



# LEVERAGING DEMOGRAPHIC TRENDS FOR ECONOMIC TRANSFORMATION

Job creation, skills development, and urbanization policies

# Exploring new sources of large-scale job creation: The potential role of Industries Without Smokestacks

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Structural change is taking place in Africa, but with a pattern that is distinct from the historical experience of industrialized countries and contemporary East Asia. Export-led manufacturing is playing a much smaller role in the structural transformation of Africa's economies. In fact, on average, the share of manufacturing in Africa's GDP has fallen since 1980. Instead, services—some with quite low productivity—absorb the bulk of African workers leaving agriculture and moving to cities. These changes reflect the impact of technological progress, a changing global marketplace, and natural resource endowments on Africa's industrialization prospects.

At the same time, reductions in transport costs and progress in information and communications technology (ICT) have created services and agri-businesses that share firm characteristics with manufacturing.<sup>1</sup> Like manufacturing, they are tradable and have high value added per worker. They have the capacity for learning and productivity growth, and some exhibit scale and agglomeration economies.<sup>2</sup> Importantly, between 1998 and 2015, services exports grew more than six times faster than

merchandise exports across Africa.<sup>3</sup> Notably, firm capabilities—the tacit knowledge and working practices embodied in the firm—play a central role in determining productivity and quality. For lack of a better term, we call these “industries without smokestacks” (IWOSS) to distinguish them from traditional, “smokestacks” industries. We define IWOSS activities as those that (i) are tradable; (ii) have high value added per worker relative to average economy-wide productivity, as well as exhibit capacity for technological change and productivity growth; and (iii) can absorb large numbers of moderately skilled labor. In addition, IWOSS sectors show some evidence of scale or agglomeration economies.

A number of these IWOSS have become increasingly important in Africa, including agro-industry and horticulture, tourism, some business services—including ICT-based services—and transport and logistics.<sup>4</sup>

**Does the growth of industries without smokestacks offer an opportunity to address the youth unemployment challenge? Early lessons from South Africa.**

1 See William Baumol, “Unbalanced Growth Revisited: Asymptotic Stagnancy and New Evidence,” *American Economic Review* 75, no. 4 (1985): 806-17 and Jagdish N. Bhagwati, “Splintering and Disembodiment of Services and Developing Nations,” *The World Economy* 7, no. 2 (1984): 133-44.

2 Gunther Ebling and Norbert Janz, “Export and Innovation Activities in the German Service Sector: Empirical Evidence at the Firm Level,” *ZEW Discussion Paper* 99-53 (1999); Ejaz Ghani and Homi Kharas, “The Service Revolution,” *World Bank Economic Premise* 14 (2010).

3 John Page, “Rethinking Africa's Structural Transformation,” in *Foresight Africa: Top Priorities for the Continent in 2018* (Washington, D.C.: Brookings Institution, 2018), 66-8.

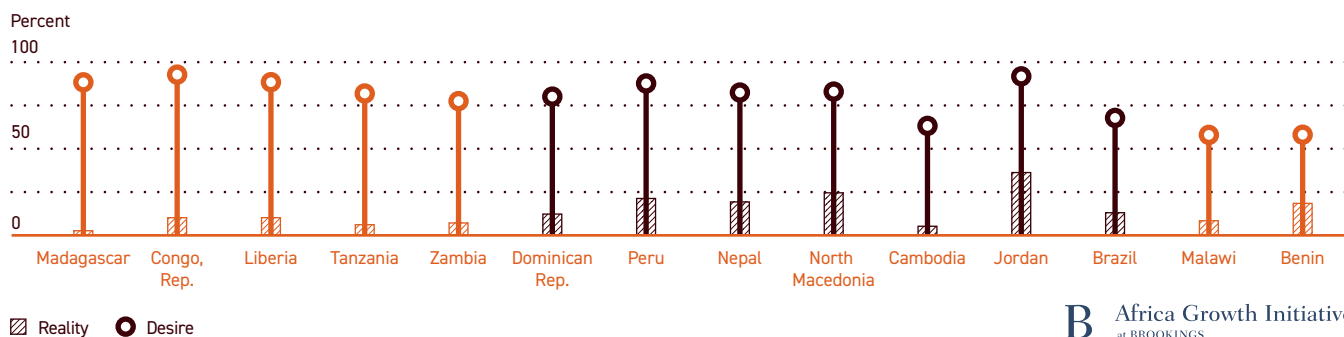
4 Richard Newfarmer, John Page, and Finn Tarp (eds.), *Industries without Smokestacks: Industrialization in Africa Reconsidered* (Oxford: Oxford University Press, 2018).

Figure 3.1

### Gaps between jobs aspirations and reality for the youth, selected countries

While the youth in Africa aspires to high-skilled jobs, their reality is that the insufficient number of high-skilled jobs confines them to lower-skilled jobs. This pattern is generally true for other non-African low- and middle-income countries, but the gap between the aspirations for high-skilled jobs and the reality is larger for African youth.

#### High skilled



Note: Estimations for Togo do not account for sampling weights as they are missing in the data.  
 Source: OECD, Youth Aspirations and the reality of Jobs in Developing Countries: Mind the Gap (Paris: OECD Publishing, 2017).

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To examine this question, the Africa Growth Initiative at Brookings has initiated a multi-year project to assess the employment creation potential of IWOSS in Africa. In what follows, we present the early findings from the **South Africa pilot case study**.

South Africa has been in a low-growth trap since the onset of democratic rule in 1994. Between 1994 and 2017, real GDP per capita grew at an average rate of only 1 percent per year. As a result, the country has achieved only modest reductions in household poverty levels, coupled with high and rising inequality.

The labor market is a primary driver of inequality, as there are a significant number of zero earners in the income distribution, marked prominently by high youth unemployment rates. South Africa's youth unemployment rate—at close to 55 percent in 2018—is considerably higher than comparable upper-middle-income countries or other countries in sub-Saharan Africa. As is the case with overall unemployment, youth unemployment in South Africa has also been on a clear upward trend since 2008.

Like in many countries across Africa, South Africa's current growth path has failed to provide sufficient jobs for the low-skilled unemployed.<sup>5</sup> The post-apartheid South African economy has been characterized by an eroding primary sector and a stagnant manufacturing sector—a concerning trend (Figure 3.2). Instead, there has been a shift toward services sectors, with finance, transport, construction, and other services experiencing employment growth. Notably, the financial and community services sectors have accounted for over half of the increase in employment between 2000 and 2019.

This shift toward services without manufacturing growth is characteristic of much of Africa. But South Africa is an outlier among other African countries. Elsewhere in Africa, the shift toward services has been largely characterized by a shift into low-productivity services, often in the informal sector. In South Africa, financial and community services are relatively high-productivity sectors. At the same time, though, the shift towards formal sector services has not generated the volume and type of jobs needed to reduce unemployment and inequality. In

<sup>5</sup> Around half (48 percent) of the South African labor force in 2019 has not completed secondary schooling.

short, while the shift to services may offer South Africa an opportunity for the type of structural transformation previously anchored by growth in manufacturing, this achievement depends, importantly, on the *type* of services.

Of the 8.9 million formal private sector jobs in South Africa in 2019, IWOSS sectors account for over two-thirds (68 percent), over double the share of non-IWOSS sectors (Figure 3.3).

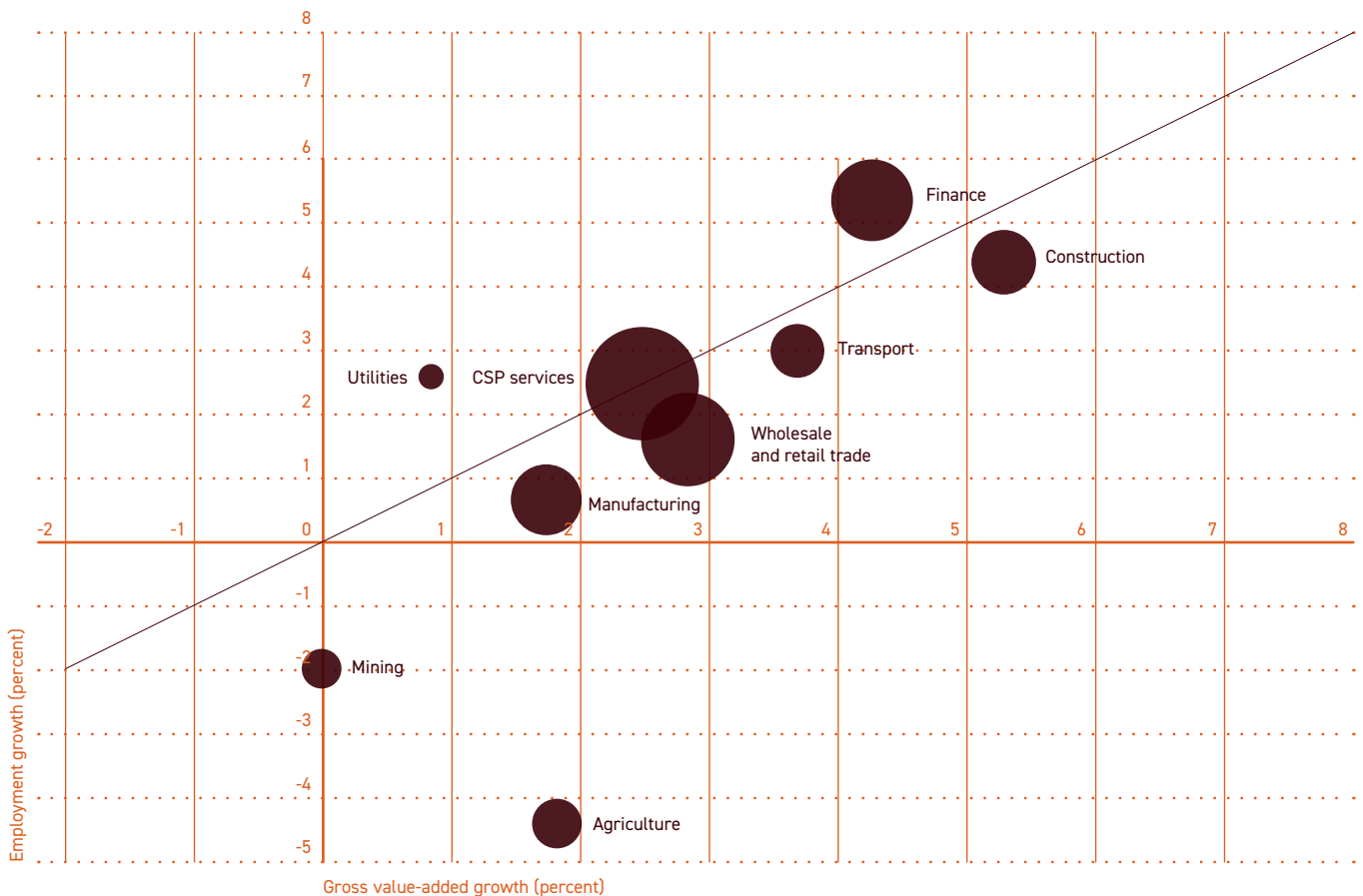
The largest employing IWOSS sectors are financial and business services (23 percent of IWOSS employment) and trade (16 percent). Tourism accounts for 9 percent of IWOSS employment in the formal private sector.

In the absence of growth in the manufacturing sector, then, South Africa already appears to be on a path of structural transformation characterized by a shift toward industries without smokestacks. Within the broader IWOSS category, there are a number of sub-sectors that may be better suited to address South Africa's employment challenges. Although the skills distribution of employment in IWOSS and non-IWOSS sectors is broadly similar, scaling up a number of IWOSS activities that are more labor intensive may offer better opportunities for a labor force that is predominantly low- and semi-skilled.

Figure 3.2

### Gross value-added and employment growth in South Africa, by sector, 2000–2018

The post-apartheid South African economy has been characterized by an eroding primary sector and a stagnant manufacturing sector. In their stead, there has been a shift toward services sectors, with finance, transport, construction, and other services experiencing modest employment growth.

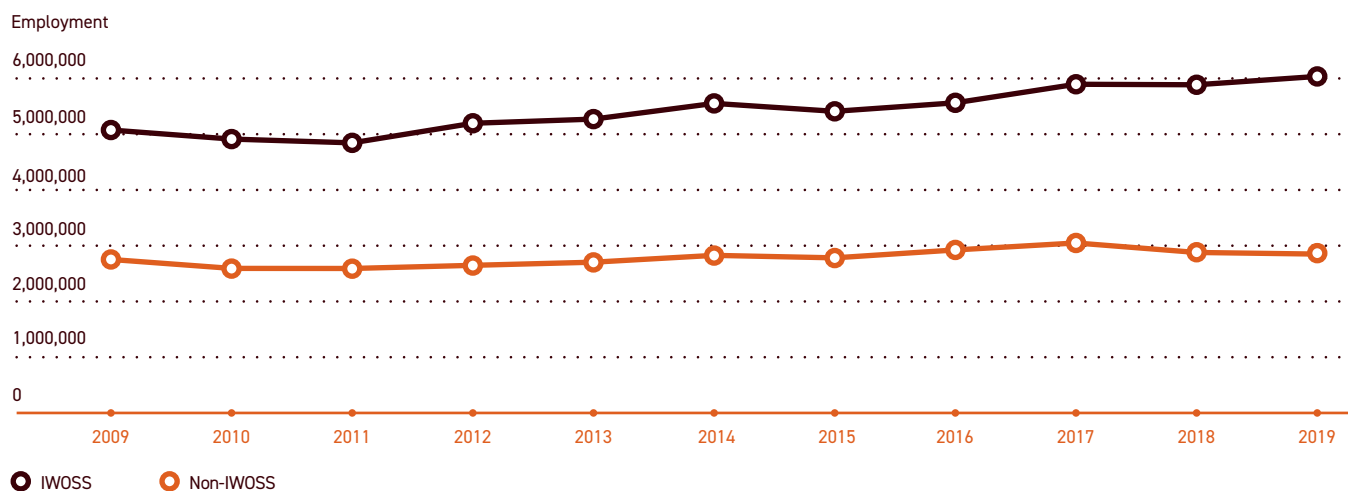


Note: The size of the bubble is determined by the relative size of employment in 2018 (the weight). CSP stands for community, social, and personal services. Source: SARB (2000, 2018) and StatsSA (2000, 2018).

Figure 3.3

### Formal private sector employment in IWOSS and Non-IWOSS sectors in South Africa

IWOSS sectors accounted for two-thirds (68 percent) of formal private sector employment in South Africa in 2019.



Note: Employment refers to private sector formal employment only.  
Source: StatsSA, 2019.

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Notably, the share of high-skilled employment is lowest in IWOSS sectors—under 10 percent in agro-processing, horticulture, and other commercial agriculture (Figure 3.3). The share of semi-skilled employment is similar across sectors at around 65 percent, and the share of low-skilled and semi-skilled employment (combined) is higher for IWOSS—most acutely in tourism, horticulture, and agro-processing (greater than 90 percent of all employment). Thus, these sectors have the potential to generate employment for the low-skilled labor force on a large scale, if the operating scale of these sectors can be increased. Of course, growing the IWOSS sectors requires addressing constraints to unlock their potential.

#### Realizing the potential: Some policy lessons

The objective of our research is to widen the options for structural change and job growth in Africa.

Notably, efforts to grow IWOSS can have similar or better outcomes on employment as efforts to expand manufacturing in South Africa, as IWOSS sectors are more labor-intensive than manufacturing and the economy overall (Figure 3.3).<sup>6</sup> Indeed, projections from our preliminary results indicate that, over the next decade or so, IWOSS sectors can generate three and half times more new formal sector jobs than non-IWOSS sectors.<sup>7</sup>

Notably, efforts to expand IWOSS may have employment outcomes that are more inclusive than those achieved from increasing growth in manufacturing and other non-IWOSS sectors. In fact, IWOSS in South Africa seem to be more intensive in the employment of women and youth than non-IWOSS sectors (Figure 3.3). The tourism and agro-processing sectors are particularly intensive in the employment of women,<sup>8</sup> while horticulture and tourism have

<sup>6</sup> The available data cannot be disaggregated to calculate IWOSS-specific measures of labor intensity. For this reason, broad sectors have been identified as sectors in which IWOSS are dominant. The measures of labor intensity have been calculated using the most recent available input-output tables for the year 2014 (see Statistics South Africa, *Input-output tables for South Africa, 2013 and 2014* (Pretoria: Statistics South Africa, 2014)) in the case of the employment multipliers, and the most recent available GVA data for the year 2018 (see Statistics South Africa, *GDP P0441, 2019Q2* (Pretoria: Statistics South Africa, 2019)) in the case of the labor-to-value added ratios. The labor-to-value added ratio is expressed in local currency (rand) in 2010 prices.

<sup>7</sup> Forthcoming AGI project on South Africa case study on employment creation potential of IWOSS.

<sup>8</sup> ICT also has a relatively high share of women of employment. However, ICT accounts for just 1 percent of all IWOSS employment.

Figure 3.4

## Advantages of industries without smokestacks

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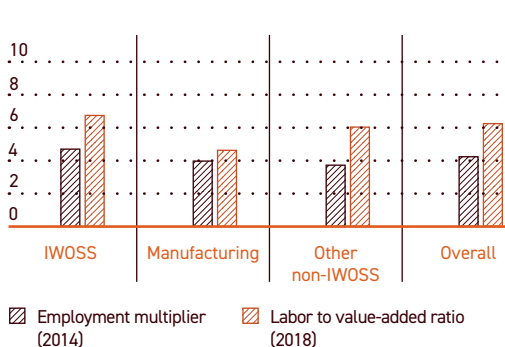
Industries without smokestacks have advantages over other industries when it comes to addressing employment challenges. Not only are IWOSS more labor intensive overall, they also employ a higher share of low-skilled laborers as well as more women and youth.

### Skill distribution of employment in South Africa



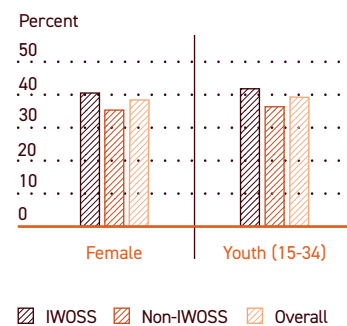
Source: Author's calculations using data from StatsSA (2019).

### Employment multipliers and labor to value-added ratio for South Africa



Source: Authors calculations using data from Stats SA (2014, 2019).

### Gender and youth share of employment in South Africa



Source: Author's calculations using data from QLFS (2009, 2019).

Note: Employment multipliers and labor-to-value added ratios can be interpreted as the number of jobs that could potentially be created by an additional R1 million increase in output or GVA, respectively.

the highest shares of individuals between the ages of 15 and 34 in employment. This tendency towards inclusivity is another reason governments should enact policies to support the development of these sectors.

Three areas of the investment climate are particularly relevant to industries without smokestacks and manufacturing—infrastructure, skills, and the regulatory environment.<sup>9</sup>

- Poor **infrastructure**, particularly electrical power and transport, is the largest constraint affecting firm productivity, hindering the development of any sector.<sup>10</sup>
- The **inadequately skilled labor force** is also a constraint. Nearly 60 percent of African 15- to 24-year-olds have only completed primary school, and only 19 percent have gone beyond lower

secondary.<sup>11</sup> In South Africa in particular, the share of the labor force aged between 15 and 34 with an educational level below secondary education is 46 percent.<sup>12</sup> Skill shortages for South Africa are particularly high for basic skills such as reading comprehension, active listening, speaking, and writing.<sup>13</sup> Monitoring, strategy learning, critical thinking, and active learning skills are also in great shortage in South Africa. While IWOSS presents opportunities for the employment of low-skilled individuals, without a concerted effort to address current skills gaps, the full potential of these sectors will not be realized.

- Because productivity in services has an important impact on productivity levels across the economy, **enabling competition through regulatory reforms** is essential. Removing barriers to foreign entry in services can increase competition, reduce

<sup>9</sup> See Carol Newman et al., *Made in Africa: Learning to Compete in Industry* (Washington, D.C.: Brookings Institution Press, 2016) for a discussion of the investment climate.

<sup>10</sup> See, for example, Alvaro Escribano, J. Luis Guasch, and Jorge Pena, "Assessing the Impact of Infrastructure Quality on Firm Productivity in Africa: Cross-country Comparisons Based on Investment Climate Surveys from 1999-2005," *World Bank Policy Research Working Paper* 5191 (2010).

<sup>11</sup> Deon Filmer and Louise Fox, *Youth Employment in Sub-Saharan Africa* (Washington, D.C.: World Bank, 2014).

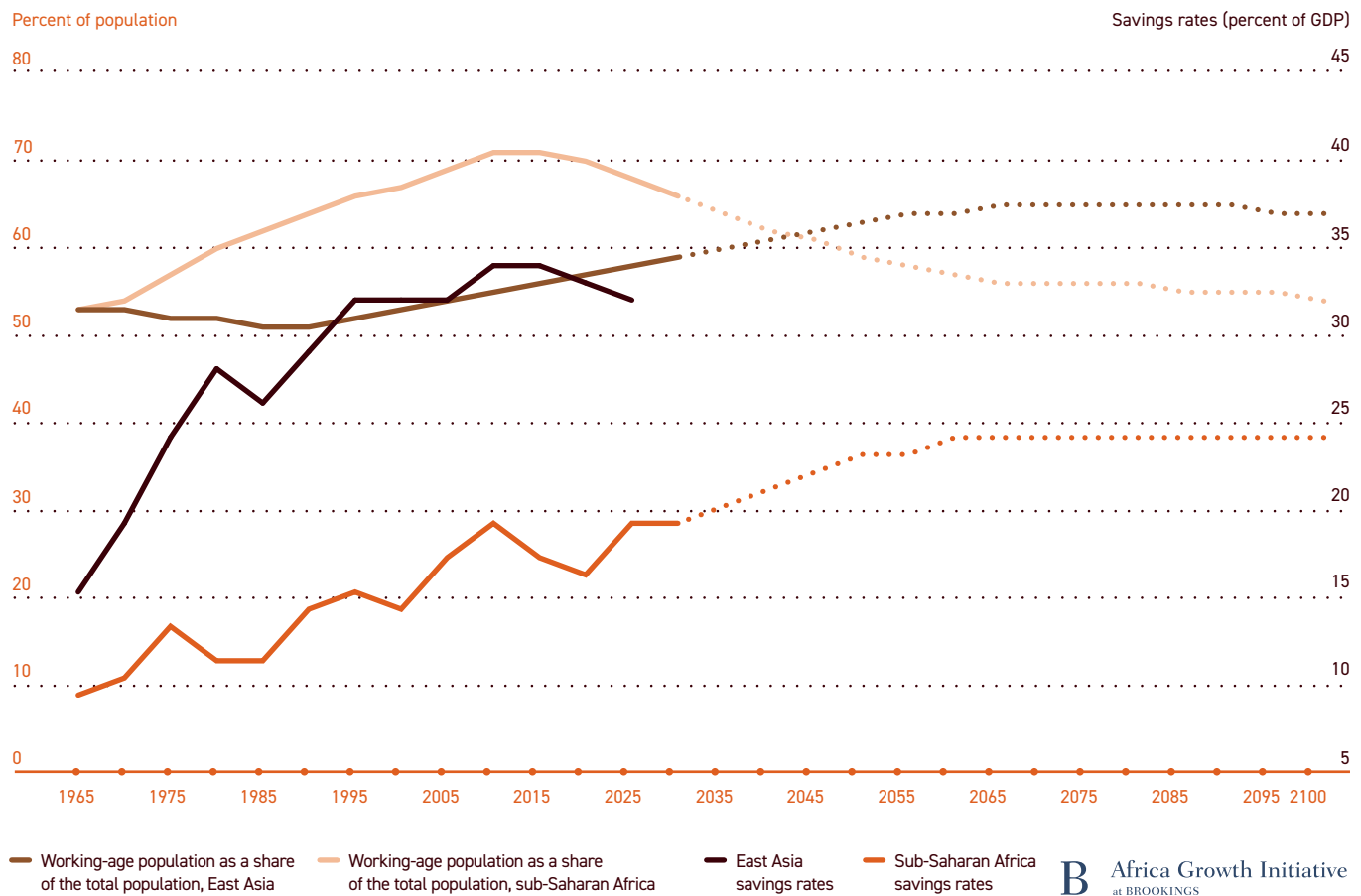
<sup>12</sup> Statistics South Africa, *Quarterly Labour Force Surveys (QLFS) (various years)* (Pretoria: Statistics South Africa, 2019).

<sup>13</sup> "OECD Skills for Jobs Database," *OECD*, accessed December 3, 2019.

Figure 3.5

### Reducing fertility rates will be key to harnessing sub-Saharan Africa's demographic dividend

The below figure assesses the prospects for Africa to harness the demographic dividend through a simple comparative analysis with the East Asian experience. The demographic dividend is process of sustained economic gains stemming from increases in the share of working-age population as fertility and mortality rates decline and rising domestic saving rates for more investment. The case of East Asia provides an illustration. East Asia and Africa started in 1965 with similar shares of working-age populations, at 53 percent. The share then rose rapidly in East Asia to peak at over 70 percent in 2010 due largely to lower fertility rates, and the saving rates rose from 15 percent of GDP to peak at 34 percent of GDP in 2010. The increase in saving rates facilitated more investment and East Asia's economic transformation. In contrast, Africa's working-age population remained relatively flat through 2010. Since then it has risen only modestly and, based on population projections, it will peak at around 65 percent in 2065 or 45 years from now. Accordingly, the projected increase in the saving rates remain very gradual, from 16 percent currently to peak at under 25 percent in 2065. The demographic transition in Africa, thus, appears too slow due largely to high fertility rates. To harness the demographic dividend, Africa will need to invest in human capital, create jobs for the working-age population and, importantly, reduce fertility rates.



Source: Brookings Africa Growth Initiative using data from World Development Indicators, World Economic Outlook, and U.N. Population projections, medium variant.

costs, and extend access to a broader range of differentiated services.

For most countries in Africa, regional and global export markets represent the best opportunity for IWOSS. To offset the costs to first movers, African governments need to develop a package of trade and exchange

rate policies, public investments, regulatory reforms, and institutional changes aimed at increasing the share of non-traditional exports in GDP—put differently, governments need to mount an East Asia-style “export push”.

Like manufacturing, IWOSS sectors benefit from agglomeration, including thick labor

markets, information and knowledge spillovers, and the ability to share overhead expenses and services. While most African governments have focused on using special economic zones (SEZs) to promote manufacturing, SEZs are relevant to services and agro-based industries as well.

By addressing these constraints to the growth of IWOSS and manufacturing, governments are not forced to choose between an “industrial policy” focused on manufacturing and policies to promote tradable services and high-value agriculture. Both can achieve structural change and job growth.

## Viewpoint

# Young Africa Works: A strategy to create 30 million jobs for youth over the next decade

**Lindsay Wallace**, Head of Impact, Mastercard Foundation @LindsayWallace3

Africa is the youngest and fastest-growing continent in the world, which, in a few decades, will also have the largest workforce. While this trend creates unprecedented opportunities for the continent, it will also exacerbate the significant gap between the number of young people seeking work and the limited employment opportunities.

In 2018, the Mastercard Foundation (MCF) launched our new strategy, Young Africa Works. Through this strategy, the Foundation aims to enable 30 million young people to access dignified and fulfilling work by 2030. The Foundation has taken a unique approach in that goes beyond being a funder: It is co-creating strategies with governments, the private sector, entrepreneurs, educators, and young people—strategies that, consequently, resonate with their aspirations. For example, MCF is:

- Strengthening the private sector environment by scaling access to finance for small businesses;
- Partnering with training and education institutions to enhance education and skills development systems to ensure they support the development of market-relevant skills; and
- Ensuring the labor market functions better by supporting platforms that facilitate the job search for young people.

While the strategy is in early stages in seven countries, preliminary lessons are emerging from the initiative in Rwanda. Hanga Ahazaza—“create the future”—is a \$50 million program aiming to enable 30,000 Rwandan youth to find employment in the tourism and hospitality sector—a high-growth area and national priority for Rwanda. Since the launch last year, MCF has been working



with partners from the education, development, and the private sector to train, certify, and link more than 2,500 young Rwandans to dignified and fulfilling work in the sector. The following key lessons are emerging from this program:

**Start with helping to create jobs for skilled labor.** MCF recognizes that to effectively address youth un- and underemployment, policymakers and partners need to first understand the root causes of low employment creation. While the strategy in Rwanda started with skills development and training (the supply of skilled labor), it is now helping small businesses in the sector grow and create jobs.

**Put young people's needs at the center.** Young people in some of our training programs, particularly young women, struggle to find time to complete the full training due to shift work or competing demands at home—a finding consistent with previous research. Across the MCF programs for young people, gender-responsive components are proving effective in gender equality in relation to participation, performance, and opportunities for youth participants.

**Promote female role models in the workforce to help shift gender norms.** While the tourism sector in Rwanda is poised to grow and create opportunities, it is not viewed as a suitable place to work for young women. As a result, gender balance in recruitment remains a challenge. Through role modelling and increased communications, one partner saw a 16 percent increase in the number of women applying for a position (from 34 percent to 50 percent). Helping potential participants see themselves working in the sector by seeing others work there has been helpful in shifting gender norms.

**Facilitate collaboration among partners through shared data platforms and impact measurement approaches.** The Foundation is encouraging collaboration and information-sharing among our implementing partners such as Harambee, Horvath, and Inkomoko. A joint platform has allowed our partners to plan events together, share documents, and quickly share programmatic updates and results. With this tool, monthly team and partner meetings are more efficient and focus on key issues rather than updates. The MCF team also created a database called "Touripedia" to provide information on micro-, small-, and medium-sized businesses in Rwanda to help partners coordinate their training and other activities.<sup>1</sup>

**Encourage other organizations and institutions to join the movement for greater impact.** As the Rwandan example illustrates, most businesses in the tourism and hospitality sector are micro or small in size and rely on friends and family for capital. For that reason, the Foundation encourages financial institutions to take more risk, invest in young entrepreneurs and startups, and develop new products and services to support this growing sector. It also encourages employers to continue to invest time and resources to train and support young job seekers. They must also work closely with education institutions to share experiences, strengthen curricula, and provide internships and other support so that young people can successfully transition to full-time employment.

As the Foundation rolls out the Young Africa Works country strategies elsewhere on the continent, it will continue to learn and share these lessons with partners, stakeholders, and peers. Most importantly, the Mastercard Foundation will continue to listen to young people in Africa.

<sup>1</sup> More details on the initiative can be found at <https://mastercardfdn.org/all/hanga-ahazaza>. Lindsay Wallace is the head of impact for the Mastercard Foundation, which supports AGI's work on youth employment. The views expressed in this article are those of its authors and do not represent the views of the Mastercard Foundation, its officers, or employees.

## Viewpoint

# Computer science can help Africans develop skills of the future

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The world is well into the Fourth Industrial Revolution, and yet education systems have not kept pace. Young people are often not learning the skills they need to succeed in the 21st century and interact with their changing world, such as digital literacy, problem solving, and critical thinking. Despite widespread recognition of the importance of these skills for the future in education policies, very few education systems have adapted to this reality. On the African continent, where 60 percent of the population is under age 25, the teaching of 21st century skills will be necessary for Africa to transform itself into a continent of growth and opportunity.<sup>1</sup> If young people do not learn how to use and create with technology, they are sure to fall further behind.

How can Africa harness the power of technology when only 24 percent of Africans have access to the internet?<sup>2</sup> Despite gains in internet access over the last several years, the region lags behind the rest of world in internet usage. A Pew survey of six African countries finds that internet usage is high among youth, which is good news for schools as it will help them teach 21st century skills; however, the study also finds that internet users tend to be male and have higher incomes and more education, meaning that more needs to be done to ensure all young people, no matter their gender or socioeconomic status, develop skills that enable their future success.<sup>3</sup>

Education systems need to equip their students with basic tech proficiency and, going further, enable students to create with technology. The Center for Universal Education (CUE) at Brookings is interested in how education systems can foster the development of skills for the future through computer science (CS).<sup>4</sup> CS education helps students understand how computers work, use algorithms to create computer programs and apps, and work with their peers to solve complex issues. Given that computers are all around us and technological advances are disrupting every industry, knowing how to use them will be beneficial to anyone, whether or not they wish to become a computer scientist.

<sup>1</sup> Mo Ibrahim, "Governance lags behind youth expectations and needs," in *Foresight Africa: Top Priorities for the Continent in 2019*, ed. Brahim S. Coulibaly (Washington, D.C.: Brookings Institution, 2019), 10-14.

<sup>2</sup> "ITU releases 2018 global and regional ICT estimates," *ITU*, December 7, 2018.

<sup>3</sup> Laura Silver and Courtney Johnson, "Internet Connectivity Seen as Having Positive Impact on Life in Sub-Saharan Africa," Pew Research Center, October 9, 2018.

<sup>4</sup> Many similar and related terms exist such as computing, informatics, computational thinking, and coding. We've used computer science here, but the specific term is less important than whether students are learning and understanding how computers work.

## Education systems need to equip their students with basic tech proficiency and, going further, enable students to create with technology.

Already, there are many examples of CS education taking place in Africa. For example, the Ghana Code Club is a weekly after-school coding club that has trained more than 1,700 students and 300 teachers across 100 centers,<sup>5</sup> and Teencoders, based in Nigeria, has reached over 5,000 students through after-school and weekend coding classes.<sup>6</sup> While these nonformal education programs give learners critical exposure to the discipline, expanding CS education into formal primary and secondary schooling can ensure that many more young people learn computer science concepts.

Certainly, many constraints exist, including funding for equipment, lack of trained teachers, and lack of time during the school day to teach CS given other curricular priorities. One potentially promising way to overcome resource constraints is to teach without a computer. The platform CS Unplugged uses worksheets, magic tricks, art projects, and games to teach students computer science concepts offline.<sup>7</sup> In one lesson, students learn about the binary system by creating a beaded necklace with their initials in binary numbers. While the teacher will need internet access to obtain the materials, these activities work well in cases where there are few computers in the classroom or intermittent internet access. A forthcoming CUE study looks further at the barriers to expanding CS education with the goal of uncovering models around the world that have succeeded despite various constraints.

## One potentially promising way to overcome resource constraints is to teach without a computer.

As the examples of Ghana Code Club, Teencoders, and others show, many already recognize the need for young Africans to learn computer science. However, more needs to be done to ensure that all students have the opportunity to learn these concepts and to develop skills of the future.

<sup>5</sup> *Ghana Code Club*, accessed November 22, 2019.

<sup>6</sup> "About Us," *Teencoders*, accessed November 22, 2019.

<sup>7</sup> *CS Unplugged*, accessed November 22, 2019.

## Viewpoint

# Prerequisites to getting Africa's urbanization "right"

**Somik Lall**, Global Lead on Territorial Development Solutions & Lead Economist for Urban Development in Africa, World Bank @SomikCities

The rapid growth of cities in Africa is presenting the continent with a major opportunity to enhance productivity and living standards. In most parts of the world, rapid city growth has triggered economies of scale and specialization along with knowledge spillovers, thereby boosting productivity. International evidence suggests that doubling of a city's size boosts income per capita between 3 percent and 8 percent.<sup>1</sup> In fact, countries that are more developed have more urbanization, and countries that switch from slow economic development to rapid economic development also switch from slow urbanization to rapid urbanization.

In contrast, African countries are not making much of the opportunity of urbanization. Only a handful of countries—such as Ghana, Namibia, Rwanda, and Togo—have been relatively successful in translating urbanization into poverty reduction.<sup>2</sup> Notably, the agglomeration of urban economic activity is lower in Africa than elsewhere, while the potential returns in labor productivity growth are the highest.<sup>3</sup> Unfortunately, neither markets nor the policy environment have coordinated decisions that yield satisfactory outcomes in the living or working environment.

Markets for land are generally dysfunctional, product markets are fragmented, and weak city planning and limited finance hobble urban development. In fact, very few large African cities have substantial own-source revenues, and tax mandates are often related to having regional government status: consider Kampala, where per capita revenue was \$59 for the 2014 fiscal year, much higher than \$26 for the rest of the country.

But more broadly, urbanization has been driven by a lack of opportunity in the countryside as agricultural activity has declined and, without the accumulated savings to make significant investments in housing, the default option has been to build shacks. Consequently, 60 percent of the region's urban population lives in slums.<sup>4</sup> With Africa's urban population likely to double over the next 25 years, there is an urgent need to make cities livable, productive, and sustainable.

<sup>1</sup> Stuart Rosenthal and William Strange, "Evidence on the nature and sources of agglomeration economies," *Handbook of Regional and Urban Economics* 4 (2004): 2119-71.

<sup>2</sup> Kirsten Hommann and Somik Lall, *Which Way to Livable and Productive Cities? A Road Map for Sub-Saharan Africa* (Washington, D.C.: World Bank, 2019).

<sup>3</sup> Somik Lall, J. Vernon Henderson, and Anthony J. Venables, *Africa's Cities: Opening Doors to the World* (Washington, D.C.: World Bank, 2017); Maria Edisa Soppelsa, Nancy Lozano Gracia, and L. Colin Xu, "The Effects of Pollution and Business Environment on Firm Productivity in Africa," *World Bank Policy Research Working Paper* 8834 (2019).

<sup>4</sup> United Nations. 2015a. Millennium Development Goals Indicators. Indicator 7.10. Proportion of Urban Population Living in Slums.

**What should be done?**

To make cities work for development, African policymakers will need to develop **urbanization** plans built on the following four proposals:

**Raise agricultural productivity:** It is difficult to visualize vibrant cities without a well-functioning rural sector. Research suggests that invention, adaptation, and dissemination of new technologies to existing farms is likely boost overall productivity and support a more vibrant structural transformation.<sup>5</sup> A good starting point would be to strengthen national agriculture research and development and innovation systems.

**Adopt a well-functioning land market:** African leaders need to focus more on the structural foundation of their cities by strengthening institutions governing the transfer, valuation, and use of land. For example, Kenya has one of the least efficient property registration systems on the continent: Lack of registration affects 24 percent of land-owning households in Nairobi. At the same time, the difficulty of registering property has contributed to a growing informal housing supply in urban areas. The capital value forgone by not developing Kibera (1,000 acres of land near Nairobi city center) amounts to \$1 billion, \$466 per person in greater Nairobi, or 70 percent of Kenya's GDP per capita in 2014. In Tanzania, only 10 percent of land is registered, and it takes 65 days to transfer property. These inefficiencies reduce incentives for formal land development.

**Enhance land use planning:** Also, better land use planning will enable cities to put in early and coordinated infrastructure investments that allow for well "formed" urban development. As Africa's cities clarify land rights and strengthen land use planning, they will encourage economic growth. They will also lay the foundations to expand domestic revenue mobilization, as revenues from appreciation in land values can help finance much-needed urban infrastructure.

**International evidence suggests that doubling of a city's size boosts income per capita between 3 percent and 8 percent.**

**Embrace the benefits new technologies offer:** Disruptive technologies that combine data with automation present an incredible opportunity to reshape notions of density and economic geography. Add to the mix the gig economy (based on flexible, temporary, or freelance jobs) and sharing economy (involving short-term, peer-to-peer transactions), and we can have vibrant communities that do not need lumpy "grid" infrastructure. In fact, Africa's cities may be able to leapfrog the current development path and be highly livable, productive, and sustainable. However, this accomplishment will require the basics of land management as well as aggressive investment in human capital.

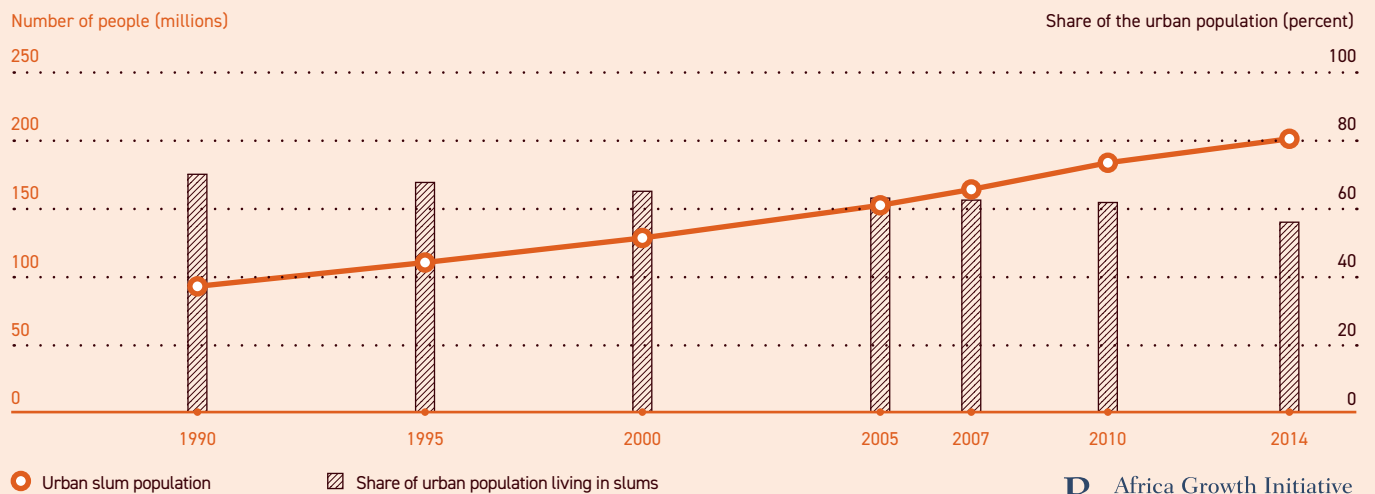
<sup>5</sup> Keith Fuglie, Madhur Gautam, Aparajita Goyal, William F. Maloney (2019). *Harvesting Prosperity: Technology and Productivity Growth in Agriculture*. World Bank Publications.

Figure 3.6

### Urban slums double in size but service delivery remains poor

As Africa rapidly urbanizes, the number of people living in urban slums has doubled from 100 million in 1990 to 200 million in 2014 despite the fact that the share of urban population living in these settlements has declined from 70 to 56 percent. The share living in slums has not declined as rapidly as it has in South and East Asia and is 25 percentage points higher than the second worst region, South Asia. Citizens living in urban slums also face worse conditions with lower access to piped water, flush toilets, and electricity.

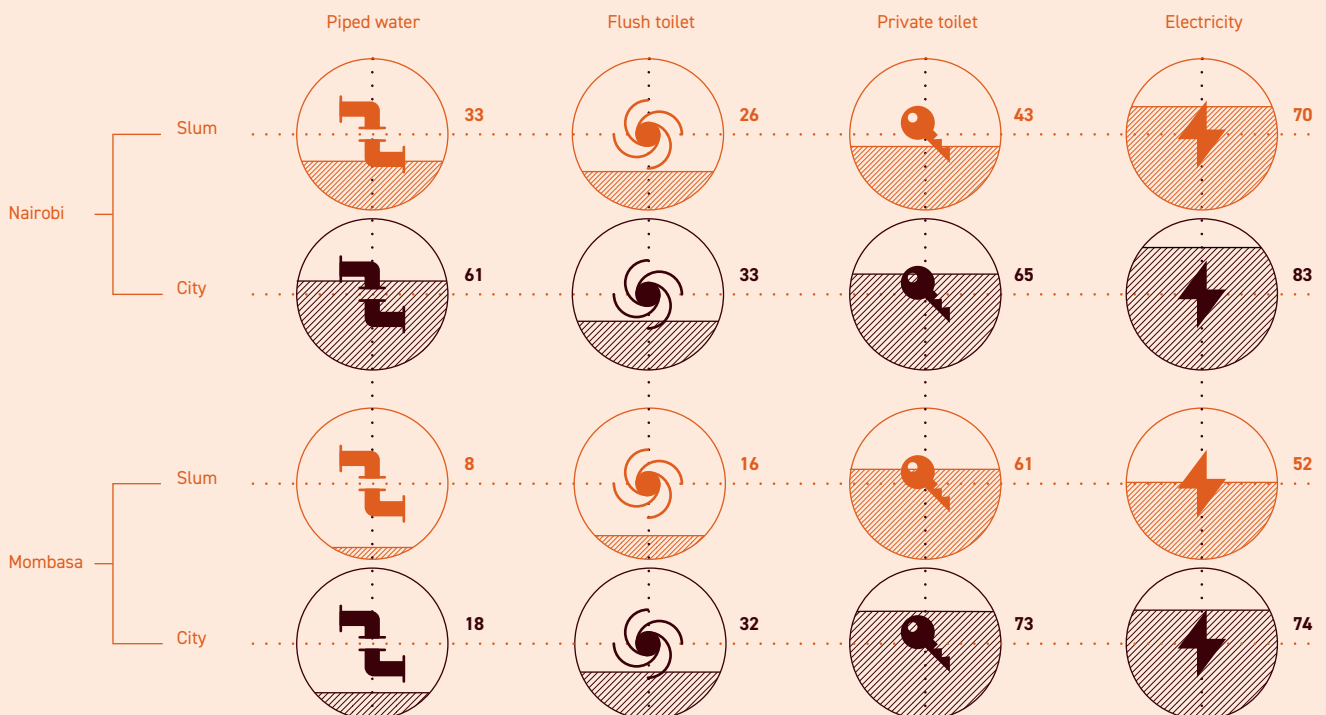
#### Number of people vs. share of urban population in slums



Source: UN-Habitat, Urbanization and Development: Emerging Futures (Nairobi: UN-Habitat, 2016).

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#### Service access is unequal within cities, with slum dwellers having far less



Source: Shohei Nakamura, Bhavya Paliwal, and Nobuo Yoshida, Overview of the Trends of Monetary and NonMonetary Poverty and Urbanization in Sub-Saharan Africa (Washington, D.C.: World Bank, 2018).

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