

► Statistical Brief

May 2023

Apprentices in countries with large informal economies

Key points

The aim of this statistical brief is to compare country-level data on apprenticeships with an interest in countries with large informal economies.

► There are close to 6 million apprentices in the 14 countries that clearly identify apprentices in their labour force surveys (LFS). Countries with an apprenticeship tradition have shares of apprentices comparable to those of apprenticeship countries in Europe, yet administrative records often do not capture them.

► Countries' LFS identify apprentices among the employed, unemployed, and those considered out of the labour force.

► Most apprentices are in informal employment, according to ILO definitions, regardless of whether they are paid or unpaid.

► Child labour remains a concern.

► Male apprentices constitute the majority, yet in some countries, female apprentices outnumber male.

► Apprenticeship is also a skilling pathway for adults.

Apprenticeships train for the world of work – in both formal and informal economies

Around the world, apprenticeships¹ are considered an effective means of facilitating the school to work transition for young people, and at times also the re-skilling or upskilling of workers. In fact, this practice has been the traditional way of passing on skills from one generation to the next throughout history. Many societies have

developed apprenticeship systems with their own specificities, but all following the same training logic. Apprentices learn the skills for an occupation in an enterprise from an experienced worker, based on an agreement or contract and should follow certain agreed standards. The apprentice contributes to the work of the enterprise throughout the duration of the apprenticeship.² After a certain amount of time, the apprentice typically “graduates” and becomes a skilled worker either in the same business, leaves to work for another employer, or

¹ In the [Resolution concerning statistics of work, employment and labour underutilization](#) adopted by the International Conference of Labour Statisticians in 2013, apprentices, interns or trainees who work for pay in cash or in kind are considered employed, and apprentices, interns and trainees who work without pay in cash or in kind are excluded from employment and considered as “unpaid trainee”. Some countries however still consider apprentices and/or interns as employed in the informal as well as formal economy even if they are not paid.

² See replaced/superseded ILO Recommendations [R60](#) and [R117](#).

opens her/his own business. This practice has been formalized through laws and regulations in many countries yet is still widespread in large informal economies where workers and learners are “not covered or insufficiently covered by formal arrangements” as the Transition from the Informal to the Formal Economy Recommendation, 2015 (No. 204) states. This form of apprenticeship is usually referred to as traditional apprenticeship, informal apprenticeship, or apprenticeship in the informal economy (Walther and Filipiak, 2007; ILO 2011; ILO 2012).

Purpose and scope

This brief aims at providing a snapshot of what statistics can currently tell us about apprentices—in both formal and informal employment—since we assume that respondents self-identify as apprentices no matter whether their employment relation or employer is formal or informal. It uses Labour Force Survey (LFS) data compiled by the ILO³ from 27 countries (26 African and 1 South Asian countries) with large informal economies for which data on apprenticeship is included in questionnaires. The countries selected all display high shares of informal employment. They range from 65.6 per cent of informal employment among all employed in Botswana to a share of 94.6 per cent of all employed in Burkina Faso (ILO, 2018).

The brief expands on earlier statistical analysis undertaken by the World Bank and French Development Agency (AFD) for six African countries (Filmer and Fox 2014, Figure 3.18).

It is important to note that there are multiple potential data sources that could be used to compile labour statistics on apprentices. Examples of alternative data sources include administrative data collected by national ministries of education or labour, education and training institutions, or data from enterprise surveys. The approach adopted to derive the estimates given in this brief was chosen based on availability and statistical robustness of LFS data. Comparison with other data sources is only provided for selected countries on an exemplary basis. Going forward,

estimates generated by alternative approaches could provide valuable points of comparison to inform this work.

► For the purpose of this brief

- **Current apprentices** are defined as those whose current economic activities within the past 4 weeks⁴ included work⁵ as an apprentice with or without pay.
- **Former apprentices** are defined as those who were apprentices and are not currently an apprentice in the past 4 weeks.

Variations in identifying apprentices

The analysis of labour force survey questionnaires of 27 countries that included the term “apprentice” or “apprenticeship” either in the question or answer options showed the varied use of the concept in different questionnaire sections such as in education and training, status in employment in main or secondary activity, or status at work.

The brief identifies the following differences in the sample demographics across countries:

- by age group, i.e. survey samples start at different minimum ages. This means, for example, that in some countries, apprentices below legal working age would not be identified;
- by employment status, i.e. apprentices are identified among “employed”, “unemployed”, or “outside the labour force”;
- by type of work-based learning, meaning that in several countries, apprentices were grouped together with interns, trainees, or people in other forms of work-based learning (OWBL)⁶.

To address these differences, this brief uses data on apprentices among the working age population (ages 15–64) for all comparative analysis, except when providing the

³ Data is derived using labour market information from household surveys compiled by national statistical offices (NSOs) around the world. The microdata shared by NSOs is [processed by the ILO to generate harmonized datasets according to international statistical standards](https://ilostat.ilo.org/), allowing for international-comparability. Derived indicators are published on ILOSTAT, the ILO’s central statistical repository <https://ilostat.ilo.org/>.

⁴ In most countries the reference period is the last 7 days.

⁵ Refers to any activity performed by persons of any sex and age to produce goods or to provide services for use by others or for own use.

⁶ This brief focuses on apprentices primarily and does not take account of questions in LFS particularly addressed to people in other forms of work-based learning that exclude apprentices.

total number and age of apprentices, and when looking at child labour within apprenticeship.

The brief talks about apprentices when countries clearly identify apprentices as a distinct category in their LFS questionnaires and talks about apprentices and other forms of work-based learning (OWBL) when any other form, be it trainees, interns, or other work-based learning is covered.

Thirteen countries provide a distinct category for apprentices within questionnaires to identify current status at work (Republic of the Congo, Democratic Republic of the Congo, Comoros, Ethiopia, Ghana, Guinea, Madagascar, Mali, Mauritania, Niger, Nigeria, Sierra Leone, Zambia) and seventeen countries do so for former apprentices (Benin, Burkina Faso, Burundi, Chad, Republic of the Congo, Eswatini, Ethiopia, Ghana, Guinea, Lesotho, Madagascar, Mali, Nigeria, Senegal, Sierra Leone and Tanzania). While international statistical standards do not distinguish between apprentices, interns or trainees, the ILO considers that they are distinct forms of work-based learning. Apprenticeships cover all skills necessary for an occupation and should follow certain standards and provide more structured training; whereas internships or traineeships provide young people, who have finished their studies or are still studying, with an opportunity to learn in a workplace—usually covering specific aspects of a job or an occupation, but not all skills needed for it (ILO, 2020).

In addition, three countries distinguish between formal and informal apprenticeships (Nigeria, Tanzania and Lesotho), taking account of the fact that some apprenticeships are “formal” and recognized within a country’s skills system, and others are “informal”, i.e. unregistered and/or in the informal economy.

Finally, there is reason to believe that questions asking about apprenticeships might not capture the true number of current and former apprentices in a country due to context-specific understandings of apprenticeships. Possible reasons can include local nomenclatures for traditional apprenticeships not included in questionnaires, or blurred lines between contributing family members in enterprises and apprentices.

► **Table 1. Identification of current apprentices in LFS questionnaires by country and status in employment**

Status in employment	Country
Employed	Comoros, Republic of the Congo, Côte d’Ivoire, Democratic Republic of the Congo, Ethiopia, Guinea, Madagascar, Mali, Mauritania, Zambia
Employed, Outside the labour force	Ghana, Niger, Nigeria
Employed, Unemployed, Outside the labour force	Sierra Leone

► **Table 2. Identification of current apprentices and learners in other forms of work-based learning in LFS questionnaires by country and status in employment**

Status in employment	Country
Employed	Burundi, Benin, Botswana, Comoros, Cote d’Ivoire, Lebanon, Lesotho, Mali, Rwanda, Senegal, Chad, United Republic of Tanzania
Employed, Outside the labour force	Afghanistan, Guinea, Niger
Employed, Unemployed Outside the labour force	Burkina Faso, Eswatini, Uganda

Tables 1 and 2 provide an overview of how countries chose to identify current apprentices based on their employment status. The [Resolution concerning statistics of work, employment and labour underutilization](#) adopted by the International Conference of Labour Statisticians in 2013 only **considers paid apprentices, interns, or trainees as employed**, and **apprentices, interns, and trainees who work without pay in cash or in kind as “unpaid trainee” outside the labour force**. However, countries still take diverse approaches.

Table 3 shows that not all countries distinguish between paid and unpaid apprentices. Given the variations of “payments” to apprentices, through stipends in formal apprenticeships, in-kind compensation, or “tips” received from customers, what apprentices regard as “paid apprenticeship” remains subjective (ILO 2020; Hofmann et al. 2022).

► **Table 3. Meta data for countries with data on current paid and unpaid apprentices and learners in other forms of work-based learning (OWBL)**

Countries...	...distinguishing between paid and unpaid...	...only identifying paid...	...not distinguishing between paid and unpaid...
...apprentices	Cote d'Ivoire, Republic of the Congo, Ghana, Mali, Mauritania, Sierra Leone	Comoros, Guinea, Niger, Zambia	Nigeria, Democratic Republic of the Congo, Madagascar
...apprentices and OWBL	Burkina Faso, Comoros, Lebanon, Lesotho, Eswatini, United Republic of Tanzania, Uganda	Afghanistan, Burundi, Benin, Botswana, Cote d'Ivoire, Democratic Republic of the Congo, Guinea, Mali, Niger, Rwanda, Senegal, Chad	

Apprenticeships are widespread, but much more in some countries than in others

Figure 1 shows the prevalence of current apprentices per thousand population. The unweighted average among all 14 countries who single out apprentices is 24 apprentices per thousand people, with large variations from less than 1 to 145 apprentices per thousand people. This suggests that the prevalence of apprenticeship training differs significantly depending on country contexts and traditions.

We find close to 6 million current apprentices within the 14 countries that identify apprentices as a distinct group. When considering all 27 countries, including those that combine apprentices and OWBL, the total number of current apprentices and OWBL reaches close to 7 million. Data confirms earlier findings that apprenticeships (in both the formal and informal economy) in Ethiopia are hardly existent (Walther and Filipiak 2007).

In most countries, the median age of apprentices lies between 18 and 34 years, with the Zambia having the

highest median age. While the findings confirm the common understanding that apprenticeship is for young people, data shows that apprenticeship does not exclude people beyond 30 years of age.

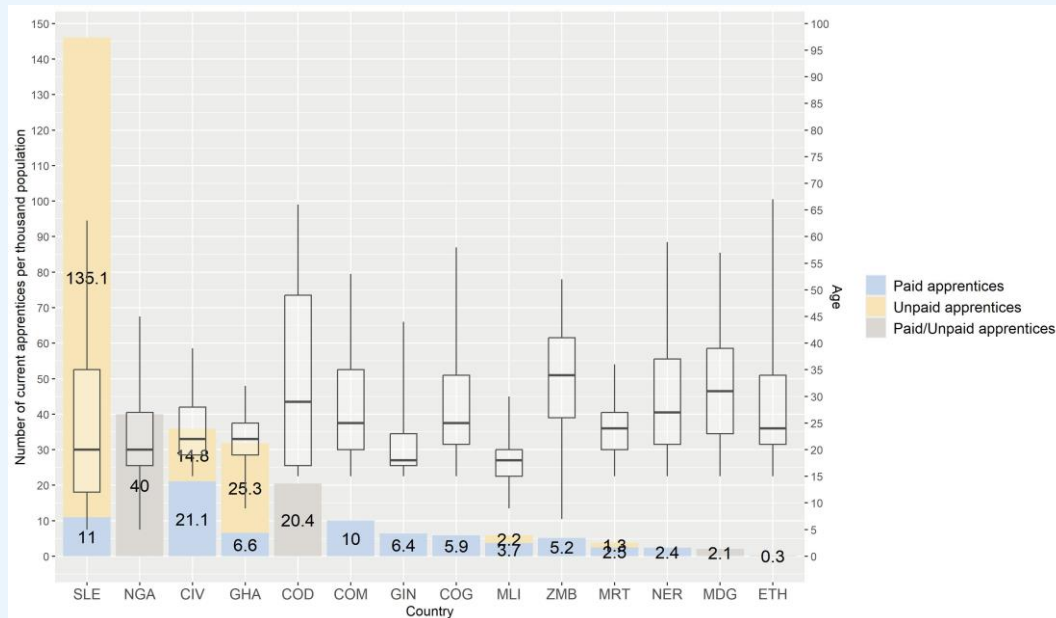
Figure 2 looks at current apprentices among youth and young adults (15-34 years) and compares shares of apprentices in countries with large informal economies with selected European countries. Countries with apprenticeship traditions in Africa have similar shares of apprentices among youth and young adults (15-34 years) compared to selected European countries.

In selected European countries, the prevalence of apprenticeship training among youth and young adults (15-34) ranges from 25 apprentices per thousand in the UK, to 43 in France, 54 in Austria, and 93 in Switzerland.⁷

⁷ Data used is from national labour force surveys in the ILO database: Austria (LFS, 2020), France (EE, 2021), Switzerland (ESPA, 2022), UK (LFS, 2022).

Apprentices in countries with large informal economies

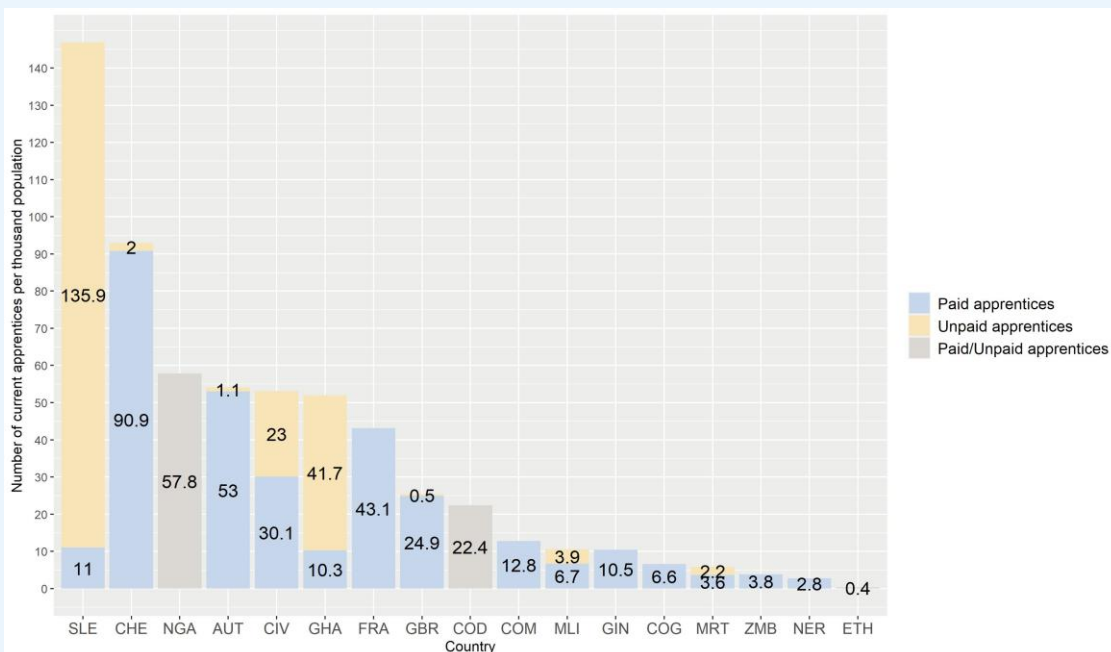
► **Figure 1. Number of current apprentices per thousand population (15-64) and age summary statistics, by country, by paid and/or unpaid**



Source: ILO calculations based on national labour force surveys from ILO database, ILOSTAT.

Note: The age summary statistics (boxplots) display the minimum, 25th percentile, median, 75th percentile, and maximum.

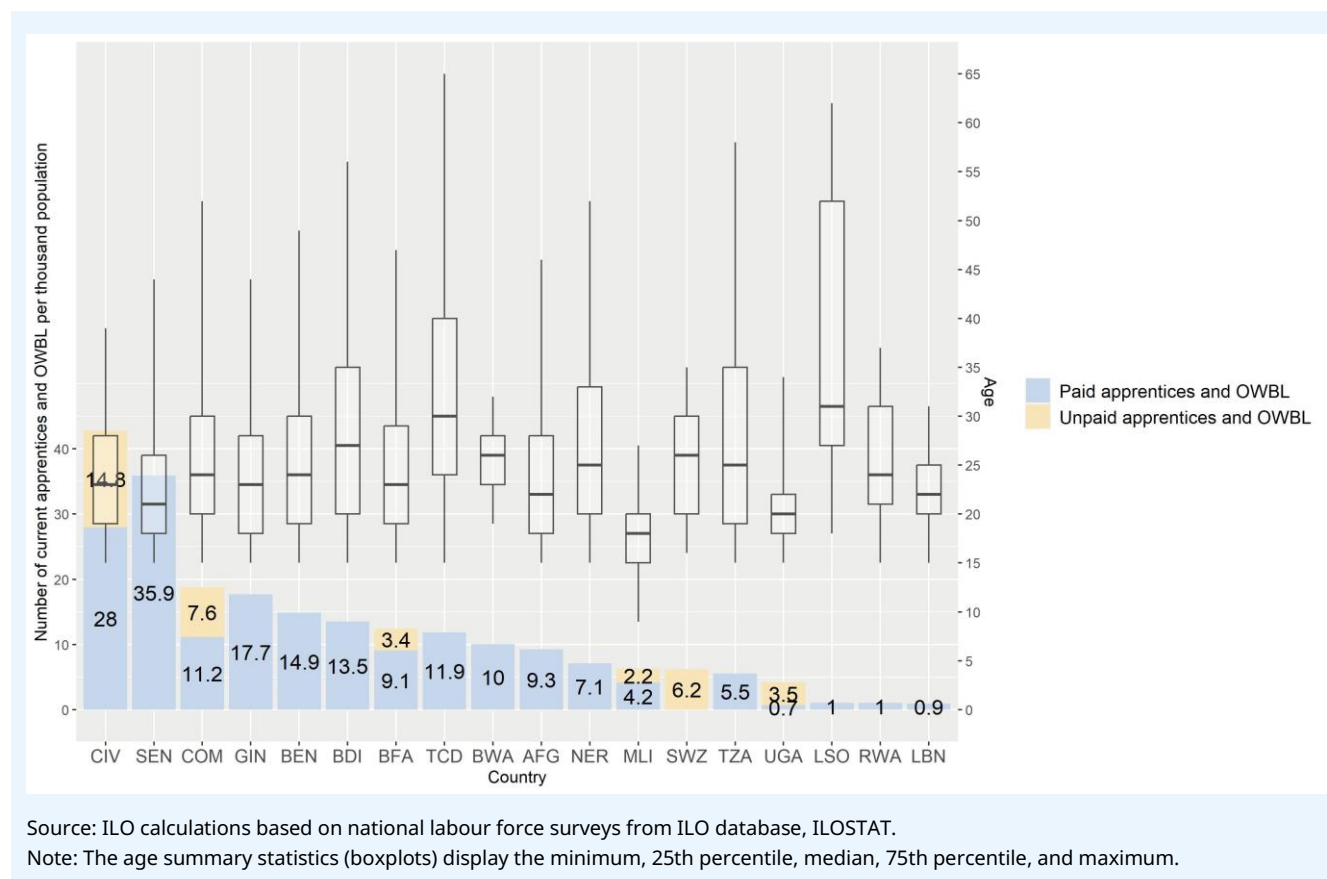
► **Figure 2. Number of current apprentices among youth and young adults (15-34) in European countries and countries with large informal economies, by country, by paid and/or unpaid**



Source: ILO calculations based on national labour force surveys from ILO database, ILOSTAT.

Note: Data on paid/unpaid current apprentices for MDG has been excluded due to small sample size.

► **Figure 3. Number of current apprentices and OWBL per thousand population (15-64) and age summary statistics, by country, by paid and/or unpaid**



The age distribution between apprentices (see **Figure 1**) and apprentices and OWBL (see **Figure 3**) does not differ much⁸—except for Guinea, where the median age of apprentices is 5 years below the median age of apprentices and OWBL, despite the minimum and maximum ages being the same.

Administrative records of skills systems underreport apprentices

Comparing some of the country-level LFS data with administrative records, we find significant differences in some countries. For example, in Tanzania, the Ministry of Finance and Planning reports that 42,407 youth in the labour market are currently trained through apprenticeships, internships, and recognition of prior learning (TMFP 2021, p.24). In contrast, estimates from ILO LFS data indicate a figure of 163,000 current apprentices or

OWBL, which means that over 100,000 apprentices/OWBL are currently not accounted for in formal training records. In Côte d'Ivoire, 116,600 people are enrolled in formal vocational education and training (UNESCO 2020), while LFS data shows around 500,000 current apprentices. In Chad, only a few thousand apprentices are enrolled in formal apprenticeship programs (RAFPRO/3FTP 2021), while according to LFS data, there are over 81,000 people currently in apprenticeship. Given the tradition of apprenticeship in all these countries, we can assume that the majority represent apprentices in the informal economy. As stated by several authors, informal apprenticeships are the primary sources of skills development for youth in Africa and account for at least 90% of all training for young people in countries like Ghana, Cameroon, or Senegal (Charmes 2021; Hofmann et al. 2022; Walther and Filipiak 2007, p. 175; Haan 2006).

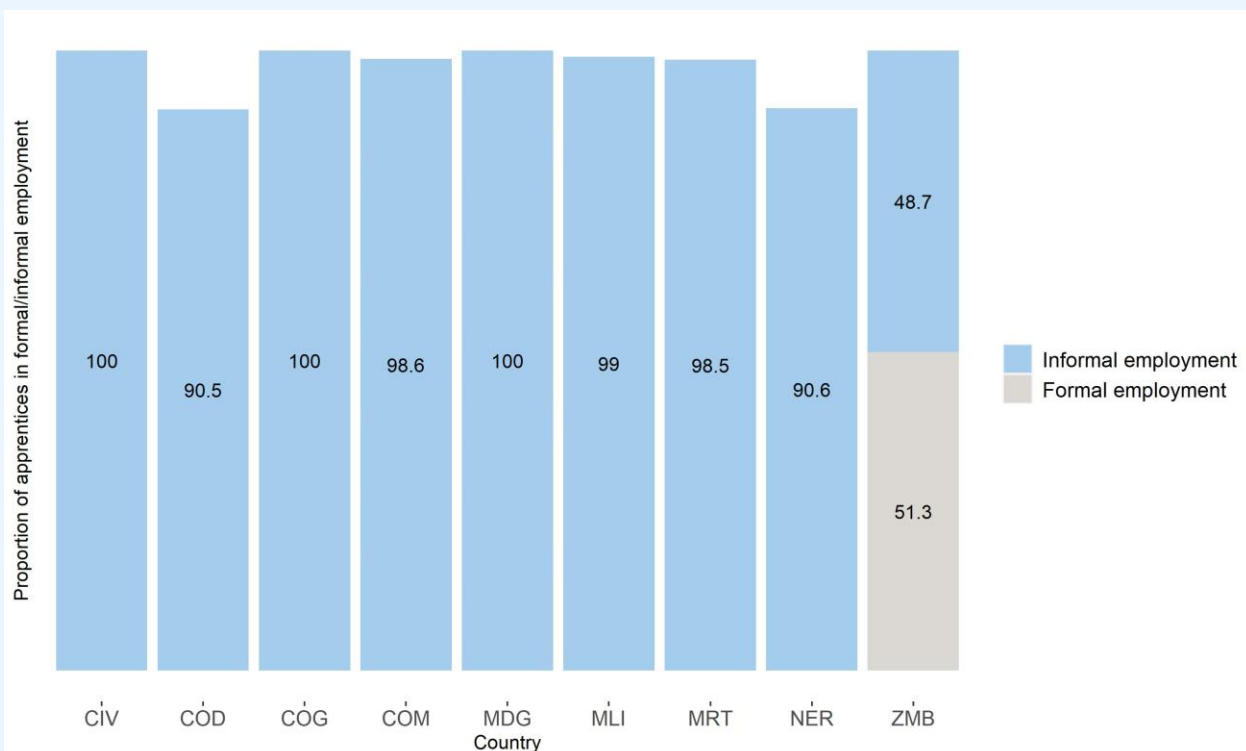
⁸ The difference in the average age is not statistically significant based on a two-sample Z-test (0.05 significance level).

Most apprentices are in informal employment

Three countries distinguish between formal and informal apprenticeships in their household surveys: Nigeria, Lesotho and Tanzania (either among current or former apprentices). The share of informal apprentices was 50 per cent among all former apprentices in Lesotho, 73 per cent among all current apprentices in Nigeria, and 58 per cent among all former apprentices in Tanzania. The numbers appear low considering the overall shares of informal employment in these three countries. A possible reason is that apprentices might not be aware of the “formality” of their apprenticeship and self-identify as “formal” apprentices while in fact their apprenticeship is not fully covered by formal systems.

The ILO’s harmonized dataset includes an indicator on whether a person currently employed is in formal or informal employment according to ILO standardized definitions. **Figure 4** shows the share of current apprentices in formal or informal employment for countries with available data. Unfortunately, the data does not allow us to compare information on formal and informal apprenticeships as stated before, since the indicator on informal employment is missing for Nigeria, and data for Lesotho and Tanzania only concerns former apprentices. Among current apprentices and OWBL, the share of those in informal employment stands at 100% for Lesotho and 93% for Tanzania.

► **Figure 4. Share of current apprentices in formal or informal employment, by country**



Source: ILO calculations based on national labour force surveys from ILO database, ILOSTAT.

Note: In NER, 8.8% of current apprentices are classified as being outside of the labour force and have been excluded from the data.

The only country with significant shares of apprentices in formal employment is Zambia. In the Democratic Republic of Congo and Niger, sample sizes of those in formal employment are very small.

While in the Democratic Republic of Congo, no distinction is made between paid and unpaid apprentices, in Niger and Zambia, all apprentices, including those in informal employment, are considered paid apprentices. This shows that payment is not a useful proxy for formality.

Child labour persists in apprenticeship

Not all surveys provide data on age-related child labour⁹ since questions on apprentices are sometimes only addressed to working-age populations. LFS data used for this brief allows us to identify five countries with apprentices below the age of 15. Slightly over 2 per cent in Ghana and Zambia, around 14 per cent in Mali and Nigeria, and 30 per cent of all apprentices in Sierra Leone are below 15 years.

Women's participation in apprenticeships

In the majority of countries, male apprentices outnumber female apprentices. Yet, in the Democratic Republic of Congo, Madagascar, and Sierra Leone, women outnumber men among current apprentices. The share of women among apprentices/OWBL ranges from 12 per cent in Mali to 62 per cent in Madagascar.

Figure 5 shows the share of women among paid and unpaid apprentices or apprentices and OWBL. In four countries (Côte d'Ivoire, Comoros, Ghana and Sierra Leone), the share of women among unpaid apprentices/OWBL is considerably higher. In Burkina Faso, the share of women among unpaid apprentices is lower, demonstrating that sex can be a factor for higher vulnerability of apprentices, yet not in all countries.

► **Figure 5. Female participation in apprenticeship/OWBL, by country, by paid/unpaid**



Source: ILO calculations based on national labour force surveys from ILO database, ILOSTAT.

Note: Data for CIV, GHA and SLE is for apprentices only, data for BFA and COM is for apprentices and OWBL.

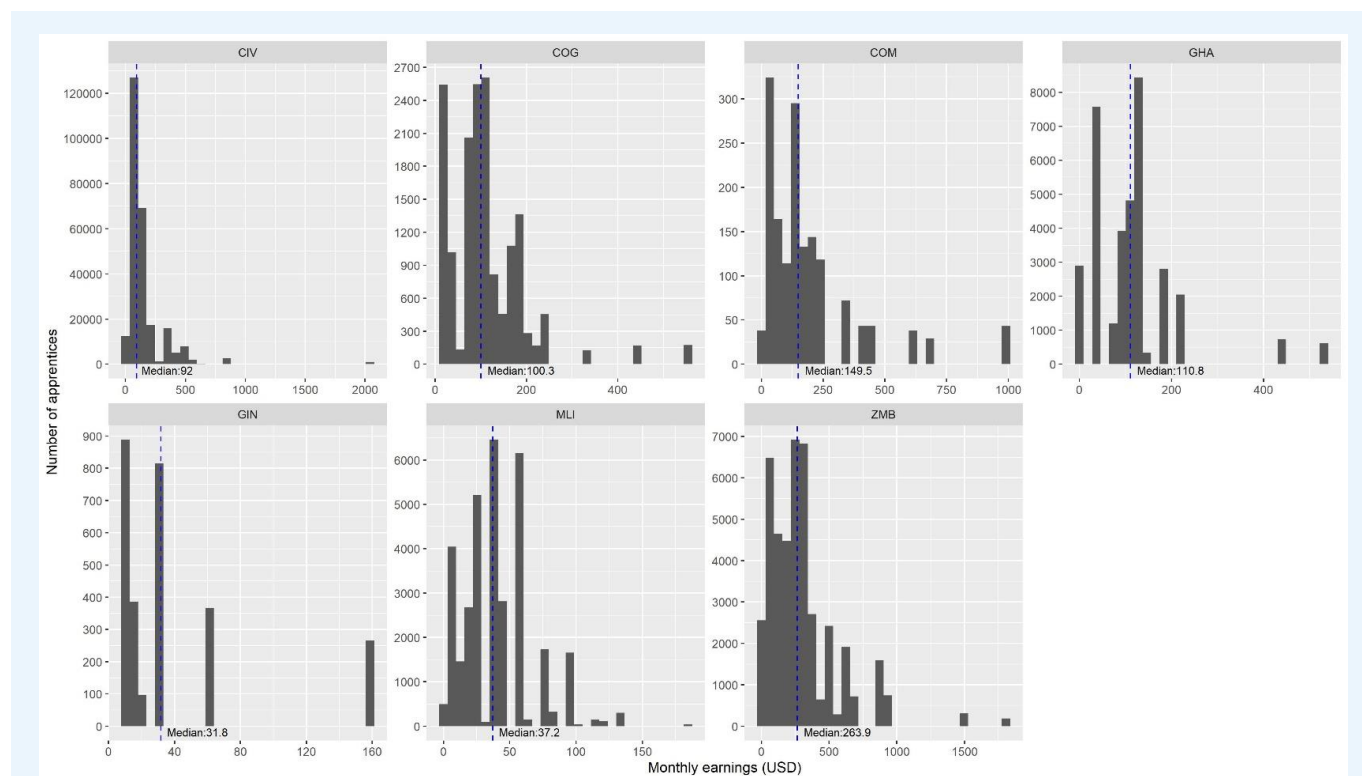
⁹ According to the ILO's Minimum Age Convention, 1973 (No. 138) and Worst Forms of Child Labour Convention, 1999 (No. 182), child labour includes hazardous work for all children below the age and 18, and all work below minimum working age. Apprenticeships, if approved by the competent authority, can be permissive as of 14 years (C138, Art. 6b).

Monthly earnings of apprentices

Seven countries provide data on monthly earnings for current paid apprentices (see **Figure 6**). While there are wide variations within countries, the median wage for

monthly earnings ranges from 32 USD equivalent in Guinea to 264 USD in Zambia. The higher median earnings in Zambia could be explained by the fact that half of all apprentices in Zambia are in formal employment.

► **Figure 6. Monthly earnings of current apprentices (15-64) in main job, by country, in USD equivalent**



Source: ILO calculations based on national labour force surveys from ILO database, ILOSTAT.

Note: Data on monthly earnings in main job were converted to USD for each country by using the exchange rate data from World Bank API as of the last calendar day of survey year.

Occupations held by apprentices

Among the sample of 27 countries, we find apprentices in all major occupational groups by ISCO.¹⁰ When examining the three largest occupational groups in each country, we find that 19 countries have apprentices or OWBL within the category of craft and related trades workers, which notably constitutes the largest group. Additionally, there are 13 countries where apprentices/OWBL are present within service and sales workers, 11 countries within elementary occupations, and 7 countries within skilled agricultural, forestry, and fishery workers. 3 countries (Burkina Faso, Lebanon, and Zambia) have significant numbers of apprentices/OWBL among professionals. Technicians are

listed only in one country (Zambia). Ghana has apprentices among plant and machine operators, and assemblers among the three largest groups for apprentices.

The importance of apprenticeship for a country's skills base

For 21 countries, LFS data provides information on whether respondents have done an apprenticeship in the past. Results of this analysis are displayed in **Figure 7** and **Figure 8**. **Table 4** shows how questionnaires capture information on past apprenticeships: some countries only ask about the past job, some ask about the past 12 months, and others ask whether respondents have ever been an apprentice.

¹⁰ Managers, Professionals, Technicians and associate professionals, Clerical support workers, Service and sales workers, Skilled agricultural, forestry and fishery workers, Craft and related trades workers, Plant and machine operators, and assemblers, Elementary occupations.

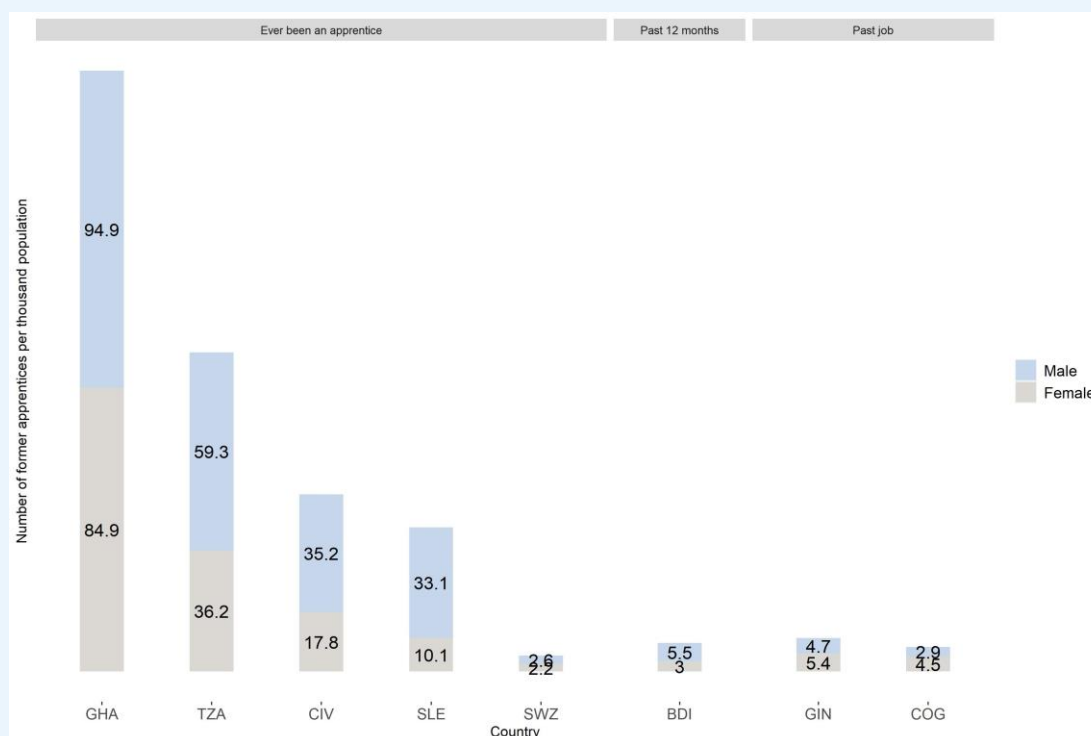
Figures 7 and 8 confirm that apprenticeships play an important role in the skill base of countries with large informal economies, yet to varying extents.

► **Table 4. Meta data for countries with data on former apprentices and apprentices and OWBL**

	Apprentice in the past job	Ever been an apprentice	Apprentice in the past 12 months
Apprentices	Burkina Faso Guinea Madagascar Mali Republic of the Congo	Botswana* Ghana Sierra Leone Eswatini* Côte d'Ivoire* United Republic of Tanzania *	Burundi Benin Ethiopia Lesotho Senegal Chad
Apprentices and OWBL	Guinea Niger	Zambia Burkina Faso	Benin Burundi Democratic Republic of the Congo Senegal Chad Uganda*

Note: SWZ and TZA record data on past informal apprenticeships only; UGA records data for the last 24 months; CIV records data for the last 5 years; BWA captures only formal apprenticeship through past educational achievements. Data for Figures 7 and 8 prioritizes data on apprentices for BDI and GIN. For BEN, BFA, SEN, and TCD data on apprentices and OWBL is shown, since data on apprentices only captures either shorter time periods (BFA), or does not include the employed population (BEN, SEN, TCD).

► **Figure 7. Number of former apprentices per thousand population (15-64), by country, by sex**



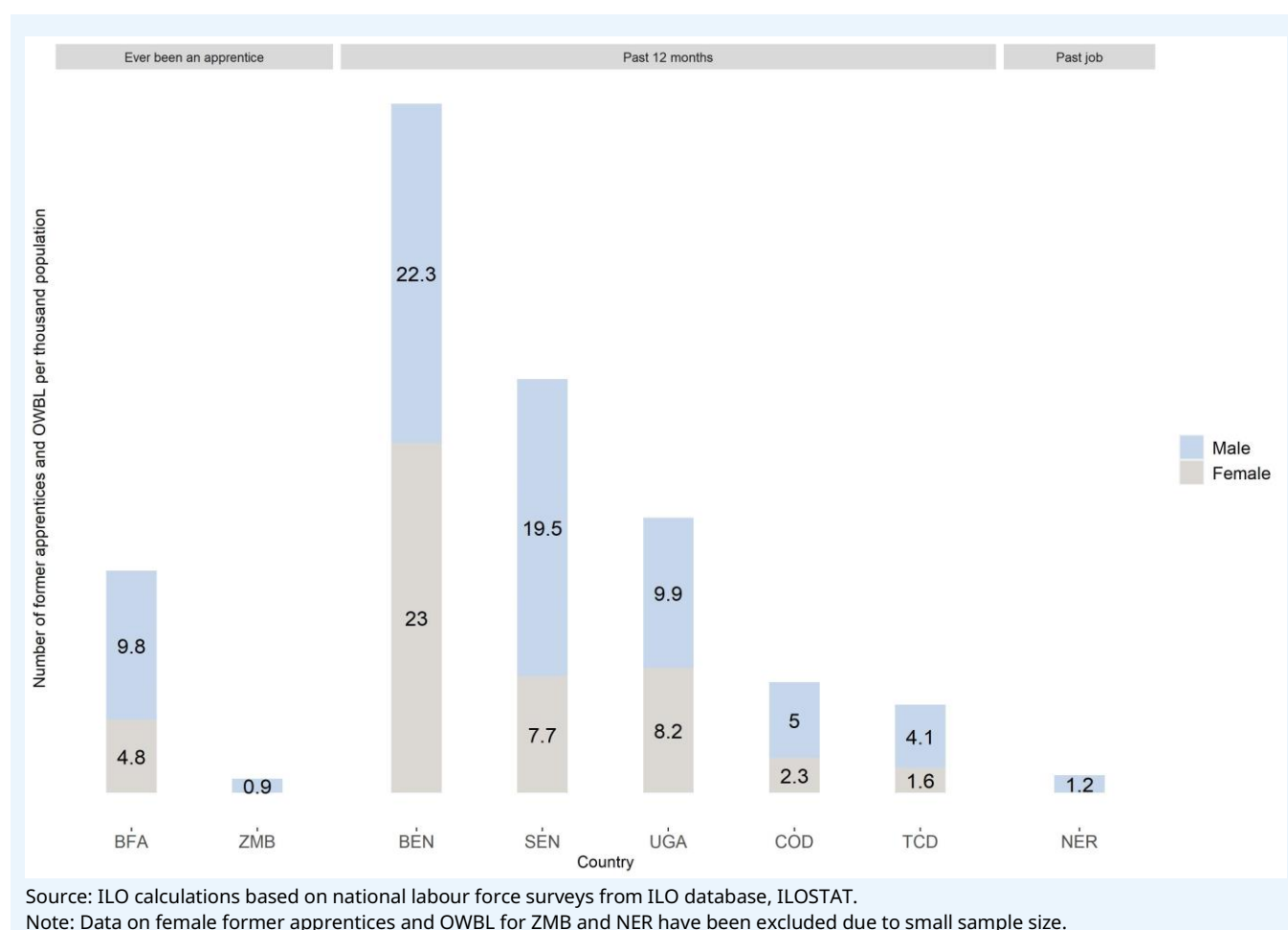
Source: ILO calculations based on national labour force surveys from ILO database, ILOSTAT.

Note: Data for ETH and LSO have been excluded due to small sample size. CIV records data for the last 5 years only.

Men constitute the majority of former apprentices/OWBL in all countries except for Benin, where more women had been apprentices. When comparing the ratio between the prevalence rate of male and female current apprentices with that of former apprentices (15-64 years) for Republic

of the Congo, Ghana, Guinea, Sierra Leone and Côte d'Ivoire, the gender gap is reducing in only two (Ghana, Sierra Leone) out of the five countries, increasing in two (Republic of the Congo, Guinea), and remaining equal in one (Côte d'Ivoire).

► **Figure 8. Number of former apprentices and OWBL per thousand population (15-64), by country, by sex**



Improving statistics on apprenticeships

This statistical brief has demonstrated the possibilities—and limitations—of current labour force statistics to provide comparative data on apprenticeship, in particular for countries with large informal economies. The following key findings/recommendations emerge:

- The prevalence of apprenticeship differs widely between countries confirming how traditions and informal practices still strongly influence the transmission and

development of skills in a country's workforce. Comparison with formal apprenticeship countries in Europe shows that the prevalence of apprentices among those aged 15-34 is at comparable levels.

- At country level, administrative data can provide some basis for comparison with statistical findings. Where this has been done on an exemplary basis, it becomes apparent that apprenticeship is prevalent in the informal economy and not captured by official records of skills development systems.
- The data from LFS does not currently allow to draw conclusions on the relation between payments to

apprentices and the formality of their employment, or whether the classification into formal and informal apprentices in questionnaires aligns with the informal/formal employment variable. It also remains questionable if apprentices would self-identify correctly as informal or formal apprentices. The distinction between paid and unpaid apprentices might still be more accurate through a separate question on pay (i.e. “Have you received payment in cash or in kind in the past month?”).

- Despite the limitations, more comparative analysis is needed to help monitor developments and trends within apprenticeship at national and international levels.
- In order to improve the comparability of statistics across countries and the accuracy of monitoring data on apprenticeship and other forms of work-based learning, countries should maintain or create a separate category for apprentices, not combining them with trainees, interns or OWBL. New Eurostat guidelines propose the same (Cedefop 2021).
- Countries have found diverse means to capture apprentices among the employed, the unemployed and those outside the labour force. Given the continued prevalence of apprenticeship in the informal economy, it is recommended that countries with large informal economies broaden the scope and identify apprentices among the employed, unemployed and those considered outside the labour force.

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Annex 1: LFS surveys used

Country	Survey	Year	Country	Survey	Year
Afghanistan	LFS	2021	Madagascar	ENESI	2015
Burundi	ECVM	2020	Mali	EMOP	2020
Benin	EMICOV	2018	Mauritania	ENESI	2017
Burkina Faso	ERIESI	2018	Niger	ENESI	2017
Botswana	MTHS	2022	Nigeria	GHS	2019
Côte d'Ivoire	ENSE	2019	Rwanda	LFS	2020
Democratic Republic of the Congo	ECVM	2018	Senegal	EHCVM	2018
Republic of the Congo	ENESI	2009	Sierra Leone	LFS	2014
Comoros	ENESI	2021	Eswatini	LFS	2021
Ethiopia	NLFS	2021	Chad	EHCVM	2018
Ghana	LSS	2017	United Republic of Tanzania	LFS	2020
Guinea	ENESI	2019	Uganda	LFS	2021
Lebanon	LFS	2019	Zambia	LFS	2021
Lesotho	LFS	2019			

Annex 2: Country abbreviations

Country abbreviation	Country
AFG	Afghanistan
BDI	Burundi
BEN	Benin
BFA	Burkina Faso
BWA	Botswana
CIV	Côte d'Ivoire
COD	Democratic Republic of the Congo
COG	Republic of the Congo
COM	Comoros
ETH	Ethiopia
GHA	Ghana
GIN	Guinea
LBN	Lebanon
LSO	Lesotho
MDG	Madagascar
MLI	Mali
MRT	Mauritania
NER	Niger
NGA	Nigeria
RWA	Rwanda
SEN	Senegal
SLE	Sierra Leone
SWZ	Eswatini
TCD	Chad
TZA	United Republic of Tanzania
UGA	Uganda
ZMB	Zambia