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SIZE AND COMPOSITION OF PUBLIC EMPLOYMENT: DATA SOURCES, METHODS AND GAPS

TOWARDS IMPROVED INTERNATIONALLY COMPARATIVE DATA ON PUBLIC EMPLOYMENT

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1 Rationale for measuring the size and composition of public employment

The size and composition of general government[1] employment can vary significantly amongst OECD-EU countries for various reasons. First, countries each reflect different models in terms of the functions their civil services carry out and how they are organised. For example, in the extent to which they centralise their public sectors, the extent to which they outsource (or not) public services to the private sector, and in their civil service frameworks and contractual models. Aside from these inherent characteristics, which influence international public employment data, there are differences among countries in their data sources and methodologies. Some countries collect data through civil service registries, payroll or other HRM (human resources management) administrative databases, while others draw data from national labour force surveys, or through a combination of these and other sources. For countries using administrative databases, these may or may not be centralised and harmonised across the entire central government or all levels of government, further complicating data consolidation and reporting. There is also the matter of differences in scope, with countries classifying public employees differently in their civil service legislation or general employment frameworks for civil servants and public employees. All of these factors can lead to differences in public workforce data across both time and countries and hinder analysis both domestically and nationally on workforce size and trends.

Additionally, the granularity of data could be improved. While most countries provide public employment data as part of the System of National Accounts (SNA), this source does not deliver any information on the age or gender of employees or on the sectoral aspects of employment. There is also a gap when it comes to disaggregation of workforce data for subnational levels of government; countries do not consistently collect this information and, when they do, there is no harmonised collection method across regional or local governments. Finally, national statistical offices often carry out regular Labour Force Surveys; however, data are collected from all sectors of society and the public sector component is either disaggregated in different ways, or the sample size is not sufficient to collect meaningful data for the public sector as a whole and for its components (such as by sector, core public administration, etc).

Overcoming such limitations and improving the harmonisation and granularity of public workforce data, both nationally and internationally, is essential in a time of transformative changes for public administrations. Indeed, public workforces are at the core of any public sector reform involving digitalisation and automation, public service delivery, innovation or strengthening resilience to crises. Adapting HRM practices and policies to workforce trends such as ageing civil services, evolving skills needs, and changes in ways of working require better data and evidence for adapting HRM practices and designing adequate HRM policies that attract and retain top talent from increasingly competitive labour forces and contribute to highly performing civil services and organisations.

In this context, the European Commission (DG REFORM) and the OECD (Organisation for Economic Co-operation and Development) have engaged in a joint project to improve the comparability and quality of

public employment data. One core aspect of this initiative is to improve the common measurement framework for comparative public employment data at the EU level (and beyond). Having clear guidelines on data collection methodologies and clear definitions of the key indicators will have several benefits. First, it will allow better-quality and more granular data to be collected. Second, it will deepen the understanding of national conditions and trends, by allowing comparisons across countries. Third, comparative data compiled through a common framework will allow for better analysis of the different civil service models and their potential effects on policy decisions and outcomes. The framework will benefit the community of practitioners and academics, ultimately improving the performance of the public workforce. This includes addressing weaknesses in standardisation/harmonisation of existing data, access to administrative information sources and collection and quality control capabilities.

As a first step towards improving the comparability and quality of public employment data, this working paper maps the characteristics of existing data sources and gaps. On this basis, it suggest four pathways for harmonising international data, two for the longer-term and two for the shorter term. The longer-term pathways are: 1) including the variable “institutional sector” in the EU Labour Force Survey, which would allow for demographic breakdowns by public sector for 40 OECD and OECD accession countries, compared to the current 19; and 2) formally proposing that the 2025 update of the System of National Accounts include new variables, such as gender, age and educational attainment, to be applied to the public sector and general government and subsectors. The two short-term pathways are 3) updating the OECD Survey on the Composition of the Workforce in Central and Federal Governments with additional social and demographic breakdowns for all OECD and OECD accession countries; and 4) extending this survey to subnational levels of government as part of the OECD’s pilot database on subnational finances and public employment.

This working paper has benefited from the inputs of key international stakeholders responsible for methodological guidelines and data collection databases for public employment data: including from the OECD Division of National Accounts (who contribute to discussions at the United Nations level); Eurostat representatives responsible for Labour Surveys; representatives from the International Labour Organisation (ILO); representatives from the European Commission DG REFORM and DG REGIO; as well as from representatives of Eurofound. The stakeholders discussed challenges and potential avenues to overcome these, which were then reflected in the last section of this paper.

Note

[1] General government (S.13) includes four sub-sectors: central/federal government and related public entities (S.1311); federated government (“states”) and related public entities relevant only for countries having a federal or quasi-federal system of government (S.1312); local government, i.e. regional and local governments and related public entities (S.1313), and social security funds (S.1314).

2 Mapping international public employment data

1. Two main sources exist at *macro level* for public employment:System of national accounts (SNA)
2. Labour Force Surveys (LFS)

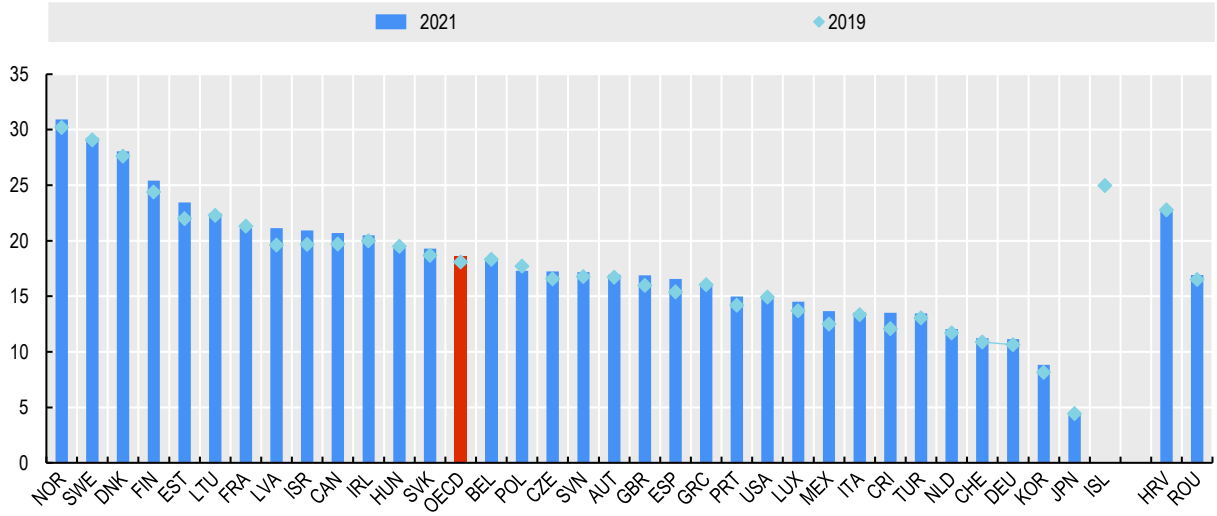
2.1. Public employment under the System of National Accounts

Data on public employment from national accounts statistics are based on the System of National Accounts (SNA, 2009[1]), a set of internationally agreed concepts, definitions, classifications and rules for national accounting. In this framework, the variable of interest refers to “general government employment”, which covers employment in all levels of government (central, state, local and social security funds) and includes core ministries, agencies, departments and non-profit institutions that are controlled by public authorities (units that produce principally non-market services). Public corporations- and therefore their employees- that produce primarily for the market are excluded from the scope of general government. Viewed as institutional units, the principal functions of government are to assume responsibility for the provision of goods and services to the community or to individual households and to finance their provision out of taxation or other incomes, to redistribute income and wealth by means of transfers, and to engage in non-market production (SNA2008: 4.117).

Figure 1 shows general government employment as percentage of total employment under this framework in the SNA. The data represent the total number of persons directly employed by those institutions defined under the scope of general government. Total employment covers all persons engaged in productive activity that falls within the production boundary of the national accounts. The employed comprise all individuals who, during a specified brief period, were in either paid employment or self-employment.

The size of general government employment varies significantly among OECD countries. Nordic countries such as Norway, Sweden and Denmark report the highest levels of general government employment, close to 30% of total employment in 2021. In contrast, Japan and Korea report the lowest levels among OECD countries, with general government employment below than 10% of total employment. Amongst the EU OECD countries, Germany and the Netherlands report the lowest levels with under 13% of total employment. Overall, the share of general government employment has remained relatively stable over time, with a small increase between 2019 and 2021 during the COVID-19 pandemic. The OECD average was 18.1% in 2019, close to 2007 value, and slightly increased to 18.6% in 2021, a rise of 0.5 percentage points (see (OECD, 2023[2])).

Figure 1. Employment in general government as a percentage of total employment, 2019 and 2021



Note: Data for Iceland, Japan, Mexico, Türkiye and the United States are from the International Labour Organization (ILO), ILOSTAT (database), Public employment by sectors and sub-sectors of national accounts.
Total employment refers to the domestic employment.
Data for Costa Rica, Iceland, Japan and Korea are not included in the OECD average.
Data for Japan do not include social security funds.
Source: OECD (2023[2]), *Government at a Glance 2023*, OECD Publishing, Paris, https://doi.org/10.1787/3d5c5d31-en; OECD National Accounts Statistics (database).

Countries' transmission of these data under the SNA framework is performed via standardised questionnaires which reflect the harmonised structure and coherence across the variables undertaking the national accounts for each country. For employment in general government the SNA table is currently the following one:

- (SNA2008) Questionnaire 0800 - ASA Annual sector accounts, annual

This above questionnaire is transmitted by the National Statistical Institutes (NSIs) annually to the OECD and Eurostat. The questionnaire contains data on employment by institutional sectors including general government. For OECD countries such domain can be found in the OECD National Accounts Statistics (database).

However, employment by levels of government (i.e. subnational levels) is not included in this table, causing problems in the past years as such detail is very important for policy analysts and users in general. Therefore, a joint questionnaire was launched by OECD and the International Labour Organisation (ILO) that after several consultations was finalised in 2010. The questionnaire collects data under the SNA framework and includes data by levels of government and the overall public sector. This dataset is managed by the ILO and named as:

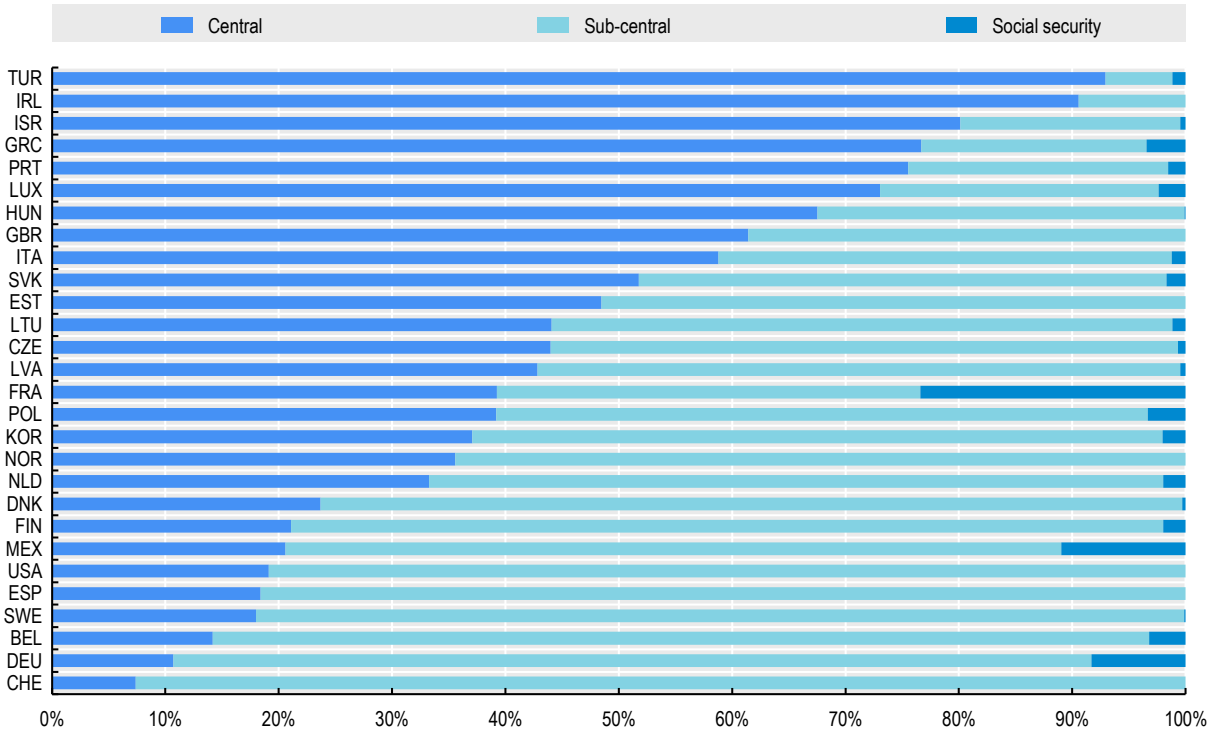
- Public employment by sectors and sub-sectors of national accounts (thousands), annual

The ILO co-ordinates and validates this data which is requested from ILO members, although only a subset of them provided data under this framework. Specifically, data are transmitted by NSIs (or in certain cases Labour Ministries) on an annual basis.

The ILOSTAT database has currently data from 28 OECD countries on subnational general government employment. Figure 2 below shows that, in 2019, general government employees employed at the subnational level made up more than half of all general government employees in 17 OECD countries for

which data were available. Federal states, such as Belgium, Germany, Spain and Switzerland, are among the countries with the largest share of general government employees working at the subnational level. In contrast, unitary states, such as Ireland, Israel and Türkiye, tend to have most general government workers concentrated at the central level. However, unitary countries, such as Finland, Norway or Sweden, also prove to have a small share of central government employees (OECD, 2021[3]).

Figure 2. Distribution of general government employment across levels of government, 2019



Source: International Labour Organization (ILO), ILOSTAT (database), Public employment by sectors and sub-sectors of national accounts.

Since the ILOSTAT coverage is not fully complete for OECD countries, and with increasing demand for these statistics for different reasons, many new initiatives have been taken on board over the recent years in this domain[1].

Going forward, at the *macro level*, Eurostat will begin a new compilation of general government employment and sub-sectors under the questionnaire:

- (ESA2010) Questionnaire 0200 - Main aggregates of General Government, annual

General government employment will be asked on a compulsory basis to the EU countries whereas sub-levels (i.e., central state, local and social security finds) will be asked on a voluntary basis. The starting date for transmission of these data will be from *September 2024*.

Given this recent development, the OECD national accounts department in the Statistics and Data Directorate is currently investigating the possibility to extend the request of employment data for government to the other OECD non-EU countries.

Another important breakdown to be aware of within general government is the Classification of Functions of Government (COFOG which is the international classification, developed by the OECD and published by the UN, and adopted as a standard in national accounts) (United Nations, 2024[4]). This is regarded as the appropriate basis to examine the structure of government expenditures. Despite the focus on

government expenditures, more attention has been given to having this breakdown available also for government employment. However, very few countries collect these data on employment by COFOG on a voluntary basis (e.g. Estonia and Hungary). Unfortunately, at this stage no plans are undertaken by Eurostat and OECD national account departments to collect these detailed data for employment[2].

There are also ongoing discussions in the Inter-secretariat Working Group on National Accounts (ISWGNA) for the 2025 SNA with potential implications for public employment data. The Working Group's area group on Labour, Human Capital and Education is proposing changes to the labour accounting in the SNA framework It has been suggested that the labour accounts be based on the SNA production boundary and should, at a minimum, cover remunerated work captured through the four dimensions of: jobs, people, volume (hours), and payments. Most notably, **it is proposed that the people quadrant include demographic breakdowns by: gender, age and educational attainment**. While it would take several years to implement and build a comprehensive database according to these proposed dimensions within the general government boundary, this (potential) development should be noted in directing future steps.

2.2. Advantages and disadvantages on public employment under the SNA framework

Certainly, the main advantage of data at the macro level under the SNA framework is to have a consistent and coherent dataset which is comparable across countries and over time and that can be liaised with other economic variables like compensation and output for example.

On the other hand, there are several limitations including:

- Concepts under the SNA framework are harmonised at the aggregate level; the macro-level adjustments and the absence of certain breakdowns do not make it possible to cross national accounts employment with other variables. Thus, in theory, it is not currently possible to disaggregate information by gender and age for example.
- Under the SNA framework, the regions are assigned to the local level together with the municipalities in unitary countries. There is no distinction within the local level among the two unless the regions have sufficient autonomy to be considered "state level", such as in federal countries. Therefore, the SNA data does not allow for greater granularity of local level to capture municipalities or intermediary units, for instance.
- This comparison of the workforce in the public sector within the meaning of the national accounts should be considered with caution in some countries because public officials could be replaced by subsidies or purchases of services from organisations that employ officials under private law to carry out public service duties, but which are classified outside the scope of the public sector. Furthermore, statistics at local level differ due to the different reporting of employees in delegated public services. For example, in several countries, personnel from health or education (teachers, doctors, nurses) may be counted as municipal employees.
- Achieving consensus on the definitions to be quantified as part the SNA framework is a lengthy process. It entails working with countries to ensure that working definitions and data collection methodologies at the national level are harmonised, only in this way it is possible to achieve effective comparability.

2.3. Public employment under National Labour Force Surveys

The Labour Force Surveys (LFS)[3] is a household sample survey, collecting individual-level labour data. Labour force status is the cornerstone concept for labour market statistics. Accordingly, individuals are

classified into three categories: employed, unemployed or persons outside the labour force. The employed comprise all persons of working age who, during the reference period, were in one of the following categories: a) employment for pay (whether at work or with a job but not at work); or b) employment for profit (whether at work or with an operative enterprise but not at work).

Being a sample survey targeting resident individuals and private households into a particular territory, a specific question is asked for the variable on working in the public and private sector, thus the breakdown by institutional sector. Public sector employment covers employment in general government plus employment in publicly owned enterprises and companies.

The International Labour Organisation provides general guidelines on the LFS methodology in order to ensure comparability. Yet, while remaining compatible with the guidelines, there are differences across countries and regions as regards some definitions (for example, the European Union has a specific definition for unemployed) and classifications (for example for economic activity, EU uses NACE[4] and NAICS, is used by the United States, Canada, Mexico).

The ILO collects the data under this framework which is named as:

- Employment by sex and institutional sector (thousands) | annual

Moreover, the following datasets are collected[5]:

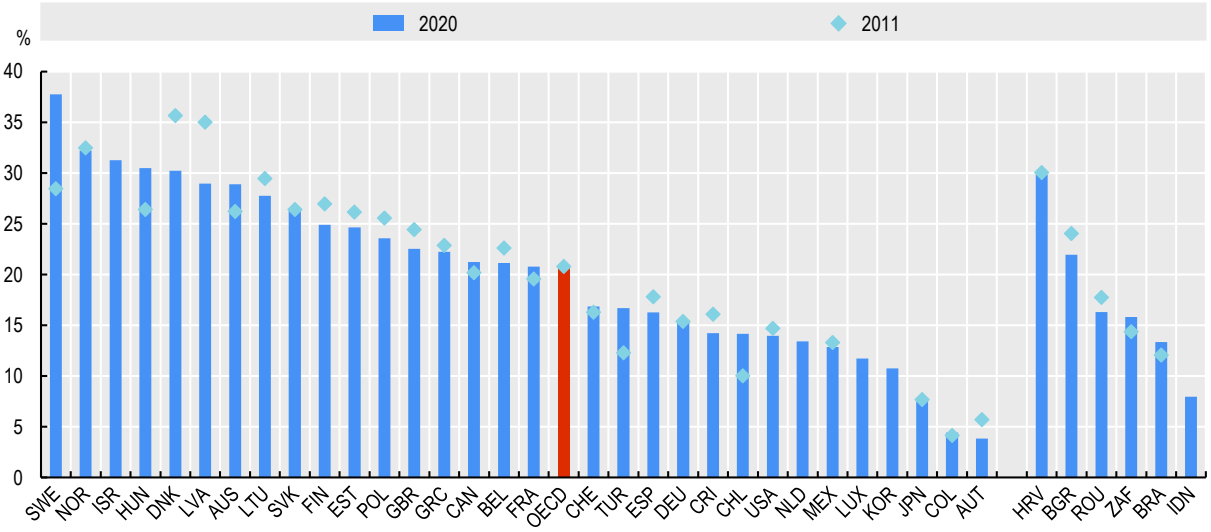
- Employment by sex, age and institutional sector; Employment by sex, status in employment and institutional sector; Employment by sex, occupation and institutional sector; Employment by sex, economic (aggregated) activity and institutional sector (thousands) | annual

The national LFS for the EU Member States are harmonised via the EU-LFS, published by the Eurostat. The OECD does not collect this detailed information under the LFS framework.

Figure 3 displays public sector employment as a percentage of total employment within the LFS framework. In 2020, Nordic countries such as Sweden and Norway ranked first, with values of 37.8% and 32.2%, respectively, while the OECD average reached a share of 20.8% during the same period. However, it's worth noting that aside the difference in data sources, between the LFS and SNA frameworks, also the measure of public sector instead of general government could lead to significant variations in the observed ratios.

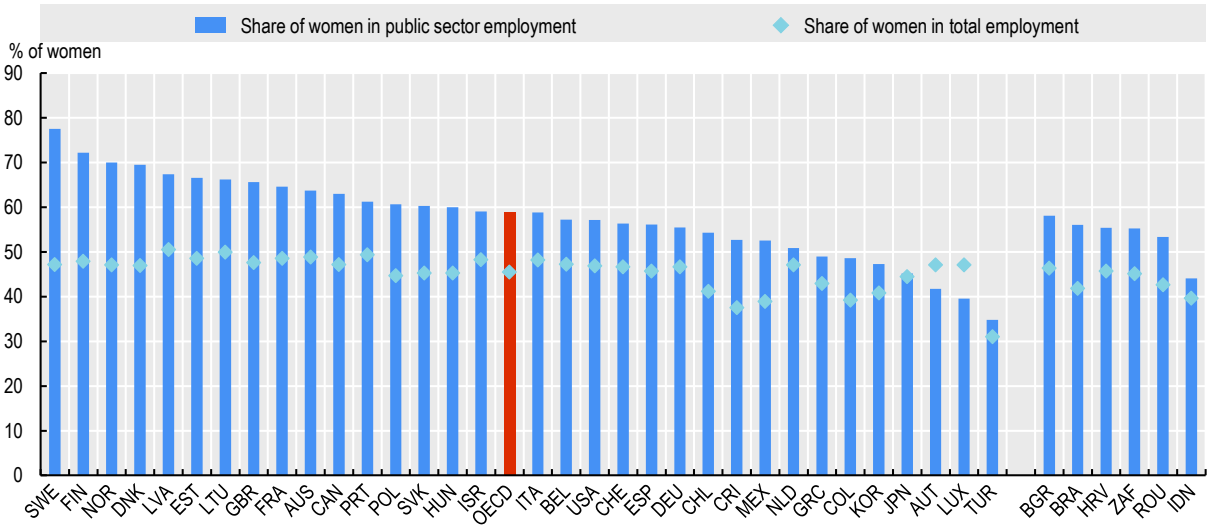
Figure 4 shows the repartition by gender in public sector employment and in total employment. In 2020, women made up a larger share of public sector employees in OECD countries on average (58.9%) than of total employment (45.4%) and this was the case in all OECD countries except Austria and Luxembourg. The difference is more than 20 percentage points in Sweden, Finland, Norway and Denmark. One reason for this phenomenon is that some public sector occupations, such as teachers or nurses, are female-dominated as they are often traditionally considered “women’s jobs” (OECD, 2023[2]).

Figure 3. Public sector employment as a percentage of total employment, 2011 and 2020



Note: Data for Israel, Korea, Luxembourg and the Netherlands are not included in the OECD average.
Source: International Labour Organization (ILO) ILOSTAT (database), Employment by sex and institutional sector.

Figure 4. Gender equality in public sector employment and in total employment, 2020



Note: Data for Italy and Portugal were provided by national authorities. Data for Israel, Korea, Luxembourg and the Netherlands are not included in the OECD average.
Source: International Labour Organization (ILO) ILOSTAT (database), Employment by sex and institutional sector.

2.4. Advantages and disadvantages of public employment under the LFS framework

LFS provides information on social or gender aspects of employment. In fact, certain breakdowns like gender and age, which are available for the LFS could be analysed further in detail. The EU-LFS allows further breakdowns and cross-references for the level of education, participation in adult learning, and type of function.

On the other hand, the disadvantages of using LFS could be summarised in the following points:

- LFS estimates are subject to sampling error, both with regard to levels and changes between periods. Also sampling design, weighting schemes, non-response, interviewers and fieldwork organisation could impact the quality of these statistics.
- The institutional sector refers only to public administration which may include, on the other hand, also public corporations, whereas in national accounts, the reference is to general government (non-market services). Moreover, no further breakdown by institutional sectors of government is available[6].
- Due to the voluntary nature of the LFS survey run nationally, some of the data breakdowns (such as institutional sector, age, sex, educational level, occupation) are fragmented since although requested not all countries are included across all survey years. This could compromise the possibility of running time-series.
- For the EU countries Eurostat only publish data by economic sector, not by institutional sector in their EU LFS datasets. This also affected the ILO as Eurostat transmitted these data to them. In fact, compared to Figure 3 and Figure 4 where a satisfactory number of EU countries were available, ILO does not longer contact such countries for LFS datasets, relying on EU LFS datasets (Table A.1 in Annex A shows the current data points and breakdown available). As a consequence, when necessary and feasible, ILO supplements the EU LFS with national LFS microdata which poses problems in updating these data for the EU countries in an efficient way.

2.5. Classification by economic activities (ISIC) in SNA and LFS frameworks

One classification for employment which is available in both SNA and LFS frameworks refers to the International Standard Industrial Classification of all Economic Activities (ISIC – Revision 4) (United Nations, 2008) developed by the United Nations. Its main purpose is to provide a set of activity categories that can be utilised for the collection and reporting of statistics according to such activities. The scope of ISIC in general covers productive activities, i.e., economic activities within the production boundary of the SNA framework. A few exceptions have been made to allow for the classification of activities beyond the production boundary, but they are of importance for various other types of statistics. As mentioned above, ISIC has been further adapted in NACE and NAICS, however the overall scope as regards public administration remains similar.

The economic categories are classified as described in Table 1 below.

Table 1. ISIC classification

Section	Divisions	Description
A	01–03	Agriculture, forestry and fishing
B	05–09	Mining and quarrying
C	10–33	Manufacturing
D	35	Electricity, gas, steam and air conditioning supply
E	36–39	Water supply; sewerage, waste management and remediation activities
F	41–43	Construction
G	45–47	Wholesale and retail trade; repair of motor vehicles and motorcycles
H	49–53	Transportation and storage
I	55–56	Accommodation and food service activities
J	58–63	Information and communication
K	64–66	Financial and insurance activities
L	68	Real estate activities
M	69–75	Professional, scientific and technical activities
N	77–82	Administrative and support service activities
O	84	Public administration and defence; compulsory social security
P	85	Education
Q	86–88	Human health and social work activities
R	90–93	Arts, entertainment and recreation
S	94–96	Other service activities
T	97–98	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
U	99	Activities of extraterritorial organizations and bodies

Source: United Nations (2008[5]), "International Standard Industrial Classification of All Economic Activities Revision 4"; *Statistical papers*, Series M No. 4.

Activities for general government, in SNA terms, can be identified mainly in the following sections:

- O "Public administration and defence, compulsory social security"
- P "Education"
- Q "Human health and social work activities"

However, generally there is no category that would describe all public sector activities carried out by a government as such. These activities also include other economic activities like Agriculture, Mining, Transport etc. Moreover, service delivery activities in the sections Education and Health could refer to both public and private activities. Thus, looking only at O for general government does not capture everything since service deliveries in health and education also should be included in the scope of government as an institutional sector.

In fact, the classification by institutional sectors (which include general government as one of them) differs in nature and scope from the ISIC classification. The legal or institutional sector is not, in itself, the determining factor for an activity to belong to that division. Units engaged in the same kind of economic activity are classified in the same category of ISIC, irrespective of whether they are unincorporated enterprises, (part of) incorporated enterprises or government units, foreign-controlled or have a parent enterprise that consists of more than one establishment. Therefore, a direct link between ISIC and the Institutional Sectors in SNA framework does not exist.

The LFS framework also uses the ISIC classification to categorise the industries and jobs of survey respondents. In this perspective, the ISIC classification helps to standardise and organise the data collected in the LFS, making it easier to compare and analyse labour market statistics across countries. However, in analogy to the SNA framework data by economic sector (ISIC classification) are generally not fully available by institutional sector (i.e. general government, financial corporations, non-financial corporations etc.).

2.6. Differences between employment in SNA and LFS frameworks

Employment data could be represented under the SNA and LFS and differences between these two sources could be relevant in some countries.

It is important to notice that the SNA source and LFS source are not independent; indeed, LFS is frequently considered an input to national accounts employment estimates, although not the unique one.

While the ILO concepts on employment reflect in some aspects the national accounts concepts both have their own aims and measurement approaches, which may lead to different results. In addition, other statistics based on business surveys also provide estimates of employment which could differ.

As a consequence, differences between SNA and LFS for employment could be due to the integration of sources and conceptual reasons.

Integration:

- SNA integrate information from many sources. All sources available (including LFS) are assessed and subsequently the best way of integrating them is decided. Each source may clarify a part of the economy. Some countries make very minor use of LFS in national accounts. The information is usually combined to provide the most complete and consistent estimate. As a consequence, each individual basic source may provide results that are different from the integrated SNA employment figure.
- In SNA, employment figures must be consistent with other economic variables. Ensuring consistency between variables may result in adjustments.

Conceptual:

- Geographical scope: SNA acknowledges two employment concepts depending on the geographical coverage: resident persons in employment (i.e., the so-called national concept of employment) and employment in resident production units irrespective of the place of residence of the employed person (i.e. domestic concept). The difference between them corresponds mainly to the net number of cross-border workers. The domestic concept is more frequently used in SNA (as it allows putting employment in relation to other variables like GDP for example). LFS, on the other hand, covers resident households. Hence LFS gives information on the major part of the national concept. This means that LFS data must be adjusted, mainly for cross-border workers, to align with the domestic concept normally used in SNA.
- Coverage differences: LFS does not cover persons living in institutional or collective households (e.g. conscripts), unpaid apprentices and trainees and/or persons on extended parental leave. They are all covered by SNA employment. Appropriate adjustments are therefore needed in SNA.
- Recording thresholds: LFS results exclude persons below 15 years old from the definition of employment (in some countries the exclusion boundaries are below 16 years old and/or above 75 years old). SNA does not exclude individuals from employment because of age (however, the difference is very small in developed economies).

- Moreover, LFS uses ISIC of the local unit where the respondent works, whilst SNA uses the ISIC of the enterprise regardless of the local unit. This is particularly relevant for work arrangements such as interims.

In addition to the above differences other discrepancies could be due to:

- The reference period for the measurement of employment: the LFS represent one average week in the year with all the weeks of the year measured. When data are derived from administrative sources or establishment surveys the reference period is usually different, the month, the whole year or a single day within the year or month.
- The criteria for repartition between the public and private sector might not be the same in LFS as compared to the SNA framework: the distinction in LFS could be on the basis of the ownership of enterprise/institution whereas in SNA framework this distinction is rigorous determining if the institution is controlled by government and if is a market or not market producer (based on 50% criteria).

When comparing LFS data and SNA statistics on employment, policy analysts and users in general are often interested in whether or not the two approaches show the same trend, i.e., change from one period to another. Several comparisons between the two sources showed that generally both sources are broadly comparable in relation to the direction of the employment growth. In some cases, however, they show important gaps. Unsurprisingly, if the SNA data are not predominantly based on the LFS data, the differences are mostly marked in the levels of the growth figures.

2.7. Data collection at the *meso level* for central, subnational levels, and functions of government

As mentioned above several compilation practices in the OECD have been implemented to cover the gaps in the statistics for public employment at the *macro level*. They refer both to the levels of government and functions of government but also to some social characteristics of the public employees.

Over the years there have been three workstreams at the *meso level*:

- OECD Public Finance and Employment database
- OECD Survey on the Composition of the Workforce in central/federal governments
- OECD pilot database on subnational public employment (which also includes data at the *micro level*)

Box 1. OECD public finance and employment database

The public finance and employment database (PFED) is a database of government expenditure, employment and revenue data that is internally consistent and consistent with the national accounts. It was developed by the OECD Public governance directorate as part of the working programme of the OECD Public Employment and Management (PEM) working party. This PFED project has been discontinued as of June 2012.

Its distinctive features are:

a. that it splits expenditures and employment according to the character: collective versus individual goods and services that the government produces;

b. that it splits expenditures according to the way they are transferred: goods and services in kind versus cash transfers.

In addition, the data are broken down according to a functional classification that resembles COFOG. The classification of the PFED is called "COFOG-Special" which categorise government expenditures according to their purpose following the two criteria above. By consequence, the COFOG-special classification is a modification of the standard COFOG functions, and it is used to capture specific categories that are not covered by the standard COFOG (for that reason detailed COFOG groups are needed to apply such modifications).

In terms of employment, the PFED contains data that are consistent with the national accounts. In order to make this possible the OECD used the joint questionnaire with the ILO on public employment under national accounts (which should include at least data by levels of government) and applied a method of estimation for employment in the COFOG-special classification.

These features are unique to the PFED and make the database a very useful tool for the analysis of many issues in public administration.

2.8. OECD survey on the Composition of the Workforce in central/federal governments

The OECD survey on the Composition of the Workforce in central/federal governments 2020 is one of the main sources of information for projects of the OECD Public Employment and Management (PEM) working party. The data collected has been used regularly in key OECD publications released by the OECD public governance directorate. The 2020 edition of the composition survey updates and expands the data collected for the last time in 2016.

This data collection was motivated by the need of a level of detail on government employees which refers to *central/federal government level* (identified in the survey with "general employment framework in the public service") which would focus on comparative analysis on topics such as:

- gender balance
- structure by age
- hierarchical positions
- educational level

The answers provided by OECD countries in this survey are restricted. The survey concentrates on:

Public servants working in *Ministries* and agencies in central/federal government level (for some governments it is necessary to include the regional and local branches of central government agencies).

The survey excludes:

- consultants working in central/federal government level;
- staff employed at state, regional and municipal levels;
- government-employed doctors and nurses, teachers, police and judges, firefighters, and the military (but civilian military staff are included);
- staff employed in social security institutions (if they are separate from the federal/central level in statistics and/or in terms of functionality);
- staff employed in state-owned enterprises, public and quasi-public corporations at all government levels, as well as non-profit institutions;

- staff employed in the subordinated offices/organisations of central government ministries, often referred to as agencies, executive agencies, unless there is a specific reason that leads a country to justify their inclusion.

Concerning hierarchical positions the survey uses the classification and the definition of the occupations which is an adaptation of the International Standard Classification of Occupations (ISCO-08) (ILOSTAT, 2024[6]) developed by the International Labour Organisation (ILO), and includes seven positions: two positions of senior managers (D1 and D2), two positions of middle managers (D3 and D4), two positions of professionals (senior and junior analysts), and general office clerks.

2.9. OECD pilot database on subnational public employment

In 2022-2024, the OECD Centre for Entrepreneurship, SMEs, Regions and Cities and the European (EC) have established a partnership to develop a **pilot database on subnational public employment (SUB-EMP)** with a gender perspective. The development of this database is part of broader project and partnership initiated in 2018 between the OECD and the EC for the development of databases on regional and municipal fiscal data that include updating and developing the Regional Government Finance and Investment Database (REGOFI) as well as the Municipal Finance Database and Municipal Fiscal Indicators (MUNIFI).

As has been highlighted by a number of stakeholders, including international organisations and the Public Services International (PSI) and United Cities and Local Government (UCLG) (PSI, 2024), there is a strong need to improve labour statistics for local and regional government workers. Indeed, this lack of data prevents a comprehensive and solid analysis of subnational capacities and the ability for regions and municipalities to deliver quality public services and fulfil their competencies.

In order to collect rich and new data, and at the same time ensure a minimum coverage, the pilot database, at this stage, aims to develop two components:

1. Aggregated database: data on subnational public employment by country aggregating data for all subnational governments – and where possible distinguishing the regional, intermediate, and local levels for a maximum of OECD/EU countries.
2. Disaggregated database: for a sample of pilot countries, data at the level of individual municipalities and regions (i.e., data for each region/municipality within a country).

Beyond headcount data for subnational public employees, the project aims to collect data broken down by a number of criteria, in line with the OECD Survey on the Composition of the Workforce. These include gender, age, education, employment condition, and hierarchical position.

The data collection processed started the first half of 2023 and is currently ongoing. As of today, the OECD has collected aggregated level data for 21 countries, while collection has been completed for 16 countries at the disaggregated level. Most of these data contain to some extent data for the sub-criteria mentioned above, depending on country data systems and availability.

At the aggregated level, the database aims to include all the categories of government function COFOG, which allows covering, at least for the headcount, all work areas for subnational governments. The only function that is not considered in this exercise is Defence, since it is a function for which subnational governments do not hold responsibilities.

At the disaggregated level, main limitations for data collection are linked to privacy and data confidentiality issues. This is why data at the disaggregated level the criteria of gender, age, education, employment condition, and hierarchical position is not often possibly to distinguish. Considering that the collection of data at the disaggregated level is more complex for countries, there is a trade-off between data granularity and coverage.

Notes

[1] For the initiatives at *meso* and *micro level* please see below in Section 2.7.

[2] For data on employment by COFOG some initiatives are described below in 2.5.

[3] Labour Force Statistics (LFS, STLFS, RURBAN databases) - ILOSTAT or EU Labour Force Survey – Eurostat

[4] Currently, public administration is covered in Section O “Public administration and defence; compulsory social security” of Chapter 3. A revision on NACE will be progressively from 2025 onwards. In the updated NACE public administration will be sector P, however the scope will remain the same. https://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF

[5] Unfortunately, only a limited number of OECD countries have these breakdowns available.

[6] Eurostat is planning regional indicators; however those will be at statistical regions, which do not always have adequate regional functions.

3 Main conclusions on data gaps and potential next steps

3.1. Main conclusions on data gaps

The two main statistics at the *macro level* for public employment are those on SNA and LFS frameworks which are released by several international organisations like ILO and OECD.

Despite the differences the two approaches to employment from SNA and LFS statistics complement each other:

- the SNA seems more suitable to measure *employment levels*, *employment growth and labour* as an input to processes of production, income generation and income distribution. Recent proposals to update the 2008 SNA framework may, if approved, provide data by gender, educational level and age. However these advancements would take time to implement and it remains unclear whether the new criteria will apply to the public sector or general government institutional boundaries.
- the LFS seems more adequate to measure *participation in the labour market*, *demographic or social breakdowns* (e.g. by age, gender or educational level) and in general for socio-demographic studies, however is not designed to measure specifically the categories of public sector employment (i.e. central, subnational, general government, etc.)

At *meso level*, the OECD Composition Survey aims to merge the benefits of both of these sources (i.e. employment levels with demographic/social information), however the scope is only for central/federal governments and with restrictions on the types of public employees included.

The table below (Table 2) summarises the main variables available for each source:

Table 2. Summary of data availability for public employment by main sources and variables

	SNA framework	LFS framework	OECD survey on the composition of the workforce
Public employment available in terms of:			
Institutional sector included as reference at aggregated level	General government	Public sector (which includes general government plus public corporations)	General employment framework in the public service (corresponding to central government level)
Breakdown by levels of government (i.e central, state, local, social security funds)	Currently available in ILOSTAT, SNA based (partial). Eurostat will start to collect it (from September 2024)	No	Central government level
COFOG classification	No	No	No
Gender breakdown	No	Yes	Yes
Age breakdown	No	For the overall economy; For public sector in ILOSTAT but only a minor part of OECD countries have this breakdown available	Yes
Education level	No	For the overall economy; For public sector in ILOSTAT but only a minor part of OECD countries have this breakdown available	Yes
Occupation/Hierarchy level	No	For the overall economy; For public sector in ILOSTAT but only a minor part of OECD countries have this breakdown available	Yes
Economic activity classification (ISIC)	Breakdown available in terms of economic activities for the overall economy	For the overall economy; For public sector in ILOSTAT (by aggregated economic activities) but only a minor part of OECD countries have this breakdown available	No

The mapping also makes clear the key stakeholders that should be consulted in data harmonisation and collection efforts, namely:

- the OECD Statistics and Data Directorate, Division for National Accounts, which currently contributes to the United Nations Working Group Inter-secretariat Working Group on National Accounts as Chair;
- OECD (Directorates for Public Governance- GOV- and Centre for Entrepreneurship, SMEs, Regions and Cities-CFE)
- Eurostat (Labour Force Surveys and others)
- International Labour Organisation (ILO)
- European Commissions DG-REFORM/DG REGIO (the latter for subnational-level data)
- Eurofound

3.2. Potential next steps- short and long-term options

Representatives from the aforementioned organisations met on 7 July 2023 virtually to discuss this initial working paper and potential ways forward. The paper was well received as a summary of the *status quo* and the main challenges, and comments and clarifications were included in this final draft. In terms of next potential steps moving forward, some of the following suggestions were raised:

1. **Including question(s) on institutional sectors in the EU Labour Force Survey**. As shown in Table A.1 in Annex A, all OECD-EU countries but four EU countries (Austria, France, Greece and the Slovak Republic) *do not* include this question. A total of 16 OECD- countries includes this variable, if it was included in all OECD-EU countries this number would instead be 34 out of 38 OECD member countries. This addition would allow analysis and crosstabulations with already existing demographic dimensions such as age, sex, educational attainment, occupation (skills levels) and contract type as shown in Figures A1-A12 of Annex A. These figures display data from the countries currently including the question on institutional sector in their LFS. Limitations, however, remain, as the LFS is conducted in an interview-led format, with small sample sizes that may not reach a critical size for each of the proposed government dimensions and reliability issues remain as to whether the respondents can accurately self-identify whether they work for a public or private enterprise. Reservations regarding the reliability of self-reported data are inherently warranted. The OECD further proposed to, at a later stage, include a variable on the disaggregation of the institutional sector variable, to cover central, regional, intermediary, and local/municipal governments. This was discussed in the group but deemed less feasible by the ILO due to its applicability to the Labour Force Survey.

2. Proposing that the additional dimensions for inclusion into **the proposed 2025 SNA update are applied to the public sector and general government sectors and subsectors and consider proposing additional dimensions in the future.** Because discussions are ongoing, it remains unclear whether the proposed changes to the 2025 SNA (the addition of the variables gender, age and educational attainment to the people quadrant) will apply to public sector and general government dimensions. This initiative could be used to support the proposal. If the proposal were approved to include general government, it could- at least for EU countries- potentially include sub-central levels due to the recent addition of these dimensions to the SNA as of 2025. In the long-term, it could be considered to suggest to the ISWGNA-Group the inclusion of additional dimensions such as hierarchy/position, contract type, and classifications of the functions of government (COFOG) (i.e. health, education, etc.). The inclusion of these variables would greatly increase the granularity of the data, however, it must be noted that if they were to be applied to general government they would be voluntary, and might therefore not provide in data for all of the OECD countries. Both of these scenarios seem less feasible in the short term given that the recency of the three new additions (gender, age and educational attainment). Even if confirmed, the existing proposed dimensions will take some time to collect.

In conclusion, options 1 and 2 above are viable ways forward, but are better suited as medium to long-term possibilities. In terms of acquiring data beforehand, a third and fourth, short/medium-term option alternatives could be:

3. **Updating and collecting data with the OECD Survey on the Composition of the Workforce in Central and Federal Governments**. The survey (described in more detail in section 2.8.) has recently been updated by the OECD PEM Working Party to include an additional variable on contract type (permanent/temporary). The survey was launched for data collection **February 2024** and will collect headcount data for central and federal governments by social and demographic breakdowns for all OECD and OECD accession countries.

4. Working towards collecting disaggregated data by **Combining the existing Survey on the Composition of the Public Workforce** and the **Survey conducted for the pilot database on subnational public employment (SUBEMP)** to include central/federal government as well as regional

and local governments in a harmonised way. Through a unique harmonised survey the following dimensions for central, regional and local/municipal levels could be collected:

Potential Core modules:

- Age
- Gender
- Permanent/temporary employment status
- Hierarchy
- Position type or activity (classification to be determined, by activity, sector, etc.)

Potential Optional modules:

- Length of service in the public service
- Highest educational attainment
- Contract type (full-time/part-time)
- Remote/hybrid working status

The title of the Survey should also be changed to better represent the scope, such as, the “Survey on the Size and Composition of Public Administrations at Central and Subnational Levels”, or equivalent.

Some of these dimensions **could be mandatory, while some optional.** The definition of this could be informed by the combined results of the Survey on the Composition of the Workforce in Central and Federal Governments and the Survey on subnational public employment (SUBEMP). It is important to note that- as it stands this option would not duplicate option 2, since the scope of such a survey would not match the SNA definition of general government. That is, data collected via this survey would represent a subset of general government which would consider “public administration”, as described in detail in the above section 2.8.

In the case where the SNA revision would not successfully meet the proposal in option 2, meaning that the new additions (gender, age and educational attainment) would not apply to the public sector and the general government dimensions, the new OECD questionnaire could consider **adding a supplementary table for general government, and for some key functions of government (i.e. COFOG classification) like education, health, and social protection sectors**,.

In conclusion, several options are put forward to improve the evidence-based for public employment data in short and longer term. International cooperation and agreement will be necessary going forward, as well as building capacities at national and subnational levels to be able to apply evolving statistical frameworks.

Annex A. ILOSTAT 'Public Sector Employment' demographic breakdowns

Table A.1. ILOSTAT data availability of breakdowns by variable 'Public Sector Employment'

Overview of availability of breakdowns for OECD, OECD-accession, and EU-countries

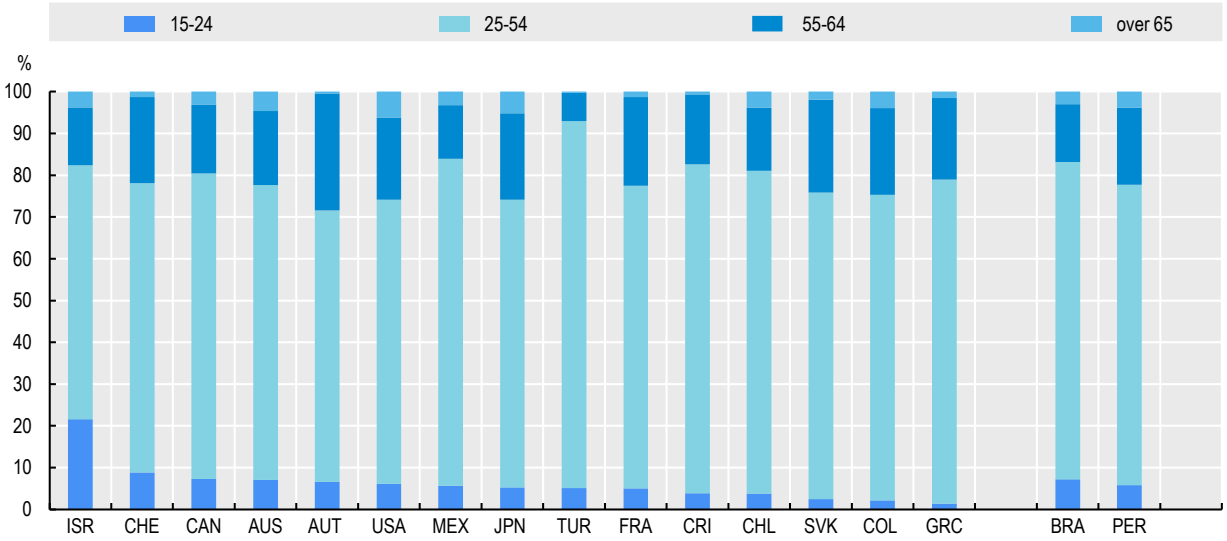
Data years available

2012-2022	2012-2020	2012-2021	2018-2021	2017-2022	2012-2015	2019	2020	2022	No data

	Sex	Age	Place of birth	Education	Rural/urban areas	Weekly hours worked	Working time arrangement	Marital Status	Occupation (skill level 1-4)	Status in employment	Type of job contract
Australia											
Austria											
Canada											
Switzerland											
Chile											
Colombia											
Costa Rica											
France											
Greece											
Israel											
Japan											
Korea											
Mexico											
Slovak Republic											
Türkiye											
United States											
Brazil											
Peru											

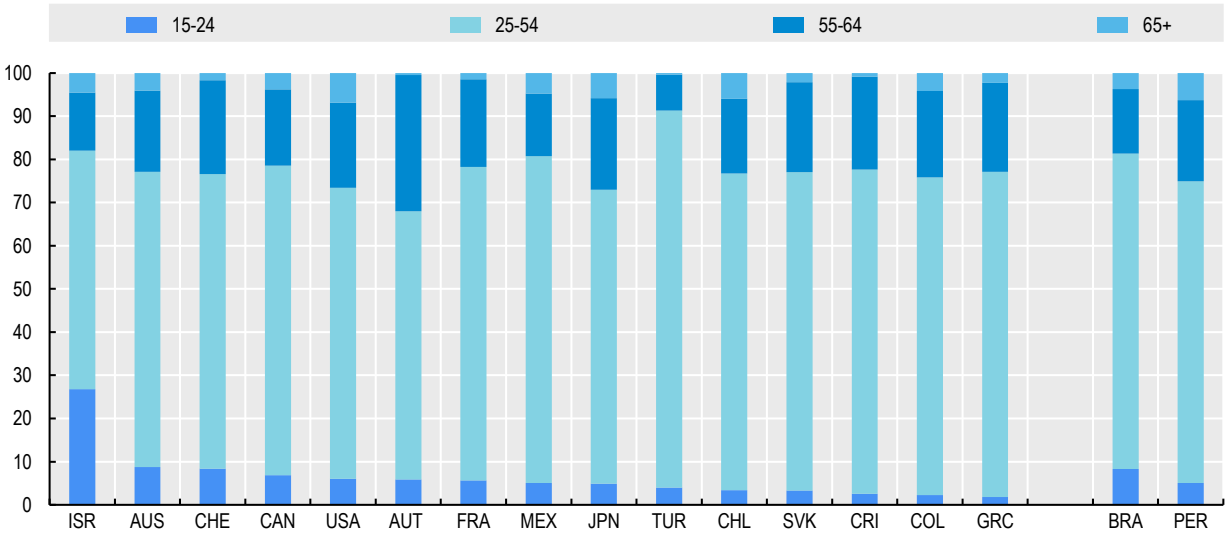
Source: International Labour Organization (ILO) ILOSTAT (database).

Figure A.1. Public Sector Employment by age groups, 2022



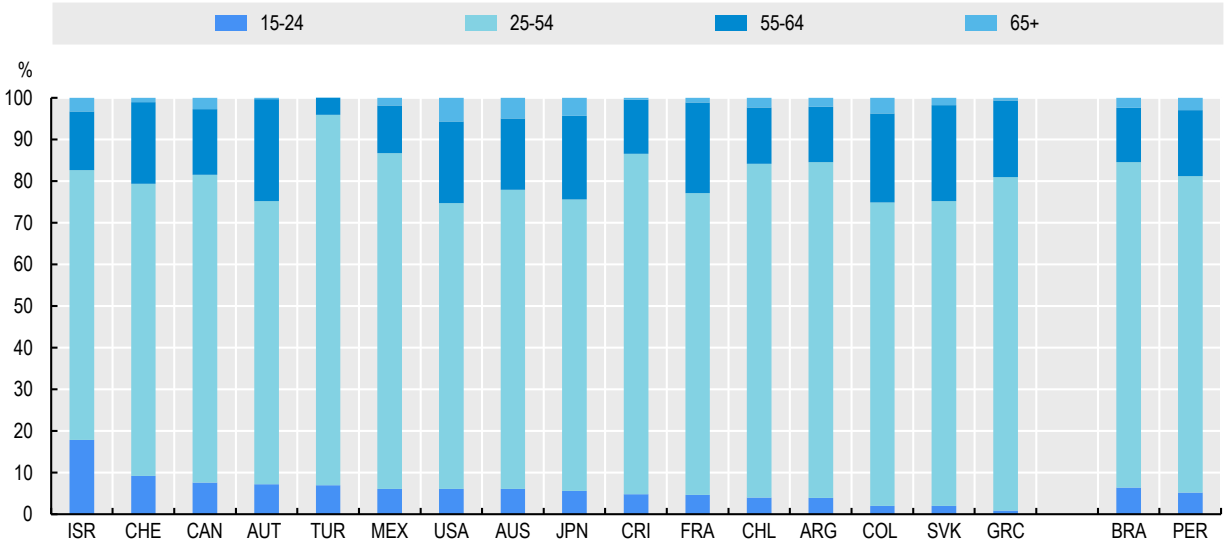
Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020), Israel (2021) and Japan (2020).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by age.

Figure A.2. Public Sector Employment by age and sex (male), 2022



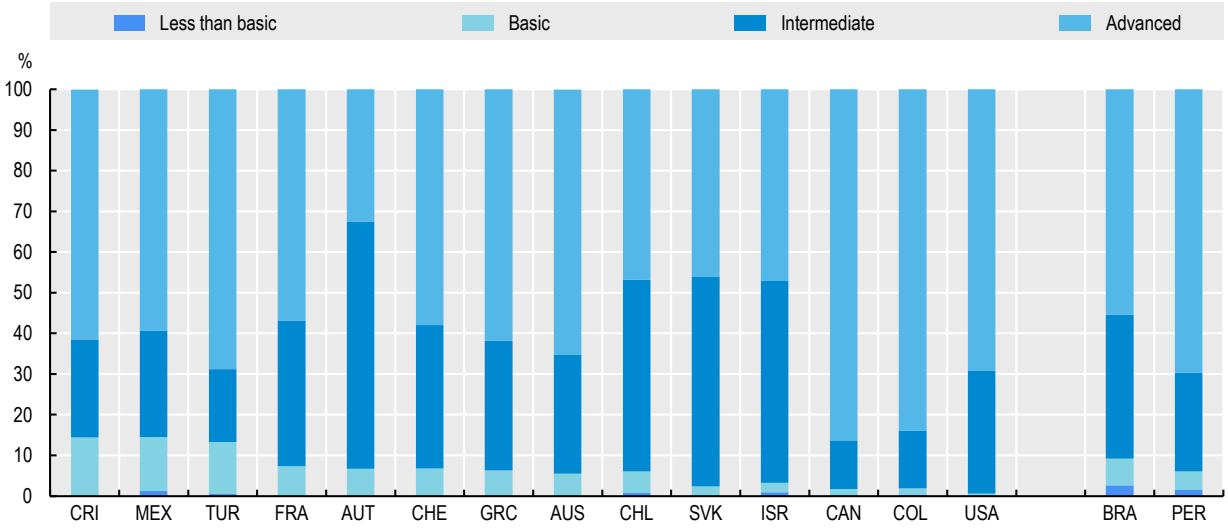
Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020), Israel (2021) and Japan (2020).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by age and sex.

Figure A.3. Public Sector Employment by age and sex (female), 2022



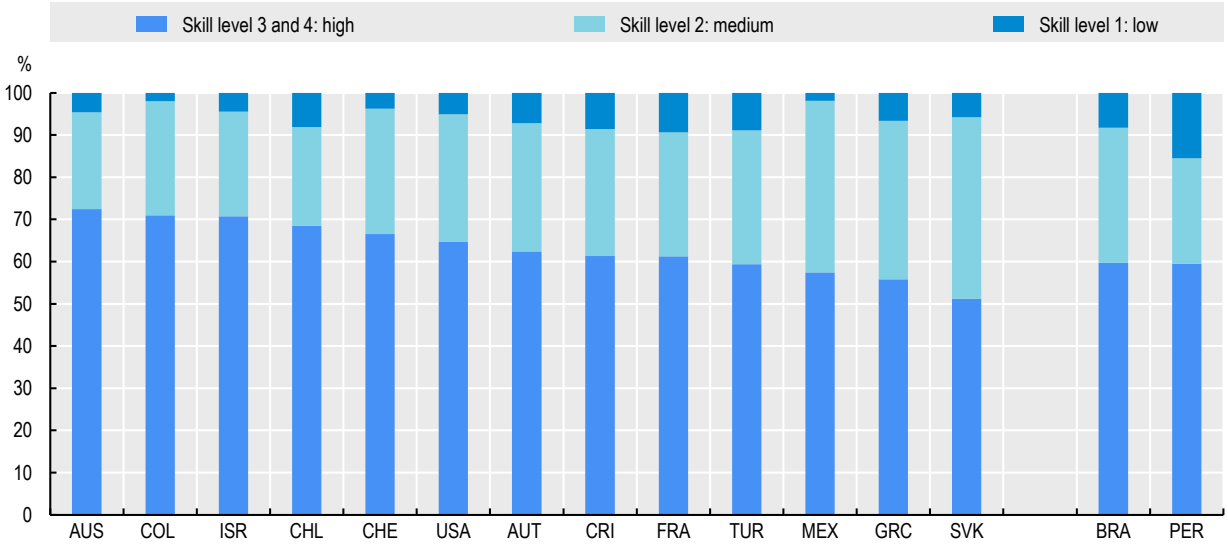
Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020), Israel (2021) and Japan (2020).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by age and sex.

Figure A.4. Public Sector Employment by education levels, 2022



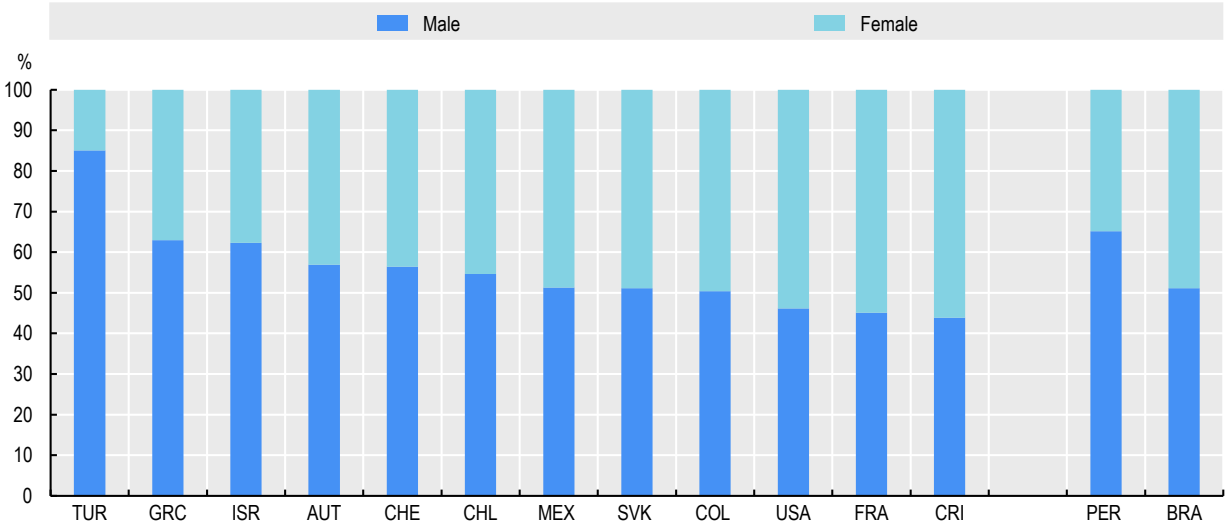
Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020), Israel (2021) and Japan (2020).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by education levels.

Figure A.5. Public Sector Employment by occupation (skills levels), 2022



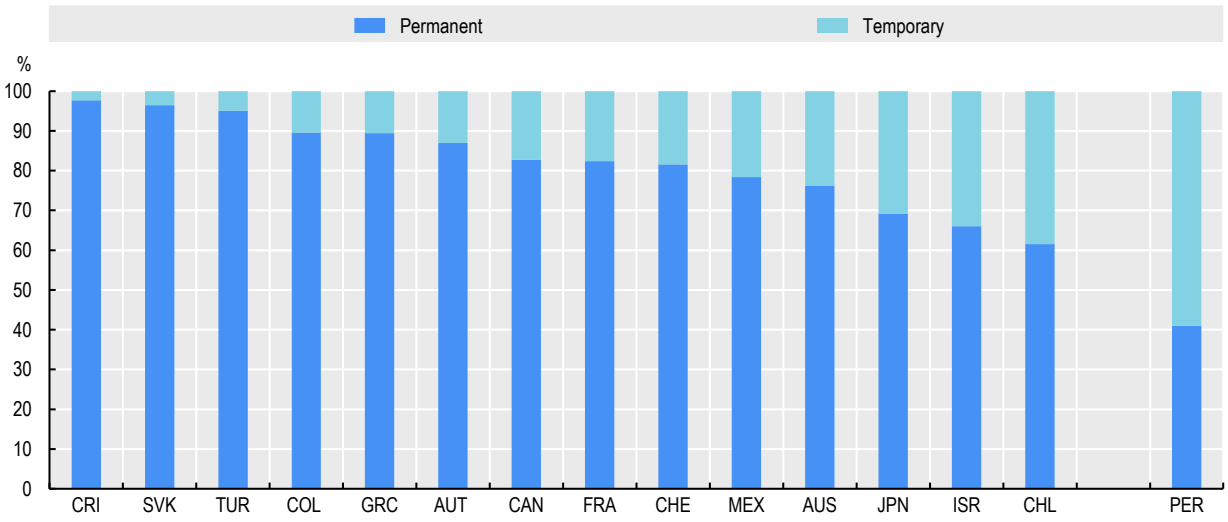
Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020) and Israel (2021).
Source: International Labour Organization (ILO) ILOSTAT (database), E Public Sector Employment by occupation (in skills levels).

Figure A.6. Public Sector Employment by sex and skill level (manager), 2022



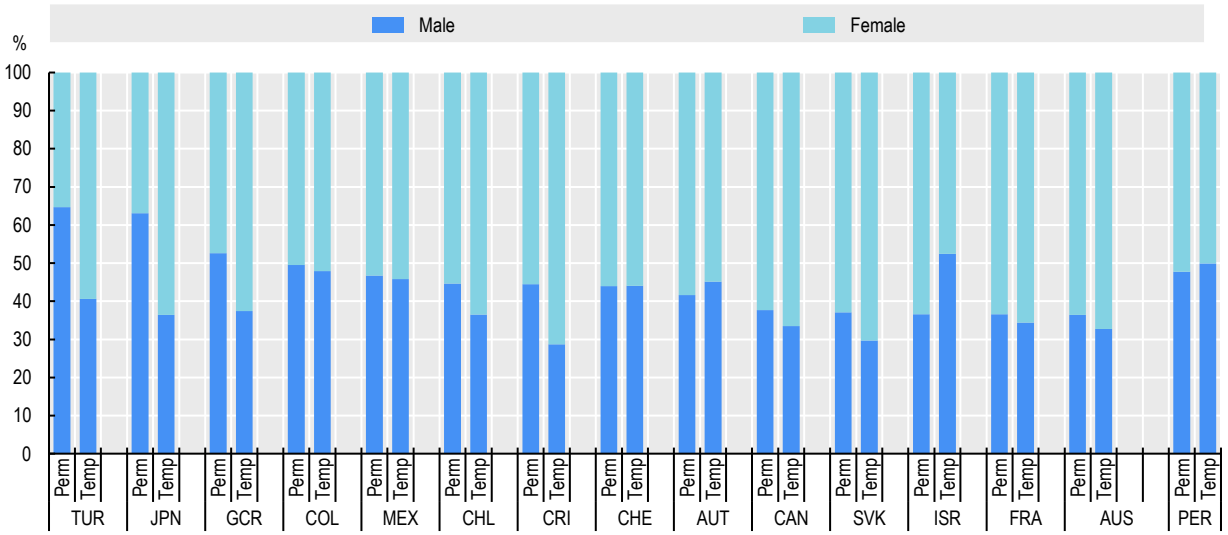
Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020) and Israel (2021).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by occupation (in skills levels).

Figure A.7. Public Sector Employment by contract type (perm/temp), 2022



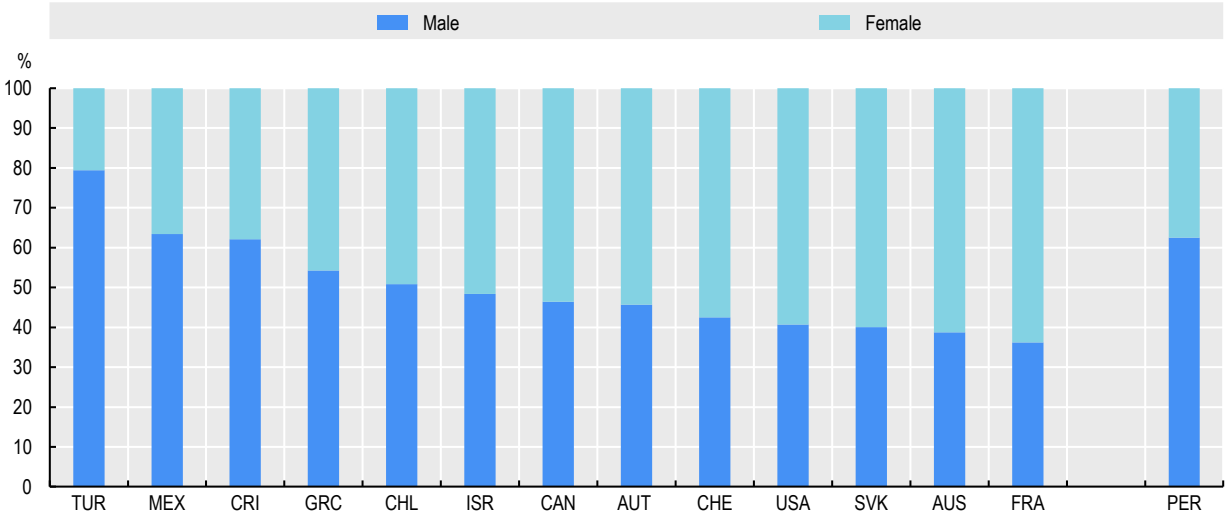
Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020), Israel (2021) and Japan (2020).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by contract type.

Figure A.8. Public Sector Employment by contract type (perm/temp) and sex, 2022



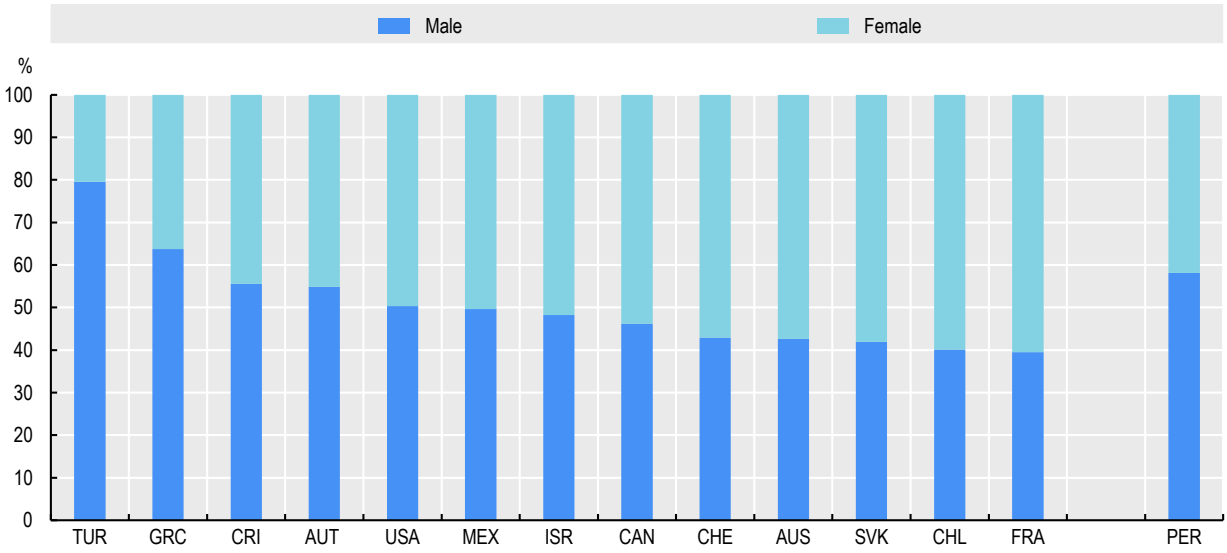
Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020), Israel (2021) and Japan (2020).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by contract type and sex.

Figure A.9. Public Sector Employment by education level (basic) and sex, 2022



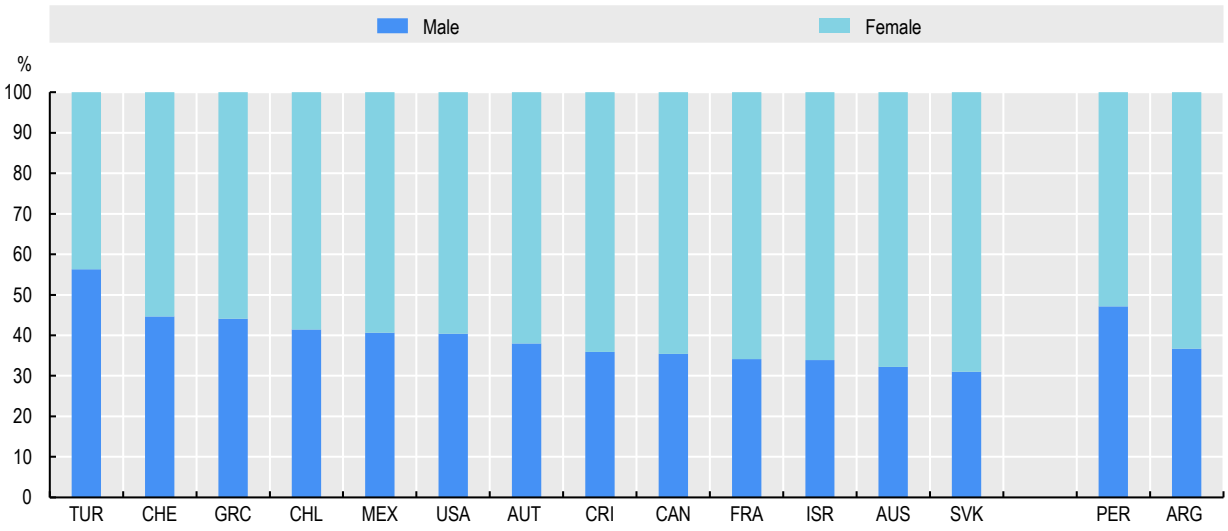
Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020) and Israel (2021).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by education level and sex.

Figure A.10. Public Sector Employment by education level (Intermediate) and sex, 2022



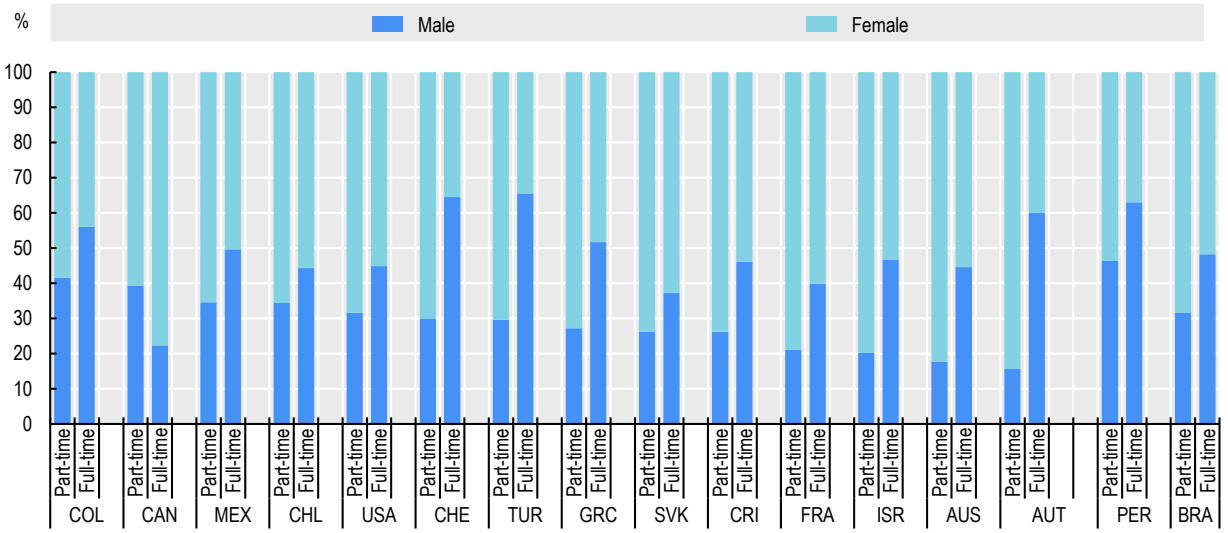
Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020) and Israel (2021).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by education level and sex.

Figure A.11. Public Sector Employment by education level (Advanced) and sex, 2022



Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020) and Israel (2021).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by education level and sex.

Figure A.12. Public Sector Employment by contract type (part-/-full-time) and sex



Note: Data included in the table are from 2022 with the exception of Australia (2021), Greece (2020) and Israel (2021).
Source: International Labour Organization (ILO) ILOSTAT (database), Public Sector Employment by contract type and sex.

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