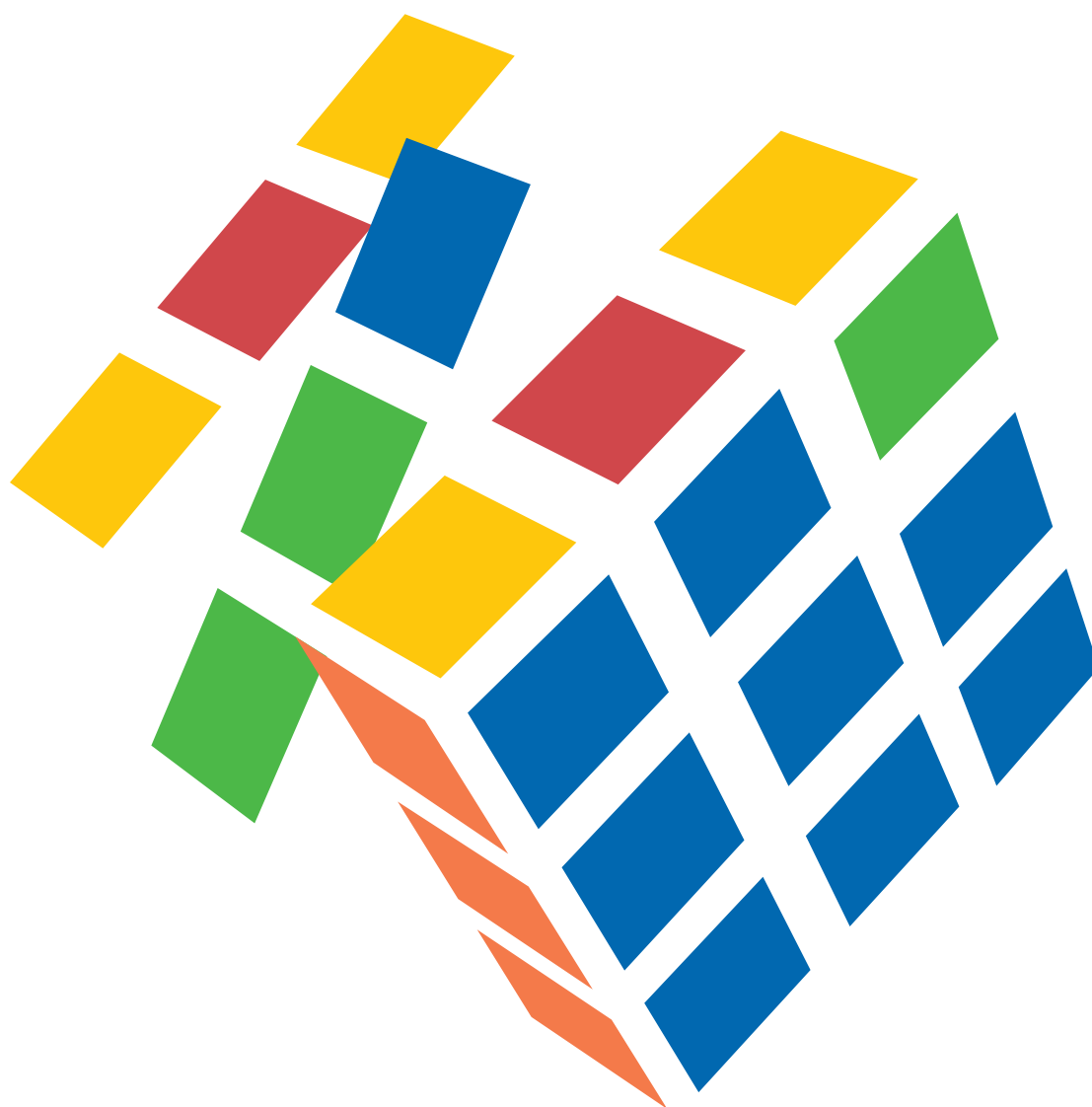




CEDEFOP

European Centre for the Development
of Vocational Training

EN



2020 skills forecast Denmark





CEDEFOP SKILLS FORECAST 2020

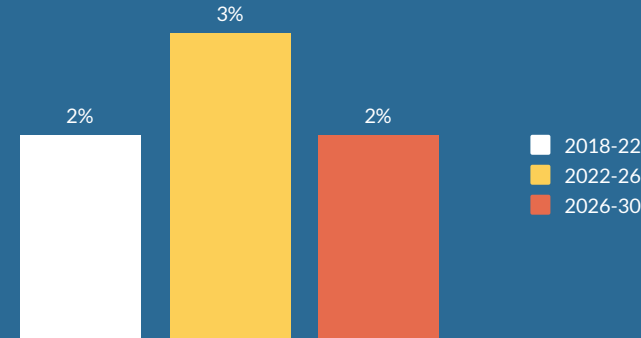
Key facts: Denmark

3 148 000

Employment in 2030

7%
Increase
2018-30

% Employment growth 2018-30



1 768 000

Total job openings, 2018-30



■ Replacement needs (90%)
■ New job openings (10%)

FASTEST-GROWING SECTORS

Growth per year 2018-30

Business and other services

2%



Construction

0.8%



HIGHEST-DEMAND OCCUPATIONS

Total job openings 2018-30

198 000

Business & administration
associate professionals

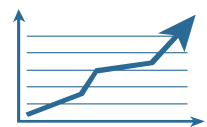
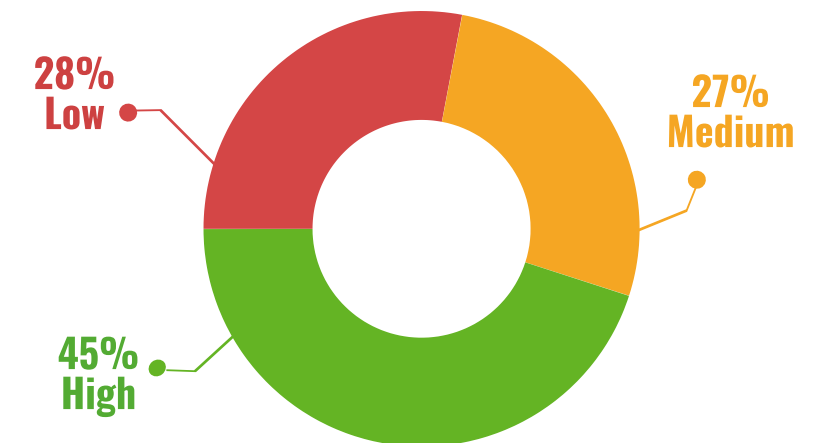
116 000

Teaching professionals

115 000

Personal care workers

Total job openings by qualification level 2030:



4.4%

Increase
in employment
in 2018-30



Fastest-growing sector
Non-marketed services



Highest-demand occupation
Business & administration associate
professionals

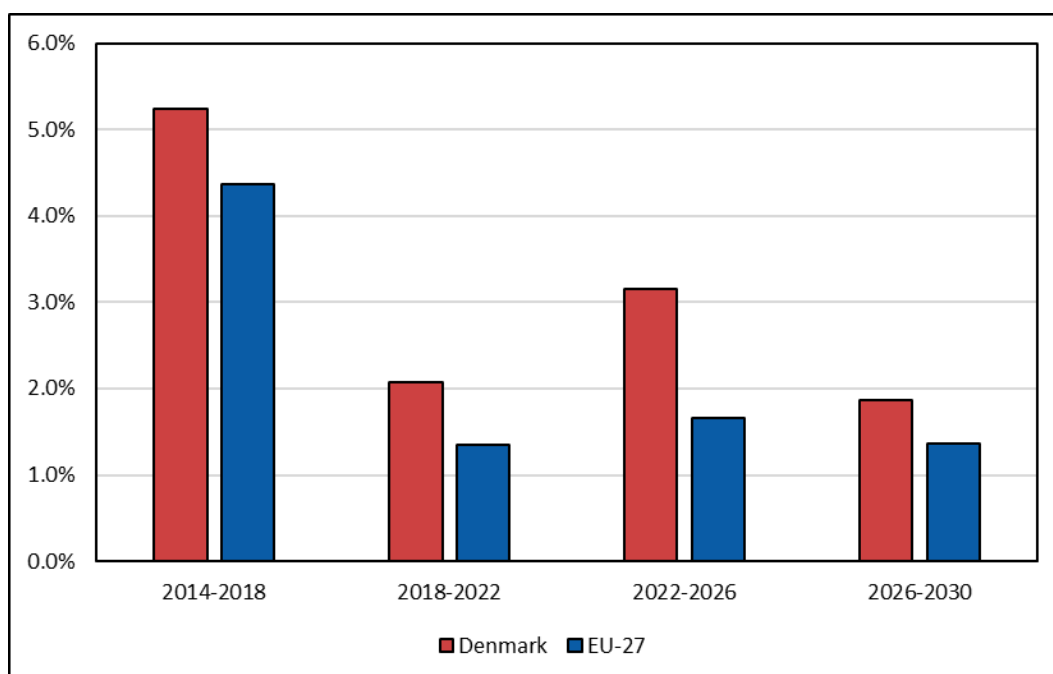
49% Increase in high-skilled
labour supply 2018-30



1. Employment outlook

As shown in Figure 1, employment growth in Denmark has been and is also expected to be stronger than the EU-27 average over the period 2014-30. The changes in growth rates are also expected to follow the EU-27 trend. Modest growth, of 2%, is expected over 2018-22 which is a slowdown from growth of 5.2% seen over 2014-18. However, employment growth in Denmark is then expected to pick up, reaching 3.2% over 2022-26, before falling back again to almost 2% over 2026-30. On average, over the forecast period (2018-30), total employment in Denmark is expected to grow faster than the EU-27 average.

Figure 1. Percentage employment growth in Denmark and the EU-27, 2014-30



Source: Cedefop (2020 Skills Forecast).

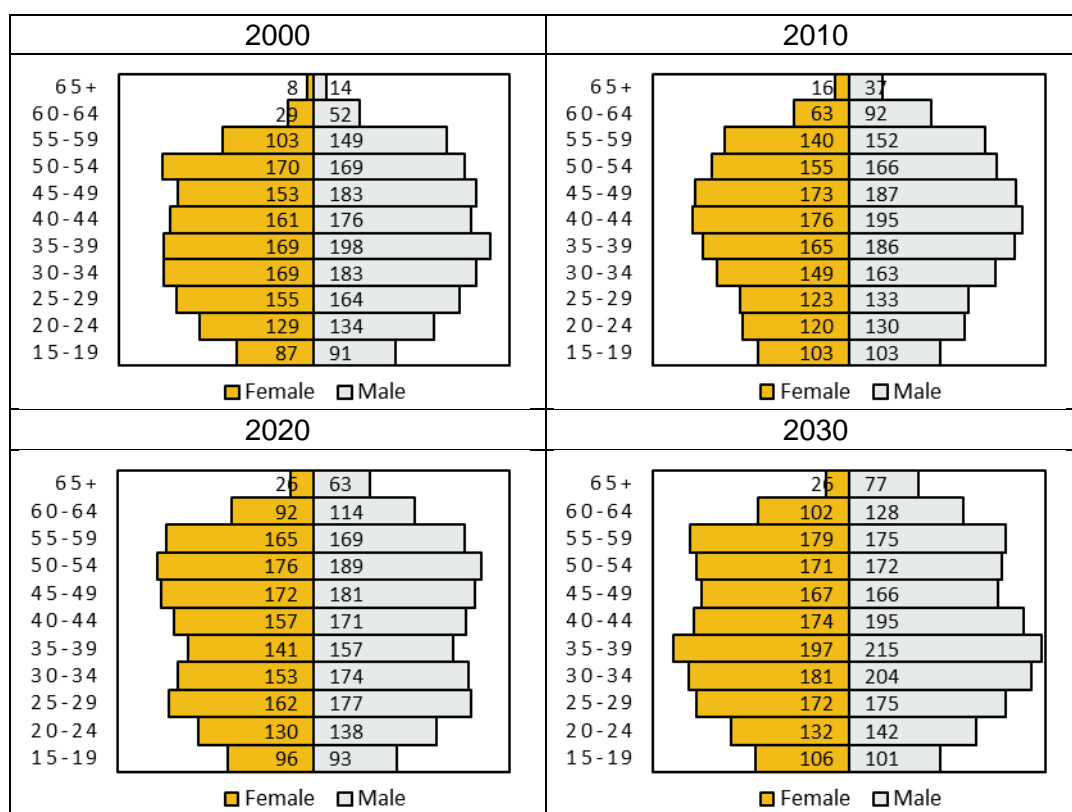
2. Labour force overview

Figure 2 shows the evolution of the distribution of labour force in Denmark by age and gender from 2000 to 2030. Over these years, the total labour force in Denmark has grown at a steadily increasing rate, by 3% over 2000-10 and 6% over 2010-20, and this trend is expected to continue into the forecast period, with an growth of 8% over 2020-30. This change has been driven by increases and changes in the age structure of the population.

The labour market participation rate for 60-64-year-olds is calculated to have grown the most between 2010 and 2020 (from 42% in 2010 to 60% in 2020) while participation rates for other age groups are calculated to have either grown marginally or to have declined. However, over 2020-30, the participation rates of most age groups are expected to pick up, except for those 60+.

In all, there will be expected to be an increase of 515,000 people in the total labour force between 2000 and 2030, and more than half of this increase is expected to enter the labour force between 2020 and 2030. The increase in participation rates for women in all age groups is expected to drive almost half of this increase between 2020 and 2030.

Figure 2. Distribution of the labour force (thousands), 2000-30



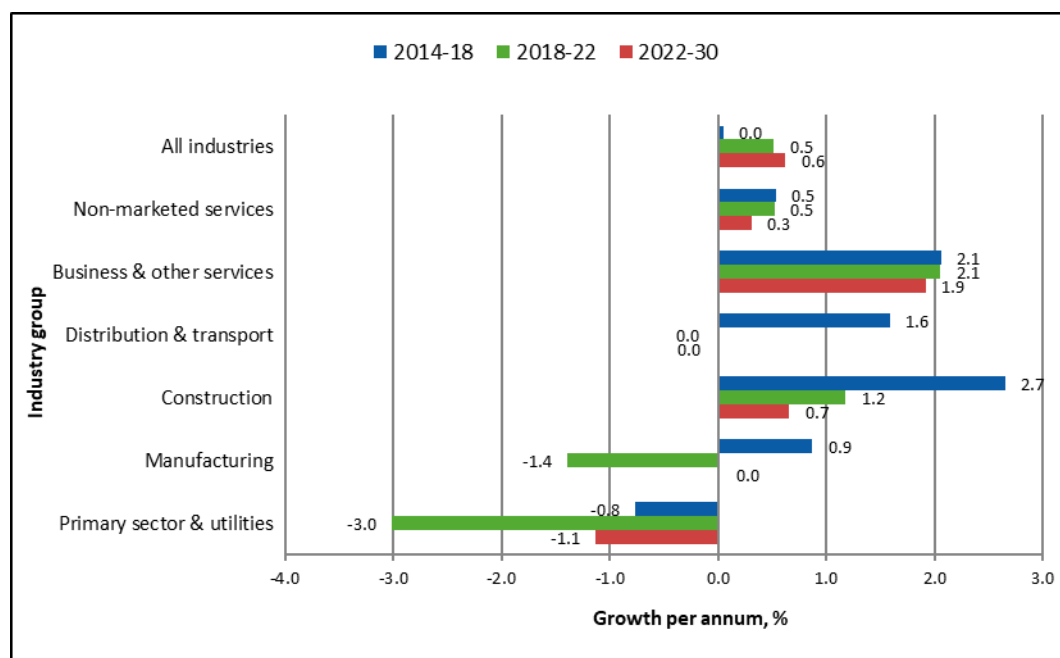
Source: Cedefop (2020 Skills Forecast).

3. Sectoral employment trends

Figure 3 compares annual employment growth by broad sectors in three periods between 2014 and 2030. All sectors, except for *primary sector and utilities*, are expected to grow at lower rates than seen over 2014-18. Employment in *business and other services* is expected to see the strongest growth in both the

shorter (2018-22) and longer run (2022-30), growing at 2.1% pa and 1.9% pa respectively. *Distribution and transport* is the only sector that is expected to remain stable in the period 2018-30 after increasing by 1.6% pa over 2014-18. On the other hand, employment growth in *construction* is expected to slow in both the short and long run, from 2.7% pa over 2014-18 to 0.7% pa over 2022-30. *Manufacturing*, a sector that is highly dependent on the German economy, is expected to shrink over 2018-22 and remain broadly stable over 2022-30. The shrinking of employment in this broad sector might be associated with a shortage of labour, which the government is trying to mitigate by attracting overseas workers. During the last two decades, there has been a steep increase in young people attending higher education, while the number attending vocational training as required in the manufacturing sector is declining.

Figure 3. Employment growth by broad sector of economic activity, 2014-30



Source: Cedefop (2020 Skills Forecast).

The shrinking of employment in *manufacturing* over 2018-22 is expected to be driven mainly by the decline in *other machinery and equipment* (9.3% pa). Positive growth in other manufacturing sub-sectors, including *other manufacturing* (3.6% pa) and *other chemicals* (2.1% pa) is expected to keep overall manufacturing employment stable in the last period of the forecast (2022-30).

The increase in *non-marketed services* is driven by growth in employment in *health, defence, and childcare*, while employment within *public administration* and *education* is expected to remain stable.

Other services is expected to drive the increase in employment in *business and other services*, while *wholesale and retail trade* is expected to support employment in *distribution and transport* despite the decrease in other sub-sectors.

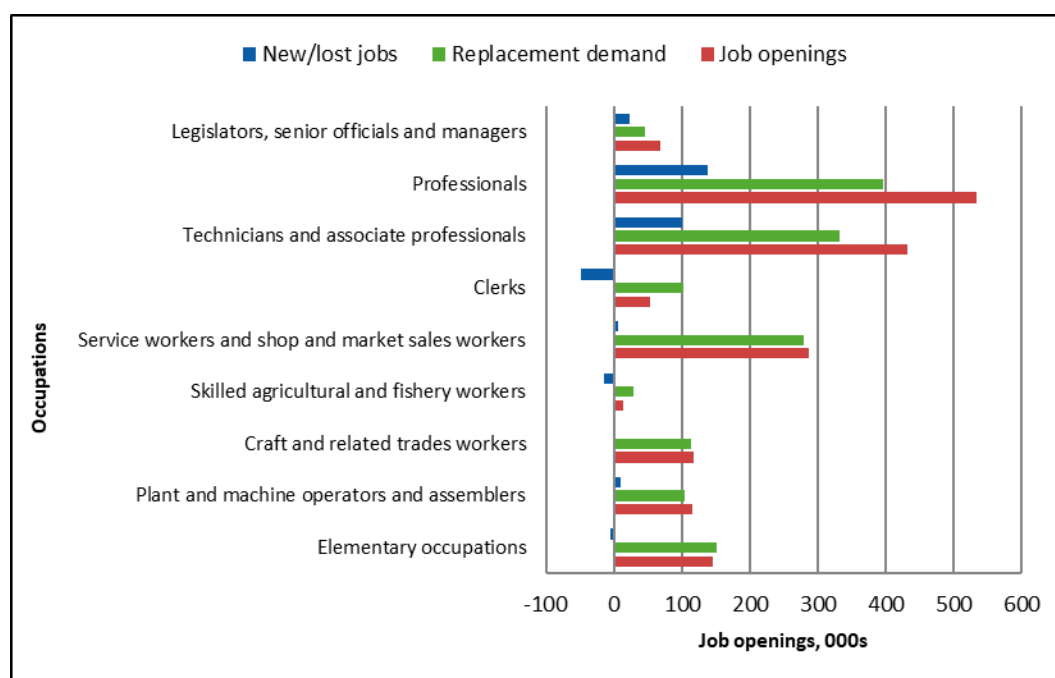
4. Job openings by occupational group

The Cedefop skills forecast estimates the total job openings by occupational group as the sum of net employment change and replacement needs. Net employment change refers to new jobs created due to the expansion of employment in that sector or occupation. Replacement needs arise as the workforce leaves the occupation due to retirement or career changes. Replacement needs, generally, provide more job opportunities than new jobs, meaning that significant job opportunities arise even in occupations declining in size (i.e. agricultural workers are a typical example, as ageing workers employed in the sector will need to be replaced).

Figure 4 shows the total job openings by broad occupational group over 2018-30. The number of job openings indicates the number of jobs that are required to be filled due to lost/new jobs and those that are in need of replacement workers. All occupations are expected to have job openings, driven by high replacement needs. Net employment change is expected to be negative for *clerks, skilled agricultural and fishery workers* and *elementary occupations*, meaning a contraction of employment in these occupations. *Professionals* is the occupation that is expected to have the highest job openings through job creation (138 000) and replacement demand (395 000) and hence the highest number of overall job openings (533 000).

Among professionals, almost 29% of job creation is expected to come from *business and administration professionals*, followed by *health professionals* and *legal, social, cultural professionals*. Due to the relatively high replacement needs in *business and administration associate professionals*, job openings are expected to be the highest in this occupation, which accounts for over 45% (198 000) of the total job openings in the *technicians and associate professionals* occupation as a whole. In all occupations, most of the job openings over 2018-30 are expected to be in *non-manual occupations* (1.4 million out of 1.8 million in total), and within that, the majority (73%) is expected to come from *high-skilled non-manual occupations*.

Figure 4. Job openings by broad occupational group, 2018-30



Source: Cedefop (2020 Skills Forecast).

5. Drivers of occupational change

Within the Cedefop skills forecast, future employment growth (or decline) of occupations is further broken down by separating national economic components from regional industrial and economic effects, helping to interpret what is driving the change. From this perspective employment growth can be explained by three possible drivers: (a) overall trends of the economy (i.e. growth or decline), (b) shifts of employment between sectors and (c) changes in the occupational structure within sectors (i.e. factors making some occupations more important than others).

The occupational composition of employment in Denmark is mainly characterised both by changes in the level of specialisation within occupations, and overall, it is not driven by changes in industry size. Stronger occupation-specific and industry effects are expected to lead, overall, to an increasing share of *professionals* (with an exception for *teaching professionals*), in *legislators*, in *senior officials and managers*, *technicians and other associate professionals* and in *labourers in mining, construction, manufacturing and transport* and in *agricultural, forestry and fishery labourers*. The only noticeable change in industry size is the one underlying the increase in *teaching professionals* and *sales workers*. High-skilled occupations that can benefit from these trends are, for example *professionals*,

such as *legal, social and cultural professionals*, in particular, *legal, social, cultural and related associate professionals*, and especially *health professionals*. The share of highly qualified workers in *personal service workers, sales workers, and personal care workers* will also increase.

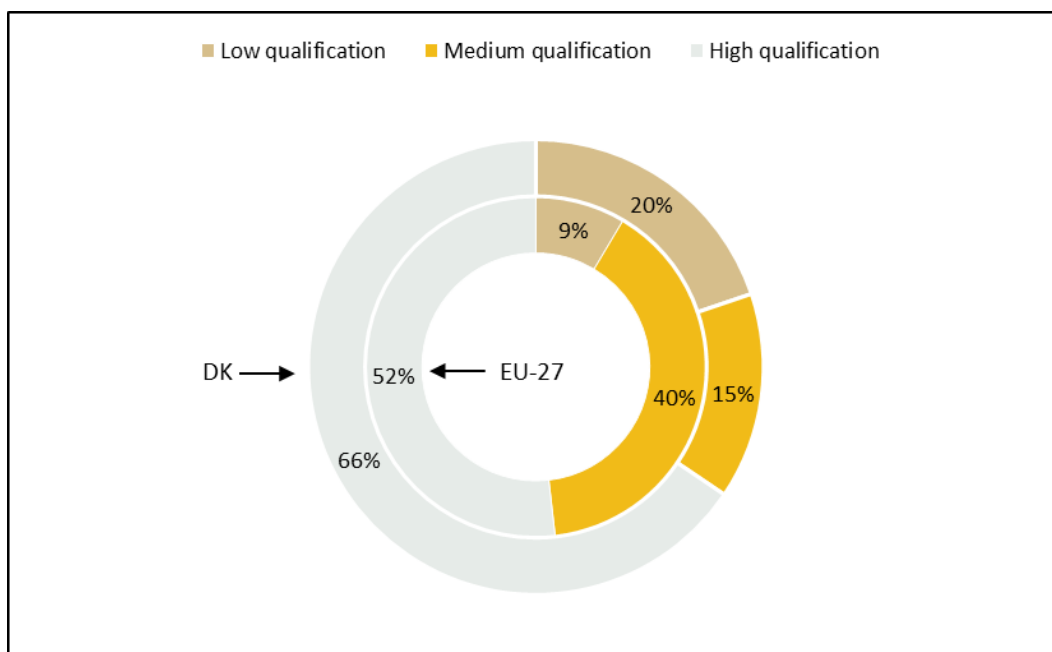
The overall effect of occupational change therefore depends on a number of factors that need to be considered together. Increasing digitisation and moves toward a service-oriented economy, including within manufacturing, will lead to a greater use of higher-level occupations at the expense of some medium and low-level occupations. Among lower-level occupations only some among *business and legal associate professionals, science and engineering associate professionals, personal service workers and occupations supporting production* such as *building and metal machinery trade workers* are forecast to increase while all the others are forecast to decrease.

Intermediate occupations are, overall, forecast to decrease slightly. Among the medium-qualified occupations becoming weaker there are clerical occupations, *personal service, sales and personal care workers*, and occupations supporting the production process.

6. Demand for and supply of skills

Within the Cedefop skills forecast, skills are proxied by the highest level of qualification held by individuals in the labour force and in employment. Three levels are distinguished, high, medium, and low, which correspond to the official ISCED classification. The occupational group also offers an indication of the skill level required, as some occupations (e.g. professionals) typically require high-level skills, while some others (e.g. elementary) typically require only basic ones. Therefore, occupational groups are also linked to a skill level.

Figure 5. Shares of total job openings by level of qualification, 2018-30



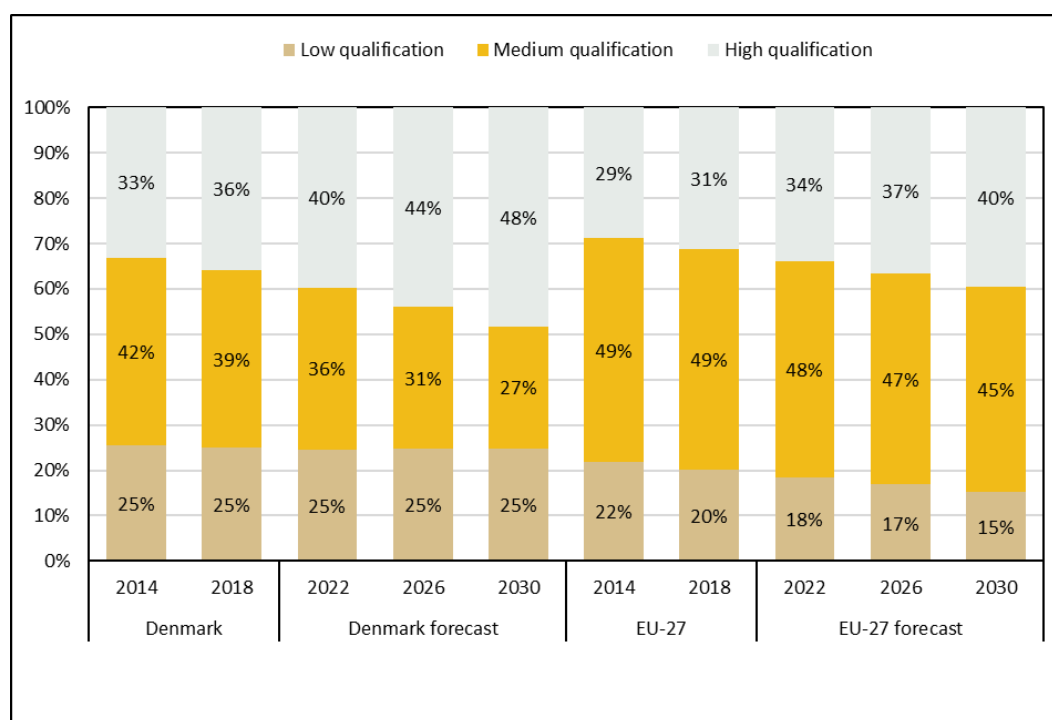
Source: Cedefop (2020 Skills Forecast).

Figure 5 shows that well over half (66%) of the total job openings that are expected to be created in Denmark over 2018-30 will require high level qualifications, about 14 percentage points (pp) more than the EU-27 average. Around 20% of total job openings are expected to require low level qualifications while only 15% are expected to require medium level qualifications

Total job openings are highest among *legislators, senior officials and managers, technicians and associate professionals, and plant and machine operators and assemblers*. In particular, the highest shares of job openings will aim at hiring *production and specialised service managers, health associate professionals and legal, social cultural and related professionals*.

Future labour supply trends depend on the size of the working age population (defined as aged 15 or older), labour market participation rates, and the extent to which people acquire formal qualifications.

Figure 6. Labour force share by level of qualification, 2014-30



Source: Cedefop (2020 Skills Forecast).

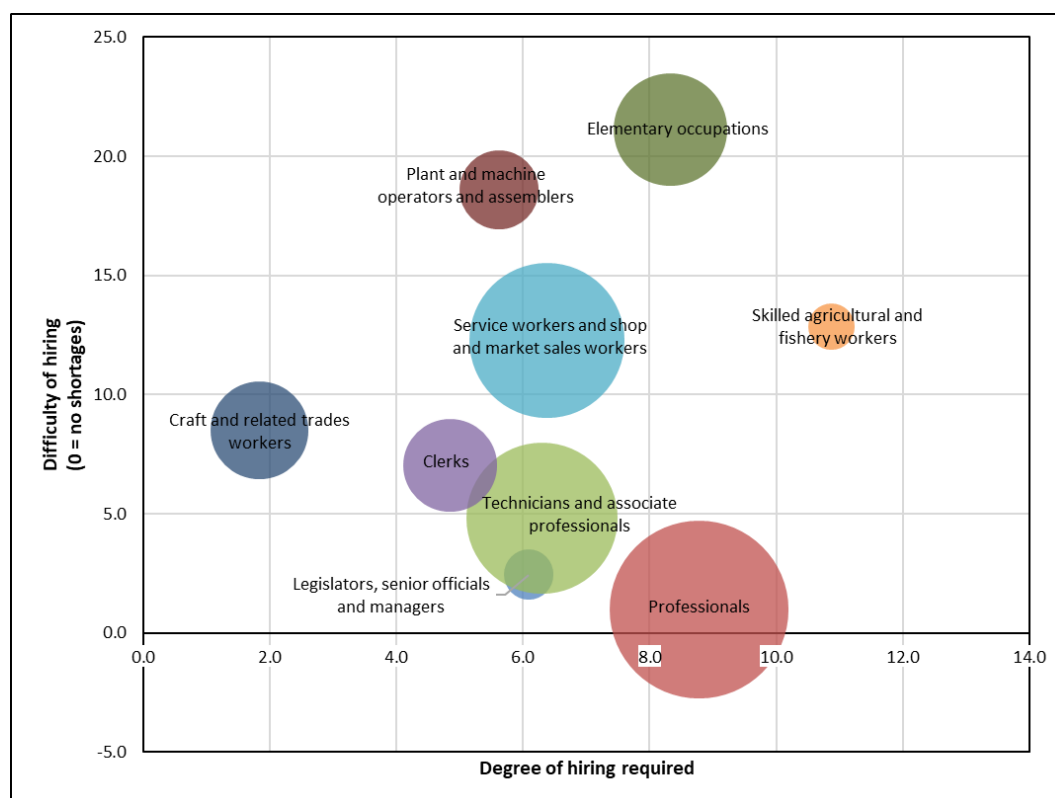
In general, Denmark is expected to experience substantial changes in shares of qualifications of the labour force over 2018-30, as can be seen from Figure 6. The share of people with high level qualifications in Denmark is expected to increase over the period up to 2030 (reaching 48%), becoming the largest qualification group at the expense of workers with medium qualifications. The share of medium qualified labour force will decrease towards 27% in 2030. The share of those with low levels of qualification is expected to remain fairly stable, at around 25%. In Denmark, the share of the labour force with high qualifications is expected to reach a higher level than the EU-27 average, and, while the level of low qualified is expected to fall within the EU-27 as a whole, the Danish share is expected to remain some way above this average.

In Denmark, the supply of workers with medium and high qualifications is expected to be enough to meet the corresponding demand, while the supply of workers with low qualifications is expected to be below the demand for those.

Therefore, some more qualified workers might have to fill positions requiring low qualifications.

Figure 7 shows an indicator, *difficulty of hiring*, whose aim is to approximate shortages of supply by qualifications and its impact on occupations. This measure, shown along the vertical axis, indicates increasing difficulties to fulfil demand given the available supply of qualifications used in the occupation. Along the horizontal axis, the *degree of hiring required* in the occupation is depicted. Higher values indicate that to reach the forecast result that occupation will need to adjust more (in terms of workers with particular qualifications) relative to the base year (2018) levels. These changes (degree of hiring required) can be due to a change in the qualifications required or increases in the number employed. The size of the bubble indicates the *overall employment level*, bigger bubbles indicate more employment while smaller bubbles less employment. Occupations with both a high *degree of hiring required* and a high *difficulty of hiring* (i.e. towards the top right of the figure) are likely to have the most difficulties in achieving a suitable workforce.

Figure 7. Indicators of future hiring difficulties (Denmark), 2018-30



N.B: Indicators were calculated at the level of the underlying two-digit occupation groups. Aggregation was based on the employment weights within each one-digit occupation group.

Source: Cedefop (2020 Skills Forecast).

Figure 7 shows that occupations within *skilled agricultural and fishery workers* are forecast to experience many changes that will require the hiring of new workers. It is expected that within this group there will be some hiring difficulties as they also hire from intermediate-qualified job-seekers, who are projected to be in shortage. Workers in *elementary occupations* and *plant and machine operators and assemblers* are expected to experience higher levels of hiring difficulties, mainly from lower and intermediate qualified personnel. *Professionals, technicians and associate professionals, legislators, senior officials and managers* and *technicians and associate professionals* have a modest degree of new hiring required but are expected not to have difficulties to hire.

Within professionals, hiring difficulties are expected to be very low across all underlying occupations. The degree hiring required will differ, though, with *information and communications technology professionals* (36), *science and engineering professionals* (35), Legal, social and cultural professionals (32) as well as *business and administration professionals* (31) being well above the average of *professionals* (21), while the degree of hiring required among *teaching professionals* (3) is expected to be well below the average.

Future imbalances in the Danish labour market will, most likely, be driven by the decrease in intermediate qualifications. While the increasing share of the higher qualified follows the general trend of more specialisation and is also reflected in the demand, within specific occupations hiring difficulties will arise, as the indicator of hiring difficulties suggests. How far high skilled occupations experience shortages will depend on the degree to which the supply, in its specialised fields, will match the demand of skills in higher and intermediate occupations. The shortage among low skilled occupations might lead to the employment of higher skilled in these occupations which would lead to overqualification.

Cedefop methodology and scenarios

The Cedefop Skills Forecast offers quantitative projections of future trends in employment, by sector of economic activity and occupational group. Future trends in the level of education of the population and the labour force are also estimated. Cedefop's forecast uses harmonised international data and a common methodological approach allowing cross-country comparisons between employment trends in sectors, occupations and qualifications. The forecast and methodology is validated by a group of national experts. The forecast does not substitute national forecasts, which often use more detailed methodologies and data, while they also incorporate in-depth knowledge of a country's labour market.

The latest round of the forecast covers the period up to 2030. The forecast takes account of global economic developments up to May 2019. The European economy is continued to expand for the seventh year in a row in 2019, with real GDP growing in all EU Member States. As global uncertainties continue to weigh, domestic dynamics are set to support the European economy. The key assumptions of the baseline scenario incorporate the Eurostat population forecast available in May 2019 (Europop 2015) ⁽¹⁾ and the short-term macroeconomic forecast produced by DG ECFIN in May 2019 ⁽²⁾.

The Cedefop Skills forecast was developed before the global Covid-19 pandemic had begun. The short-term economic impacts of the pandemic and subsequent lockdowns in many countries are very uncertain, and therefore the current short-term forecast is likely to be over-optimistic. However, the key long-term factors (such as the ageing population, increasing use of automation/artificial intelligence, globalisation, resource scarcity and moves towards a carbon neutral economy) will still hold as the EU Member States put plans in place to deal with the virus and their economies move forwards. The trends in the longer-term forecast are therefore still likely to hold.

For the latest update and access to more detailed Cedefop skills forecast data please visit:

<http://www.cedefop.europa.eu/el/events-and-projects/projects/forecasting-skill-demand-and-supply>



(1) <https://ec.europa.eu/eurostat/web/population-demography-migration-projections/population-projections-data>

(2) https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/spring-2019-economic-forecast-growth-continues-more-moderate-pace_en



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