

SKILLS IN GUINEA: SUPPLY AND DEMAND



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Abbreviations and Acronyms

CEO	Chief Executive Officer
CPS	Country Partnership Strategy
ELEP	Limited Poverty Assessment Survey
GCI	Global Competitiveness Index
GNF	Guinean Francs
ICT	Information and Communication Technology
PPP	Public-Private Partnerships
PREMA	Program for Reform of the State and Modernization of Administration
PRSP3	Third National Poverty Reduction Strategy Paper
SSA	Sub-Saharan Africa
TTI	Technology Transfer Initiative
TVET	Technical and Vocational Education and Training

Executive Summary

The World Bank's Country Partnership Strategy (CPS) for Guinea in FY 2014–17¹ confirmed the Government's priority to build 21st century skills for improved employability and to implement systemic reforms. Guinea is emerging from years of political and economic isolation and instability. The democratic election of President Alpha Condé has opened the door for the international donor community, including the World Bank, to come forward and support the new government. Its important reform agenda, PREMA,² has helped restore the confidence of the international community. The World Bank will partner with the Government of Guinea to develop systems that will “*improve lagging human development indicators for absolute poverty reduction, through more efficient and transparent allocation of resources, and to build shared prosperity by aligning the business environment and education system with Guinea's economy*” (World Bank, 2013, pp. 1). This is in line with the government's priorities, as per the Third National Poverty Reduction Strategy Paper (PRSP3) approved in 2013. The PRSP3 aims to reduce poverty and to create and sustain a vibrant private economy by maximizing rents from Guinea's substantial mining sector. The Bank supports the Government's agenda on improving human capital by: (a) promoting both the quantity and quality of education and (b) upgrading skills for the needs of emerging and export-oriented sectors such as agriculture, tourism, mining, and telecommunications and Information and Communications Technology (ICT).

The education system has made significant progress, with the primary gross enrollment rate reaching 83 percent as of 2013. However, challenges remain in the areas of coverage, quality, and relevance. Approximately 60 percent of the student population between the ages of 8 and 14 are out of school, and learning assessments conclude that the government must step up its efforts to improve completion rates, gender parity, and learning outcomes. University enrollments have increased tenfold over 10 years, reaching more than 95,000 students in 2012. However, Guinea's higher education coverage rate remains relatively low compared to its neighbors, at 916 students at 100,000 inhabitants. In addition, the traditional opportunities for Guinean graduates on the labor market through the civil service are no longer sufficient. Graduates between the ages of 25 and 35 are facing unemployment rates close to 30 percent, increasing the likelihood of social instability.

1 The other two areas are: improving governance and service delivery and stimulating growth and economic diversification (World Bank. 2013. Country Partnership Strategy for Guinea).

2 PREMA stands for Program of Reform of the State and Modernization of the Administration and it has the following items on agenda: organization of the country, management of the human resources available in the public sector, improvement of fiscal and economic governance, and overhaul of the judiciary.

All of these goals must be achieved while ensuring that the needs of the labor market are met by the education system. The education system must equip graduates with the skills needed by the emerging export-oriented economy. Developing relevant skills programs that provide students with the competencies in demand and will subsequently enable them to be employed in an economy that values a technological and scientific skill set. Government needs to lay the groundwork to offer training in the relevant fields at the secondary, vocational, and higher education levels.

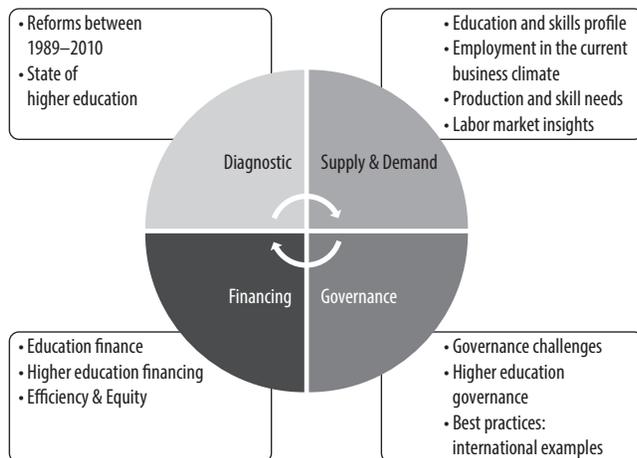
Despite its abundant natural resources, Guinea has struggled to become attractive to investors and entrepreneurs. In the Ease of doing Business report, Guinea ranks 175th out of 189 countries.³ Firms operate in a heavily constrained environment and face frequent power shortages and a slow bureaucracy. All of these factors contribute to poor business policies. This unfavorable business environment is also partly the result of poor governance and petty corruption. The International Finance Corporation is providing substantial support to strengthen Guinea's business environment. Lack of local skills is an important constraint, and in order for jobs in the emerging sectors (mining, construction, hotel industry, banking and finance) to be filled by Guineans rather than foreigners, the Government must equip its youth with the skills required.

In 2012, the Government requested special support from the Bank in the form of technical assistance to conduct an analysis of the higher education system. This analysis would be used to prepare a comprehensive higher education strategy to meet the needs of both the economy and the labor market. Since the early 2000s, the Bank had limited involvement in this critical sub-sector. Per the Government's request, the Bank mobilized resources to engage in policy and analytical work in the areas of governance, financing, and diagnostic of skills demand and supply from a new employer survey prepared specifically under this technical assistance project.

1. Supply and Demand: Higher Education and Skills. This note reviews the current state of education and workforce skills from an employer perspective. It identifies the key bottlenecks faced by firms in hiring qualified workers and provides concrete recommendations to improve workforce quality.
2. Current Outcomes and Challenges: Diagnostic of the Higher Education System. In this note, we trace the evolution of the higher education system. The note shows trends over time, highlights tracer characteristics, and draws comparisons between the public and private provision of education.
3. Governance of Higher Education. The key governance issues faced by the Guinean higher education system are presented.

3 World Bank (2014). Doing Business Report.

Conceptual Framework



The note delves into the reforms undertaken by the government after 2011 with a focus on the two presidential decrees.

4. Financing of Higher Education. The note provides a brief overview of education funding and structure; the main focus is on the sources and uses of public and private funds for higher education.

These four distinct policy notes are intended for policy makers and technical staff. They may be read individually or as a series. The results from this work will also form the cornerstone for a new higher education operation in Guinea.

Note 1: Higher Education and Skills: Supply and Demand

Economic development and civic participation in Guinea are hampered by an extremely low literacy rate and a poorly educated working population, especially in rural areas. Nearly 22 percent of youth were either economically inactive or unemployed in 2012, with the highest unemployment rates found among the educated population, pointing to a marked mismatch between the supply and demand of skills.

In general, the education system is neither responsive to nor currently producing graduates equipped to adequately meet the needs of the labor market. Universities offer a predominantly theoretical education, despite the fact that firms value experience and practical skills. The school to work transition offers further insight into the extent of the training-labor market absorption mismatch. Graduates of longer-term programs enter the job market earlier than those completing short programs, but there is no distinction between the different levels of programs. Employers report difficulty finding employees with the skills they require, and the informality of the labor market, aggravated by the preference for hiring through personal networks, has important consequences for equity and efficiency.

Universities offer predominantly theoretical education, when firms value experience and practical skills. For example, in the construction, industry and service sectors, one in five firms state that they cannot find the type of qualifications

they need, leading to a substantial proportion of vacancies. To increase the relevance of the education system to the labor market, the agriculture, construction and mining industries recommend a focus on the entire system.

As Guinea strives to embark on an accelerated development path, its ability to meet the demands of a diversified economy will be partly determined by the quantity and quality of its trained workforce. An emphasis on growing Guinea's Technical and Vocational Education and Training (TVET) sector, adjusting university programs for greater relevance, and developing strategic partnerships with the private sector will gradually close the gap between skills supply and demand.

Note 2: Current Outcomes and Challenges: Diagnostic of the Higher Education System

Human capital is increasingly a key ingredient for economic success: in Guinea, vast mineral reserves paired with a lack of appropriate skills to exploit their potential keeps the country trapped in poverty. Though enrollment rates have significantly improved over the past decade, Guinea has yet to ensure that its education system produces a labor force composed of workers with the low, middle, and high level skills required by high-growth-potential sectors.

Access to higher education remains a more significant barrier for girls. In 2011–12, only one fourth of higher education students were girls, in contrast to high schools where about 40 percent of students were girls.⁴ However, the share of girls by level remains rather stable over time. This implies: girls have as good, if not superior, academic performance as boys, and once they enter higher education, they do not face many constraints in continuing to pursue their education. Between 1989 and 2010, three major reforms—the transformation of Higher Education Institutions into public administrative institutions, extension and diversification of universities, and transition to the Licence-Master-Doctorat system—have set the higher education system on a more promising path, though progress remains to be made in the areas of institutional autonomy, access in equity, institutional capacity, and teaching quality.

Higher education receives a disproportionate share of all public education spending, relative to enrollment levels. More troubling is the allocation: nearly half of the budget goes to scholarships, and of that, the majority supports predominantly wealthier students enrolled in private institutions.

With the simultaneous removal of entry requirements and substantial increase in high school graduates, higher education enrollment has soared. Though private institutions are multiplying and thus helping to absorb the surge, Guinea remains below the Sub-Saharan average for private higher education enrollment. It should be noted that while access has expanded, secondary education access, completion, and course selection largely determine the distribution of tertiary education students across program areas, with obvious consequences for subsequent employment opportunities. Furthermore, the current system offers little flexibility and few opportunities

4 ELEP (2012).

for adjustments to labor market needs. High repetition rates throughout primary and secondary education creates delays in university enrollment and thus the entry of the most skilled labor onto the labor market.

Guinea's higher education landscape offers ample public-private partnership possibilities, from forecasting to curriculum development, training, job placement, and equipment provision. Public-private partnerships (PPPs) are the key to developing the healthy, equitable, and high-quality education system that will enable Guinea to develop and sustain a skilled and versatile workforce that will enable Guinea to take advantage of its immense natural resources and achieve economic stability.

Note 3: Governance of Higher Education

Over the past decade, governance reforms, which include increased institutional autonomy, diversification of programs, and additional resources for institutions, have contributed to the re-awakening of the higher education sector in Africa's developing countries. In Guinea, the central government has pursued three decentralization strategies: delegation to (a) a lower level of government, (b) a buffer body, or (c) institutions themselves.

Moving towards a fully autonomous system should be an incremental process. Given the differences in economic conditions and development of the higher education system, this note examines countries on a similar scale, particularly in the Sub-Saharan Africa (SSA) region, namely: Ethiopia, Nigeria, Ghana, and Kenya.

The successful reforms among the ones adopted are highlighted to provide examples of best practices.

Guinean institutions do not have the institutional autonomy to hire and fire permanent teaching staff, and the growth of teaching staff has not kept pace with enrollments. Private institutions "poach" teachers from public institutions, aggravating the shortage, and the low level of international faculty indicates that opportunities for research collaboration and innovation are insufficient. More than one third of qualified teachers will retire within the next two years. Guinea recently adopted and is in the process of adopting Decrees that will change the higher education landscape. This roadmap for a successful transition towards a more decentralized system of higher education should be combined with initiatives to relax the stringent conditions attached to the budget and allow more flexibility in its use; give control to institutions over the recruitment, promotion, and management of their teaching and research staff; and implement adequate accountability and quality assurance mechanisms.

Note 4: Financing of Higher Education

The education sector is supported by three sources of financing: government, household, and donor financing, respectively. Major challenges include highly centralized funding, disconnect between the budget and sectoral goals, fluctuation in expenditures and consequent lack of predictability.

Guinea's suboptimal allocation of resources is among the most important challenges facing the education sector. One-third of total public education funding goes to higher education, even though enrollment accounts for only eight percent of

the entire student body, and the subsidies eating up most of the budget not only prevent better leveraging of public funds; they also remove incentives to develop relevant and innovative higher education programs. Indeed, funding for higher education is neither allocated nor used efficiently: almost half of the higher education funding for operating expenditures is used to support students in public and private universities through stipends and scholarships, regardless of the academic merits of the student and the value of the program in the labor market. Furthermore, evidence shows that this support is both insufficient to cover students' needs, and not allocated to the students most in need.

Improving the effectiveness and efficiency of the sector will require revamping of the scholarship and subsidy payments to higher education students and institutions, greater involvement of the private sector as partners, and the introduction of performance-based contracts for increased accountability of both public and private institutions.

Policy Recommendations

Policy challenge	Recommendations
Skills supply and demand mismatch	<ul style="list-style-type: none"> Develop and improve skills relevant programs aligned with employer demand Involve the private sector as partners in curriculum development, practical training, and financing.
Disconnect between schools/ graduates and potential employers	<ul style="list-style-type: none"> Facilitate intermediaries to link skills profiles with jobs Reform labor market access
Uneven access to relevant training programs	<ul style="list-style-type: none"> Reduce geographical inequities and ensure school and labor market reform and adequate distribution of training programs throughout the country Expand education opportunities for the poor and girls
Lack of autonomy of institutions	<ul style="list-style-type: none"> The government and the higher education institutions need support to facilitate their transition towards a decentralized and more autonomous higher education system Higher education institutions should be given control over the recruitment, promotion, and management of their teaching and research staff. Autonomy with adequate accountability and quality assurance mechanisms.
Inflexible budget	<ul style="list-style-type: none"> Relax the stringent conditions attached to the budget and allow more flexibility in its use
Inefficient and disproportionate spending on student scholarships	<ul style="list-style-type: none"> Revamp the scholarship and subsidy payments to higher education students and institutions
Lack of accountability	<ul style="list-style-type: none"> Introduce performance-based contracts for increased accountability of both public and private institutions.

1. Introduction

In Guinea, the quality of human capital is as crucial for economic success as its vast mineral resources. Improving the quality of education, ensuring the creation of a productive labor with high returns, and, above all, encouraging the creation of private enterprises through a favorable business climate are all essential to boosting productivity and skills. Today, traditional civil service opportunities available are insufficient to absorb ever-growing numbers of Guinean graduates. University enrollments have increased tenfold over the past 10 years, reaching more than 95,000 students in 2012. Graduates between the ages of 25 and 35 face an unemployment rate close to 30 percent, posing a threat to social stability. Education remains disconnected from work, and students are not distributed among academic disciplines according to any economic logic. Technical and vocational training is underdeveloped relative to the needs of industry, namely mining, construction, and agriculture in particular. Companies hire mainly through personal connections, creating a system in which, for all sectors but agriculture, the majority of employees report obtaining their jobs through acquaintances. Even in the formal economy, firms recruit predominantly via informal networks.

The productivity of graduates increases sharply once they become involved in complex operations within large companies. Unfortunately, with the exception of large mining companies, enterprises with the capacity to offer these opportunities are almost non-existent outside of Conakry. The lack of transport infrastructure and weak electrical power grid, coupled with a poorly developed financial system and challenging institutional environment hinder both the creation of new businesses and growth of existing businesses. Growth projections are encouraging, although not as high as expected due to the Ebola virus disease, and demand for skilled labor is now a national priority. Maximizing the outputs of these new jobs will require strengthening the linkages between higher education (including technical and vocational education and training (TVET)) and high-growth sectors.

In this note, we review the current state of education and workforce skills in Guinea. With the support of the new employer-employee survey prepared under this technical assistance⁵ and household surveys covering years 2007 and 2012, the note will identify the key bottlenecks faced by firms in hiring qualified workers. The note will conclude by providing recommendations to improve workforce quality.

5 The aim of the new employer (employee) survey conducted jointly by the World Bank and the Government of Guinea was dual: it constituted a follow-up of the 2006 enterprise survey and covered key additional information regarding the demand for skills. There were two parts to the employer survey: first, a questionnaire sent to Chief Executive Officers (CEO)s that asks for details on the functioning of the labor market, and second, a focus on a sample of firm employees. The data was collected in 2012 and comprised a sample of 1,487 employees in 526 establishments. A detailed description of the methodology is available in the annex. Among

2. Profile of Education, Skills, and Employment in the Current Business Climate in Guinea

Doing Business in Guinea

Despite its abundant natural resources, Guinea is not yet attractive to investors and entrepreneurs. In the Ease in doing Business report, Guinea ranks 175th out of 189 countries.⁶ Firms operate in a risky environment with few public goods and face heavy bureaucracy, both of which contribute to poor business policies. Part of this inefficiency stems from poor governance: Guinea is ranked 147th out of 148 countries on the Global Competitiveness Index (GCI), ahead of only Chad.^{7,8,9,10} Respondents rank corruption, access to financing, inadequate infrastructure, policy instability, and inefficient government bureaucracy as the most problematic factors for doing business in Guinea (Figure 1). 65 percent of surveyed firms cite limited access to electricity as the main obstacle, followed by transportation, cited by 10 percent of firms.¹¹

Ensuring that currently underexploited mining resources prove valuable to Guinea will require good governance and institution-building. The country is endowed with tremendous mining resources, namely bauxite: Guinea has 10.6 billion tons of bauxite reserves confirmed, and expects an additional 29.6 billion tons.¹² Processing industries would enable the export of aluminum, rather than raw bauxite, for improved resource generation.

Education and Skills Profile

Economic development and civic participation in Guinea are hampered by an extremely low literacy rate and a poorly ed-

employees surveyed, public administration (16.8%) and industry (31.9%) are over-represented and the commercial sector is highly under-represented. The weight of enterprises providing services (23.2%), education and health (6.4%) and construction (6.6%), corresponds to the results of the household survey. The service sector dominates the sample (30%) with agriculture, commerce, education and health, and industry coming in at 15 percent each. A smaller number of firms come from construction (6.5%) and public administration (3%). The second part of the survey covered a sample of employees from firms selected in the first part. Apart from services and construction, the education levels of this sample reflect information reported by employees.

6 World Bank. 2014. Doing Business Report. World Bank.

7 2013–14 Global Competitiveness Report. WEF, 2013

8 The GCI takes into account 12 factors to calculate a country's competitiveness: institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, market size, business sophistication and innovation.

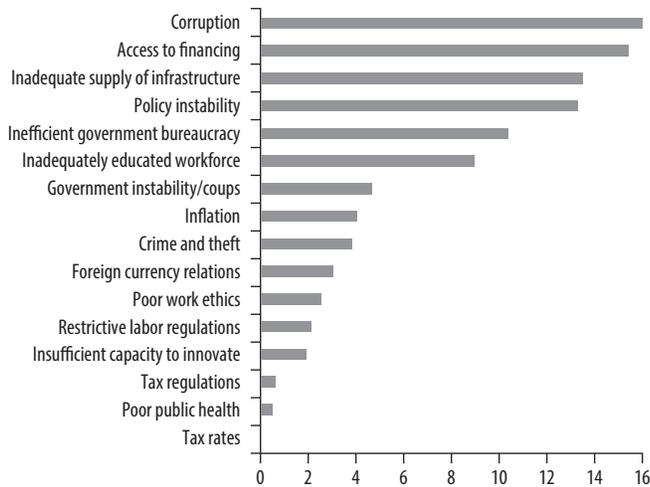
9 In 2012–13, Guinea was 141 out of 144 in the GCI Index.

10 The report defines competitiveness as “the set of institutions, policies, and factors that determine the level of productivity of a country (WEF, 2013, page 4).”

11 These figures are much higher than the SSA average at 40 and 5 percent respectively.

12 All estimates for mineral resources come from «Les Enjeux de la gouvernance du secteur minier en Guinée», Guinea/Germany cooperation. The original estimates for bauxite are from Mamedov, Dr. V., Catalogue des gisements et indices de minéralisation bauxitique en République de Guinée, 2003.

Figure 1: Most Problematic Factors for Doing Business^a



Source: Taken from WEF (2013).

Note: ^a From the list of factors above, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

educated working population, especially in rural areas. Guinea has one of the lowest literacy rates in the world: in 2012, only 24.3 percent of Guineans older than 25 reported being able to read and write. Education prospects remain bleak. Currently, 76.9 percent of the population has never attended school, and of those who did enter school, only two-thirds completed primary school, and only 6.3 percent had access to higher or technical education. Four-fifths of urban youth have attended school, whereas 70 percent of rural Guineans

have never attended primary school (Figure 2).¹³ In 2012, 40 percent of 8–10 year olds were not in school, and only 27 percent of the 20–24 age group had reached high school or college (the evolution of higher education in Guinea is detailed in Note 2. This state of affairs can be attributed to Government’s emphasis on “education for all” beginning only in the 1990s.

Employment Profile

Estimates from ELEP 2012 indicate that Guinea’s labor market is clearly signaling a need for significant investment in education. Figure 3 shows average simulated annual income by level of education and age. A higher level of education leads to a higher lifetime earning horizon.

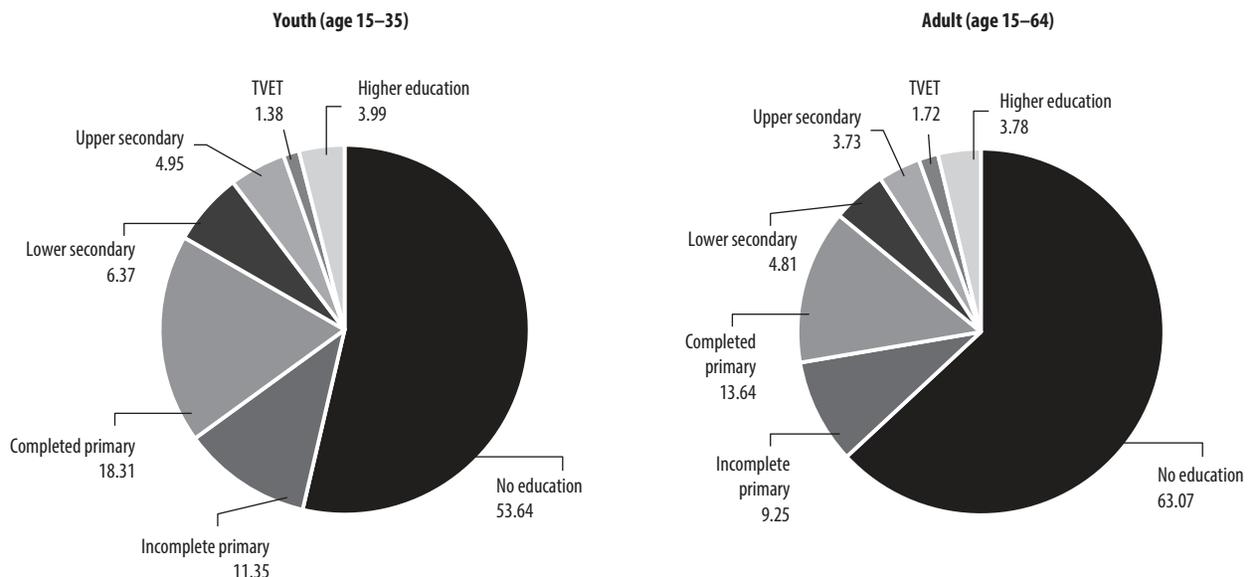
Income and Its Effects by Economic Sector

The Mincerian regression coefficient shows that Guinea’s labor market has a strong signal for education, both in wage employment and household income. When estimating returns based on household consumption, the education level of the household head is used. The results show that, among salaried workers, one additional year of education is associated with an average increase of monthly earnings by 9 percent, while income-based estimation hovers around 11 percent increase in household income per additional years of household head’s education.

Estimates by level of education reveal that a higher level of education is associated with higher earnings at all levels of education, both for wage employment and household income (Figure 4). The other notable aspect regarding educa-

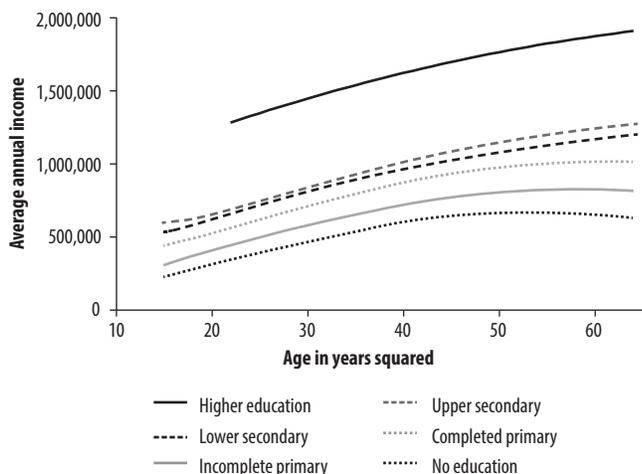
¹³ Source: ELEP 2010 (Household survey)

Figure 2: Educational Attainment, Youth and Adult



Source: ELEP (2012).

Figure 3: Average Annual Simulated Earning by Education Levels



Source: Estimates based on ELEP 2012.

tion's significant role in poverty reduction is the direct linear relationship between education and earnings. As educational achievement increases, the likelihood of poverty declines. For example, in wage employment compared to no education level, attainment of some primary education increases monthly earnings by 37 percent, by 61 percent for primary completion, by 88 percent for completed lower secondary, by 100 percent for upper secondary completion, and by 136 percent for higher education. Overall, for wage and household head's education, a higher level of education seems to reward the highest incremental yields, while for average and median years of

household member's education, primary completion yields high returns. Therefore, education is the most important factor for poverty reduction.

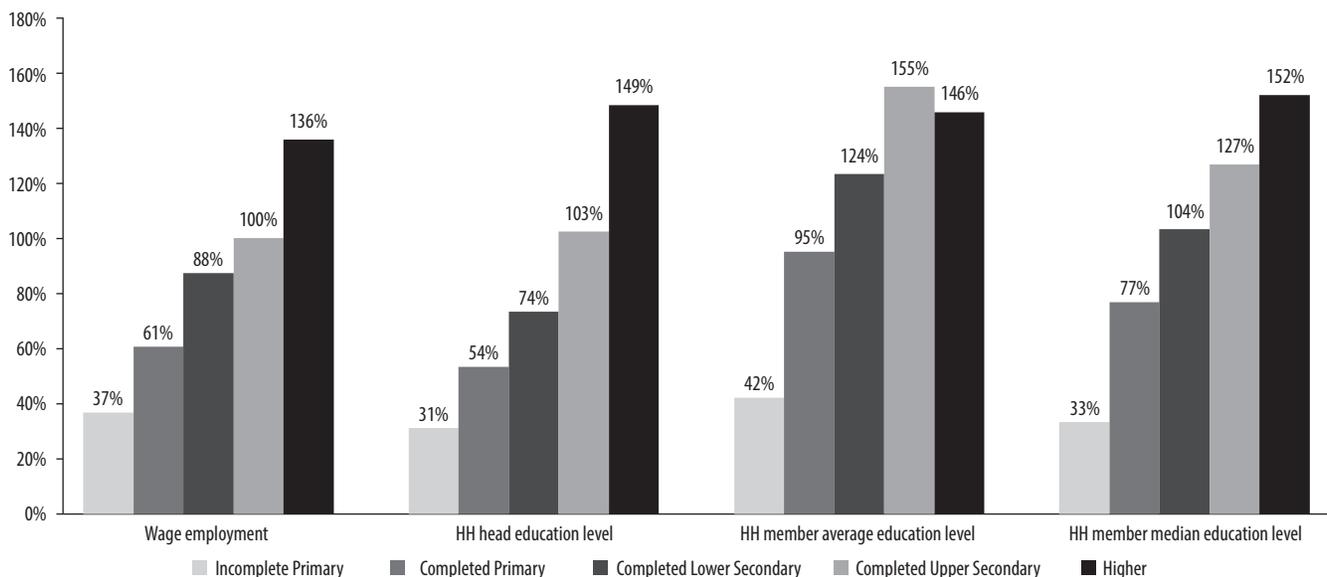
Primary education has the highest private and social rates of return (Table 1). This is consistent with other findings in developing countries.¹⁴ After primary education, the private rate of return for post-secondary education is the most favorable at 8.9 percent, compared to 7.5 percent for the social rate of returns.

Aside from the private and social benefits of investing in education, Guinea's generally unfavorable human development measures constitute another compelling reason for investment in education. Approximately 22 percent of youth (age 15–24) were either economically inactive or unemployed in 2012, with the highest unemployment rates found among the educated population. Similarly, the unemployment rate for the broader youth age group (age 15–35) is higher than the general adult working age population (age 15–64). For example, the unemployment rate for youth who have completed TVET was 30.2 percent in 2012 compared to 16.8 percent in the adult population (Figure 5). The corresponding figures for higher education attainment are 43.7 for youth and 17.1 percent for adults respectively. As Guinea strives to embark on an accelerated development path, its ability to meet the demands of a diversified economy will be partly determined by the quantity and quality of its trained workforce.

The sector of employment varies by level of educational attainment for both youth and adults (Figure 6). In Guinea, approximately 80 percent of individuals with no education

14 (Lee and Psacharopoulos (1979), Baumol, Blackmann, and Wolff (1989))

Figure 4: Earning Incremental by Level of Education Compared to no Education Category for Employed Working Age Population (age 15–64)



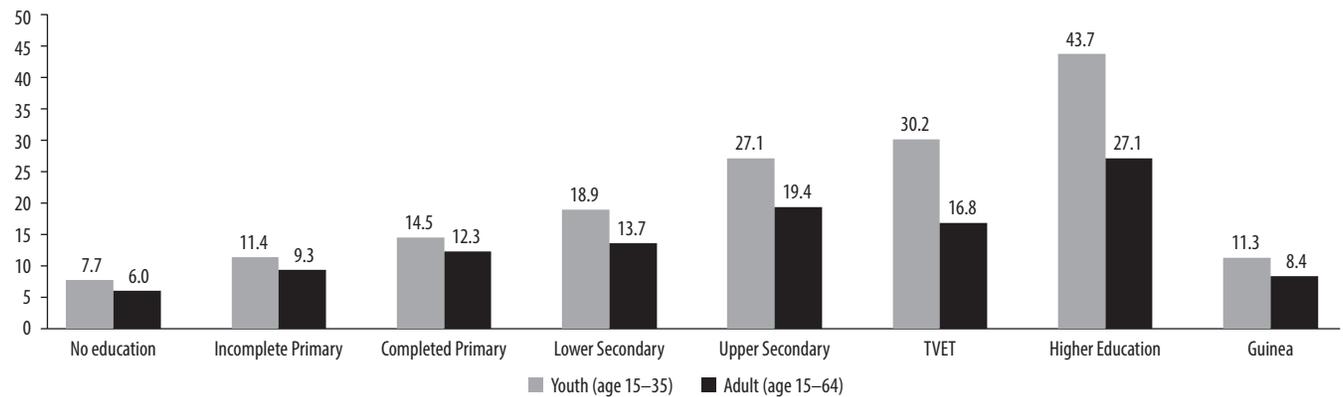
Source: Estimates based on ELEP 2012.

Table 1: Social and Private Rates of Return to Schooling

Level of education	Expected life-time earning	Average years of schooling	Difference in average number of years of schooling	Average years of schooling within the school level	Private per student payment	Public per student Payment	Private rate of returns	Social rate of returns
Primary	11.7	2.8	2.8	2.8	605,866	351,222	10.3%	10.0%
Lower Secondary	14.6	8.5	5.7	2.5	932,615	399,367	4.2%	4.1%
Upper Secondary	15.9	11.3	2.8	2.3	1,046,179	429,007	3.2%	3.1%
Post-Secondary	21.3	14.7	3.3	2.7	2,759,649	4,229,922	8.9%	7.5%

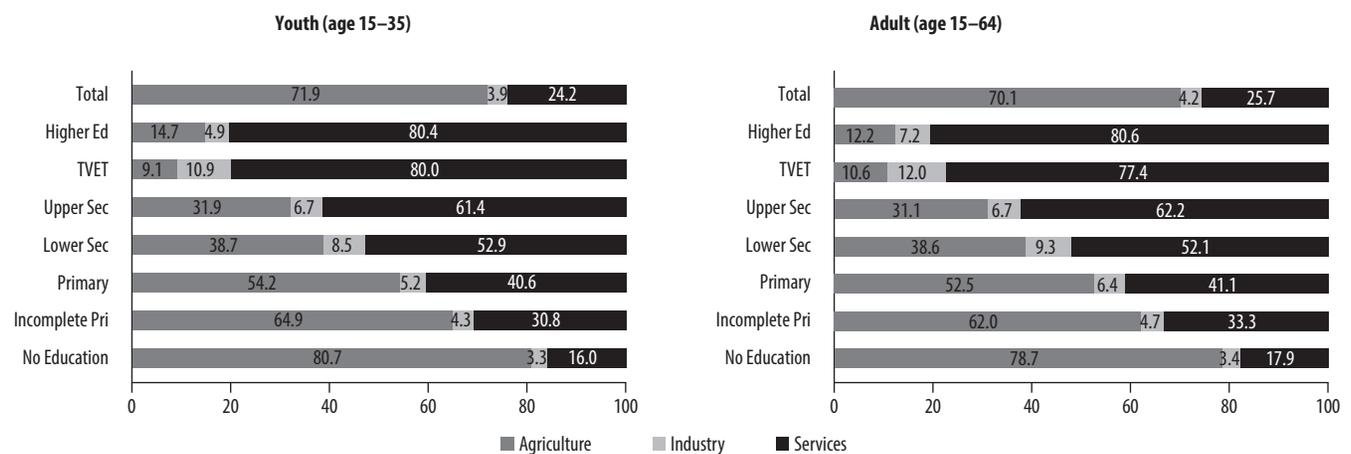
Source: Estimate based on ELEP 2012 and Guinea Public Expenditure Review of the Education Sector (2014).

Figure 5: Unemployment Rate for Youth and Adults, 2012



Source: ELEP (2012).

Figure 6: Educational Sector Attainment by Sector of Employment, Youth and Adult



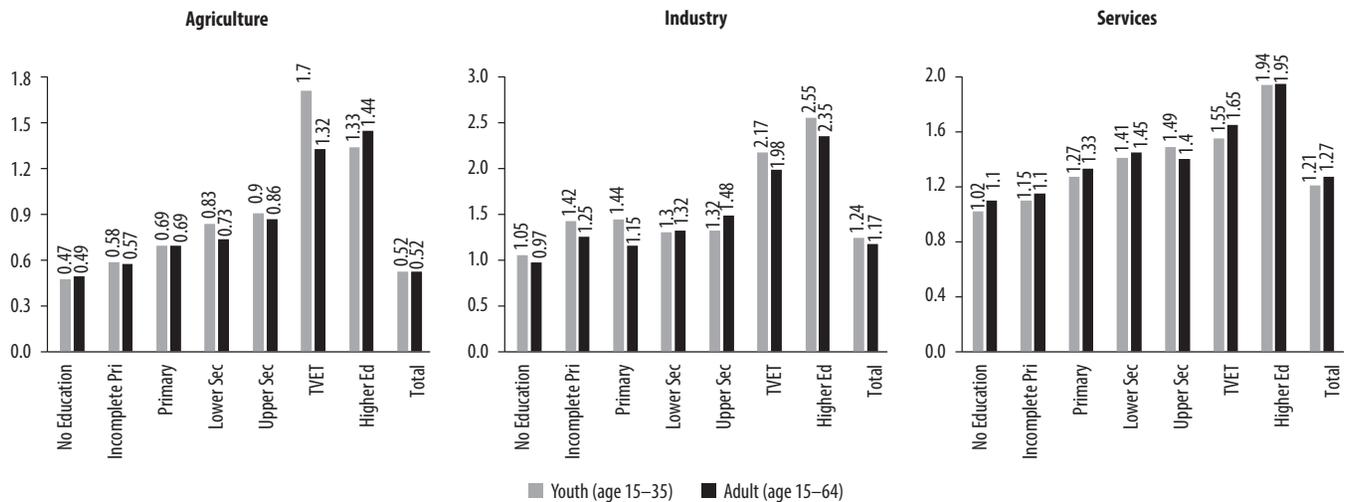
Source: ELEP (2012).

were employed in the agriculture sector, irrespective of age. As educational attainment increases, the share of employment in agriculture decreases and there is a proportional rise in employment in the service sector. The highest share of employment in the industry sector is for Guineans with a TVET level of education; however, overall industry employs the least amount of population.

Income and its effects by economic sector

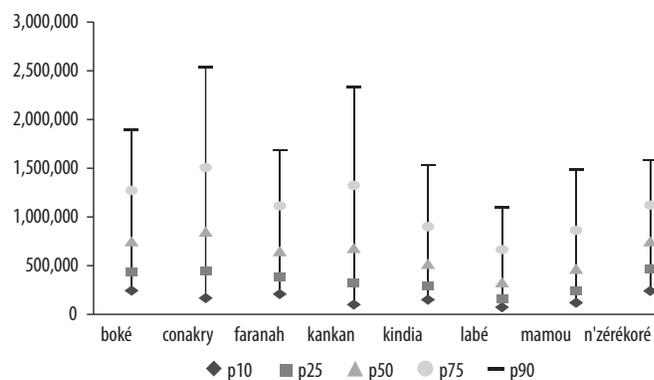
Education is positively related to income, irrespective of age or industry (Figure 7). In the agriculture, industry, and service sector, a person with even some primary education earns more than a person with no education. Across sectors, Guineans between the ages of 15 and 35 earned more than the ones between

Figure 7: Monthly Income by Economic Sector (GNF millions), Youth and Adult



Source: ELEP, 2012.

Figure 8: Household Income Quintiles by Region



Source: ELEP, 2012.

the ages of 15 and 64. In the agriculture sector, the highest earners were youth with TVET degrees; higher education graduates were the highest earners amongst adults, though the difference in earnings between TVET and higher education graduates are minimal. In the industry and service sectors, higher education graduates earned the most. In industry, youth with higher education degrees earned the most; in the service sector, adults with higher education degrees were the high earners.

Determinants of Inequities in Education and Employment¹⁵

As the education system has only recently become accessible to women in Guinea, their earning potential remains limited. Women lag behind men both in literacy and economic activity (74.5 percent versus 82.8 percent, respectively) and tend

¹⁵ The determinants of inequality in education and employment are gender and age, location and socio-economic status.

to be confined to traditional occupations, such as farming and commerce. Only 5.8 percent of women were active in industry and mining, construction, services, and public administration as of 2012. (Note 2 describes in detail the differences in education attainment by gender).

The income inequality across regions masks the extent of inequality within each region (Figure 8). A household in the wealthiest quintile earns, depending on the region, between 7 and 25 times more than a household in the 1st—or poorest—quintile. N'zérékoré is the region with the least inequality, and Kankan the region with the most: the richest and poorest rub shoulders. Low agricultural productivity is a major factor in poverty. This is particularly striking in the case of Middle Guinea, in Mamou, Labé, and Kankan, where nearly 10 percent of households live on less than 100,000 GNF (US\$15) per month. Living standards are lowest in Middle Guinea, and unsurprisingly, higher in Conakry and the mining regions of Boké, N'zérékoré, and Kankan. It is difficult to conclude, however, that the mineral deposits in the latter two areas are the source of their prosperity. Kankan is unique in that the proportion of agricultural households there remains the same no matter which quintile is considered. Finally, the affluent reside in Boké, Kankan, and Conakry; the top quintile earns around US\$283 per month.

3. Production and Skill Needs of Firms

This section examines labor market needs, particularly in terms of skilled workers from the perspective of employers. The characteristics of the employer survey are described below, followed by our findings.

Firm characteristics: The survey covers the diversity of economic activities in the capital, where small businesses engaged in handicrafts, manufacturing, or personal services operate alongside larger companies.

The median size of firms in the survey is fifteen. Nearly half of the firms engaged in commerce employ less than five employees, which explains their low weight in terms of jobs and sug-

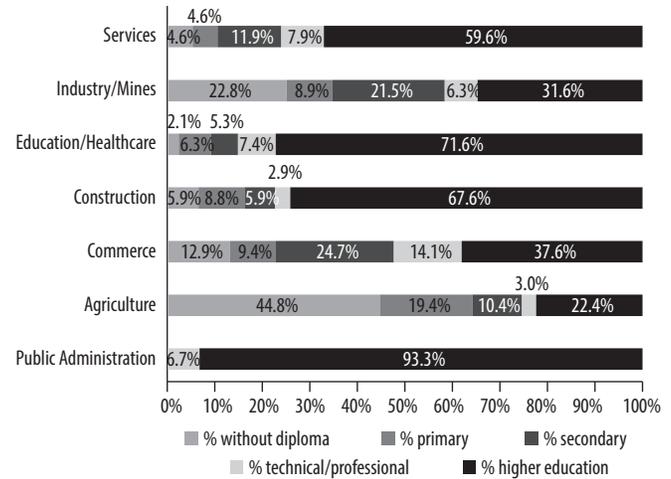
gests that the sector is not modernized. In the services, industry, and construction sectors, small businesses comprise 20 percent of firms. Public administration and public enterprises employ a large number of people. In the agricultural sector, 66 percent of the enterprises have between 21 and 200 employees.

Employer characteristics: In the employer section of the survey, information is provided on the education level of enterprise directors. As mentioned previously, a high proportion of university graduates find employment in the public sector (93.3 percent), education, and healthcare (71.6 percent). Given the relevance of the construction and business service sectors to the Guinean economy, it is heartening to note that a high proportion of CEOs in this field hold university degrees (67.6 percent and 59.6 percent respectively) (Figure 9). It is worrisome that only a third of the CEOs in commerce and industry are university graduates, since the creation of high-value-added businesses requires increasing the provision of higher education programs in technological and scientific fields.

Employee characteristics: **Employees have significantly less education and/or training compared to the firm directors, as reported by employers** (Figure 10). With the exception of public administration and the education sector, a large proportion of employees are not university graduates. For instance, in the construction industry, more than 70 percent of employees have not finished lower secondary, and only 15 percent have a high school (Baccalauréat) diploma. In addition, the services sector, industry, and commerce are divided between low-skilled jobs (high school degree or less), representing about 60 percent of employees, qualified technicians (15 percent) and higher education graduates. While it may be premature to conclude that there is an imbalance between supply and demand for skilled labor, the high proportion of workers without qualifications in areas such as construction and industry is unsustainable.

The majority of surveyed university graduates are employed in public administration, which is often perceived as the only source of employment. Almost half of public sector employees hold a technical higher education diploma, which one would expect to translate to a significant pay-off in other

Figure 9: Education Level of Enterprise Directors



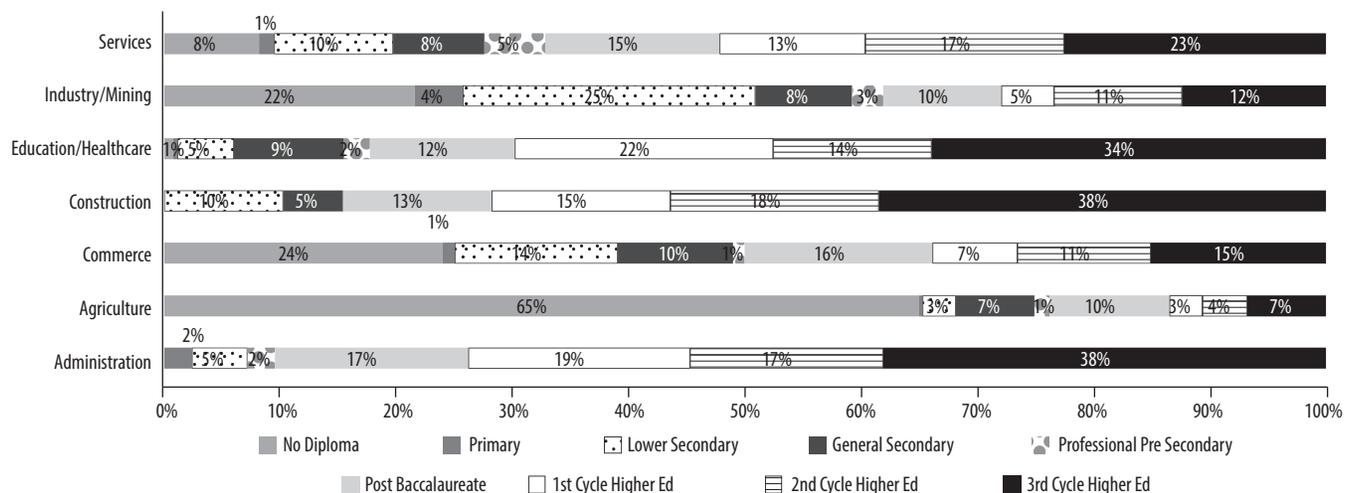
Source: Employer Survey 2013.

sectors, especially within the private sector (further discussion of employment sectors and skills is available in Note 4). The employer portion of the survey also estimates the importance of part-time work: only 12 percent of jobs are part-time in commerce, industry, and services. It is more common in construction (28 percent), education, and health (30 percent).

Skills valued by employers: **Employers most value non-cognitive or personal skills in their employees** (Figure 11).¹⁶ Some of the non-cognitive skills include the ability to work in teams or autonomously, organizational skills, and conflict

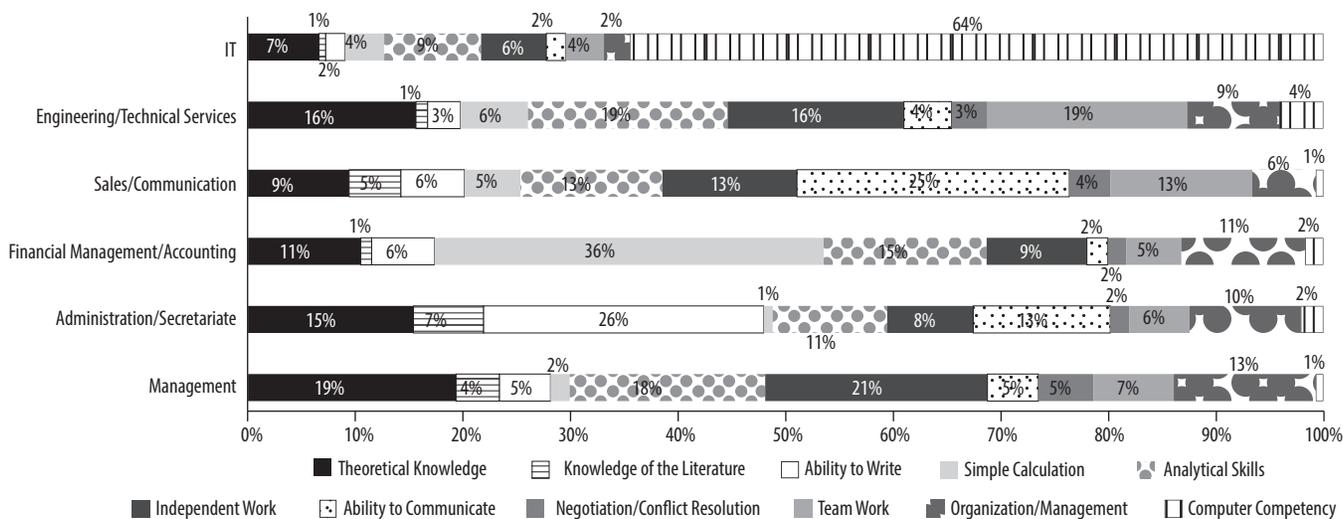
16 In order to obtain information regarding the needs and expectations of employers in terms of employee characteristics and skills, the survey asked employers to indicate the degree of importance they attach to different skills: basic, specific and personal or also called non-cognitive.

Figure 10: Employee Education Level



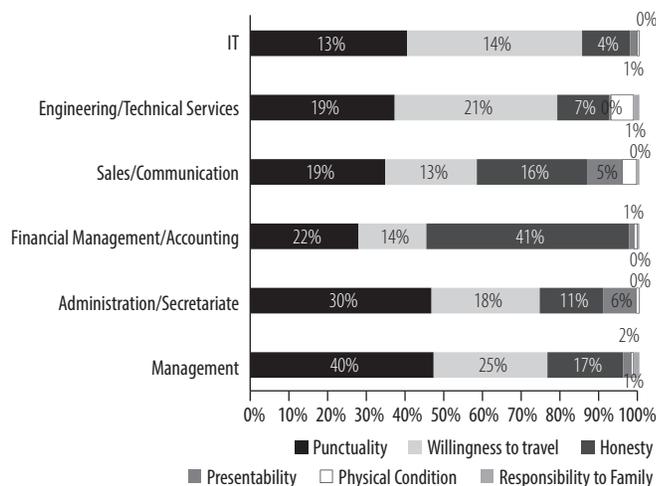
Source: Employee Survey 2013.

Figure 11: Key Basic Skills Required by Employers



Source: Employee Survey 2013.

Figure 12: Key Personal Skills Required by Employers



Source: Employer Survey, 2013.

resolution.¹⁷ Valued skills vary by profession; for instance, Information Technology require computer skills, whereas accounting requires arithmetic skills. The tasks assigned to employees depend significantly on education levels, with more highly educated employees also being the most versatile. Employees who did not attend school are generally excluded from cognitive tasks, including even simple administrative activities such as writing bills or calculating prices, and are more

¹⁷ The range of skills analyzed goes beyond the scope of the knowledge acquired during schooling. It is important to note the high rate of non-response, 40 percent on average for all categories and all types of skills. The rate is particularly high for computer skills indicating a lack of knowledge of the labor force by the business owners.

likely to perform physical tasks. With these few exceptions, tasks depend little or not at all on the specific sector, which points to the importance of quality general education. This can also suggest a low degree of specialization within firms, indicative of an economy that is still operating at a low level of productivity.

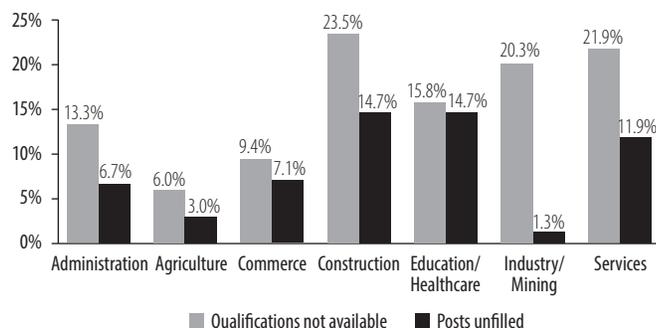
Punctuality is the personal skill most valued by employers, which fits with employer reports of absenteeism as the primary problem (Figure 12). In every sector, nearly 40 percent list punctuality as the most important trait in an employee, closely followed by commitment to work and honesty. Honesty, which is particularly important when dealing with finances, is essential in accounting and sales.

4. Insights into the Labor Market

In general, the education system is neither responsive to nor currently producing graduates equipped to adequately meet the needs of the labor market. Universities offer a predominantly theoretical education, despite the fact that firms value experience and practical skills (see Note 3 for a detailed description of the current governance structure and what it entails in higher education). For example, in the construction, industry, and service sectors, one in five firms states that it cannot find the type of qualifications needed, leading to a substantial proportion of vacancies (Figure 13). To increase the relevance of the education system to the labor market, the agriculture, construction, and mining industries recommend a focus on the entire education system. Employers in the agricultural sector¹⁸ in particular are seeking additional effort from universities and TVET institutions to attract more educated youth to agriculture and agribusiness.

¹⁸ More than 60 percent of agricultural enterprises would like to invest in train

Figure 13: Lack of Qualified Skills and Positions by Sector



Source: Employer Survey, 2013.

The school to work transition offers further insight into the extent of the training-labor market absorption mismatch. Graduates of longer-term programs enter the job market earlier than those completing short programs, but there is no distinction between the different levels of programs. 15 percent of graduates of university programs experience a 2-year lag between graduation and their first job, compared to about 35 percent for employees who have completed short training programs.¹⁹ Graduates of short vocational courses (BEP, CAP, etc.) do not find jobs more quickly than lower secondary and high school graduates (Figure 14). This clearly points to the inadequacy of skills taught, since these study programs are intended to train students in a trade or profession. One of Guinea's major challenges over the next few years will be to ensure that these programs confer a preferential employment status compared to a basic, general education.²⁰ However, at this time, no clear paths to achieve this goal have been identified.

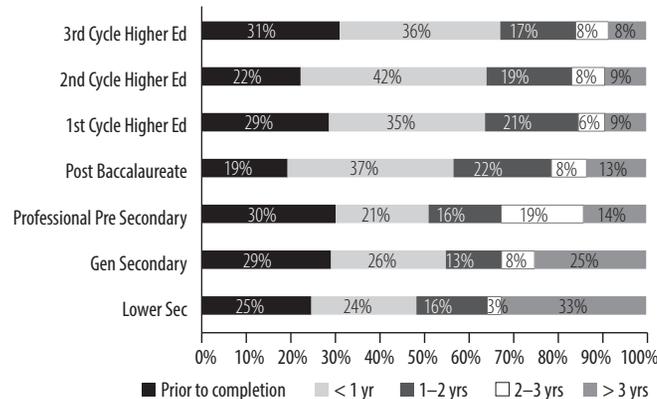
Recruitment is conducted primarily through social networks (Figure 15). With the exception of agriculture, employees in every sector obtained their jobs through acquaintances, with less than 20 percent of jobs obtained through job advertisements. Approximately 15 percent of employees report that they are related to the head of the enterprise in which they work. In this context, there is little doubt that an employee's education or training is not the central element in hiring decisions. Finally, between 30 percent of hires in services and education and over 40 percent of hires in services, industry, and construction result from personal relationships. This greatly reduces hiring possibilities for firms, employment possibilities for people in the workforce, and incentives to pursue long-term, quality studies.

The informality of the labor market, aggravated by the preference for hiring through personal networks, has im-

¹⁹ The probability varies little within each of these two categories.

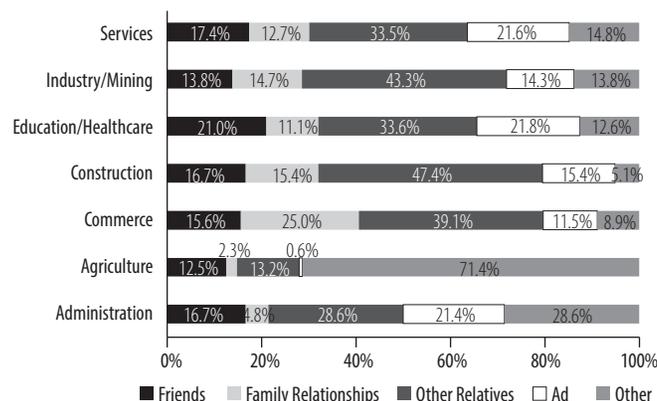
²⁰ We also note that regardless of training, almost a quarter of people are offered a job before the end of their studies. This phenomenon certainly overlaps several different realities. On one hand it can attest to the good functioning of the labor market if it matches the case where companies snatch up students with attractive qualifications; on the other hand, it may mean that the level of education does not play a major role and that individuals are bound to work in the family business.

Figure 14: Waiting Time Before Initial Employment



Source: Employer Survey, 2013.

Figure 15: Access to Employment as Reported by Employees

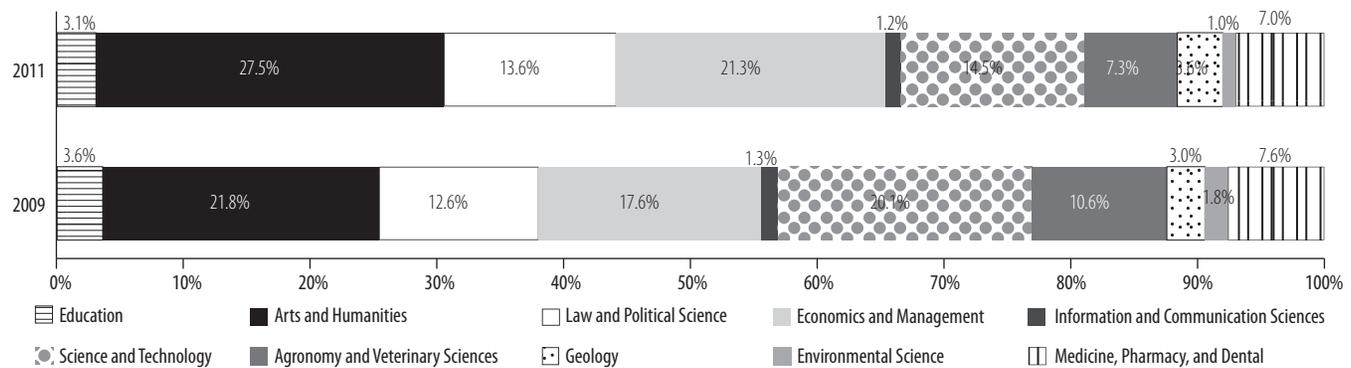


Source: Employer Survey, 2013.

portant consequences for equity and efficiency. The important prevalence of unsolicited job applications and internal advertising of openings underscores the insignificance of both the labor market forces and the applicant qualifications in hiring decisions. Compared to a private recruiting firm, the national employment agency (*Agence Guineenne pour l'Emploi, AGUIPE*) is still at a nascent stage in its role of matching the unemployed with job opportunities.

Despite the shortcomings described above, Guinean firms in different sectors display different patterns in their reporting of recruitment challenges. The public sector is virtually exempt from such problems, regardless of the type of work. For other sectors, agriculture aside, and regardless of the type of employment, recruitment difficulties are felt most acutely in filling management and finance positions. 20 to 30 percent of firms report experiencing difficulty in recruiting directors or managers and accountants. In addition, approximately 15 percent of trading companies face recruitment difficulties in sales, and a similar proportion of firms in industry and mining have problems recruiting engineers and skilled labor. Agriculture, consisting mainly of coopera-

Figure 16: Share of Enrollment by Discipline



Source: EMIS data, Ministry of Higher Education and Scientific Research.

tives, is experiencing serious difficulties in recruiting workers in all areas. This can be interpreted primarily as a sign of a traditional sector that has not modernized its business, in which activities such as administration, management, accounting, engineering, and communication are almost non-existent. Agriculture appears to be a potential source of jobs, provided it improves its attractiveness in terms of salaries and work sites.

Quality of the Education System

The surveyed firms hold contrasting views of educational quality. Firms have a positive opinion of the best degree programs, but negative perceptions of secondary education. Employers discredit the educational qualifications of employees who have not been able to access university (or equivalent) education. The majority (about 60 percent) of employers however do not express an opinion about the quality of education, but share the view that most employees must be trained immediately after hiring. This reveals either an alarming disinterest among employers regarding the education system, or alternatively, a feeling of resignation towards the current state of affairs. There is also a shift in the responsibility for training from the school system to individual firms.

Primary and secondary education enrollment growth registered in the early 2000s has plateaued since 2007. Enrollment rates are high in cities but remain very low in rural areas. In 2012, the average age of a primary school pupil was 10.2 years 16.5 years for a lower secondary student, and 20 years for a high school student. The examination pass rate is low. In 2010, it was 61 percent for primary, 36 percent for lower secondary and 38 percent for high school.

Guinea's Technical and Vocational Education and Training (TVET) sector is not yet fully developed. As of 2010, 82 schools were operating in the country, including paramedical and teacher training institutions. The schools are concentrated in urban areas with 36 schools alone being located in the capital city of Conakry. Total enrollment in 2010 was 28,400, with approximately 10,000 of these students enrolled in the paramedical and teacher training institutions. TVET is only offered at the secondary and higher education levels. The development of the sector has been impeded by a lack of re-

sources.²¹ Outside of the mining sector, partnerships with enterprises are limited.

Higher education enrollment has increased tenfold in the past decade, but there remains a mismatch between the degrees obtained and the needs of the labor market. A generous scholarship system awards student aid to nearly four of five students, enabling the proliferation of higher education students (further discussion of the scholarship issue can be found in note 4). Students are not graduating in disciplines that are in demand in the labor market (Figure 16). In 2011, more than 27.5 percent of students were enrolled in the humanities and social sciences, compared to only 14.5 percent in the technical sciences. Meanwhile, geological sciences, which will play in crucial role in the emerging economy, attract just 1 percent of students. Private education dominates the legal, management, communication, and information technology fields. More details will be covered in the education system diagnostic and financing notes (notes 2 and 4 in the series respectively).

Employees often supplement their initial academic training with additional education programs. Approximately 70 percent of public sector workers, 40 percent of employees in construction, education and services, and 30 percent of employees in industry and commerce pursue additional training programs. A significant proportion of these workers participate in more than one continuous education program. On average, employees spend 18 months on additional training; this figure is relatively consistent across sectors. Individual/family resources are the primary funding source for employees participating in training, although firms do provide some assistance. With the exception of agriculture, employees are more likely to have their training funded by firms rather than receiving scholarships. Firms pay for additional training for about 30 percent of employees in services and public administration, 25 percent in industry, 17 percent in construction, and 15 percent in commerce.

In order to better align university and industry and encourage them to jointly develop relevant skills programs, Guin-

21 Medium Term Expenditure Framework, 2013–15

ea might explore mechanisms such as Ireland's Technology Transfer Initiative, described in Box 1 below.

5. Conclusions and Recommendations

The deficiencies in Guinea's human capital development have hampered the development of its labor market. A large section of the population has not advanced beyond primary school, and an even lesser minority has received either technical or general higher education. Most importantly, a large proportion has never attended school. Low literacy and education are more common among women, rural population, and groups from lower socioeconomic status. Meanwhile, the educational system produces graduates lacking the skills needed by the labor market. Higher education graduates have higher unemployment rates than graduates with lower levels of education. In addition, there is an urgent need for vocational training in agriculture, construction, and industry and mining. A large proportion of firms consider in-house training necessary for the graduates they do hire. These issues compound Guinea's already complex business environment due to low productivity, competitiveness, efficiency, and under-developed infrastructure.

Box 1: Creating University-Industry Links in Ireland

Creating university—industry links in Ireland

The Technology Transfer Initiative (TTI) is an innovative support structure for small and medium enterprises in some regions of Ireland. It emerged from an alliance of three regional universities. The TTI is co-funded by them and the Enterprise Ireland, a state development agency focused on developing industry.

The role of the TTI is to act as a gateway for companies by facilitating access to the expertise and resources of the three universities. Its core aim is to encourage and assist Irish companies to become more innovative and thus more competitive and profitable. Essentially, the TTI aims to enhance technology transfer on an inter industry and interregional basis, increase innovation through research and development, and act as a single point of contact between expertise in the participating universities and local industry.

Companies request visits from TTI personnel who help identify potential research projects and topics to be addressed at specialist seminars with staff at universities. The TTI also organizes various innovation clubs between industry and academics. Companies meet regularly to discuss, present, and brainstorm new research areas, to share experience in new innovation, and to meet with academic researchers.

Feedback on the TTI from industry representatives suggests that it has been effective in giving small and medium enterprises access to in-depth knowledge of universities and that it has given university researchers a more practical look at the needs of industry.

Source: Technology Transfer Initiative; see http://www.biotechnologyireland.com/pooled/profiles/BF_COMP/view.asp?Q=BF_COMP_9249

Policy Recommendations

The business climate in Guinea needs to be improved, particularly in the areas of infrastructure and access to electricity. In order to attract and sustain foreign investment while the private sector matures, entrepreneurship is an avenue to consider to boost employment. For the latter to occur, the government needs to make significant investments in skills development.

Develop and improve skills relevant programs aligned with employer demand: The government should as a priority, tackle the development and improvement of short-term technical programs in key economic sectors, namely construction, energy, mining, hospitality, and transportation. The government must be more active in encouraging industrial and services enterprises, as well as agricultural cooperatives, to participate. It must organize and formalize the provision of training around partnerships and existing structures and the needs of the economy. This can occur through incentive programs or co-financing arrangements, and its success will depend largely on the development of relevant and mutually beneficial partnerships.

Industries can partner with schools and create curricula, provide training, or establish dual degrees to fulfill their labor market needs. Currently, the institution-employer dialogue remains extremely limited: program offerings are not based on concrete needs expressed by employers, resulting in a surplus of students in fields with few opportunities, and a shortage in those key for Guinea's economic development.

Facilitate intermediaries to link skills profiles with jobs: The previous section illustrates a number of unfilled jobs in critical sectors. The national employment agency has gradually moved into an intermediary role to link the unemployed to jobs. The Stepping Up Skills project supported by the Bank will reinforce this role by connecting graduates with formal opportunities in high-growth sectors and by creating a one-stop platform for youth to gain access to employment opportunities (i.e. counseling, training, internships or jobs).

Reform labor market access: Labor market access is restricted to the elite, since most hiring takes place through social and informal networks. Social status is an important determinant of employment: children of senior managers and members of the liberal professions are much more likely to be employed than children of civil servants and laborers. It is therefore key for institutions and employers to collaborate more closely to connect graduates directly with opportunities and give them a chance to earn employment through merit, rather than connections. Setting up a labor market information system for transparent information on job openings and required skills profiles is also an important next step that can contribute to behavior changes and practices.

Reduce geographical inequities: Ensure school and labor market reform and adequate distribution of training programs throughout the country. It is essential to reduce disparities between rural and urban areas. Rural residents are short-changed by the lack of opportunities in training and employment, along with the overall low quality of education quality. The concentration of vocational training in Conakry undercuts the economic development of other regions, where

transport infrastructure is inadequate, limiting the mobility of both workers and future apprentices.

Expand education opportunities for the poor and girls. More investments are necessary for increasing the supply of school in remote and poor areas, and for developing targeted, demand-side interventions to attract the poor and girls to school and keep them in school. To attract and retain girls in school, it is important to ensure that schools are safe/free from violence. Cash transfers in the case of poverty could be another

avenue tried out in other countries. For instance, through Bolsa Familia in Brazil, poor families with children in school receive an average of R\$70.00 (about US\$35) in direct transfers. In return, they commit to keeping their children in school and taking them for regular health checks. This produces two important results: helping to reduce current poverty, and getting families to invest in their children, thus breaking the cycle of intergenerational transmission and reducing future poverty. This type of approach could be effective for improving equity in Guinea.

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Annex I: Employer Survey Methodology

In the annex, we provide technical details on the employer survey, conducted jointly by the World Bank and the Government of Guinea.

Scope of the Employer Survey

The employer survey collected data from firms in the capital city of Conakry; Conakry is the place of convergence for both the graduates and the labor force.

The overall objective of the survey was to gather data—quantitative and qualitative—on the labor market and the way the labor market is viewed by graduates, academic institutions and firms. The survey aimed to determine the adequacy between training and employment, identify the specifics of the labor market and determine the contribution of formal education (be it training received or level of education attained). It served as a basis for determining the needs for capacity building and document the quality of technical and professional training programs.

The survey aimed to determine the mismatch between education and employment in the labor market and also investigate the quality of human capital, without which no program of reform and modernization can occur.

The survey collected data from employers in both the formal and informal sector. Specific indicators are:

- The skills and qualifications available in the Guinean labor market;
- The percentage of employees with higher education and/or TVET as reported by employers;
- The skilled labor needs in the workforce;
- Employer's perceptions of employees;
- The expectation that employers have of employees;

- How can we use the education system to improve the relevance and quality of the training opportunities so that the skills need of the labor market can be met?

Data Collection Instruments

Two questionnaires were used: (1) a survey that was sent out to firms to the human resource director or CEOs to obtain information on the firm; and (2) direct interviews with firm employees selected randomly.

Sample Size

The employer survey targeted employers in the formal and informal sectors in the Conakry region. To this sample, a few groups in the agricultural sector located less than 200 km from Conakry were added. The employers were selected based on the indicators relating to the employability of graduates, the expected structure of the distribution of employers and precision.

The theoretical sample size was obtained by considering a margin of error $\epsilon = 0.05$ for a confidence level of 95%. These considerations led to the selection with a proportion of estimated $\phi = 0.5$ employer, a relatively large theoretical size. Theoretical number required for the collection at the employers in the region of Conakry is 337 for a margin of error of 5%. Applying the same precision to agricultural groups, the sample has theoretically 84 agricultural groups. There were adjustments made to the sample size given the estimated response rate of 80 percent. The expected response rate was 95 percent for the farm groups. The adjusted sample size is 422 for businesses and 88 for agricultural groups coming up to a total of 510 employers.



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