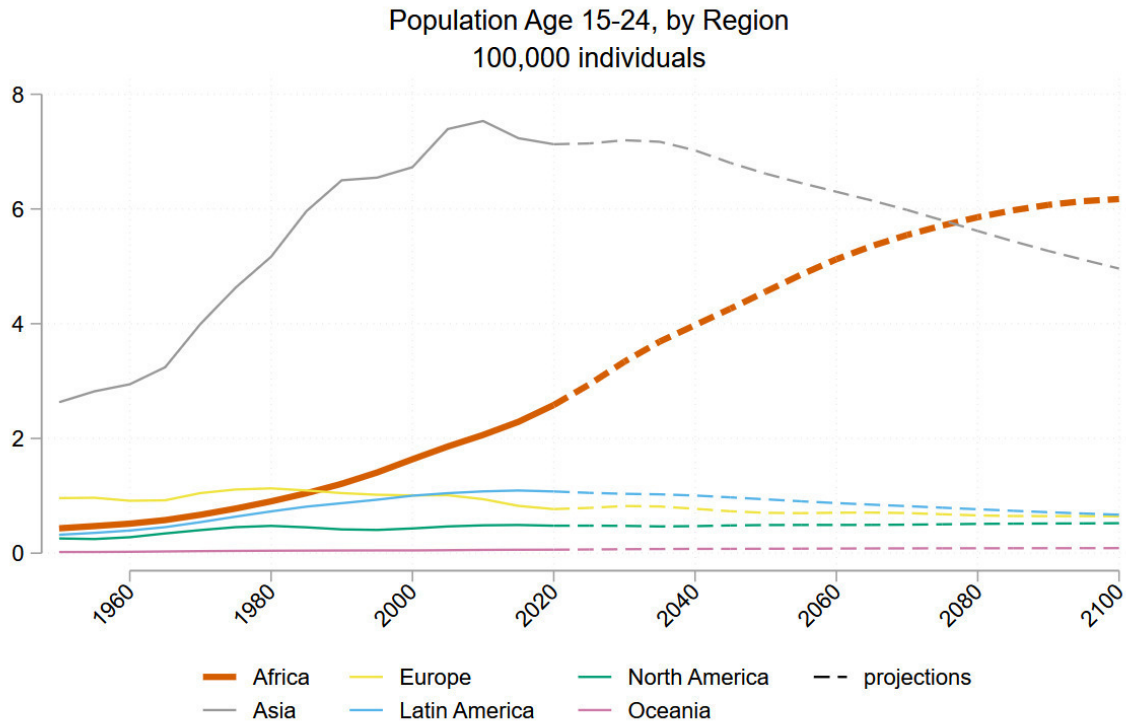
<sup>8</sup><https://dx.doi.org/10.15185/JWP>

Table A1. Samples and Sources of Data



## B Additional Figures

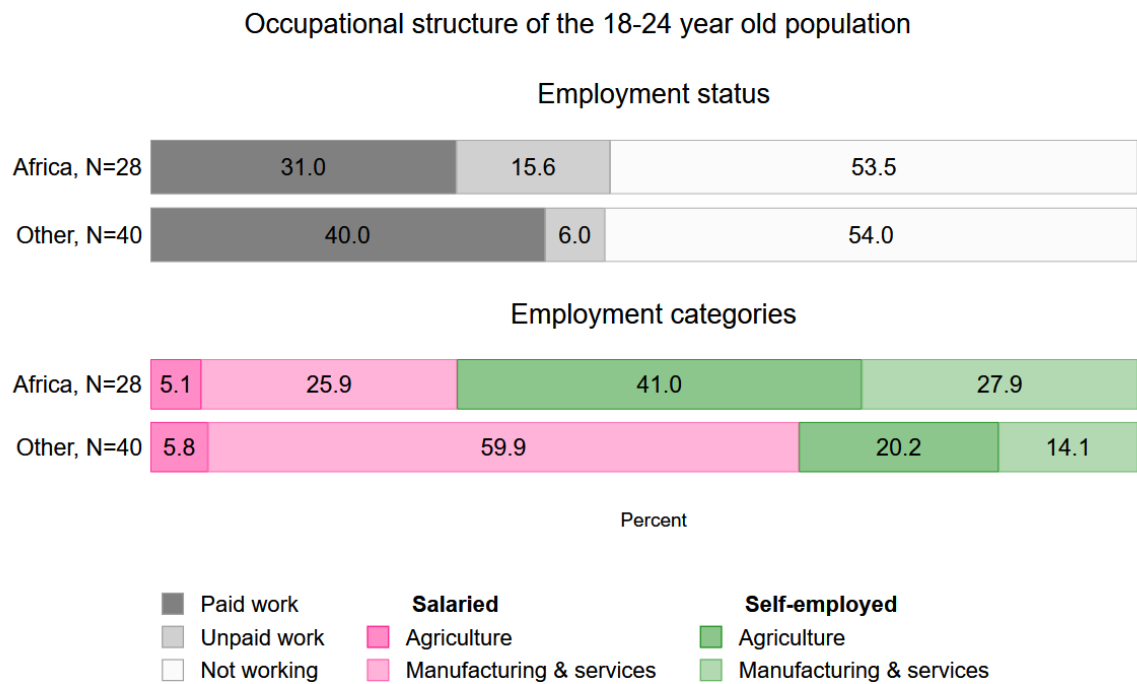
Figure A.1



**Source:** UN World Population Prospects (2019).

**Note:** Regional shares of the world's total 15-24-year-old population, constructed from population estimates and projections from the UN World Population Prospects, 2019 (<https://population.un.org/wpp/>). Regions correspond to the geographical units coded in the source data. The figure refers to the cohort aged 15-24 as population counts and projections are provided for 5-year bands. In the remainder of the paper, where we examine aggregates produced from microdata, we will focus on the 18-24 age group.

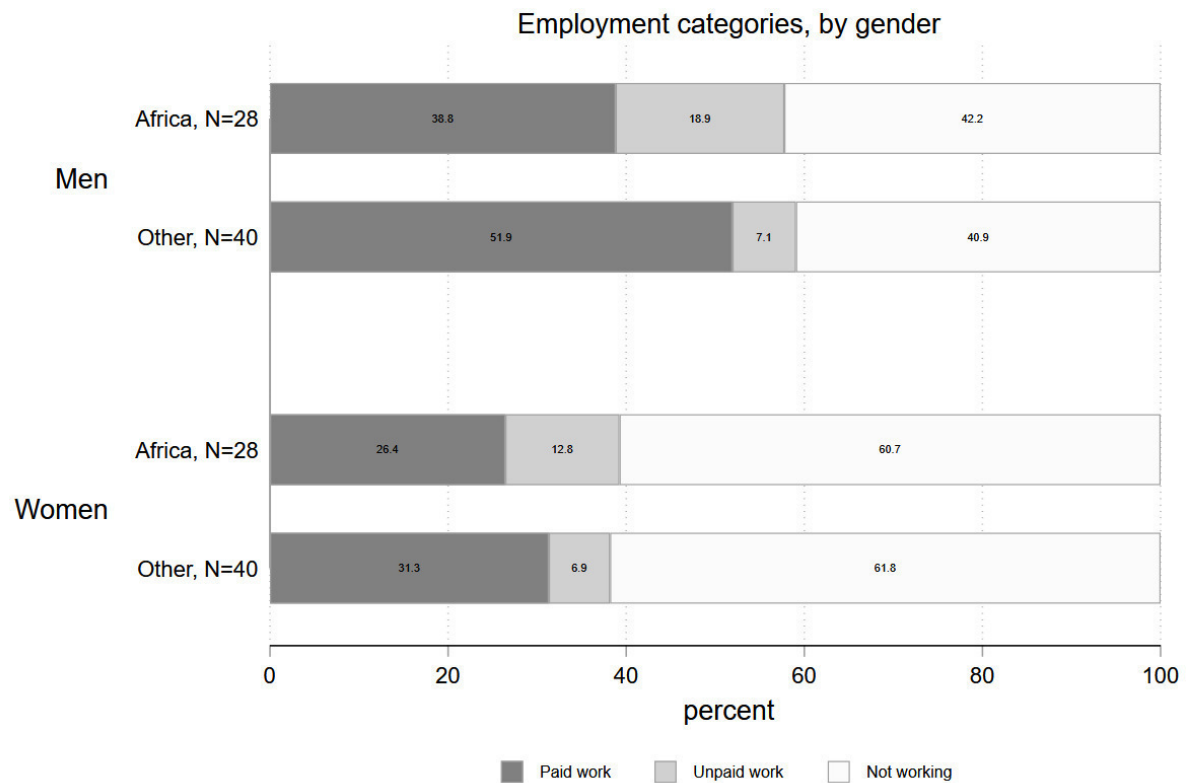
Figure A.2



**Source:** Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

**Note:** Regional aggregates for the 18-24-year-old population in 68 developing countries (28 countries from Africa and 40 countries from the rest of the world) constructed from the latest sample available for each country in the Jobs of the World Database. Samples are selected if they contain the following information for both men and women: whether the individual is engaged in any form of economic activity at the time of the survey or census, type of employer (self/family/someone else), paid/unpaid work, and sector of occupation. The left panel plots the relative shares of three ‘extensive margin’ categories: fraction of individuals aged 18-24 (i) working for pay, (ii) in unpaid work and (iii) not working. The right panel plots the relative shares of four employment categories (defined according to sector and type of work), restricting the sample to working individuals (paid and unpaid). This figure is the version of Figure 2 in the paper when aggregates are not weighted by country population size.

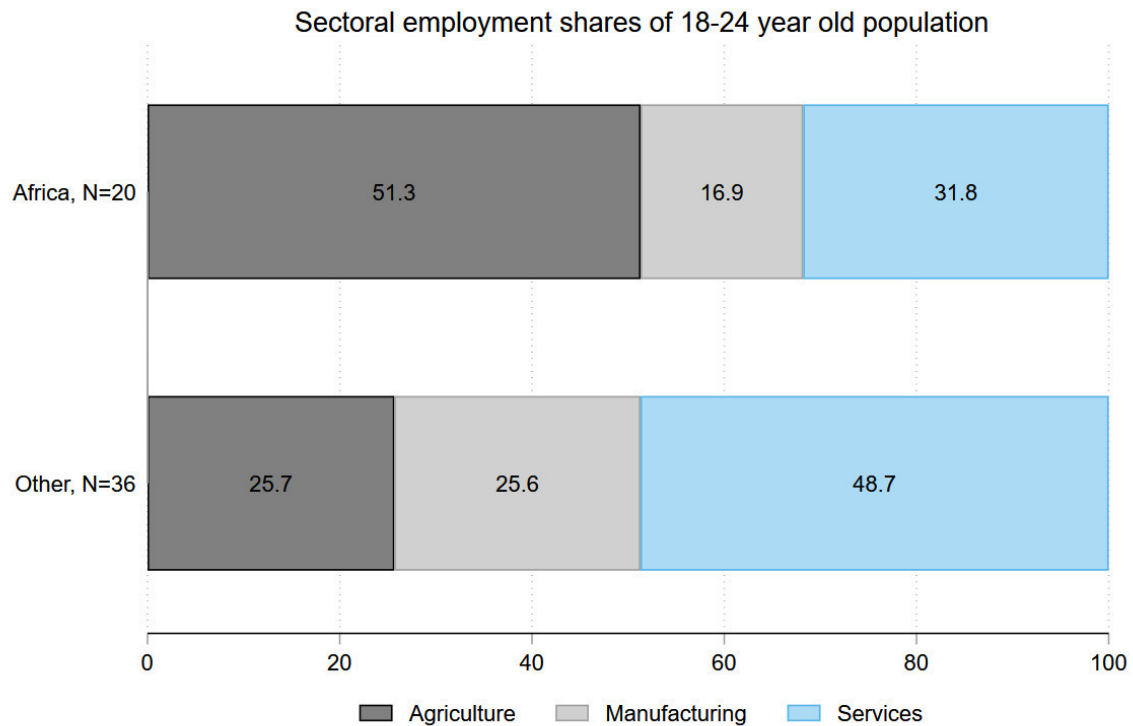
Figure A.3



**Source:** Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

**Note:** Regional aggregates for the 18-24-year-old population in 68 developing countries (28 countries from Africa and 40 countries from the rest of the world) constructed from the latest sample available for each country in the Jobs of the World Database. Samples are selected if they contain the following information for both men and women: whether the individual is engaged in any form of economic activity at the time of the survey or census, type of employer (self/family/someone else), paid/unpaid work, and sector of occupation. The figure plots the relative shares of three ‘extensive margin’ categories: fraction of individuals aged 18-24 (i) working for pay, (ii) in unpaid work and (iii) not working, split by gender.

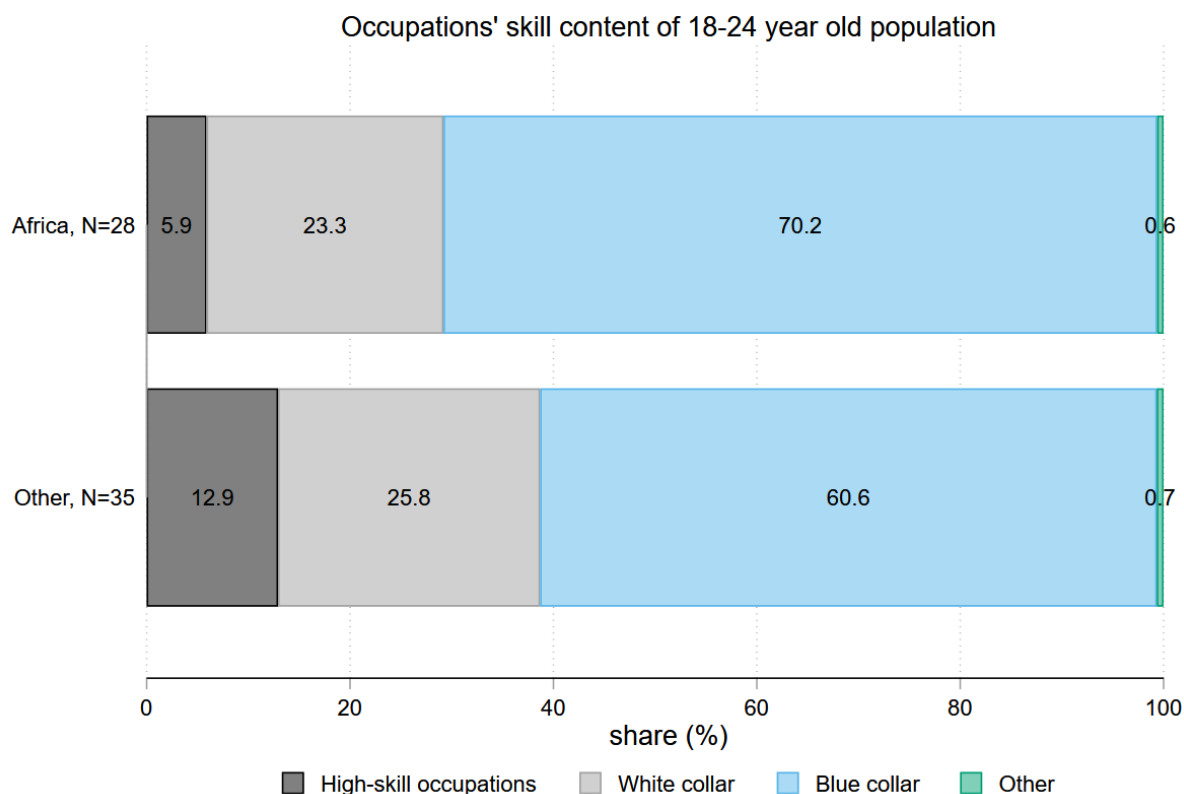
Figure A.4



**Source:** Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

**Note:** Regional aggregates for the 18-24-year-old population in 56 developing countries (20 countries from Africa and 36 countries from the rest of the world) constructed from the latest sample available for each country in the Jobs of the World Database. Samples are selected if they contain the following information for both men and women: whether the individual is engaged in any form of economic activity at the time of the survey or census, type of employer (self/family/someone else), paid/unpaid work, and disaggregated sector of occupation. The latter variable is available only for a subset of the countries in the core sample.

Figure A.5



**Source:** Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

**Note:** Regional aggregates for the 18-24-year-old population in 63 developing countries (28 countries from Africa and 35 countries from the rest of the world) constructed from the latest sample available for each country in the Jobs of the World Database. Samples are selected if they contain the following information for both men and women: whether the individual is engaged in any form of economic activity at the time of the survey or census, type of employer (self/family/someone else), paid/unpaid work, and type of occupation. The figure reports the relative share of the work force engaged in each of three types of occupations: (i) high-skill: professional, managerial and technical occupations; (ii) white collar: clerical, sales and service sector occupations; and (iii) blue collar: manual and unskilled jobs in agriculture and industry, and domestic services.