An Assessment of Italy's Labor Market

In Support of a Tunisia-Italy Global Skill Partnership

REPORT FOR ITALY
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Contents

ACKNOWLEDGMENTS

EXECUTIVE SUMMARY

Profound demographic changes are reshaping the structure of Italy's labor market. Despite sustained job creation over the past few years, population aging and a shrinking pool of job seekers are constraining the country's productive capacity. With nearly one in four Italians now beyond working age and the youth population steadily declining, the labor force is contracting—limiting the economy's ability to fill new and replacement jobs. Even as post-pandemic recovery has driven employment gains and lowered overall unemployment, key sectors have been facing mounting labor shortages (ISTAT 2025).

While the labor market has continued to create jobs, overall employment growth, on average, has been relatively weak over the past two decades. Even though Italy registers a very large flow of vacancies annually, total employment has risen by only 7 percent since 2005—among the lowest growth rates in the European Union (EU). Most of this growth was driven by migrant workers, primarily from non-EU countries, while employment among Italian nationals has remained largely stagnant. The trend is even more evident among youth: employment among young Italian nationals fell sharply (-30 percent) over 2005–24, partially offset by modest gains among migrant youth. Sustaining employment growth in Italy will increasingly depend on attracting and integrating young foreign workers, complemented by activation policies to expand female labor market participation.

The past two decades' weak employment growth is despite strong labor demand. Vacancies are primarily in service-oriented sectors, including accommodation and food services, construction, and care-related activities. These sectors have created large numbers of medium-skilled service and sales jobs, with growth also in high-skilled occupations in professional and technical fields. Conversely, manufacturing employment has contracted, with job creation limited to a few niches, such as food processing, metal fabrication, and machinery operations.

The main challenge faced by the Italian labor market is a steadily shrinking supply of workers. As population aging reduces labor force participation, and strong job creation absorbs many qualified workers, the remaining unemployed are increasingly low-skilled individuals. Firms struggle to find workers with the right technical and professional skills, especially for medium- and high-skilled occupations. The result is a widening gap between an economy eager to hire and a shrinking pool of job seekers, especially among young and skilled workers.

In this context, well-governed international labor mobility can play a pivotal role in addressing Italy's demographic and labor market imbalances. By establishing clear and mutually beneficial

migration channels, Italy can attract workers to fill key labor shortages while supporting the development of skills that enhance employability and productivity.

One of the potential labor markets for Italian employers to consider is that of Tunisia. Tunisia's large and growing pool of young job seekers contrasts sharply with Italy's shrinking and aging workforce. While Italy faces persistent labor shortages across key sectors—particularly in medium-skilled technical and service occupations—Tunisia's surplus of workers offers scope to help meet these needs. Beyond demographic alignment, Tunisia's geographic proximity to Italy, shared Mediterranean context, and its existing memorandum of understanding with Italy provide a solid foundation for cooperation in structured labor mobility.

The Promise of the Global Skills Partnership Model

The Global Skills Partnership (GSP) model offers an innovative means to achieve this balance. Unlike conventional migration agreements, GSPs invest in training that enables both local retention and international placement, turning labor market challenges into shared opportunities (Acosta et al. 2025). GSPs can thus increase the supply of skilled workers and reduce shortages in workers' origin (e.g., Tunisia) and destination countries (e.g., Italy).

A robust, evidence-based analysis of the destination country's labor market is critical to designing an effective GSP. One of the central challenges in designing a GSP is ensuring that skills development initiatives are closely aligned with the needs of sectors that offer (1) sufficient job vacancies to generate meaningful opportunities for prospective migrants, and (2) strategic value for participating countries' broader economic growth and structural transformation.

This report provides an essential foundation for the design of such a partnership agreement, focusing on the needs of the Italian labor market. The report's purpose is not to diagnose employment constraints, as a standard job diagnostic would, but rather to deliver an evidence-based assessment of Italy's labor market. It identifies the sectors and occupations where targeted skills development can generate the greatest impact for both Italy and its partner countries. With a particular focus on a potential GSP with Tunisia, the report highlights overlapping labor needs between the two countries and the specific skills Tunisian workers can develop to help both countries address shortages in their labor markets. Grounded in robust analysis, the assessment informs the design of an Italy-Tunisia GSP while also contributing to broader efforts to promote safe, orderly, and mutually beneficial labor mobility.

A Summary of Key Findings

Ten key findings emerge from the assessment. Together they offer a strong analytical base for designing an Italy-Tunisia GSP. These findings are grouped into three areas: (1) demographic and labor market fundamentals, (2) private sector characteristics and potential to create jobs, and (3) critical occupations facing labor shortages.

Demographic and Labor Market Fundamentals

Italy is experiencing a rapid demographic transition, marked by population aging and a shrinking working-age population (ISTAT, 2024). By 2050, the working-age population is projected to shrink by 15 percentage points, and is projected to continue contracting at even faster rates until around 2060. Thereafter, the rate of decline is expected to slow, although the population trend will remain on a downward trajectory.

This demographic contraction is already shaping the labor market. Over the past few years, job creation has consistently outpaced population growth in Italy, driving unemployment to historic lows. However, the rapid growth of labor demand has also exposed a persistent shortage of workers, as firms struggle to fill vacancies across a wide range of occupations.

The pool of job seekers is steadily shrinking and increasingly composed of lower-skilled individuals, as many well-educated young people transition quickly into jobs. Regional disparities exacerbate these pressures: while unemployment remains high in the south, the north faces widespread labor shortages. These trends highlight a central policy challenge: sustained labor demand amid a shrinking workforce is constraining Italy's capacity to sustain growth. At the same time, this dynamic creates an opportunity for well-managed international labor mobility to help fill vacancies. Alongside efforts to update the skills of migrant workers, such mobility would generate benefits for both Italy and its partner countries.

Private Sector Characteristics and Potential to Create Jobs

Italy's private sector is dominated by small and medium enterprises, which drive job creation and face persistent recruitment challenges.

Recent job growth is primarily in medium-skilled service occupations. Accommodation and food services, residential care, and construction have led job creation, reflecting the country's growing reliance on domestic demand, tourism, and an expanding care economy.

Meanwhile, job growth in manufacturing has weakened—especially in high-tech and export-oriented segments—signaling a structural slowdown in industrial employment. Manufacturing,

jobs that require low or medium skills, such as in basic metals, fabricated metal products, and food and beverage processing, dominate growth in the sector.

Overall, job growth in Italy remains strong but uneven. While firms in expanding service sectors continue to hire, both high- and medium-skilled occupations continue to face shortages of skilled labor. These dynamics highlight a need for complementary international labor mobility to address skill shortages. In particular, cooperation in skill development with Tunisia—a country with a large pool of young, educated job seekers—holds promise.

Critical Occupations Facing Labor Shortages

Several occupations essential to firm productivity have a high concentration of unfilled vacancies. According to the Critical Occupations List prepared for this report, 25 occupations face the most acute and persistent shortages. These are primarily concentrated in the trade and service sectors, and include medium-skilled service and sales workers in food services, beauty, hospitality, and health care. Shortages are also evident among high-skilled managers, professionals, and technicians. Clerical and other support occupations, as well as craft and technical occupations (e.g., masons and electricians) also face shortages, as do low-skilled jobs (e.g., fast food preparation).

Potential for a GSP with Tunisia

Considering Italy's and Tunisia's labor demand landscape and the composition of the occupations in demand, this report identifies priorities for a GSP. The analysis weighs the relative advantages and risks of targeting specific occupations, taking into account labor supply and demand dynamics in Tunisia and their alignment with labor market needs in Italy. The relevance of selected occupations and their potential to advance GSP objectives while supporting broader economic growth outcomes in both countries are assessed.

The agrifood system offers a particularly promising basis for an Italy-Tunisia GSP. Four considerations underlie this conclusion. First, downstream agrifood segments in Italy—spanning food processing, logistics, and food services—are key drivers of job creation, supported by strong export performance and a vibrant tourism industry. Second, food processing and hospitality are cornerstones of Italy's economy. These industries are supported by global demand for high-quality food products and a dynamic tourism industry. The third consideration is the shifting demand dynamics in Tunisia. As mechanization and improved agronomic practices boost on-farm productivity, off-farm segments such as processing, packaging, cold-chain logistics, and retail are becoming sources of labor demand in Tunisia. These occupations are generally more skill intensive and offer better wages than traditional on-farm work, and are, thus, an important avenue to absorb trained workers into the local labor market. The fourth consideration is feasibility for training.

Training pathways for medium-skilled occupations are relatively short, making it possible to prepare prospective workers quickly for both the domestic and international tracks of a GSP.

While manufacturing and construction could, in principle, serve as alternative sectors for engagement under a GSP, neither presents the optimal conditions for short-term job placement. Manufacturing offers limited near-term potential: the sector is contracting in Italy, firm numbers are declining, and employment growth is increasingly concentrated in high-skill technical roles—raising concerns about potential brain drain if such occupations were targeted. Construction presents somewhat stronger alignment but remains an uncertain anchor. Vacancies in Italy have been declining since their peak in early 2024 due to a slowdown in public investment, casting doubt on the sustainability of demand. Fewer vacancies also reduce the likelihood of timely placement for Tunisian workers, given the long administrative and preparatory processes of international mobility schemes, creating the risk that opportunities may weaken before deployment. Moreover, as a moderate- to low-productivity sector, construction contributes less to long-term economic growth relative to other sectors. Taken together, these elements suggest that while manufacturing and construction may retain some medium-term relevance, neither is well suited as a first-choice sector for a GSP focused on near-term job placement.

ABBREVIATIONS

COL	Critical Occupations List
ESCO	European Skills, Competences, Qualifications, and Occupations
EU	European Union
FGC	focus group consultation
GDP	gross domestic product
GSP	Global Skills Partnership
ILO	International Labour Organization
ISCO	International Standard Classification of Occupations
ISTAT	Italian National Statistical Institute
OJV	online job vacancy
UN	United Nations
UN WPP	UN World Population Prospects

STRUCTURE OF THE REPORT

The report is organized into six chapters, complemented by annexes.

The first chapter sets the stage by presenting Italy's macroeconomic, demographic, and labor market context. It highlights the country's ongoing demographic transition and its implications for labor supply, including the shrinking working-age population and rising dependency ratio. It also provides an overview of recent trends in employment and unemployment, framing the structural challenges created by persistent labor shortages amid sustained labor demand.

The second chapter introduces the conceptual and statistical framework guiding the analysis. It outlines the approach used to provide a descriptive assessment of labor demand dynamics and explains how critical occupations facing shortages are identified using the Critical Occupations List (COL) methodology. It also presents the main data sources used throughout the report.

The third chapter examines the structure and evolution of labor demand in Italy. It analyzes employment trends in key sectors and occupations, focusing on the private sector's role in job creation, vacancy patterns, and the underlying drivers of unmet labor demand. The chapter also discusses Italy's growing reliance on migrant workers and the implications of tightening labor market conditions for productivity and competitiveness.

In chapter 4, the COL methodology is applied to identify occupations facing labor shortages across the Italian labor market. It presents the 130 occupations facing shortages, explores their distribution across sectors, and provides an in-depth discussion of the 25 most critical occupations—those characterized by large employment size.

Chapter 5 delves into the skill requirements of the 25 critical occupations identified with the COL methodology. It first identifies emerging skill trends shaping Italy's labor demand and then analyzes the composition of skills across these key occupations.

The concluding chapter synthesizes the main findings and translates them into actionable recommendations for the design and implementation of a Global Skills Partnership (GSP) between Italy and Tunisia. It begins with a summary of key demographic, labor market, and occupational trends, followed by a section outlining strategic directions and priority occupations for the GSP. This includes identifying sectors and occupations offering the greatest potential for mutually beneficial cooperation. It then considers geographic areas where the GSP could be initiated—where employer demand aligns with established Tunisian communities in Italy—and concludes with recommendations for institutionalizing a dynamic COL, strengthening data-driven

monitoring, and ensuring that training and mobility initiatives remain adaptive to evolving labor market needs in both countries.

1. MACROECONOMIC, DEMOGRAPHIC, AND LABOR MARKET CONTEXT

1.1. Macroeconomic Outlook

Since 2000, Italy's real gross domestic product (GDP) has grown at an average annual rate of 0.6 percent. Economic growth was strongest in the early 2000s, followed by a sharp contraction due to the 2008 global financial crisis, and a modest recovery beginning in 2015. In the past few years (2020–24), real GDP grew by an average of 1.3 percent per year, but projections indicate a slowdown to around 0.6 percent annually over 2025–26 (IMF 2025a).

To assess the implications of economic growth for employment, GDP can be decomposed into three components: (1) population growth, (2) changes in the employment-to-population ratio, and (3) growth in output per worker (Onder and Pestieau 2014). Growth in the first two components reflects a quantitative increase of jobs, whereas growth in output per worker captures qualitative improvements in jobs, since productivity gains tend to raise wages (World Bank 2025). Differentiating between these dimensions helps to assess whether more jobs or better-quality jobs will lead economic growth in Italy.

Between 2020 and 2024, population growth made virtually no contribution to GDP growth, whereas the rising employment-to-population ratio added about 0.8 percentage points and productivity gains, 0.5 percentage points. Over 2025–26, demographic trends are expected to weigh negatively on growth (-0.1 percentage points), with a projected slowdown in employment (-0.6 percentage points) (figure 1.1) compounding the effect. Fewer young entrants into the labor market, combined with rising retirement rates, imply that job creation can no longer serve as a primary driver of growth. Overall GDP growth will therefore depend almost entirely on productivity improvements, with output per worker contributing roughly 1.4 percentage points.

However, part of the expected increase in output per worker will likely reflect a statistical effect rather than actual efficiency improvements: as the number of employed individuals declines, a relatively stable level of output is divided among fewer workers, mechanically raising output per worker. Such *"productivity gains by contraction"* differ fundamentally from productivity growth driven by innovation, technological diffusion, or skill upgrade, as they do not translate into higher aggregate output, improved living standards, or fiscal sustainability.

Figure 1.1 Decomposition of Italy's GDP Growth by Population, Employment, and Productivity
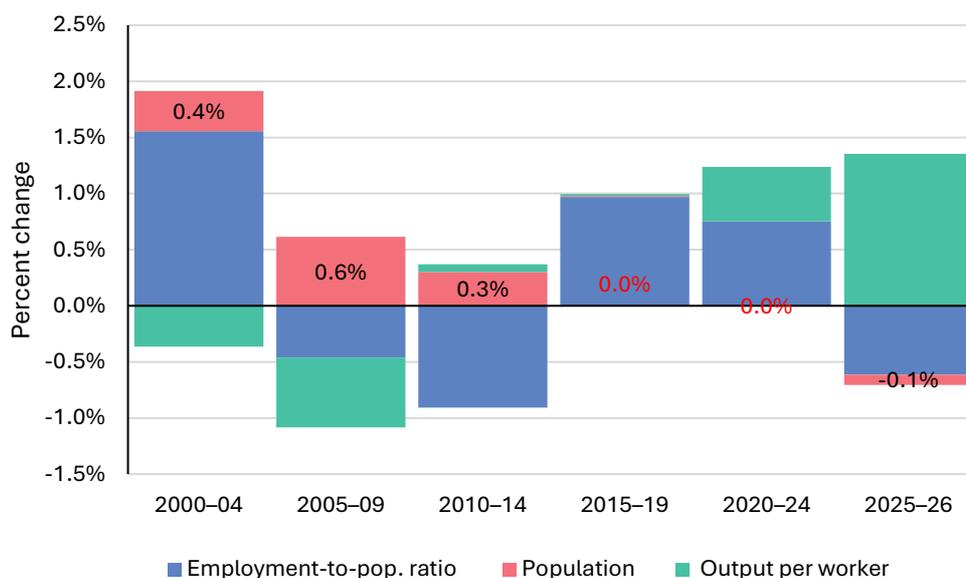
Source: GDP data—IMF 2025b; population data—UNDESA 2024; revision employment data—ILO 2024.
Note: GDP = gross domestic product; pop. = population.

To put these trends into perspective, population decline, demographic aging, and a slowdown of the employment-to-population ratio are, together, expected to dampen Italy's GDP growth by around 0.7 percentage points over the next two years, via multiple channels.

These demographic trends will be a key constraint on Italy's economic trajectory. A shrinking and aging population contracts the labor force and directly limits productive capacity. At the same time, demographic aging reshapes both demand and supply: aggregate consumption weakens as fewer households are in their peak spending years, while lower savings reduce resources available for investment, slowing capital accumulation and productivity growth.

The rising inverse dependency ratio further compounds these effects. While a growing number of retirees puts the pension system under mounting pressure, with expenditure outpacing contributions, fewer workers will be available to support them. Policy adjustments, such as raising the retirement age, may sustain labor force participation, but they also carry risks. Since the productivity of older workers is typically lower than that of younger cohorts, prolonged employment of the elderly may sustain participation but depress output per worker.

Taken together, these dynamics risk locking Italy into a self-reinforcing cycle of fewer workers, slower productivity growth, weaker aggregate demand, and growing fiscal imbalances— leading to persistently weak GDP growth. Addressing these challenges will require more than productivity improvements alone. With Italy's labor force shrinking and aging, the country's future growth prospects depend on widening the pool of available skills. Policy actions, among others, will

have to attract and integrate an increasing number of skilled workers from abroad, to offset demographic decline, sustain labor supply, and reinforce the country's innovation capacity.

Box 1.1 Contribution of EU and non-EU Migrants to Employment Growth in Italy

As the size of Italy's working-age population rapidly declines, regular inflows of foreign workers are critical to sustain employment levels and support economic growth (Basso et al. 2025).

To assess the contribution of migrants to employment growth over the past two decades, figure B1.1.1 illustrates the distribution of total employment gains between native- and foreign-born workers (both from European Union [EU] and non-EU countries). Between 2005 and 2024, Italy's employment growth was modest: the number of employed persons aged 15–74 increased by only 7 percent, equivalent to about 1.5 million additional workers over nearly 20 years. This places Italy among the countries with the weakest employment growth performance in the EU—alongside Slovenia (5 percent), Portugal (2 percent), and Greece, where employment actually declined 4 percent over the same period.

This limited employment growth was almost entirely sustained by foreign-born workers, as employment among native-born Italians stagnated. The number of Italian nationals in jobs rose by only 153,000 (+1 percent relative to total employment in 2005), while employment among non-Italian citizens increased by approximately 1.35 million. In other words, foreign-born workers from EU and non-EU countries accounted for all net employment gains—equivalent to about 6 percent of total employment in 2005, including 4 percent from non-EU countries and 2 percent from EU countries.

In the absence of migrant labor, Italy's overall employment trajectory would have been stagnant, underscoring the pivotal role of migration in offsetting demographic decline and sustaining the stability of the labor market. Nevertheless, while the contribution of EU and non-EU migrants to Italy's employment growth is broadly in line with the EU average, it remains well below that in countries with the strongest employment growth—such as Luxembourg (45 percent), Iceland (14 percent), Cyprus (24 percent), Norway (10 percent), and Switzerland (13 percent)—where foreign-born workers contributed substantially to employment growth over the past two decades.

Figure B1.1.1 Italy's GDP Growth: Decomposition by Population, Employment, and Productivity

Employment growth (% change 2005–24)

■ EU 27   ■ Non-EU 27   ■ Origin
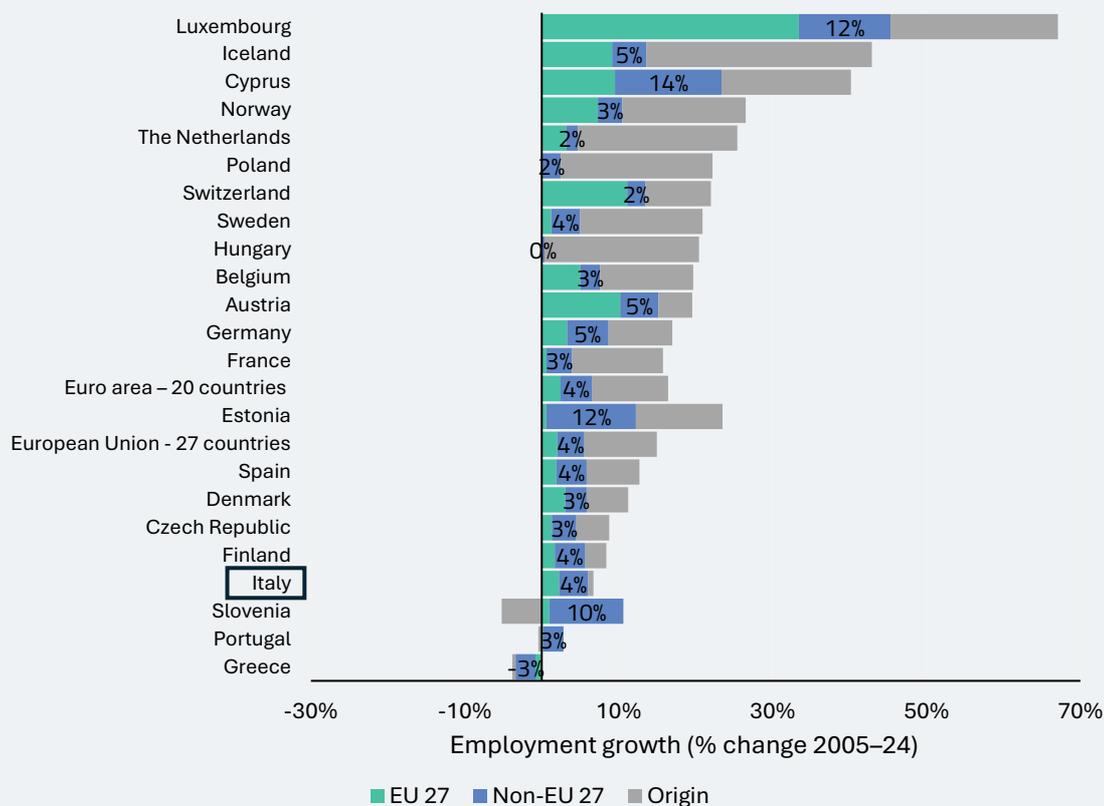
Source: World Bank staff elaboration based on Eurostat (2025).

Note: The figure shows the decomposition of total employment growth between 2005 and 2024, highlighting the respective contributions of native-born workers and foreign-born workers from EU and non-EU countries. The data refer to individuals aged 15–74 years. EU = European Union; GDP = gross domestic product.

1.2. Demographic Outlook

Italy's population is estimated at 59.1 million in 2025—returning to levels last seen in 2007 and nearly 3 percent below the 2014 peak (UNDESA 2024). After a period of sustained expansion in the early 2000s—the population grew at an average annual rate of 0.4 percent between 2000 and 2008, alongside average GDP growth of 1.5 percent—both population and economic growth began to slow following the 2008 global financial crisis. Though population growth remained marginally positive through 2015, it has since entered a phase of steady and accelerating decline, marking a major demographic turning point with long-term implications for labor supply and economic growth (figure 1.2).

Looking ahead, Italy's population is projected to continue shrinking until around 2060, when it is expected to reach approximately 46 million. The decline is projected to persist beyond that, albeit at a slower pace. If current United Nations (UN) forecasts hold, Italy's population could fall to 35.3 million by 2100—a loss of nearly 24 million people relative to today.

Figure 1.2 Population Level and Growth in Italy, 1950–2075
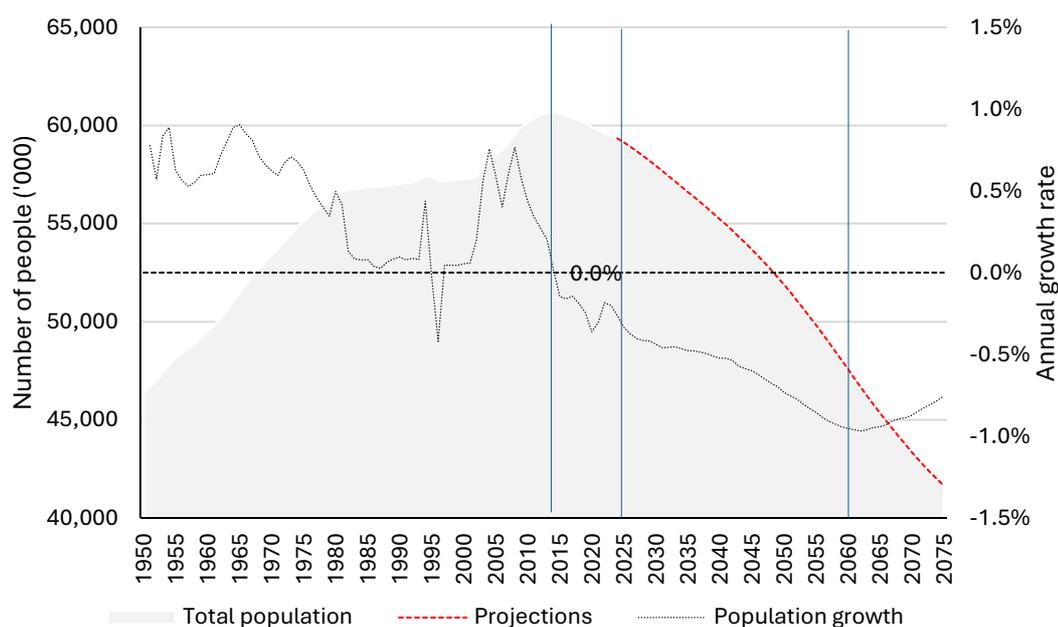
Source: UNDESA 2024.

Italy's demographic decline is primarily driven by persistently low and falling fertility rates. While population aging is often associated with increased life expectancy, in Italy, it largely reflects insufficient births to replace an aging population. The number of deaths—driven by a growing share of elderly individuals—has consistently exceeded the number of births since the mid-2010s, reinforcing the downward demographic trend (figure 1.3).

Figure 1.3 Crude Death and Birth Rates in Italy, 1950–2100
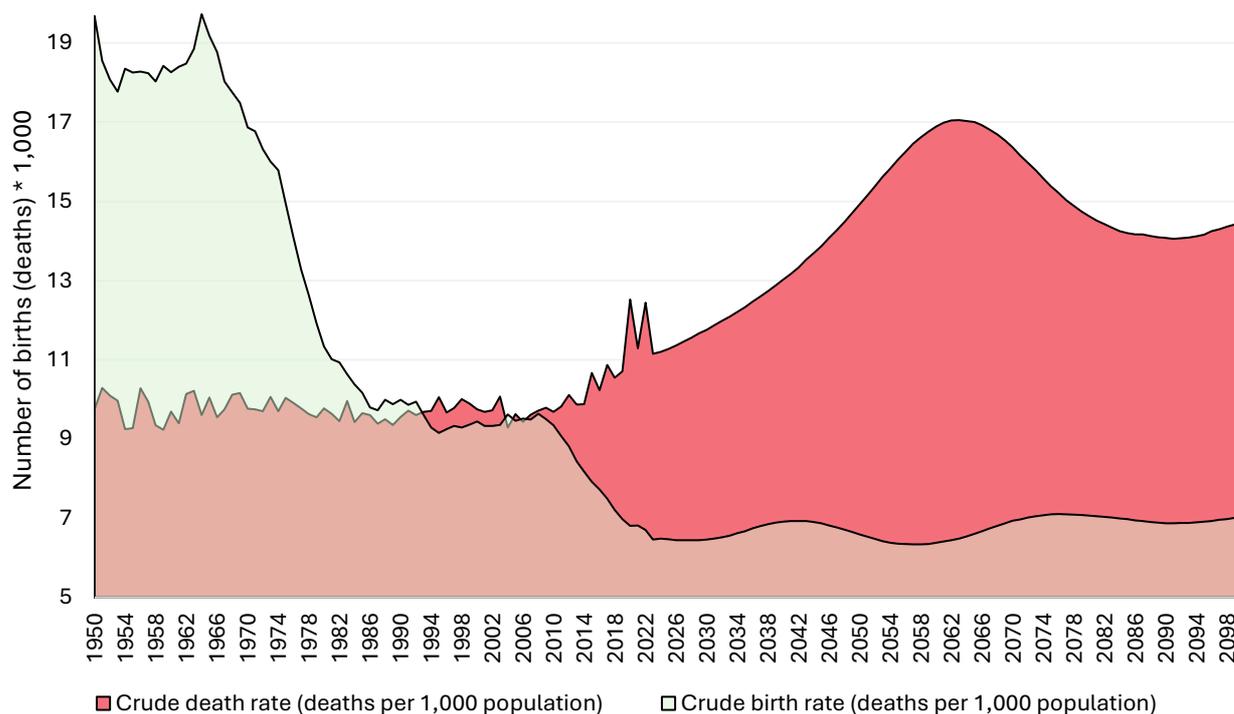
Source: UNDESA 2024.

Box 1.2 Economic Roots of Italy's Fertility Decline

Demographic trends are driven by the interrelated dynamics of fertility, mortality, and migration, which evolve in parallel to broader economic, social, and institutional transformation in a country. As economies modernize, the process of structural transformation—from agrarian to industrial and service-based systems—reshapes household behavior and fertility choices (Baeumler et al. 2021). Urbanization, higher educational attainment (particularly among women), and greater female labor force participation raise the opportunity cost of childbearing, while higher costs of living in urban centers further constrain family size. At the same time, economic development and improved public health infrastructure reduce mortality rates and extend life expectancy. These parallel shifts accelerate the transition toward an older population structure.

In Italy, this demographic transition has advanced to an extreme stage. The total fertility rate has fallen to 1.2 children per woman, far below the replacement level of 2.1 required to maintain population size in the absence of migration (UN 2025).

Italy's low fertility rate is closely linked to economic insecurity, especially among younger cohorts facing high youth unemployment, nonstandard employment, and delayed entry into stable, full-time work. These labor market constraints limit the ability of young adults to make long-term decisions, even as the rising costs of housing, childcare, and education increase both the direct and opportunity costs of parenthood.

The relationship between fertility and economic conditions is reinforced by wage dynamics. Empirical evidence points to a positive elasticity between real wage growth and fertility, implying that stagnating or declining real earnings depress birth rates (figure B1.2.1). In Italy, real wages have fallen steadily since 2011, eroding household purchasing power. As incomes decline and essential expenditures rise, fertility decisions become increasingly sensitive to macroeconomic volatility and job insecurity. The result is a pattern of postponed or foregone childbearing, with fertility typically declining after short lags following economic downturns—reflecting how demographic behavior responds directly to labor market fragility.

Figure B1.2.1 Fertility Rates and Real Wages in Italy, 2001−22
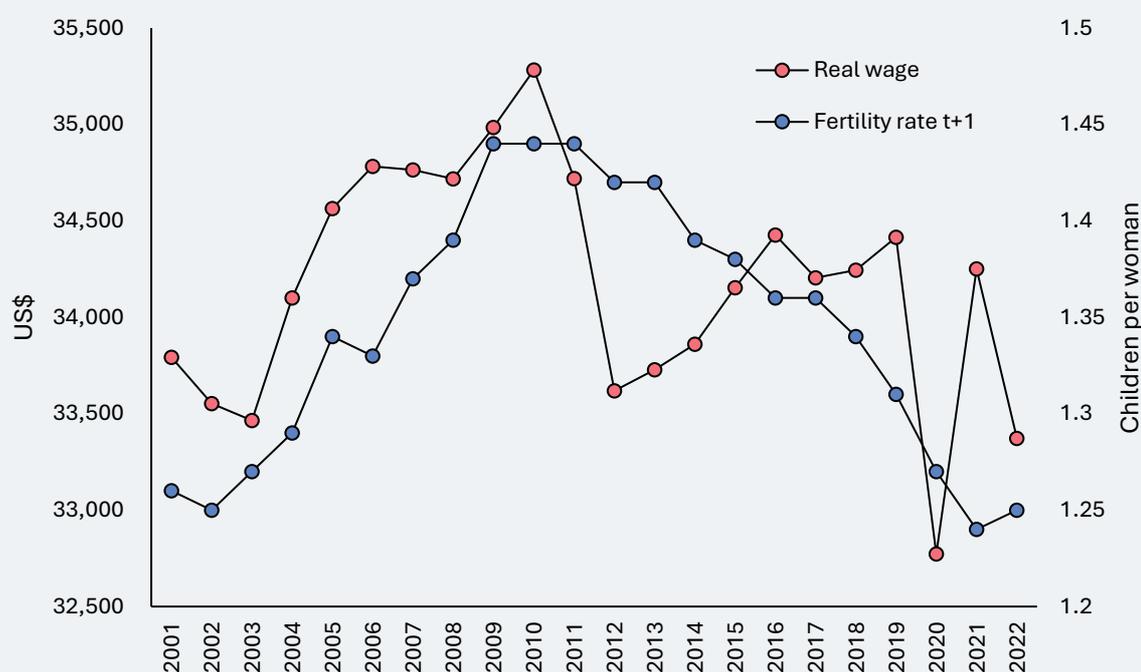
Source: OECD (2024) for real wages; UNDESA (2024) for fertility rates.

Demographic trends in fertility, mortality, and life expectancy have significantly shaped the age structure of Italy's population (Figure 1.4). Over the past five decades, Italy has undergone a profound demographic shift—from a relatively youthful society to an increasingly aging one. Persistently declining fertility rates have contributed both to overall population decline and to a progressively older age structure. For example, in 1975 the population pyramid had a broad base, reflecting a large number of children and young people. By 2000, the base had narrowed, signaling slower population growth. In 2025, the pyramid shows a clear bulge among middle-aged cohorts and a further contraction of the youth population. Looking ahead to 2050, the structure becomes

increasingly inverted, with the largest cohorts concentrated in older age groups, particularly those aged 65 and over. This transformation reflects persistently low fertility and steadily rising life expectancy.

Two key challenges arise from Italy's projected demographic structure in 2050. First, population aging—driven by a rising share of older individuals and a shrinking youth population—will substantially reduce the size of the working-age population. This shift is expected to intensify pressures on labor markets, social protection systems, and healthcare services.

Second, equally significant is the absolute decline in the working-age population. By 2050, its share is projected to fall by around 15 percentage points compared to 2020, equivalent to a loss of approximately 11.5 million individuals. This sharp contraction raises critical questions about the sustainability of economic growth and about who will support an increasingly large dependent population.

Figure 1.4. Italy's Population Pyramid: Past, Present, and Future
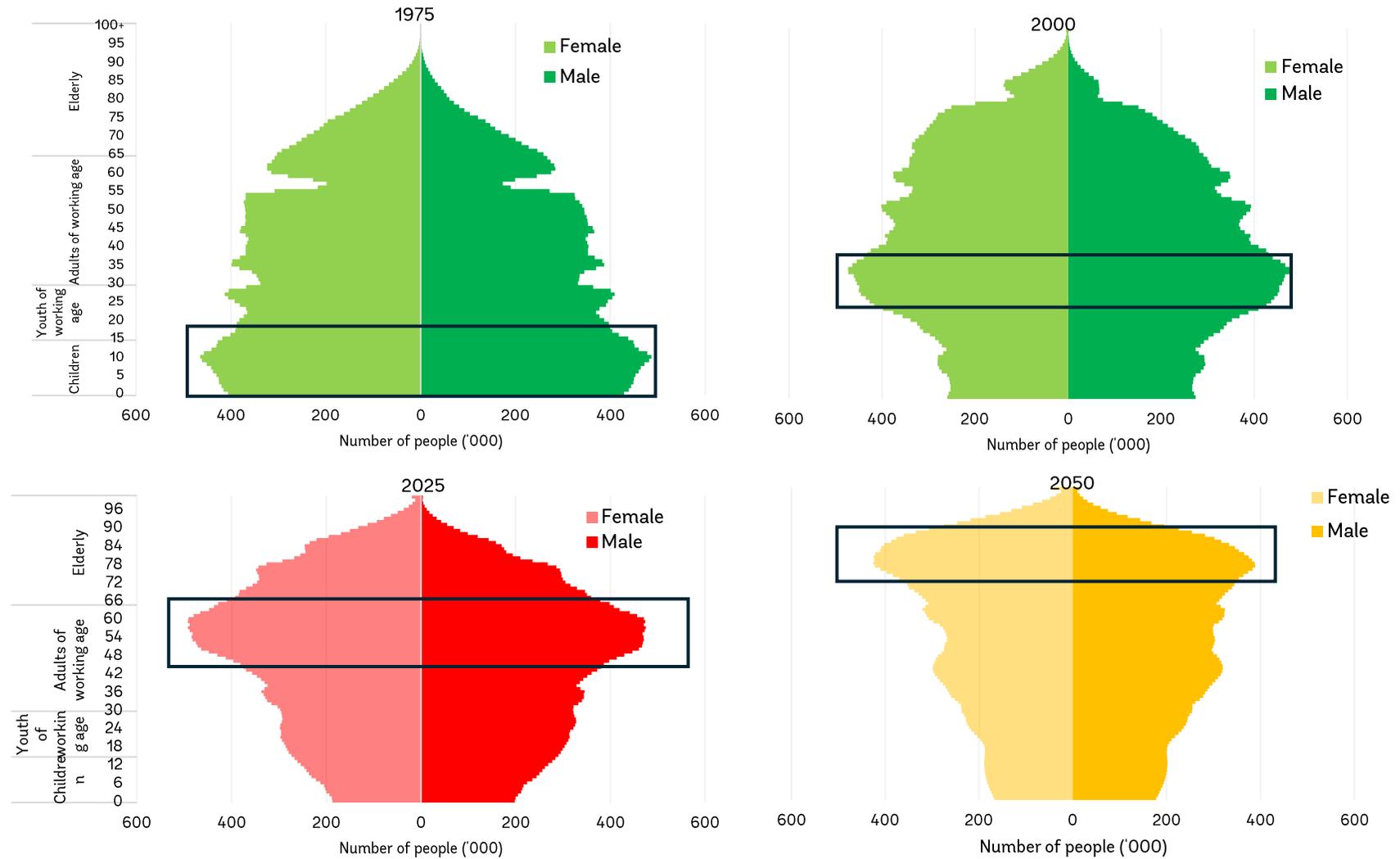
Source: United Nations, Department of Economic and Social Affairs, Population Division. (2024). World Population Prospects 2024, Online Edition. Retrieved from

https://population.un.org/wpp/

From Demographic Trends to the Capacity of the Labor Force to Support an Aging Population

Changing demographic structures are placing increasing pressure on Italy's labor supply. The evolving shape of the population pyramid reflects a sustained contraction of the working-age population alongside a growing share of individuals aged 65 and over. As a result, the inverse dependency ratio—measuring the number of working-age individuals (15–64) per person aged 65+—has declined markedly. This deterioration is driven by the elderly population expanding more rapidly than the labor force base.

In 2025, the ratio reached a critical threshold of 2.5 (Figure 1.5) (Acosta et al., 2025). While any specific threshold is illustrative, the broader trajectory is more relevant: the working-age population is shrinking faster than the retired population, increasing the economic burden placed on each worker. This structural shift has significant implications for labor supply, potential output growth, and the long-term sustainability of public finances.

Under United Nations projections, the inverse dependency ratio is expected to decline further to 1.4 by 2075. Beyond the ratio itself, the projected absolute decline in the working-age population signals a contraction of the country's productive base. This dual pressure—fewer workers per retiree and fewer workers overall—raises concerns regarding labor availability, economic resilience, and the sustainability of social protection systems (Figure 1.5).

Figure 1.5. Population Trends by Key Demographic Groups (Children, Youth, Adults, and Elderly) and the Inverse Dependency Ratio

Source: United Nations, Department of Economic and Social Affairs, Population Division. (2024). World Population Prospects 2024, Online Edition. Retrieved from https://population.un.org/wpp/

This demographic transition also implies a reduced capacity of younger cohorts to replace retiring workers (Figure 1.6). As large cohorts exit the labor market, smaller cohorts are entering it, increasing the risk of structural labor shortages. To capture this forward-looking dynamic, the replacement ratio compares the number of children aged 5–14 (future entrants into the 15–24 working-age group) with adults aged 55–64 (who are expected to transition into retirement over the next decade). The indicator provides an early signal of potential labor market imbalances.

In Italy, the replacement ratio has declined to approximately 0.5. This means that for every two individuals expected to exit the labor force in the coming decade, only one potential entrant is available to replace them. Persistently low fertility rates and sustained population aging are the primary drivers of this imbalance. The implications extend beyond labor supply: a reduced inflow of new workers increases pressure on productivity growth, potential output, and the financial sustainability of pension and social insurance systems.

Figure 1.6. Population Trends by Key Demographic Groups (Children, Youth, Adults, and Elderly) and the Inverse Dependency Ratio

Source: United Nations, Department of Economic and Social Affairs, Population Division. (2024). World Population Prospects 2024, Online Edition. Retrieved from https://population.un.org/wpp/
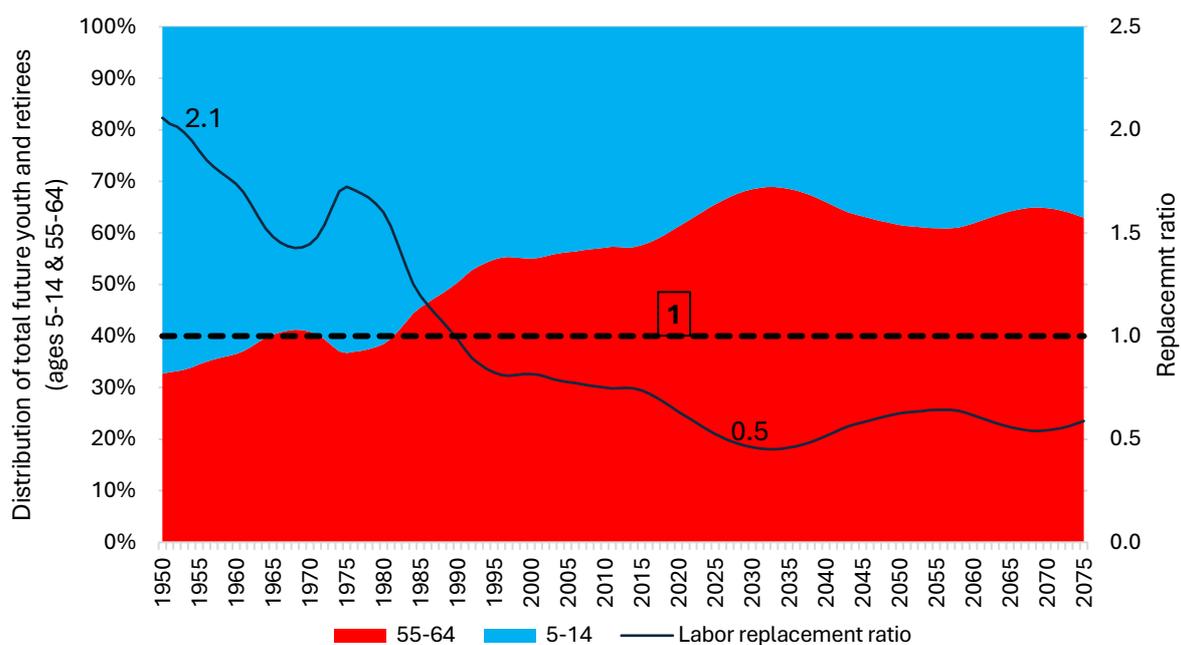
Without policy responses —including higher labor force participation, improvements in human capital and productivity, longer working lives, and well-managed labor migration—**the declining size of incoming cohorts will limit economic growth and deepen labor shortages across regions and sectors.**

Box 1.3 Migration as a Demographic and Labor Market Stabilizer in Italy

Migrants play a central role in sustaining Italy's labor force and mitigating the effects of demographic aging. As the working-age population contracts and the share of older individuals rises, migration represents one of the few mechanisms capable of replenishing labor supply and preserving economic dynamism.

Across EU countries, data reveal a clear inverse relationship between demographic pressure— captured by lower inverse dependency ratios—and the share of migrants in the total population. Countries facing less favorable demographic structures tend to host larger migrant populations. This pattern suggests that migration functions as a demographic stabilizer, helping aging societies sustain their labor force and mitigate the economic consequences of population decline. Italy, however, stands out as an outlier in this relationship. In 2024, it recorded one of the lowest inverse dependency ratios in the EU—below those of Portugal, Greece, and Germany—while hosting a comparatively smaller share of migrants than Germany and Greece, and a similar share to Portugal, whose demographic structure remains relatively more favorable. The combination of a rapidly shrinking workforce and comparatively limited migrant inflows is intensifying pressures on the pension system, healthcare infrastructure, and overall labor market performance.

Figure B1.3.1 Inverse Dependency Ratio and Migrant Share in EU Countries (1990–2024)
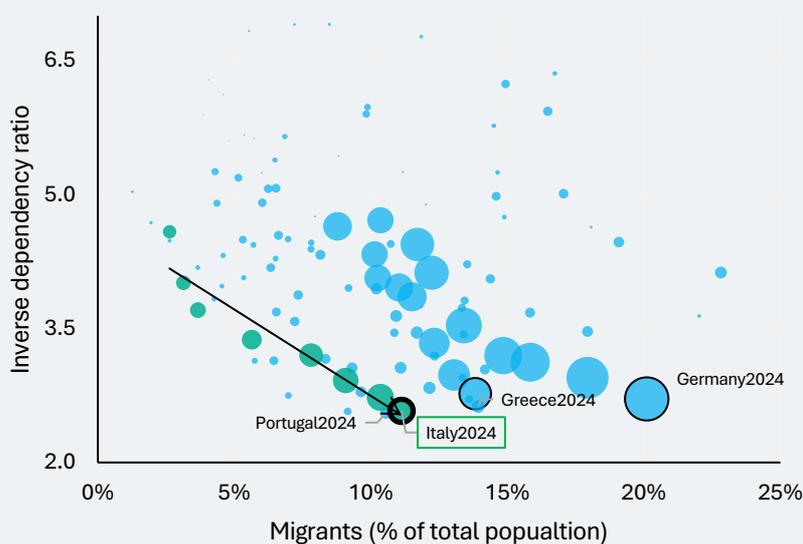
Source: United Nations, Department of Economic and Social Affairs, Population Division. (2024). World Population Prospects 2024.
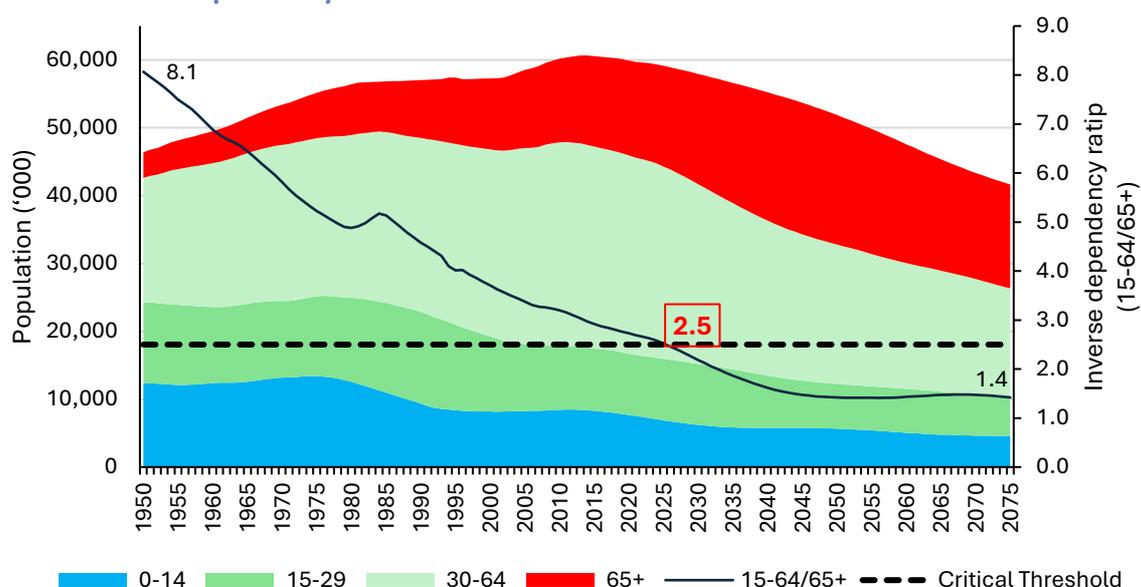
1.3. Labor Market Outlook

From Job Shortages to Worker Shortages. Italy's labor market is increasingly constrained by limited labor supply rather than insufficient labor demand. Since 2015, employment growth has outpaced changes in the working-age population (Figure 1.7, left side). While the size of the working-age population has remained broadly stable, employment has continued to expand, raising the employment-to-population ratio. This pattern indicates a structurally tightening labor market in which the availability of workers has become the binding constraint on further employment growth.

Labor demand remains strong in Italy. The sustained rise in the employment-to-population ratio and the steady decline in unemployment—particularly since 2021 (Figure 1.7, right side)—reflect rapid absorption of available jobseekers. Together, these forces are tightening labor supply: demographic trends limit new entrants, while strong demand reduces the remaining reserve of jobseekers.

Figure 1.7. Trends in the Working-Age Population and Employment (left side); Trends in the Unemployed Populations (right side)
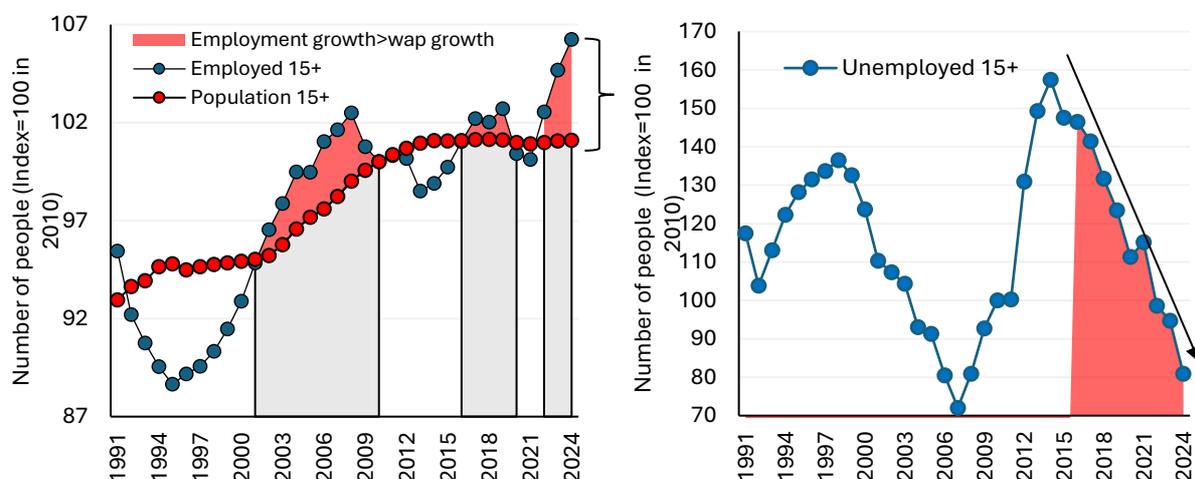
Source: International Labour Organization (ILO), ILOSTAT (2024).

Labor market tightening is also reflected in Italy's declining labor dependency ratio—the number of non-working dependents relative to employed individuals (Figure 1.8). Since 2014, this ratio has declined, reaching 1.4 non-working dependents per employed person in 2024. The reduction largely reflects sustained employment growth, which has increased the share of the population engaged in productive activity.

A declining labor dependency ratio is typically associated with improved economic capacity, as more workers support relatively fewer dependents. This can strengthen fiscal sustainability by expanding the base of contributors to tax and social security systems while reducing reliance on public transfers.

However, this improvement must be viewed in the context of Italy's ongoing demographic transition. Population aging is expected to accelerate over the coming decades, increasing the share of older dependents. If the elderly population grows faster than employment, the labor dependency ratio will eventually reverse its downward trend. This trajectory underscores the importance of policies that expand effective labor supply—including higher labor force participation, continuous skills upgrading, and the attraction and retention of migrant workers—to sustain economic performance and fiscal stability.

Figure 1.8. Trends in the Labor Dependency Ratio and Employment Growth in Italy
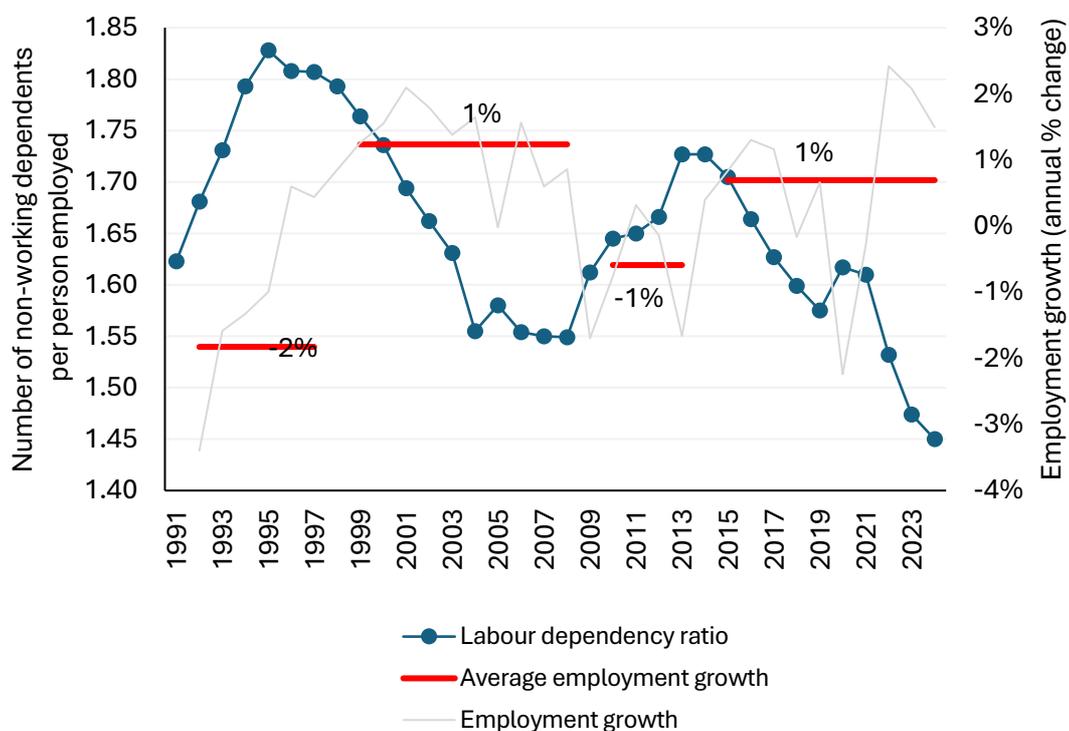
Source: International Labour Organization (ILO), ILOSTAT (2024).

Box 1.4. Subnational Labor Demand and Emerging Worker Shortages in Italy

Municipal labor market conditions reveal growing spatial imbalances in labor supply and demand. Although imperfect, unemployment rates provide a practical proxy for local labor demand. Consistent with the Beveridge curve framework, low unemployment indicates tighter labor markets and stronger demand, while high unemployment signals weaker demand or structural mismatches.

Because the Italian National Statistics Office (ISTAT) publishes unemployment data only at the regional level, municipal unemployment rates were estimated using a proportional allocation method combining demographic and economic proxies. Regional unemployment counts were distributed across municipalities according to working-age population, while employment was allocated using Nighttime Light (NTL) intensity as a proxy for economic activity (Hu & Yao, 2022). Municipal unemployment rates were then calculated as the ratio of estimated unemployed individuals to the local labor force.

The results show a pronounced North–South divide (Figure B1.3.1). Southern municipalities—particularly in Molise, Campania, Apulia, Basilicata, Calabria, and Sicily—exhibit persistently high unemployment, reflecting weak labor demand. Northern municipalities—especially in Lombardy, Veneto, Emilia-Romagna, and parts of Tuscany, Marche, and Lazio—display low unemployment and high economic activity, indicating limited labor availability.

Figure B1.4.1 Municipal Unemployment Rates (left side); Nighttime Light Intensity as a Proxy for Local Labor Demand (right side)
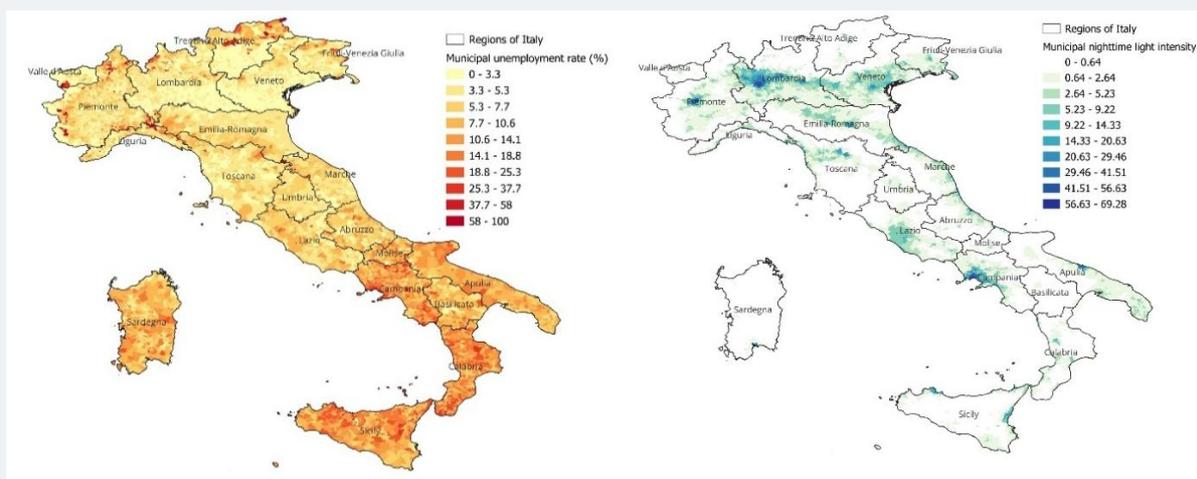
Source: ISTAT (regional data) and derived municipal estimates; Nighttime Light data from NASA/NOAA (VIIRS).

These spatial disparities point to emerging labor shortages in economically dynamic regions, where demographic aging is expected to further reduce labor supply. Municipalities with stronger economic activity—including Milan, Bologna, Modena, Padova, Prato, and Parma—are also experiencing declining shares of working-age residents, suggesting that growth centers will face intensifying labor constraints.

Addressing these imbalances will require both internal labor mobility and targeted international recruitment. Policies that reduce barriers to domestic relocation could help reallocate workers from high-unemployment southern regions. At the same time, migration partnerships—such as those with Tunisia—could help fill persistent shortages in middle-skilled occupations.

Italy's Shrinking Labor Force: Which Profiles Are Becoming Scarcer?

Building on the labor market outlook described in Section 1.3, this section examines whether the skill composition of Italy's labor supply aligns with the qualifications required by newly created jobs. Persistent gaps between job requirements and worker profiles signal structural mismatches that constrain employment growth and limit productivity gains. Identifying these gaps is therefore central to designing policies that expand skills in line with evolving labor demand.

Italy's labor market has undergone a sustained structural shift toward more skill-intensive employment (Figure 1.9). High-skilled occupations accounted for 38 percent of total employment in 2024—up from 25 percent in the early 1990s—reflecting a long-term upgrading of labor demand.

This shift has accelerated in recent years. Between 2022 and 2024, Italy generated approximately 815,000 net new jobs. Nearly all were concentrated in medium- and high-skilled occupations: 722,000 high-skilled and 95,000 mid-skilled positions, while low-skilled employment declined slightly. Job creation is therefore increasingly concentrated in occupations requiring at least upper secondary education or vocational training, with limited expansion of opportunities for low-skilled workers.

Figure 1.9. Trends in Employment by Skill Level, 1992–2024.
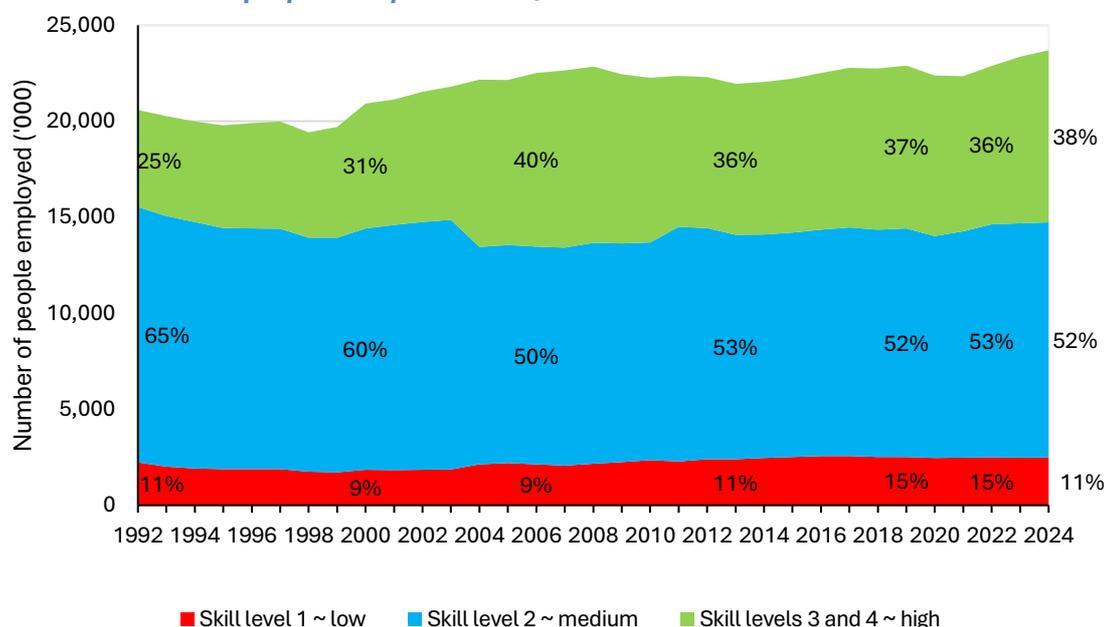
Source: International Labour Organization (ILO), ILOSTAT (2024).

Labor supply, however, has not adjusted at the same pace. Unemployment remains disproportionately concentrated among individuals with low educational attainment (Figure 1.10).

In 2024, the unemployment rate for workers with at most primary education stood at around 10 percent—compared with 6 percent for those with upper secondary or vocational qualifications and 3 percent for tertiary-educated individuals. This steep gradient reflects declining demand for low-skilled labor alongside limited slack among medium- and high-skilled workers.

Figure 1.10. Key labor market indicators: employment, unemployment, and inactivity rates, by gender, age, and education.
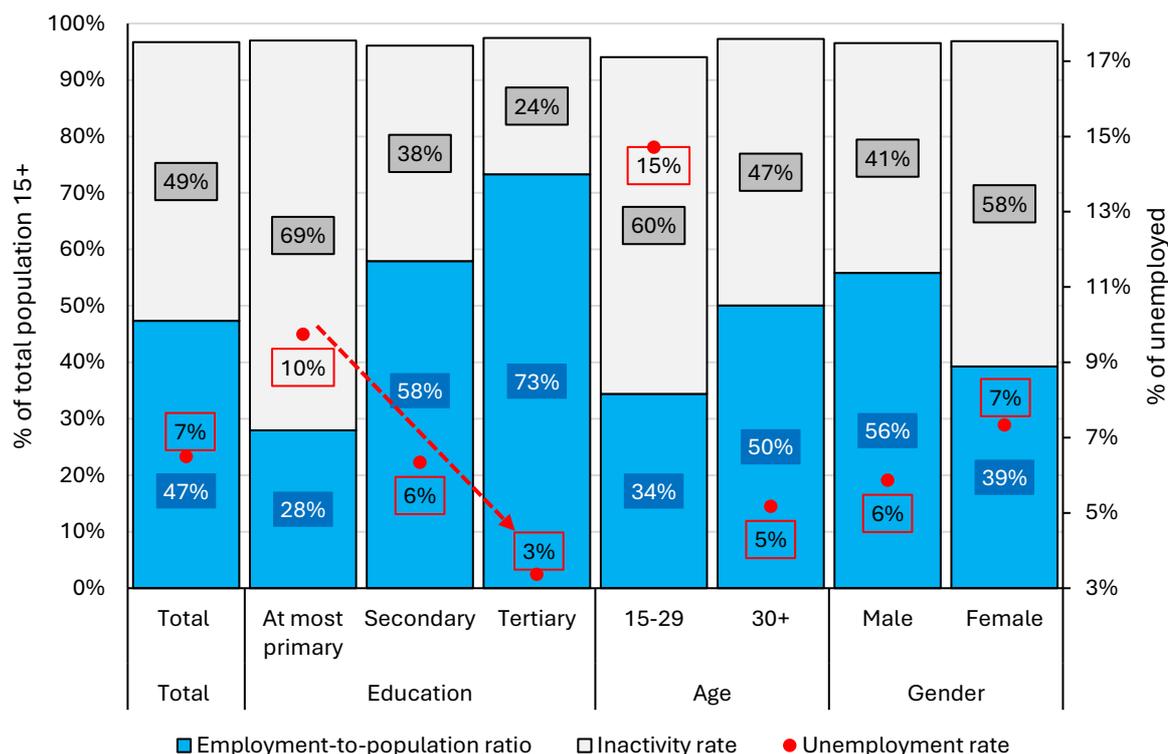
Source: National Statistics Office (ISTAT), Employment and Unemployment Statistics, 2024.

Recent dynamics reinforce this imbalance. The pool of unemployed workers with medium and high education—the groups aligned with expanding occupations—has been shrinking rapidly. In 2024, there were approximately 217,000 unemployed tertiary-educated individuals and 773,000 with upper secondary or vocational qualifications. Both figures have declined substantially in recent years, even as employment in corresponding occupations expanded.

Between 2019 and 2024, unemployment among tertiary-educated workers fell by 34 percent, while employment in tertiary-level occupations increased by 15 percent. Similarly, unemployment among those with secondary or vocational qualifications declined by 30 percent, while employment in related occupations grew by 6 percent.

The supply of qualified jobseekers is therefore tightening faster than demand is expanding. This divergence between skill-biased labor demand and slow supply adjustment is increasingly binding.

Firms seeking medium- and high-skilled workers face a diminishing pool of candidates, leading to longer vacancy durations, rising wage pressures, and greater reliance on internal training, reskilling, or migration.

Figure 1.11. Trends in employed and unemployed by Level of education Attainment
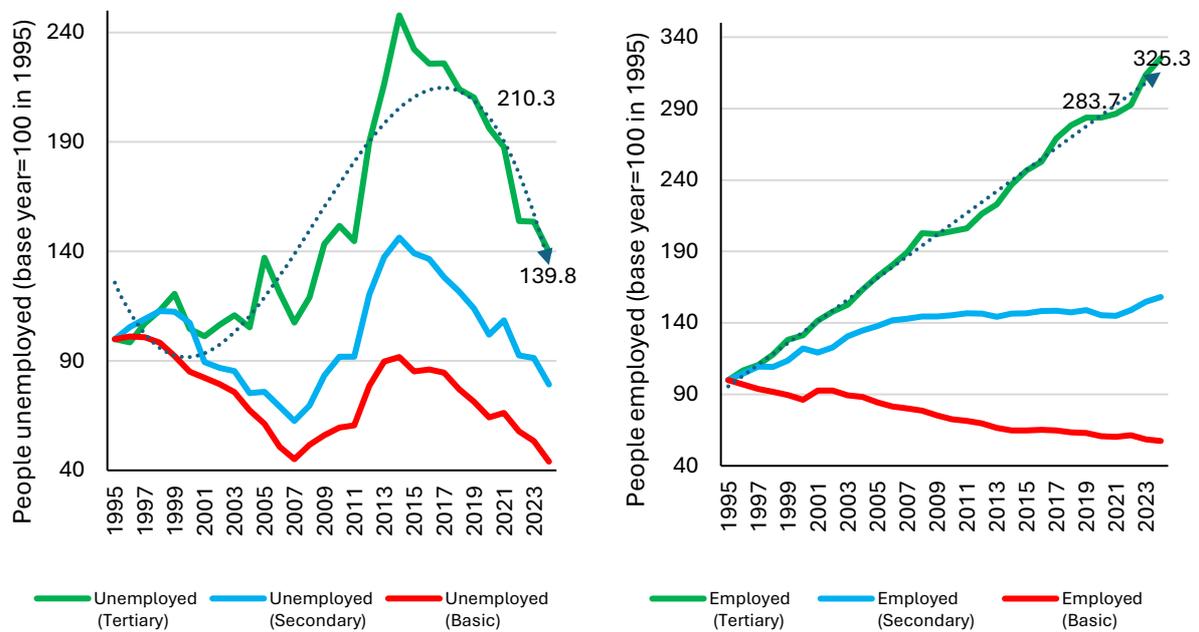
Source: International Labour Organization (ILO), ILOSTAT (2024).

Geographic disparities further compound these constraints. A significant share of jobseekers remains concentrated in southern regions, while most employment growth is occurring in the north. This spatial misalignment reinforces recruitment difficulties and highlights the need for policies that address both skills formation and regional labor mobility.

Finally, the analysis relies on educational attainment as a proxy for skills, which introduces measurement limitations. Formal qualifications do not fully capture competencies, work experience, or task-specific capabilities. As a result, education-based indicators may overstate or understate the true extent of skill shortages and surpluses.

Box 1.5. An Aging Workforce and the Vanishing Youth in Italy

Italy's labor force is aging rapidly and the number of young workers continues to decline.
Evidence from the EU Labour Force Survey shows a sustained contraction in youth employment,
driven primarily by demographic decline rather than cyclical labor market conditions (Figure 16).

Figure B1.5.2 Youth Employment Growth among EU countries, by citizenship

Youth (15-39) employment growth (% change 2005-2024)

■ EU 27   ■ Non-EU 27   ▨ Origin
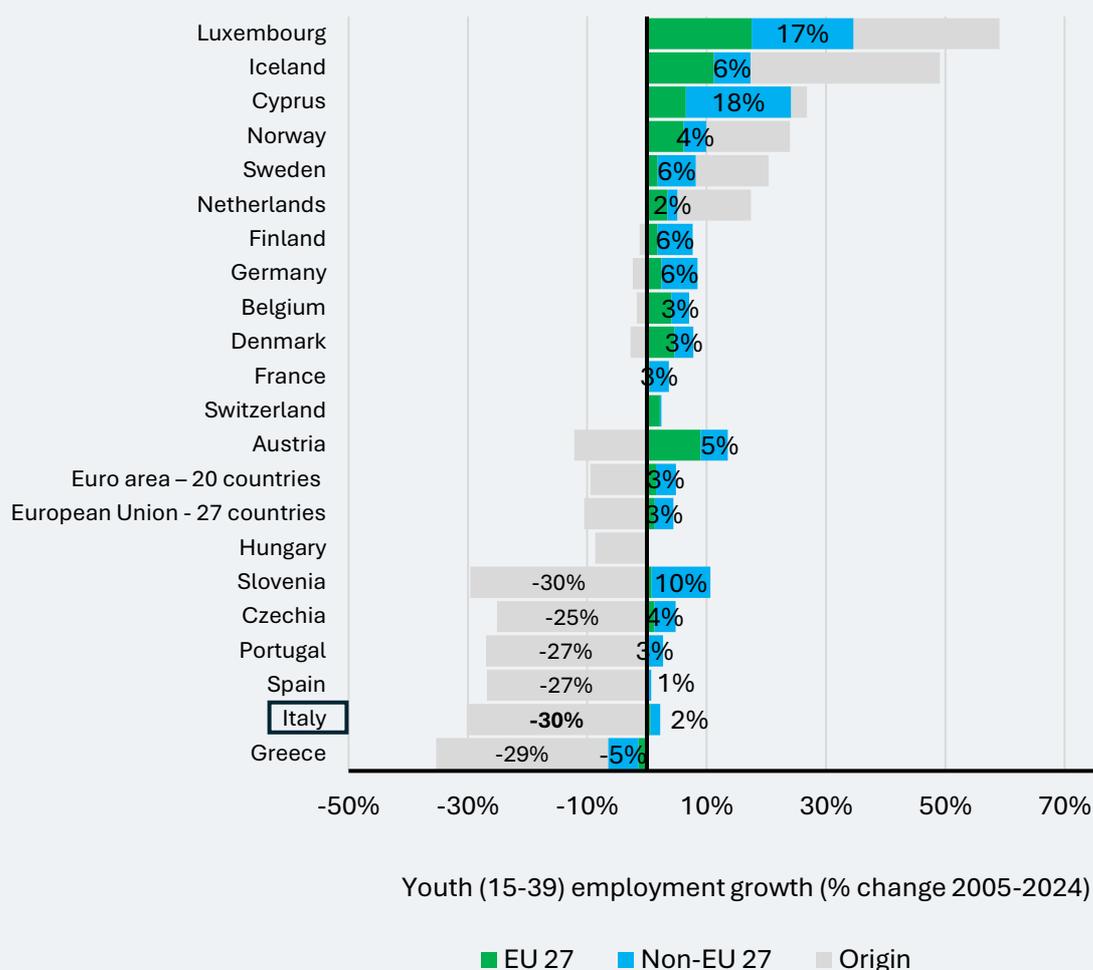
Source: Authors' elaboration based on Eurostat, Employment by sex, age and country of birth (1 000) — dataset
lfsa_egacob, EU Labour Force Survey (EU-LFS).

Notes: The figure shows the decomposition of total youth employment growth between 2005 and 2024, highlighting the
respective contributions of native-born workers and foreign-born workers from EU and non-EU countries.

**Between 2005 and 2024, employment among young Italian nationals fell by roughly 30
percent—the steepest decline recorded among EU countries.** This sharp contraction reflects
persistently low fertility and the shrinking size of successive cohorts entering the labor market. As
fewer young people transition into employment, the generational renewal of the workforce is
weakening.

Employment among foreign youth has increased only modestly over the same period (+3 percent overall, including +2 percent among non-EU nationals). However, this limited growth has not compensated for the substantial decline among Italian youth. As a result, the total number of young employed individuals has continued to fall, accelerating workforce aging and reducing the inflow of new labor market entrants.

This demographic shift has direct implications for migration policy. In the absence of stronger domestic youth inflows, migration becomes an increasingly important mechanism for stabilizing the age structure of the labor force and sustaining labor supply. Younger migrant workers can partially offset declining entry cohorts, support intergenerational workforce renewal, and help meet skill needs in expanding sectors. Without sufficient inflows of working-age migrants—particularly younger cohorts—Italy's labor market will face intensifying recruitment constraints, faster workforce aging, and growing pressure on productivity growth and social protection systems.

2. CRITICAL OCCUPATIONS FACING A LABOR SHORTAGE

2.1. Conceptual Framework of the Labor Market Assessment

This labor market assessment looks at two factors: filled labor demand (i.e., realized hires that lead to net job creation) and unmet labor demand (i.e., unfilled job vacancies). By analyzing both components in parallel, the framework offers insights into sectoral and occupational dynamics, as well as hiring pressures in Italy (figure 2.1). This approach serves as a basis for identifying Italy's most critical labor shortages and for constructing a Critical Occupations List (COL) using a robust statistical methodology (World Bank 2020).

Figure 2.2 Three Factors Considered in the Labor Market Assessment

Filled Labor Demand

Number and % of new jobs created by:
Occupations across economic sectors

Unfilled Labor Demand

Number and incidence of job vacancies by:

1. Occupation (ISCO)
2. Economic sector (ISIC)
3. Sought-after skills (ESCO)

Profiles of workers in the top 30 critical occupations

Age, sex, nationality, educational level, and type
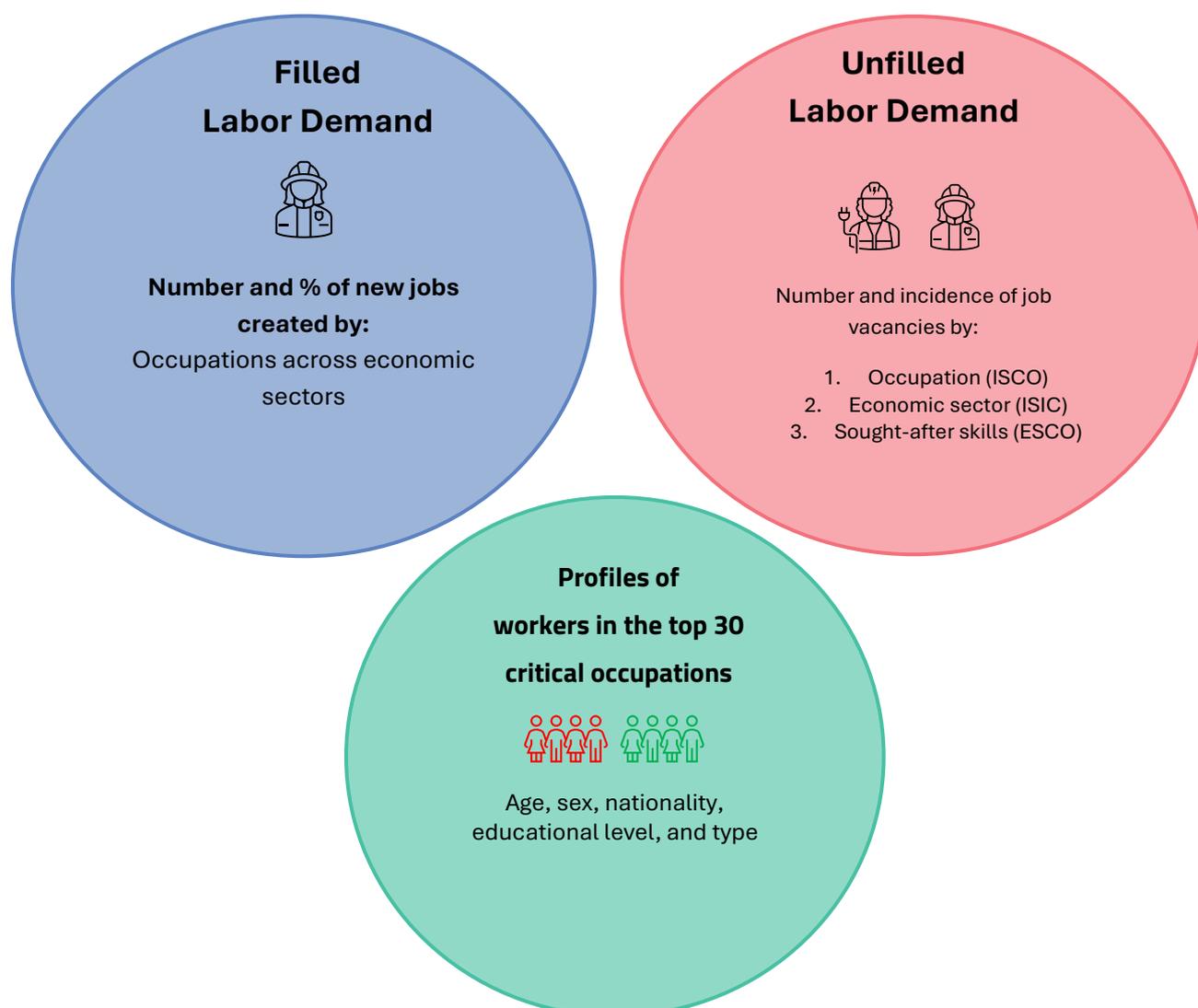
Note: ESCO = European Skills, Competences, Qualifications, and Occupations; ISCO = International Standard Classification of Occupations; ISIC = International Standard Industrial Classification of All Economic Activities.

The assessment relies on two complementary levels of analysis:

1. **Descriptive assessment of labor demand (chapter 3).** This component analyzes employment growth and vacancy rates across sectors and occupations to identify trends in hiring activity, expanding areas of demand, and emerging bottlenecks.

2. **Critical Occupations List (COL) methodology (chapter 4).** A structured, indicator-based approach is used to identify occupations that face ongoing and complex recruitment challenges, which often signal structural mismatches between labor supply and demand.

Together, these analytical layers link overall labor market trends to actionable evidence on where policy interventions and skill development initiatives are best targeted. The results provide a solid evidence base for identifying occupations most suitable for Global Skills Partnerships between Italy and partner countries. It should be noted, however, that this assessment focuses exclusively on labor demand.

2.1. Descriptive Analysis

The descriptive analysis of filled labor demand examines patterns of net job creation, disaggregated by sector and occupation. This makes it possible to identify the economic sectors that generate the largest employment gains, as well as the occupations with the most vacancies. Understanding these dynamics is essential for distinguishing sectors capable of absorbing additional labor from those where employment growth will likely remain stagnant.

The analysis of unfilled labor demand examines the stock of open vacancies, disaggregated by sector and occupation, in both absolute and relative terms. Examining the reasons why job positions remain unfilled—such as skills mismatches, geographic barriers, limited mobility, suboptimal working conditions, or wage constraints—helps to identify the structural frictions that impede labor market adjustment.

2.2. The Critical Occupations List

After mapping broad labor market trends with descriptive statistics, the analysis proceeds to identify specific occupations where labor shortages are structural rather than temporary. To this end, the assessment uses the COL—a structured, indicator-based framework that tracks multiple signals of labor market pressure (such as wage growth, employment expansion, and vacancy rates)—to distinguish between short-term recruitment challenges and persistent mismatches between labor demand and supply (box 2.1).

Box 2.1 The Critical Occupations List at a Glance

The Critical Occupations List (COL) is a data-driven tool for skills and labor monitoring, designed to support workforce planning and migration partnerships. It identifies occupations that are both critical for economic growth and consistently undersupplied relative to employer demand.

The list applies the **International Standard Classification of Occupations (ISCO**[1]**)** at the 4-digit level, ensuring:

1. **Precision and operational relevance.** Shortages are identified at a granular level that distinguish closely related jobs (e.g., different types of technicians or trades).

2. **International comparability.** Results can be benchmarked across countries applying the same classification system, increasing their utility for labor mobility initiatives.

At its core, the COL seeks to identify occupations that are critical to economic growth yet remain consistently undersupplied relative to employer demand. A precise occupational definition is fundamental to this exercise. For this reason, the COL adopts the International Standard Classification of Occupations (ISCO) at the 4-digit level, which allows shortages to be pinpointed with much greater specificity than broader 1- or 2-digit categories (see box 2.2 for details on the ISCO). This level of detail captures meaningful distinctions between closely related occupations— such as between different types of technicians or skilled trades—that often face very different demand and supply dynamics. The use of ISCO at the 4-digit level serves two critical purposes. First, it ensures that the analysis identifies shortages in a granular and operationally relevant manner, making the results directly actionable for labor market policies and mobility initiatives. Second, it provides international comparability, allowing the findings for Tunisia to be benchmarked against other countries that employ the same classification system.

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[1] The International Standard Classification of Occupations (ISCO), developed by the International Labour Organization (ILO), is a hierarchical system for classifying jobs based on tasks and duties. At the 4-digit level, it distinguishes specific unit groups, for example, *2512: Software Developers* is classified separately from related occupations such as *2511: Systems Analysts* or *2513: Web and Multimedia Developers*. For details, see: https://ilostat.ilo.org/methods/concepts-and-definitions/classification-occupation/.

Box 2.2 What Is the ISCO?

According to the International Labour Organization's International Standard Classification of Occupations 2008 (ISCO-08), an *occupation* is "a set of jobs whose main tasks and duties are characterized by a high degree of similarity" (ILO 2008). In ISCO-08, occupations are grouped sequentially from the broadest categories (1-digit) to the most detailed (4-digit).

The ISCO-08 structure integrates skills into the classification of occupations. Higher-skill occupations require more advanced education and involve more complex tasks, whereas lower-skill occupations involve simple, routine, or manual tasks. This linkage ensures that occupational analysis captures both the nature of work performed and the competencies required to perform it.

At the 1-digit level, ISCO-08 classifies occupations into major groups, each broadly associated with a corresponding skill level (table B2.2.1).

Table B2.2.1 ISCO: Occupational Groups and Associated Skill and Education Levels

ISCO-08 Major Group (1-digit)	Description	Typical Skill Level*	Typical Education (ISCED)
1. Managers	Plan, direct, and coordinate policies and activities	**High** (Level 4)	8–9 (bachelor's or master's)
2. Professionals	Perform complex tasks requiring advanced knowledge	**High** (Level 4)	6–9 (bachelor's, master's, doctorate)
3. Technicians and associate professionals	Perform technical and practical tasks supporting professionals	**Medium-high** (Level 3)	5–6 (post-secondary, nontertiary, short-cycle tertiary)
4. Clerical support workers	Record, organize, store, and retrieve information; handle routine office tasks	**Medium** (Level 2)	3–4 (upper secondary, vocational or general)
5. Service and sales workers	Provide personal services; sell goods and services	**Medium** (Level 2)	3–4 (upper secondary, vocational or general)
6. Skilled agricultural, forestry and fishery workers	Grow crops, raise animals, catch fish	**Medium** (Level 2)	2–3 (lower to upper secondary)
7. Craft and related trades workers	Produce goods and services using tools, machinery, and craft skills	**Medium** (Level 2)	3–4 (upper secondary, vocational or general)

8. Plant and machine operators, and assemblers	Operate machinery; assemble products	**Medium** (Level 2)	3–4 (upper secondary, vocational or general)
9. Elementary occupations	Perform simple and routine tasks requiring use of handheld tools and physical effort	**Low** (Level 1)	1–2 (primary or lower secondary)

Source: ILO 2008.
Note: ISCED = International Standard Classification of Education; ISCO = International Standard Classification of Occupations.

The construction of the COL relies on a set of quantitative indicators that capture various dimensions of occupational tightness and recruitment pressure (table 2.1). These indicators act as empirical proxies for labor market imbalances, enabling a systematic and data-driven identification of shortage occupations.

A key objective in the selection of indicators is to balance analytical relevance with operational feasibility. On one hand, the indicators must meaningfully capture core aspects of labor market disequilibrium—such as persistent vacancies, hiring frictions, wage pressure, and mismatches between skill supply and demand. On the other hand, they must be derived from reliable and regularly available data sources using transparent, replicable methods, to ensure both statistical integrity and usability for policy and workforce planning.

Twelve indicators are computed at the 4-digit ISCO level, drawing on three complementary sources: (1) the Italian Labor Force Surveys; (2) administrative data from "Comunicazioni Obbligatorie";[2] and (3) data on online job postings from Lightcast. These indicators are grouped into three analytical categories, each capturing a distinct dimension of labor demand dynamics:

(1) Employment-based indicators (seven)[3] capture changes in employment levels and contract creation, reflecting shifts in labor utilization at the extensive margin.

(2) Earnings-based indicators (two) measure changes in median posted wages. Persistent upward wage pressure may indicate supply constraints, with employers offering higher wages to attract scarce skills.

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[2] Comunicazioni Obbligatorie are mandatory notifications that Italian employers must submit to the Italian Ministry of Labor and Social Protection for each employment relationship, including hirings, terminations, and contract changes. They provide official administrative data on labor market flows and can be used as a resource for labor market monitoring and statistics.
[3] Due to the transition from the CP2011 to the CP2021 occupational classification system in Italy, it was impractical to compute consistent employment growth trends over a three-year period.

(3) Volume-based indicators (three) track trends in job vacancies over short- and medium-term horizons. Persistent increases in job vacancies suggest employer-side difficulties in filling job positions, consistent with tight labor market conditions.

Together, these indicators support a multidimensional analysis of occupational demand pressure, integrating both macrolevel signals and microlevel employer behavior. The full list of indicators and their rationale is presented in table 2.1.

Table 1.1 Indicators Used to Construct the Critical Occupations List, with Data Sources and Interpretation as Signals of Shortage

Category	Indicator	Source	Time Frame	Description	Rationale
Employment based	1-year employment growth	Labor Force Survey	2023–24	Yearly percentage change in employment	A positive annual or multiyear change in employment suggests rising labor demand and potential occupational shortages.
	1-year contract growth	Comunicazioni Obbligatorie	2022–23	Yearly percentage change in new contracts	A growing number of new contracts may indicate labor demand pressure in specific occupations.
	2-year contract growth	Comunicazioni Obbligatorie	2021–23	2-year percentage change in new contracts	Same as above, but over a longer time horizon.
	Contract-to-termination ratio	Comunicazioni Obbligatorie	2023	New contracts-to-terminations ratio	A ratio above 1 suggests labor market expansion; below 1 may indicate contraction.
	Contract-to-termination ratio	Comunicazioni Obbligatorie	2022	New contracts-to-terminations ratio	A ratio above 1 suggests labor market expansion; below 1 may indicate contraction.
	Net increase in contracts	Comunicazioni Obbligatorie	2022–23	Absolute increase in number of new contracts	Complements employment growth rates by showing the volume of contract expansion.

	Net increase in contracts	Comunicazioni Obbligatorie	2021–23	Absolute increase in number of new contracts	Provides cumulative contract creation over a 2-year horizon.
Earnings based	1-year wage growth	Lightcast job postings	2023–24	Yearly percentage change in average posted salary	Wage increases reflect tighter labor markets or skill shortages.
	2-year wage growth	Lightcast job postings	2022–24	2-year percentage change in average posted salary	Sustained wage growth can indicate persistent demand-supply mismatches.
Volume based	1-year growth in postings	Lightcast job postings	2023–24	Yearly percentage change in number of job postings	A rise in postings suggests increasing employer demand.
	2-year growth in postings	Lightcast job postings	2022–24	2-year percentage change in number of job postings	Offers a broader perspective on long-term employer demand trends.
	Job vacancy rate	Lightcast + Labor Force Surveys (combined)	2024	Share of vacancies relative to total labor demand (employment + vacancies)	High vacancy rates often reflect unfilled demand and labor shortages.

Once the eight labor market indicators are computed for each occupation, they are compared against a quantitative threshold to assess whether the observed value constitutes a credible signal of occupational shortage. Exceptionally high values—such as rapid employment growth, sustained wage increases, or rising vacancy intensity—are symptomatic of structural imbalances between labor demand and supply.

To ensure statistical rigor and avoid arbitrary cutoffs, the COL applies a distribution-based thresholding approach recommended by the UK Migration Advisory Committee (Ruhs et al. 2008) **and used in Malaysia's Critical Occupations List** (World Bank 2019). For each indicator, the threshold is set at median (or mean) + 0.5 × median/mean (e.g., if the median annual growth in job postings is 10 percent, the threshold is 15 percent). An occupation is flagged as facing a shortage

when its value exceeds the threshold, and it is included in the COL if this occurs for at least three of the eight indicators—a rule that minimizes false positives from short-term fluctuations.

Occupations with fewer than three available indicators are excluded from the analysis, as the data are insufficient to provide empirical evidence of potential shortages. For occupations with three to five indicators, a stricter rule is applied: at least 66 percent of total available indicators must exceed their defined thresholds to flag a shortage occupation. This avoids classifying occupations as critical based on very limited evidence. In contrast, for occupations with six to twelve indicators at least 50 percent must exceed their defined thresholds to flag a shortage occupation. In this way, the methodology ensures that the likelihood of inclusion is not biased by the number of indicators, but instead reflects the strength and reliability of the available evidence (box 2.3).

Box 2.3 Testing Overlap and Complementarity of Labor Market Indicators Signaling Shortages

Before combining shortage signals into the Critical Occupations List (COL), it is essential to test how the 12 indicators relate to one another. This correlation analysis (table B2.3.1) ensures that the composite measure is both statistically sound and policy relevant, by serving three purposes:

1. **Avoiding redundancy.** If two indicators are highly correlated (e.g., $r > 0.5$), they may capture the same labor market signal (e.g., one- and three-year wage growth). Using both would overweight that dimension of shortage.

2. **Confirming complementarity.** Low or moderate correlations indicate that indicators capture different aspects of labor market stress—demand-side pressures (vacancy growth), supply-side adjustments (falling education requirements), or employer responses (wage premiums, hours worked). This justifies their combined use.

3. **Guiding selection.** Following the COL methodology, indicators with excessive overlap are pruned using two criteria:

   - If the overlap in shortage occupations is ≥90 percent, the broader indicator is retained.

   - If the correlation is >0.5 with ≥80 percent overlap, the indicator covering at least 75 percent of the other's occupations is retained.

As a result of the pairwise correlation analysis, 4 out of the 12 indicators were excluded from the analysis due to high correlation with other indicators. The excluded indicators are: two-year contract growth (2021–23), contract-to-termination ratio (2022), net increase in contracts (2022–

23), and two-year job postings growth (2022–24). This step ensures the parsimoniousness and interpretability of the COL by preventing the overweighting of certain labor market dimensions and maintaining a robust and nonduplicative set of indicators.

Table B2.2.1 Correlation Matrix of Labor Market Shortage Indicators

	1-year emp. growth	1-year new contract growth	2-year new contract growth	Contract-to-termination ratio	Contract-to-termination ratio	Net increase in contracts	Net increase in contracts	1-year average salary growth	2-year average salary growth	1-year job postings growth	2-year job postings growth	Job vacancy rate
1. 1-year employment growth	1											
2. 1-year new contract growth	-0.01	1										
3. 2-year new contract growth	-0.01	1	1									
4. Contract-to-termination ratio (22)	0.01	0.42	0.41	1								
5. Contract-to-termination ratio (23)	-0.05	0.07	0.07	0.71	1							
6. Net increase in contracts (22)	-0.01	0.94	0.94	0.39	0.06	1						
7. Net increase in contracts (23)	-0.03	0.68	0.68	0.27	0.04	0.84	1					
8. 1-year average salary growth	-0.04	-0.05	-0.05	-0.09	-0.04	-0.06	-0.05	1				
9. 2-year average salary growth	0.08	-0.01	-0.01	-0.09	-0.08	-0.01	-0.03	0.36	1			
10. 1-year job postings growth	-0.01	0	0	0.12	0.18	0.02	0.02	0.07	0.04	1		
11. 2-year job postings growth	-0.03	0	0	0.04	0.07	0.01	0	0.3	0.1	0.81	1	
12. Job vacancy rate	0.06	0.16	0.15	0.04	-0.06	0.15	0.07	-0.02	-0.08	-0.11	-0.12	1

Finally, once shortage occupations are identified, the analysis examines the skill content within them. This step is essential for understanding which competencies are in demand but undersupplied, guiding strategies to reduce mismatches, strengthening training systems, and improving labor market efficiency.

2.3. Data Sources

To analyze Italy's labor market, this report draws on multiple, complementary data sources at the individual, firm, and country levels. Together, these sources provide a solid empirical foundation for assessing both filled and unfilled labor demand, as well as the skill content of occupations—ultimately supporting evidence-based recommendations for a Global Skills Partnership. The following paragraphs describe the main data sources used, structured around two core components of the labor market framework.

First, the Italian Labor Force Survey (Indagine sulle Forze di Lavoro, 2021–2024) serves as the main data source to inform chapters 3 and 4 (ISTAT 2021). It provides individual-level, nationally representative data on the labor force status of the working-age population, disaggregated as employed, unemployed, and economically inactive individuals. Key variables include:

1. **Employment characteristics:** Occupation, economic sector, type of employment (wage or self-employed), and hours worked.
2. **Unemployment or inactivity:** Job search behavior, reasons for unemployment or inactivity, and underemployment.
3. **Demographic information:** Age, sex, education level, and geographic location.

This disaggregated analysis across different population groups, supports a nuanced understanding of labor market dynamics. Employment growth by occupation and economic sector highlights which sectors drive job creation and which occupations are in high demand.

Second, firm-level and job posting data complement individual-level insights by providing information on labor demand, job vacancies, and skill shortages. Three sources are used to inform chapters 3–5.

1. **Quarterly Survey on Job Vacancies and Hours Worked (VELA) conducted by the Italian National Statistical Institute (ISTAT).**[4] Publicly available data from VELA that reflect persistently high or increasing vacancy rates are used to identify sectors with severe labor shortages.

2. **World Bank Enterprise Survey (World Bank 2023).** Based on a representative sample of private sector firms in Italy (excluding agriculture), this survey provides information on firms experiencing challenges in hiring qualified workers. It also covers topics such as access to finance, competition, and infrastructure. These data serve as a key indicator of skill shortages across the Italian labor market.

3. **Online job vacancies (OJV) data from Lightcast.** These data are used to track trends in job postings, wage patterns, and skill requirements across sectors and occupations at the ISCO 4-digit level. They provide insights into whether occupations experiencing employment growth are difficult to fill, using metrics such as job posting duration and wage trends. In addition, OJV data reveal the specific skills in demand—including digital, green, technical,

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[4] https://siqual.istat.it/SIQual/visualizza.do?id=7779928.

and soft skills—offering a clear view of emerging labor market requirements (Lightcast 2025).

Finally, country-level data from international repositories provide a broader, and evolving perspective, capturing trends over time in demographic structure, employment, and labor market outcomes (used to inform chapter 1). The World Population Prospects (WPP) and ILOSTAT, data repositories of the United Nations and the International Labour Organization (ILO), are used to track demographic and labor market trends over time.

UN WPP data offer insights on the size and age composition of the population, as well as key demographic indicators such as fertility and mortality rates. This information facilitates the analysis of historical and projected changes in the working-age population, including trends in the inverse dependency ratio and the demographic factors driving these shifts.

ILOSTAT data provide detailed information on labor market dynamics, including employment and unemployment levels, the distribution of employment across skill levels, and the composition of the unemployed population by education level. When combined with population statistics from the UN WPP, it enables a dynamic analysis of the Italian labor market over time. It also highlights how changes in the size and age composition of the working-age population have shaped labor market trends and contributed to structural constraints.

3. ANALYSIS OF LABOR DEMAND

3.1. Private Firms in Italy: Characteristics and Job Creation Potential

The Italian private sector is predominantly made up of microenterprises (which employ between 3 and 10 people), at 79 percent of all private firms. According to the latest Census of Firms (2022) conducted by the Italian National Statistical Institute (ISTAT), Italy hosts over 1 million private enterprises, of which more than three-quarters operate in just 10 economic sectors (figure 3.1). Notably, nearly half of all private firms in the country are found in three sectors alone: wholesale and retail trade, accommodation and food services, and construction.

Figure 3.1 Number of Private Sector Firms in Italy, by Economic Sector

Sector	%	Number of firms
Wholesale and retail trade	20%	208,829
Accommodation and food service activities	16%	160,664
Construction	12%	122,215
Professional, scientific and technical activities	6%	64,605
Other service activities	4%	43,538
Manufacture of basic and fabricated metal products	4%	40,172
Transportation and storage	4%	40,072
Administrative and support service activities	4%	39,500
Repair of motor vehicles and motorcycles	4%	38,903
Education, human health and social work activities	4%	38,380
Manufacture of food, beverages and tobacco products	3%	29,718
....		
Manufacture of rubber and plastics products	1%	6,663
Water supply; sewerage, waste management activities	1%	5,955
Printing and reproduction of recorded media	1%	5,501
Manufacture of motor vehicles and transport equipment	0%	3,254
Manufacture of chemicals and pharmaceuticals	0%	3,221
Manufacture of paper and paper products	0%	2,342
Electricity, gas, steam and air conditioning supply	0%	1,672
Mining and quarrying	0%	1,071
Manufacture of coke and refined petroleum products	0%	239

■ Number of firms ▢ Total firms in Italy — Number of firms

Source: ISTAT Census of Firms, 2022.
Note: Each bar represents the total number of firms within each economic sector and its percentage share of all firms in Italy.

Manufacturing accounts for around 17 percent of all Italian enterprises, with activities concentrated in a few key industries such as fabricated metal products, food processing,

machinery and equipment, and apparel. Together these form the backbone of Italy's manufacturing base, reflecting the country's long-standing strengths in metalwork, agri-food processing, precision machinery, and fashion.

While firms in the manufacturing sector are fewer in number compared to other sectors, they are generally larger in size. Manufacturing firms are predominantly medium (50–249 employees) or large (250 or more employees), in medium- and high-tech industries such as chemicals and pharmaceuticals; motor vehicles and transport equipment; and computer, electronic, and optical products (figure 3.2). These firms typically display higher productivity and a stronger capacity for innovation, driven by their capital intensity, technological sophistication, and export orientation—hallmarks of Italy's advanced industrial system.

Figure 3.2 Distribution of Private Firms, by Size, Across Economic Sectors in Italy
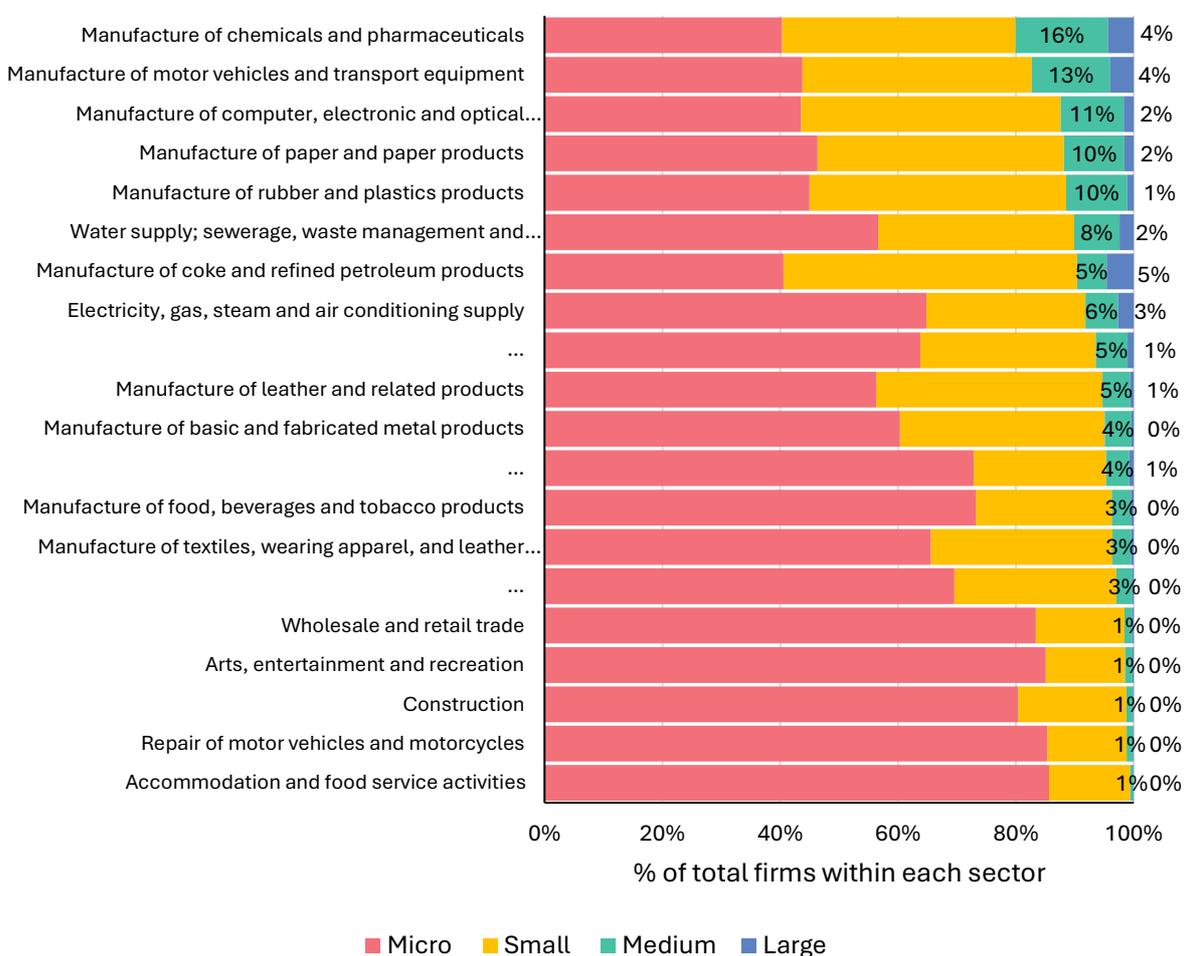
Source: ISTAT Census of Firms, 2022.
Note: Each bar shows the distribution of micro (fewer than 6 employees), small (6–29 employees), medium (30–99 employees), and large (100+ employees) firms within each economic sector.

Although medium and large firms represent only about 2 percent of all private enterprises in Italy, they employ a disproportionately high number of workers per firm, giving them an outsized role in the labor market. Correlation analysis indicates that sectors with fewer firms tend to employ more workers on average (figure 3.3). These large firms are mainly concentrated in technologically advanced industries—such as manufacturing, motor vehicles, pharmaceuticals, and air transport—where the demand for high-skilled labor is greater, wages are higher, and career opportunities more abundant.

The distribution of firms reveals a pronounced duality in Italy's economic structure. Nearly 80 percent of private firms employ between three and six workers and primarily function in low-productivity, labor-intensive sectors such as wholesale and retail trade, accommodation and food services, and construction. However, given their prevalence, they account for a large share of total employment. In contrast, a small group of capital- and technology-intensive firms—notably chemicals, pharmaceuticals, and motor vehicles—achieve the highest levels of productivity and employ more workers per firm, but constitute only a minor portion of the overall workforce. This pattern underscores a persistent structural imbalance: productivity gains are concentrated in a few advanced firms that, despite employing a larger number of workers, are too few to stimulate overall employment growth, whereas the majority of firms remain engaged in low-productivity activities.

Figure 3.3 Correlation Between the Number of Private Firms in Each Sector and the Average Number of Employees per Firm
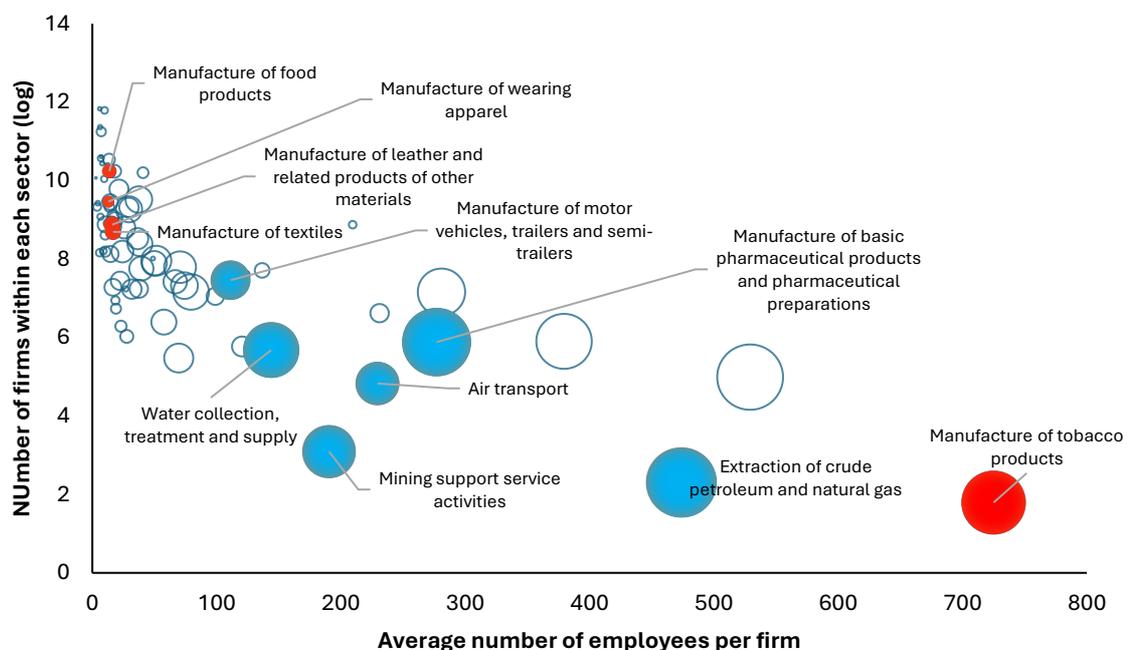
Source: ISTAT Census of Firms, 2022 and Italian Labor Force Survey, 2022.

Box 3.1 Italy's Shrinking Manufacturing Base

Although manufacturing firms are typically larger, more capital intensive, and employ a higher-skilled workforce, the bulk of future job creation in Italy is expected to come from the construction, services, and trade sectors. This shift reflects two concurrent trends: ongoing expansion in the number of firms within these sectors and the gradual erosion of Italy's manufacturing base.

Between 2018 and 2022, Italy's private sector experienced a notable contraction, as more than 12,000 enterprises exited the market (figure B3.1.1). This decline was driven primarily by manufacturing, which accounted for nearly 8,000 firm closures—about two-thirds of all private sector exits during the period. Within manufacturing, the downturn was most pronounced in lower-tech industries such as textiles, leather, and wood products. However, it also affected technology-intensive and specialized segments such as machinery and equipment (including their repair, maintenance, and installation) and miscellaneous manufacturing.

Figure B3.1.1 Private Sector Firms Created or Lost, by Economic Sector, 2018–22
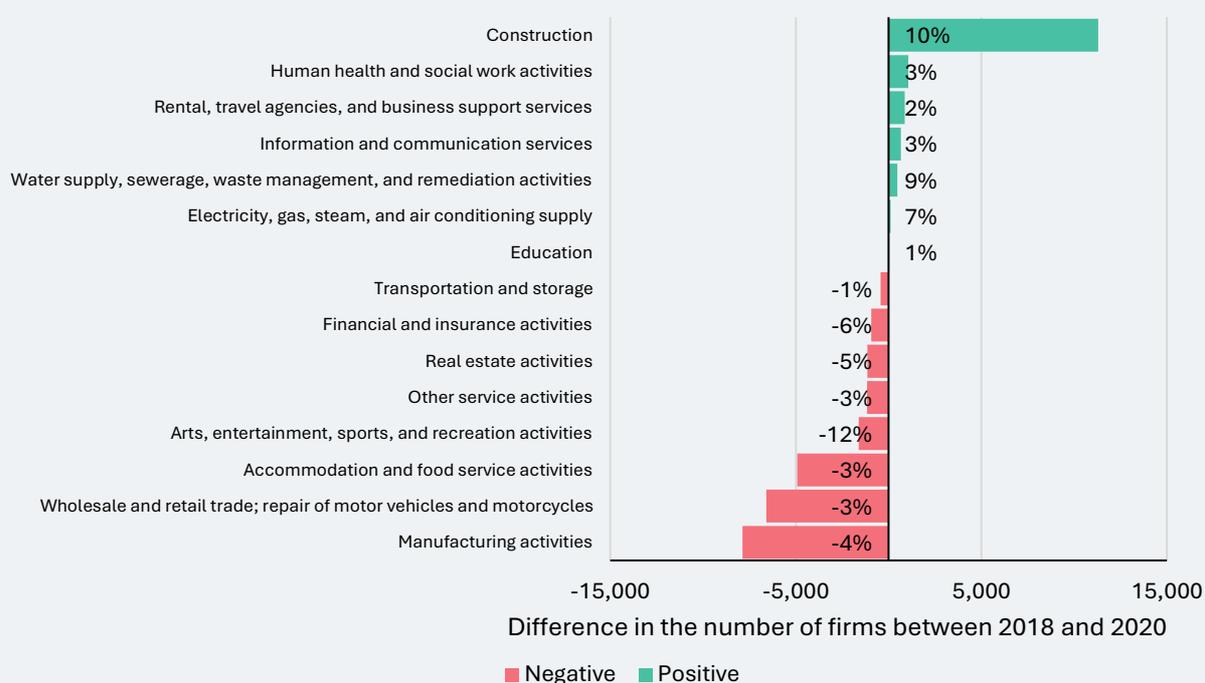
Source: ISTAT Census of Firms, 2022.

In 2024, Italy's industrial production index remained 5 percentage points below the pre-COVID (2019) level, indicating a continued contraction in key sectors. The textiles, leather, and apparel industries experienced the steepest decline, with output falling by 32 percentage points, followed by wood products (−16 percentage points). The automotive sector continued its downward trajectory, recording a 6 percentage point decline relative to 2019 (figure B3.1.2). This contraction stemmed largely from weak European demand—particularly for electric vehicles—alongside high energy costs, increased competition from China, and the ongoing transition toward greener production models.

Figure B3.1.23 Private Sector Firms Created or Lost, by Economic Sector, 2018–22

Manufacture of motor vehicles and other transport equipment

Manufacture of textiles, wearing apparel, and leather products

Manufacture of wood and of products of wood

Source: ISTAT 2025.

Despite these challenges, several high-potential niches within the Italian manufacturing industry continued to demonstrate resilience and growth. The pharmaceutical industry, particularly the production of basic pharmaceutical products, expanded significantly, with its industrial production index rising by nearly 10 percentage points compared to 2019, according to ISTAT data. This growth reflects strong domestic demand, steady export opportunities, and Italy's long-standing expertise and integration into global pharmaceutical supply chains (Farmindustria 2024). Similarly, food and beverage processing recorded a 5 percentage point increase in output, supported by Italy's international reputation for high-quality food products and stable global demand, which shielded it from the volatility affecting more export-dependent industrial sectors.

3.2. Sectoral Dynamics of Job Creation and Contraction

Employment growth in Italy has increasingly shifted toward services, trade, and construction (figure 3.4), indicating a gradual reorientation of the labor market toward sectors driven by domestic demand rather than exports. Since 2021, the sectors generating the largest cumulative

employment gains include accommodation and food services, residential care activities (part of the broader education, health, and social work domain [box 3.2]), and construction. Between 2021 and 2024, these sectors recorded uninterrupted employment growth, adding an estimated 286,000, 205,000, and 140,000 jobs, respectively. Collectively, they accounted for a substantial share of net job creation in the Italian economy, reflecting the resilience of tourism- and hospitality-related services, the growing demand for care occupations, and the sustained expansion of construction activity. A similar trend is observed in wholesale and retail trade as well as in the information and communications sector, which recorded net employment gains of about 138,000 and 91,000 jobs, respectively, despite temporary contractions of 7,800 jobs in 2022–23 and 9,600 jobs in 2023–24.

Figure 3.44 Net Job Creation, by Economic Sector, 2021–24
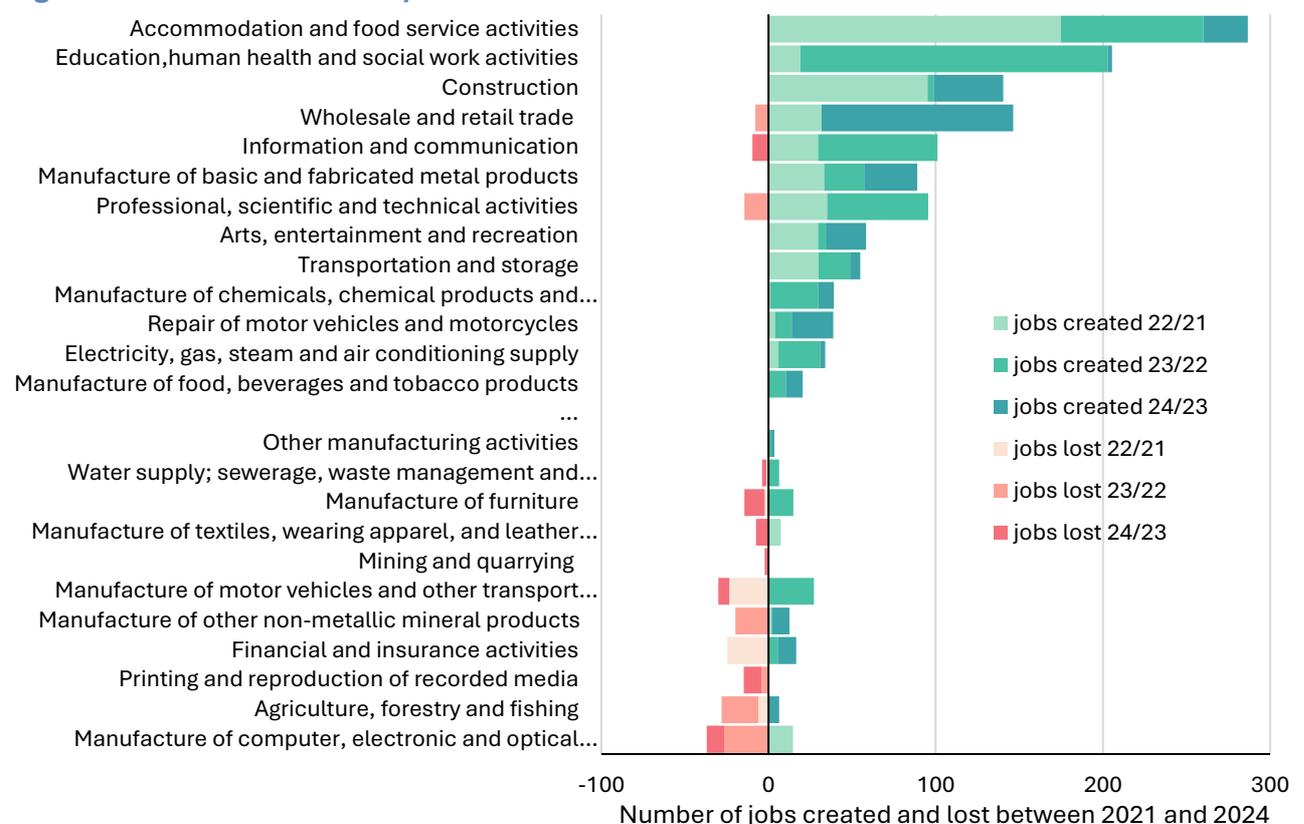
Source: Italian Labor Force Survey, 2021–24.

Job creation in manufacturing has remained weak, with most subsectors recording cumulative employment losses between 2021 and 2024 (figure 3.4, red bars). This decline was primarily driven by contractions in the manufacturing of computers, electronic and optical products, electrical equipment and machinery, nonmetallic mineral products, and motor vehicles and other transport equipment—a pattern consistent with the broader erosion of Italy's manufacturing base (see box 3.1).

Within the manufacturing sector, positive employment growth was confined to only some niches, predominantly in low- and medium-tech industries such as basic metals, fabricated metal products, and food and beverage processing. Among high-tech industries, positive employment trends were limited to chemicals and pharmaceuticals.

Box 3.2 Italy Needs 1.2 Million Care Workers to Sustain Its Aging Population at Levels Comparable to Norway

Across European countries, Italy has the highest proportion of population aged 80 and above, at 8 percent, and totaling nearly 4.6 million (Eurostat 2024a). Although the number of care workers in Italy has increased in recent years in response to demographic aging (Eurostat 2024b), it is still insufficient to meet the growing need (figure B3.2.1). Italy records the highest ratio of elderly persons per care worker in Europe (about 7.3 to 1) and a stark contrast from countries such as Norway, Liechtenstein, and the Netherlands (2.5 to 1) (European Commission 2022).

To align the levels of eldercare coverage to Northern European standards, Italy would need about 1.2 million additional care workers. This would increase the number of total care workers from 629,000 to around 1.8 million and improve the ratio to roughly 1 care worker for every 2.5 elderly persons. While this estimate serves as an upper bound—given that actual needs depend on the share of elderly individuals requiring formal care and the financial capacity of households—it highlights the significant demographic and labor challenges Italy faces in the care sector.

Figure B3.2.1 Relationship Between Care Worker Coverage (number of elderly individuals per care worker) and Population Aging (% of residents aged 80 years and above)
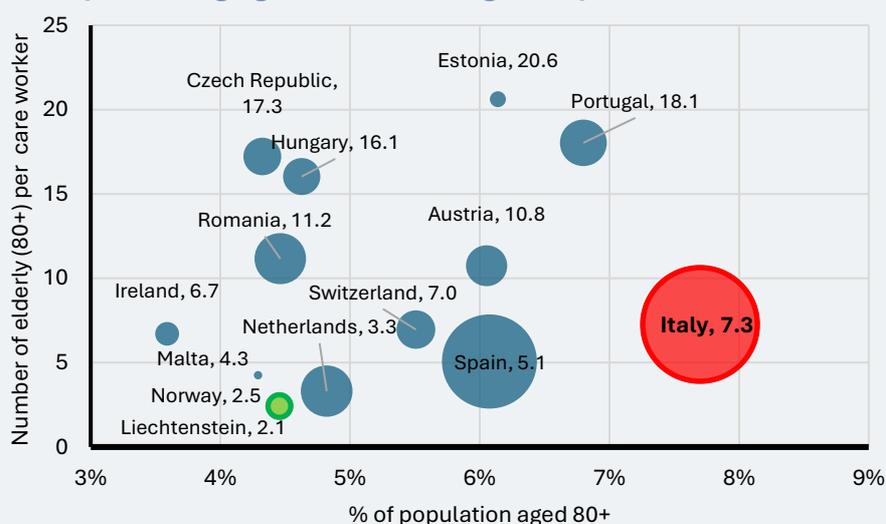
Source: Eurostat 2024b; UNDESA 2024.
Note: The size of each bubble represents the number of elderly people (80+) in each country.

Regardless of whether job growth across economic sectors has been positive or negative, many firms—particularly in technology-intensive sectors—face acute recruitment challenges. Each point on the scatter plot in figure 3.5 represents a distinct economic sector, with the horizontal axis measuring the sector's job growth rate and the vertical axis indicating the share of firms facing difficulties in finding the right candidate. The dispersion of sectors across the quadrants reveals a range of labor market configurations—from high-growth economic sectors constrained by a shortage of qualified labor to contracting sectors where persistent labor supply gaps hinder hiring efforts.

Figure 3.5 Job Growth by Economic Sector (% yearly change) vs. Recruitment Challenges (% of firms within sectors)
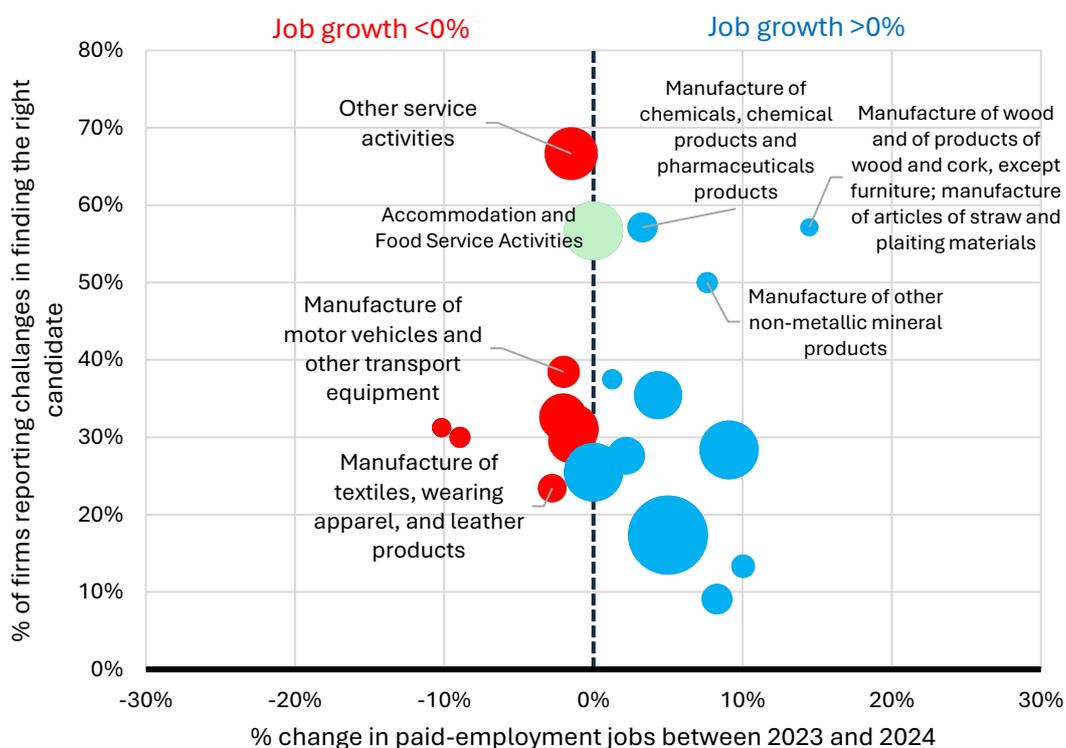
Source: Italian Labor Force Survey, 2023–24; and World Bank Enterprise Survey, 2024.

Recruitment difficulties are most pronounced in high-tech, capital-intensive industries—such as chemicals, pharmaceuticals, and machinery—where rapid technological change has heightened demand for specialized skills. In expanding industries, firms find it challenging to convert growth opportunities into sustained employment due to skill mismatches and limited vocational alignment.

A similar pattern is observed in contracting sectors, such as motor vehicle production, where high-skilled positions remain unfilled due to geographic immobility and gaps in training.

Conversely, low-technology, labor-intensive sectors—notably accommodation and food services—also report persistent hiring challenges. These arise from high turnover rates, seasonal work patterns, population aging, and a shrinking pool of younger, available workers.

Overall, hiring difficulties in Italy emerge in areas where the demand for labor outpaces the availability of appropriately skilled workers, highlighting the importance of targeted training, workforce development, policies that promote internal and external labor mobility, and initiatives to enhance job attractiveness. These interventions ensure that job creation effectively translates into actual labor market absorption.

3.3. Occupational Dynamics of Job Creation and Contraction

Employment growth at the occupational level reflects the derived demand for labor—the need for specific skills and tasks that arise as firms adjust their production in response to changes in aggregate demand. The extent of the expansion of labor inputs in each sector depends on the elasticity of labor demand in relation to output growth, which is influenced by factors such as production technologies, the degree of capital-labor substitution, and the sector's inherent labor intensity. The composition of occupational growth is determined not only by the quantity of labor required, but also by the distribution of tasks and the relative skill intensities embedded in production processes. These patterns, in turn, are shaped by technological factors such as the potential for automation and the complementarities between human and nonhuman inputs in production.

Identifying the occupations most in demand in growing sectors is therefore essential for understanding how structural changes reshape task allocation and skill requirements. This section explores how this expansion translates into demand for specific occupations, drawing on data from the 2021–24 Italian Labor Force Surveys.

The 2023–24 Italian Labor Force Survey indicates that labor demand has been concentrated in medium- and high-skilled occupations in sectors experiencing positive employment growth (figure 3.6). High-skilled employment (International Standard Classification of Occupations [ISCO] major groups 1–3) has been driven by the expansion of service-oriented and trade-related sectors, notably education, health and social work, arts and entertainment, wholesale and retail trade, and administrative and support services. In parallel, medium-skilled, nonmanual occupations— including workers in services and sales as well as clerical support staff—have seen expansion in wholesale and retail trade as well as accommodation and food services. This upward trend reflects the sustained demand for customer-facing and operational roles in Italy's service-based economy.

Meanwhile, medium-skilled, manual occupations (ISCO groups 6–8), which are predominantly concentrated in manufacturing, have recorded slower growth due to weak labor demand in many production processes. Exceptions to this include construction and certain manufacturing subsectors—such as basic metals, rubber and plastics, wood products, and, to a lesser extent, food and beverage processing. In these areas, demand remains stable due to specialized production requirements and limited scope for automation.

While the overall demand for low-skilled occupations has declined, certain sectors—particularly wholesale and retail trade, administrative and support services, and transportation and storage— still depend heavily on low-skilled workers for routine and logistical functions that are less susceptible to automation.

Figure 3.6 Difference in the Number of Paid Jobs Created Across Economic Sectors Experiencing Positive Job Growth, by Skill Level, 2023–24
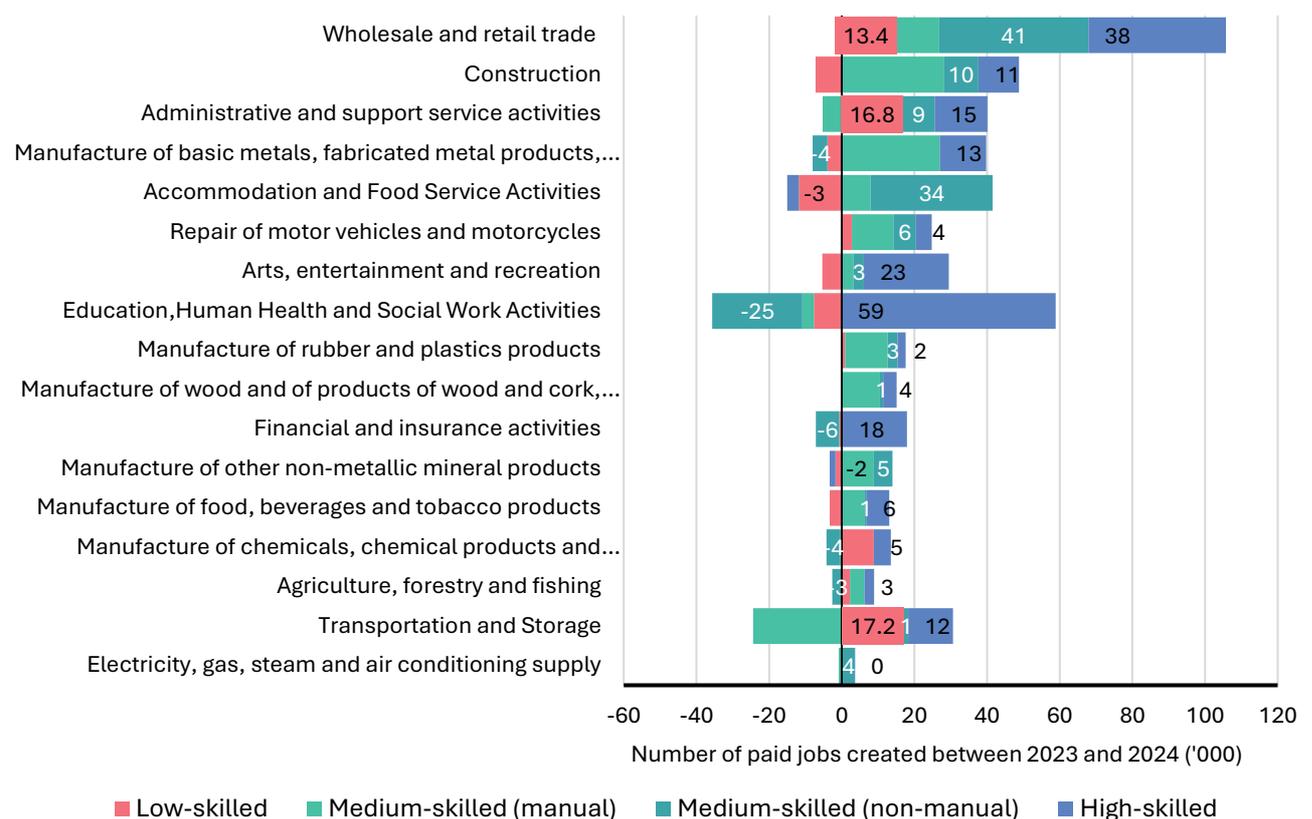
Source: Italian Labor Force Survey, 2023–24.

Nevertheless, high-skilled occupations recorded positive net gains in virtually all sectors experiencing negative overall employment growth (figure 3.7), illustrating the resilience of demand for skilled labor despite sectoral contraction. This phenomenon is especially evident in manufacturing, where Italy's key economic sectors (motor vehicles and textiles) saw jobs created

for high-skilled occupations amid an overall reduction in employment between 2023 and 2024. This decline in jobs primarily stemmed from job losses in mid-skilled manual occupations, followed by declines in low-skilled positions.

Figure 3.7 Difference in the Number of Paid Jobs Created Across Economic Sectors Experiencing Negative Job Growth, by Skill Level, 2023–24
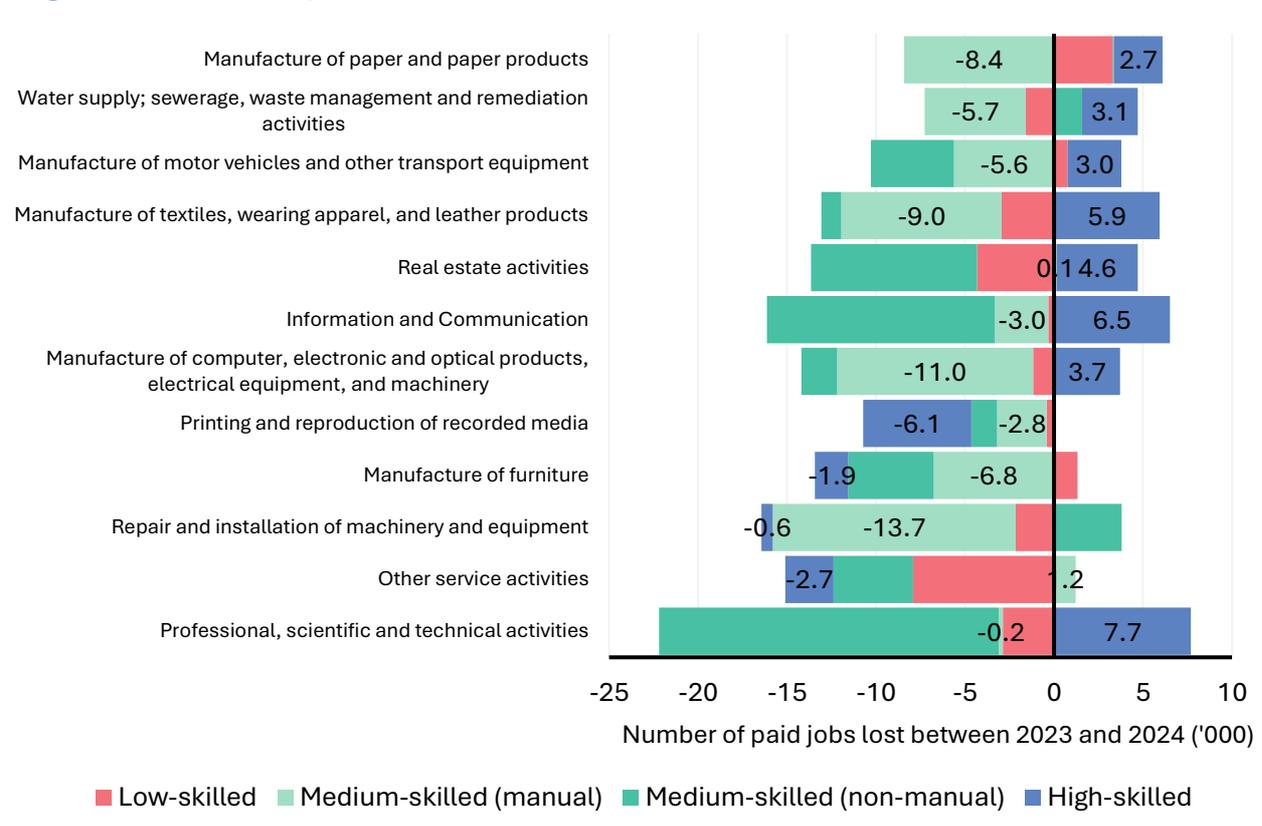
Source: Italian Labor Force Survey, 2023–24.

This apparent paradox can be explained by two interrelated dynamics. First, weak aggregate demand has constrained production output, compelling firms to downsize their workforces. These companies are selectively reducing lower-skilled positions, while retaining high-skilled workers critical for maintaining operational efficiency, innovation capacity, and technological adaptability. Second, the ongoing diffusion of automation, digitalization, and advanced manufacturing technologies has intensified capital-skill complementarity. This reinforces the demand for high-skilled occupations, while routine, lower-skill tasks become increasingly susceptible to automation.

As a result, even in contracting sectors, net job losses occur alongside expansion in high-skilled employment. This highlights the increasing centrality of high-skilled occupations to Italy's manufacturing base, where sectors continue to require high-skilled workers even as they contract (box 3.3).

Box 3.3 Emerging Occupational Patterns at the 4-Digit ISCO Level in Italy's Labor Market

Employment trends by major occupational groups between 2021 and 2024 confirm the sectoral patterns discussed in section 3.3 (figure B3.3.1). High-skilled professional and technical occupations recorded the largest net gains, adding about 640,000 jobs (340,000 professionals and 300,000 technicians). This sustained growth highlights the increasing centrality of high-skilled labor in Italy's economy, as firms seek to retain and expand their skilled workforces to remain productive and continue innovating even as aggregate growth weakens.

Medium-skilled service and sales occupations added about 343,000 jobs, driven by growth in domestic, service-oriented sectors. These roles remain critical for customer-facing and administrative functions that are not easily automated, highlighting the resilience of service-based employment.

In contrast, medium-skilled manual occupations, particularly plant and machine operators, saw a decline of more than 60,000 jobs, reflecting the contraction of the manufacturing sector and technological substitution in production processes.

Figure B3.3.1 Difference in the Number of Paid Jobs Created, by Major ISCO Group, 2021–24

	2022/2021	2023/2022	2024/2023
5 Service and Sales Workers		66.0	80.9
2 Professionals		147.6	89.7
3 Technicians and Associate Professionals		218.2	111.6
7 Craft and Related Trades Workers		31.2	75.9
1 Managers		41.7	
6 Skilled Agricultural, Forestry and Fishery Workers		-5.2	
4 Clerical Support Workers	-62.2	9.7	
9 Elementary Occupations	-0.4		
8 Plant and Machine Operators, and Assemblers	-53.7	-46.0	

Number of paid-job created between 2021 and 2024 ('000)

■ 2022/2021 ■ 2023/2022 ■ 2024/2023

Source: Italian Labor Force Survey, 2021–24.
Note: ISCO = International Standard Classification of Occupations.

At a more detailed level, high-skilled professionals—notably accountants, marketing specialists, management analysts, and human resource professionals—recorded the strongest growth over 2023–24 (figure B3.3.2). Among technicians, the gains were primarily seen in mechanical engineering, process control, and finance-related occupations. Meanwhile, mid-skilled nonmanual roles, such as health care assistants, sales assistants, and waiters, expanded within the health, retail, and hospitality sectors. These patterns confirm a shift toward service- and

knowledge-driven employment in Italy, where labor demand increasingly favors technical and interpersonal skills over routine manual work.

Figure B3.3.2 Difference in the Number of Paid Jobs Created, by ISCO Detailed Group, 2023–24
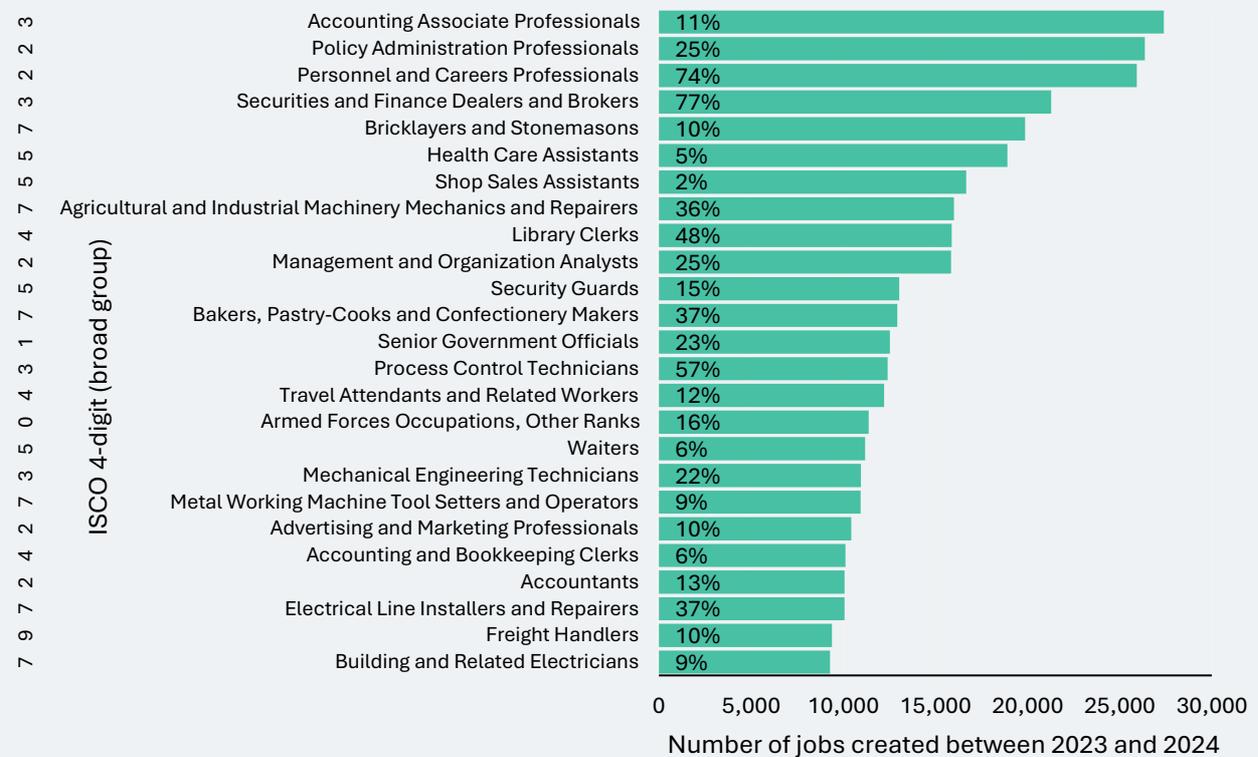
Source: Italian Labor Force Survey, 2023–24.

Note: The % in each bar represents the annual percentage change in paid jobs created for each occupation from 2023 to 2024. The numbers next to each 4-digit ISCO occupation indicate the corresponding ISCO major group. ISCO = International Standard Classification of Occupations.

3.4. Unfilled Labor Demand

The previous section examined the sectors and occupations where new employment opportunities are emerging, but the findings do not reveal whether firms are actually able to fill those positions. Employment growth reflects only the jobs that are successfully created; it does not capture the underlying frictions that arise when labor supply leaves demand unfulfilled.

This distinction is essential from a labor market perspective. Job creation reflects the actual number of employment opportunities, while job vacancies capture the ongoing demand for unfilled positions. Persistently high vacancy rates are therefore a leading indicator of potential mismatches between available skills and job requirements. They may suggest that employers struggle to find suitably qualified candidates or that other barriers—such as geographical immobility, information gaps, or institutional constraints—are hindering the effective matching of firms and jobseekers.

These dynamics are commonly illustrated by the Beveridge curve (Consolo and da Silva 2019), which depicts the relationship between unemployment and job vacancies. The curve serves as a key tool for assessing labor market efficiency.

To explore this dimension, this section analyzes job vacancy trends using a two-step approach. First, vacancy rates across economic sectors are examined using ISTAT's nationally representative firm-level data to identify where labor demand is most challenging to meet. Second, an occupational analysis complements this perspective by leveraging online job postings data at the 4-digit ISCO level from Lightcast. This analysis tests whether occupations experiencing strong employment growth are also facing higher vacancy rates—an indication of potential skill shortages or recruitment bottlenecks.

By combining sectoral and occupational perspectives, the analysis shows not just where jobs are being created but how effectively the Italian labor market connects workers to these opportunities. This distinction is crucial for understanding whether employment growth is sustainable in the long term. Moreover, identifying areas where persistent mismatches occur can provide valuable insights for policy—particularly in highlighting sectors or occupations where structural shortages may justify the use of targeted training programs or, where appropriate, the recruitment of foreign workers to fill critical gaps.

Box 3.4 Job Vacancy Rate—An Indicator of Emerging Labor Shortages

The job vacancy rate—the percentage of unfilled positions in a sector or occupation—offers a predictive measure of labor demand. Generally, an increasing job vacancy rate is an early indicator of emerging labor shortages. Firms typically advertise more job vacancies when they anticipate an immediate need for additional workers. However, these positions can take time to fill due to a range of labor market frictions—such as mismatches between workers' skills and job requirements, geographic immobility, lengthy recruitment processes, and information asymmetries (arising when potential candidates lack immediate awareness of advertised job opportunities).

However, an increase in job vacancies does not immediately lead to a corresponding rise in employment. Rather, employment growth typically lags job vacancies by approximately one quarter. This delay is due to the time required for employers to fill open positions, for job seekers to find suitable matches, and for the hiring process to be finalized.

Figure B3.4.1 illustrates this relationship between job vacancies and employment growth from Q4 2022 to Q2 2024. During this period, changes in paid employment closely followed fluctuations

in the job vacancy rate, albeit with a slight delay: when vacancy rates increased, employment growth turned positive about one quarter later. This pattern underscores that vacancies serve as a leading indicator of employment growth, capturing the time needed for recruitment, selection, and hiring processes to translate into new jobs. Consequently, monitoring vacancy trends can help anticipate shifts in labor market conditions and identify emerging pressures in specific sectors before they become evident in employment data.

Figure B3.4.1 Trends in Quarterly Job Vacancy Rates and Lagging Employment Growth, Q4 2022– Q2 2024
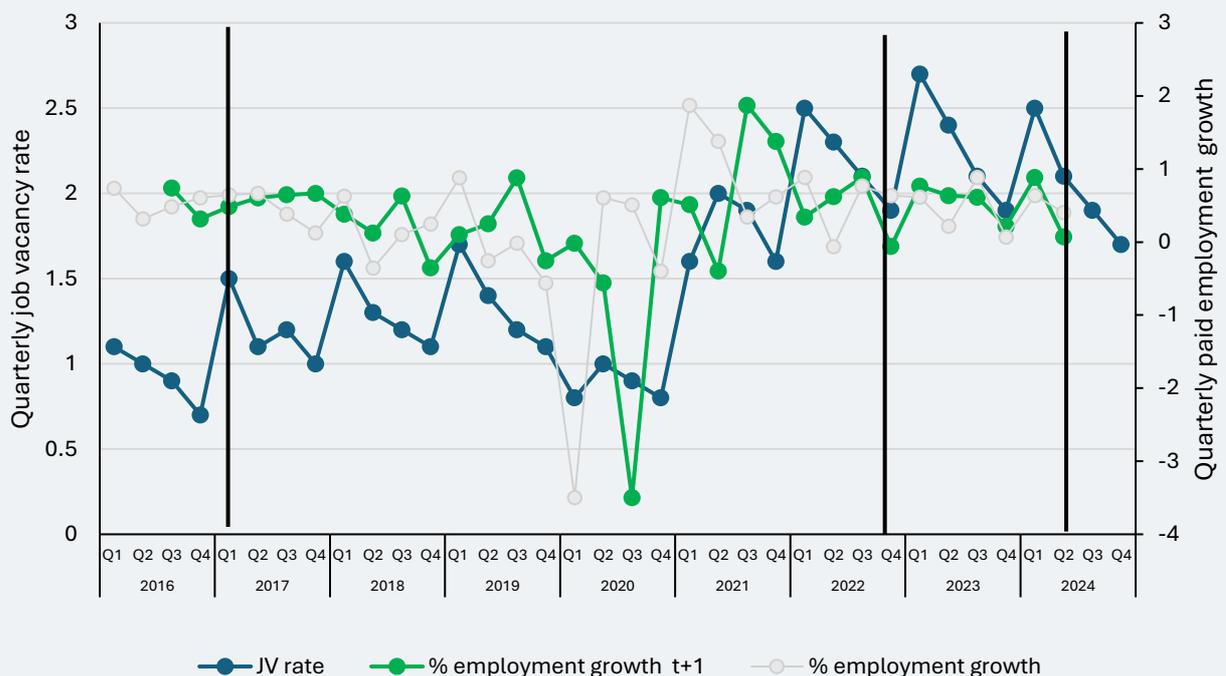
Source: World Bank staff calculations based on ISTAT Job Vacancy Survey (JVS) and Labor Force Survey (LFS) data.
Note: JV = job vacancy.

Trends in Sectoral Job Vacancy Rates

In 2024 (latest full-year data), job vacancy rates were highest in accommodation and food services and construction, followed by wholesale and retail trade, professional and technical services, information and communication, and other service activities (figure 3.8). Across all sectors, the average job vacancy rate increased notably between 2022 and 2023, reflecting heightened labor demand driven by a rapid post-COVID rebound in economic activity that outpaced the available workforce, creating temporary hiring pressures. Between 2023 and 2024, vacancy rates eased slightly but remained elevated in many sectors, indicating continued recruitment challenges despite a partial normalization of labor demand.

The observed vacancy patterns are primarily driven by demand, reflecting Italy's ongoing structural shift toward services and construction. In accommodation and food services, high vacancy rates stem from the country's reliance on tourism and hospitality, where strong and often seasonal labor demand exceeds domestic supply. In wholesale and retail trade, the restructuring of supply chains and the expansion of e-commerce have increased demand for logistics and retail workers. Similarly, in professional, scientific, and technical services as well as the information and communication sector, digitalization and technological transformation are fueling the demand for highly skilled professionals.

The construction sector continues to experience intense labor demand, driven by both public and private investment in new projects. As of October 31, 2024, around €18 billion had been allocated to public construction projects (European Commission 2023) , while the private sector invested about €14 billion, supported by the "Superbonus" (European Commission 2025). These investments collectively stimulated significant labor demand in the sector.

Finally, although manufacturing covers a wide range of activities that obscures differences across subsectors, the sector as a whole continues to underperform relative to others. Vacancy rates, which were already low prior to the pandemic (1.13 percent in 2018; 1.08 percent in 2019), fell sharply during COVID-19 (0.65 percent in 2020). They only partially recovered afterward (1.50 percent in 2021; 1.98 percent in 2022–23), before declining again in 2024 (1.70 percent). Despite this post-COVID rebound, manufacturing vacancy rates remain well below those of more dynamic sectors, underscoring the persistent structural weaknesses and limited labor demand of the sector.

Figure 3.8 Job Vacancy Rates by Major ISIC Groups, 2023 and 2024 (left); Annual Change in Job Vacancy Rates (% point difference), 2022–24 (right)

	Job vacancy rate (left)	2024/2023	2023/2022
Accommodation and food service...	3.18	-0.8	
Construction	3.03	-0.3	
Professional, scientific and...	2.70	-0.1	
Other service activities	2.43	-0.1	
Education	2.33		0.1
Information and communication	2.25	-0.6	
Services of the business economy	2.13	-0.2	
Business economy	2.05	-0.3	
Wholesale and retail trade; repair of...	1.90	-0.1	
Arts, entertainment and recreation	1.90	-0.6	
Human health and social work...	1.85		0.0
Manufacturing	1.70	-0.3	
Administrative and support service...	1.60	0.0	
Transportation and storage	1.58	0.0	
Mining and quarrying	1.33		0.0
Water supply; sewerage, waste...	1.28	-0.3	
Electricity, gas, steam and air...	1.25		0.1
Financial and insurance activities	1.03	0.0	

□ 2024   ■ 2023   ■ 2022
□ 2024/2023   ■ 2023/2022

Source: ISTAT Job Vacancy Survey (JVS).
Note: ISIC = International Standard Industrial Classification of All Economic Activities.

Building on these sectoral trends, comparing vacancy rates with employment growth helps identify where labor shortages are most pressing (box 3.4). Although vacancy data are only available at the 1-digit ISIC level—which aggregates heterogeneous activities such as those in manufacturing—they still reveal a consistent pattern with employment growth: labor shortages are most acute in sectors that have been key drivers of recent job creation.

However, vacancy rates also remain high in some sectors that are experiencing little or even negative employment growth. The relationship between vacancy rates in 2023 and the percentage change in paid employment between 2023 and 2024, as illustrated in figure 3.9, displays an almost U-shaped pattern. This indicates that vacancy rates capture both the cyclical and structural dimensions of labor market dynamics. In sectors such as construction and wholesale and retail trade, high vacancy rates are linked with rapid job creation, as firms struggle to hire quickly enough to sustain their expansion. In contrast, persistently high vacancy rates in knowledge- and skill-intensive sectors—including information and communication, professional and technical services, and other specialized activities—indicate structural skill mismatches. These shortages persist even in the face of weak employment growth, reflecting the evolving nature of job profiles, technological advancements, and the growing demand for specialized expertise that is challenging to source within the domestic labor market.

Figure 3.9 Sectoral Job Vacancy Rates by Major ISIC Groups, 2023 and 2024
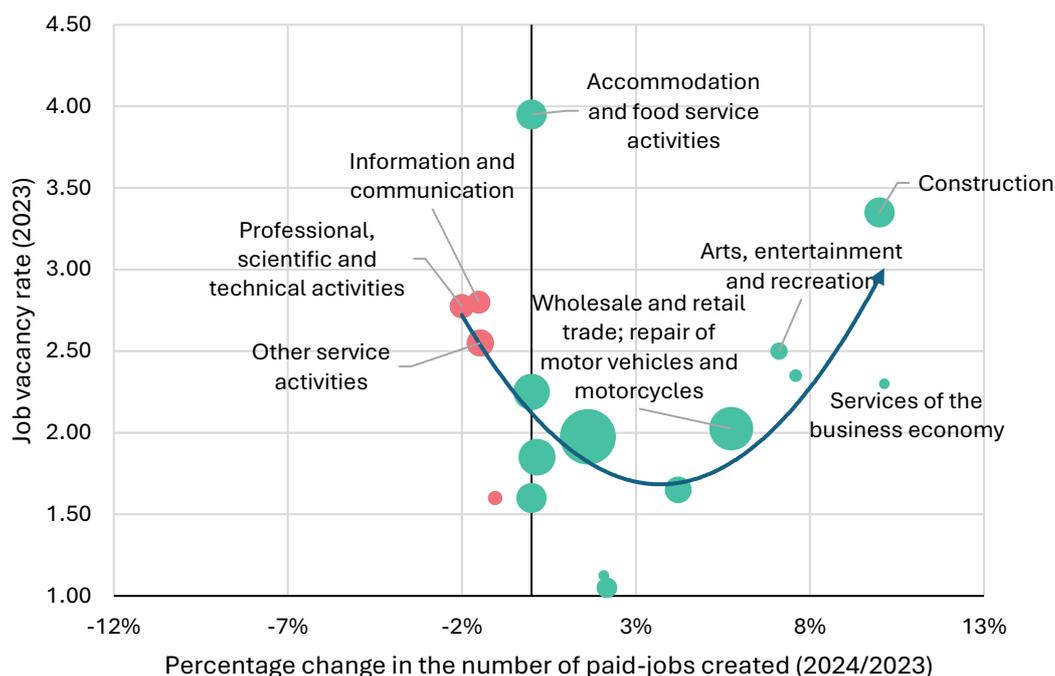
Source: World Bank staff elaboration based on ISTAT Job Vacancy Survey (JVS) and Labor Force Survey (LFS) data.
Note: ISIC = International Standard Industrial Classification of All Economic Activities.

3.5. Looking Ahead: Emerging and Declining Sectoral Labor Demand

Looking ahead, labor demand in Italy is expected to continue shifting toward the broader services and trade sectors. This trend is primarily driven by the expansion of health care and social services (box 3.6), as well as utilities such as electricity, gas, steam, and air-conditioning supply. In addition, wholesale and retail trade, transport, accommodation, and food services have all recorded a steady upward trajectory in job vacancy rates since 2021 (figure 3.10).

However, some activities—particularly those linked to tourism, such as accommodation and food services—are likely to post irregular and seasonal vacancies throughout the year. Seasonal patterns remain pronounced, with vacancy rates typically peaking in the first and second quarters, as employers anticipate labor needs for the summer tourist season, and culminating in the third quarter.

Figure 3.10 Trends in the Sectoral Quarterly Job Vacancy Rate for Expanding Economic Sectors, 2016–24 (%)
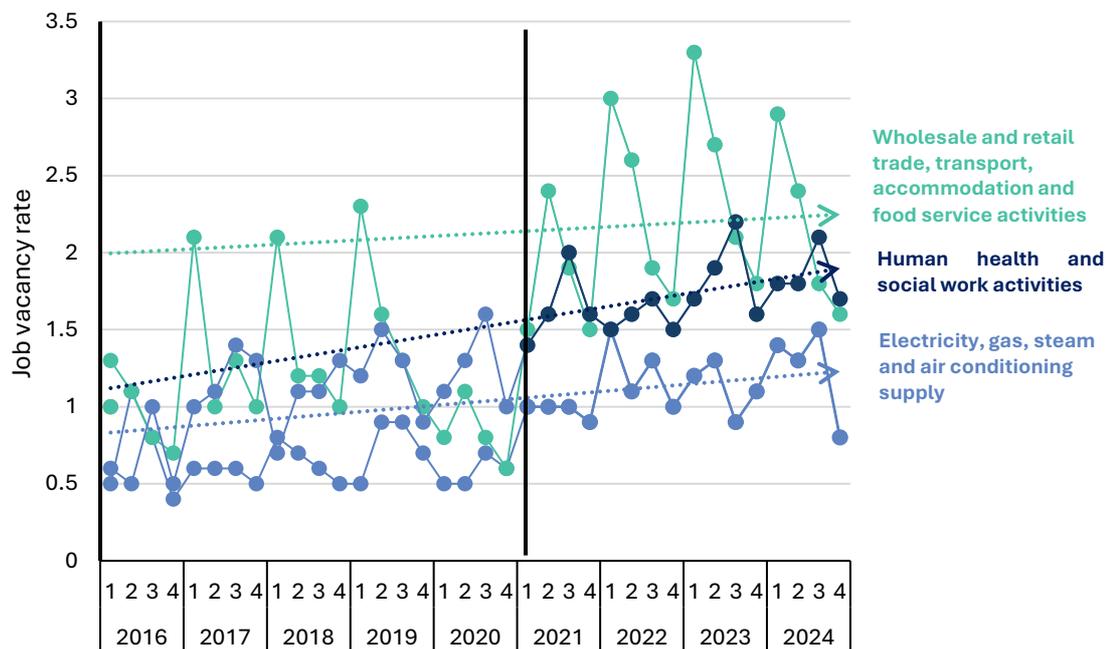
Source: World Bank staff elaboration based on ISTAT Job Vacancy Survey (JVS) data.

By contrast, manufacturing is projected to create fewer job vacancies, reflecting the downward trajectory observed since Q1 2023 (figure 3.11). This deceleration is consistent with the sector's weaker output performance and the broader signs of stagnation in Italy's industrial base. Manufacturing activity contracted notably in late-2024, posting the steepest decline of the year and signaling diminished demand for labor (EY 2025).

This decline is also evident in the construction sector, mainly due to reduced public financing for infrastructure and residential projects, and the gradual phasing out of the "Superbonus 110 percent" scheme. After two years of strong and sustained growth since Q1 2021, the job vacancy rate steadily declined by an average of 0.1 percentage points per quarter—from a peak of 3.6 percent in Q2 2023 to 2.9 percent in Q4 2024. Vacancy rates currently average around 3 percent annually (about 70,000 openings), indicating a cooling demand in the sector.[5]

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[5] According to Confindustria (2024) "*the gradual weakening of the Superbonus, already due to expire at the end of 2023 in terms of the rate at 110%, and the other building incentives*" will drive a contraction of the sector. "*Residential construction, in terms of added value and thus contribution to GDP, is expected to be strongly affected by this planned reduction of incentives, already in 2024 and to an even greater extent in 2025.*"

Figure 3.11 Trends in the Sectoral Quarterly Job Vacancy Rate for Declining Economic Sectors, 2016–24 (%)
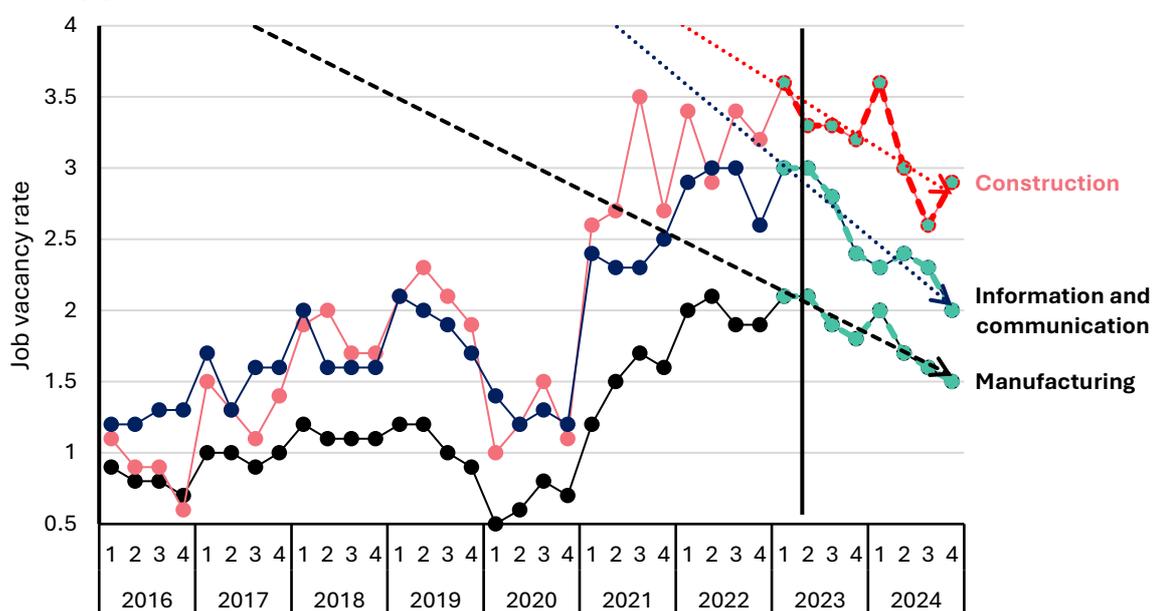
Source: World Bank staff elaboration based on ISTAT Job Vacancy Survey (JVS) data.

From Sectoral Demand to Occupational Shortages

Building on the sectoral analysis in section 3.2, this section explores how Italy's labor demand is shaped by its occupational structure. Sectoral growth translates into specific occupational needs, as firms adjust their workforce composition to align with technological, organizational, and skill requirements. Examining labor demand through an occupational lens is therefore essential in identifying where demand pressures are most acute.

While official job vacancy statistics are robust at the sectoral level, they lack details on specific occupations and skills. Collecting this information through dedicated surveys is costly and also burdensome for respondents. A practical alternative is online job vacancy data, which provide occupationally disaggregated indicators of demand and capture employers' recruitment behavior in real time and at high granularity.

Although online job postings tend to overrepresent high-skill occupations and underreport sectors with informal or seasonal hiring such as agriculture or tourism, they closely mirror the trends seen in official data. Online job vacancy data can therefore be

considered a complementary and cost-effective tool for identifying emerging labor market pressures (for details, see box 3.5).

Box 3.5 Comparing Sectoral Online Job Vacancy Rates with Nationally Representative Data

To assess the reliability of online job vacancy data in identifying labor shortages, they were benchmarked against official job vacancy rates published by the Italian National Statistical Institute (ISTAT) in 2024. Despite methodological differences—ISTAT data are based on the number of job positions while online data focus on the number of employees—the two measures display a broadly consistent pattern. Sectors with higher vacancy rates in official statistics, such as health care, professional services, trade, transport, accommodation, and information and communication, also show higher online vacancies (figure B3.5.1).

However, some discrepancies persist in the education and construction sectors, where recruitment often occurs through nondigital channels such as internal referrals or public registers. These differences, however, highlight the complementarity of the two data sources rather than their equivalence.

Figure B3.5.1 Comparison of ISTAT Job Vacancy Rates with Online Job Vacancy Data, 2016−24
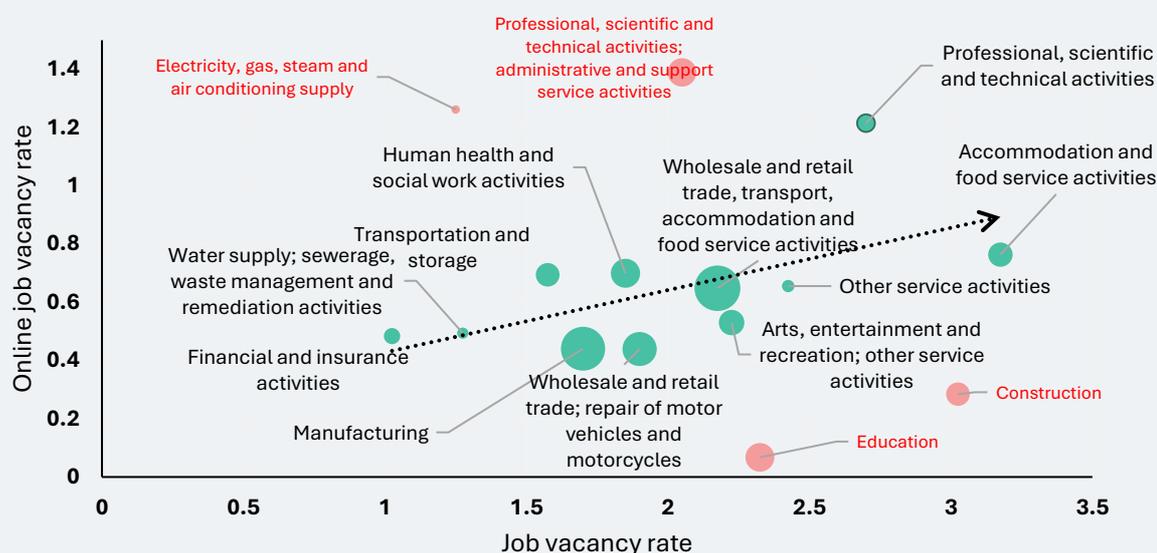
Source: World Bank staff elaboration based on ISTAT Job Vacancy Survey (JVS) data and Lightcast online job vacancies.
Note: ISTAT = Italian National Statistical Institute.

An important caveat applies. The comparison between the two sources can only be conducted at the sectoral level, because Italy's official job vacancy statistics lack occupational details. It is therefore not possible to directly validate online vacancy rates by occupation; however, the sectoral

alignment observed here could be interpreted as an indirect validation. While online data may not capture the full spectrum of recruitment activity, they do accurately reflect the underlying labor demand pressures across industries.

Mapping Occupational Labor Shortages in Italy

Fastest-growing occupations. Between 2021 and 2024, online job postings in Italy rose sharply, signaling sustained demand across several occupational groups. The largest cumulative increase—around 650,000 online job vacancies—was recorded among technicians and associate professionals as well as managers, followed by nearly 500,000 vacancies among service and sales workers. These groups also accounted for the bulk of new employment over the same period, indicating a strong correlation between hiring activity and job creation (figure 3.12).

Within these broad occupational groups, demand is particularly strong in services, construction, and manufacturing. At the mid-skill level, there have been sharp increases in postings for food service counter attendants, bartenders, cooks, and waiters, reflecting a robust recovery in the accommodation and food services sector. In manufacturing, rising activity in food and beverage processing industries has boosted demand for machine operators and technicians. On the higher-skill end, demand for construction supervisors (ISCO 3) has been exceptionally high—exceeding 125,000 postings over three years. Within management occupations (ISCO 1), there has been a strong demand for retail and wholesale trade managers, sales and marketing managers, and supply and distribution managers driven by infrastructure investment and expansion in trade and logistics (figure 3.13).

Figure 3.12 Increase in Online Job Postings by ISCO Group Between 2022 and 2024, Relative to 2021

Difference in the number of job postings relative to 2021

■ 2022/2021 ■ 2023/2021 ■ 2024/2021
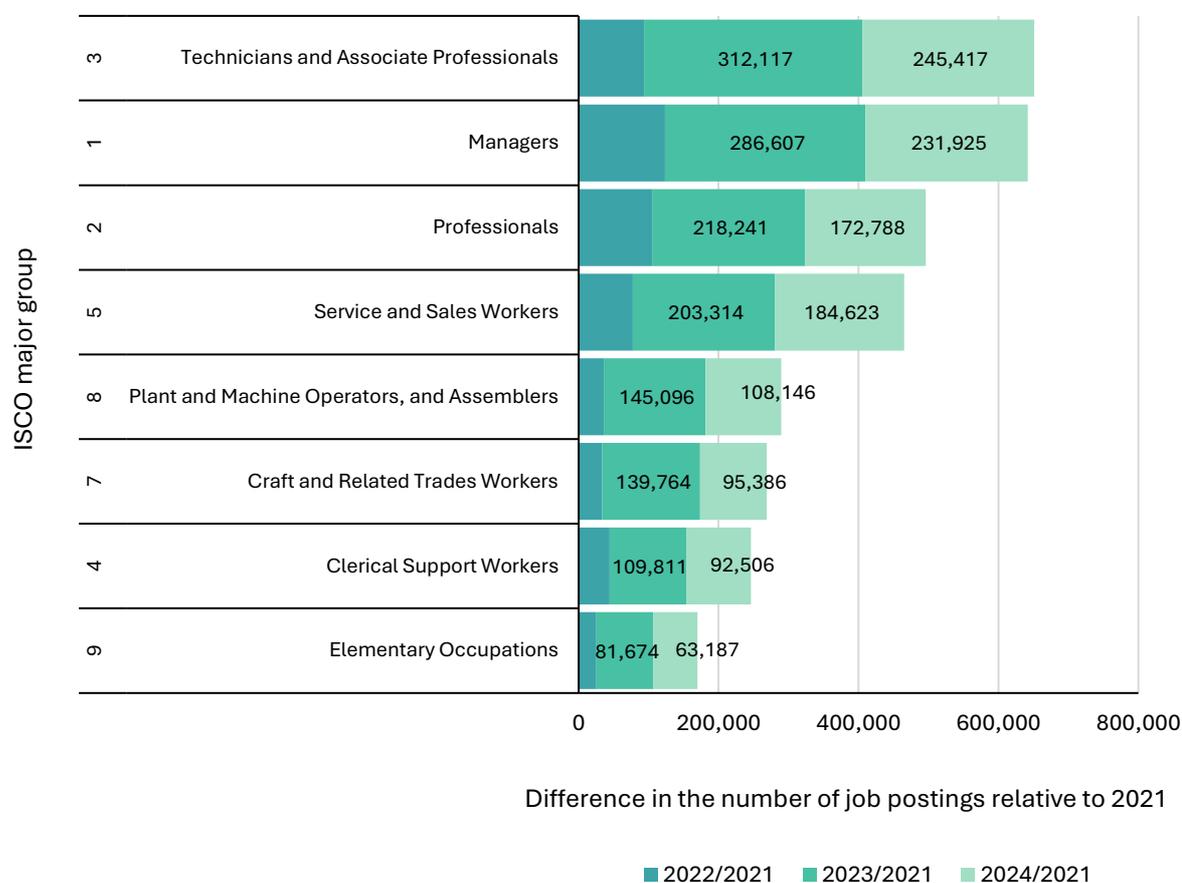
Source: Lightcast—online job vacancies data.
Note: ISCO = International Standard Classification of Occupations.

Figure 3.13 displays the top 30 detailed occupations (ISCO-08, 4-digit) with the largest cumulative increase in online job postings between 2022 and 2024, relative to 2021. Managers (ISCO 1) account for over one-fourth of total vacancies among the top occupations. This is followed by technicians and associate professionals (ISCO 3) and service and sales workers (ISCO 5), each representing roughly one-fifth of total postings.

Figure 3.13 Top 30 Detailed Occupations (ISCO 4-digit level) with the Largest Cumulative Increases in Online Job Postings Between 2022 and 2024, Relative to 2021
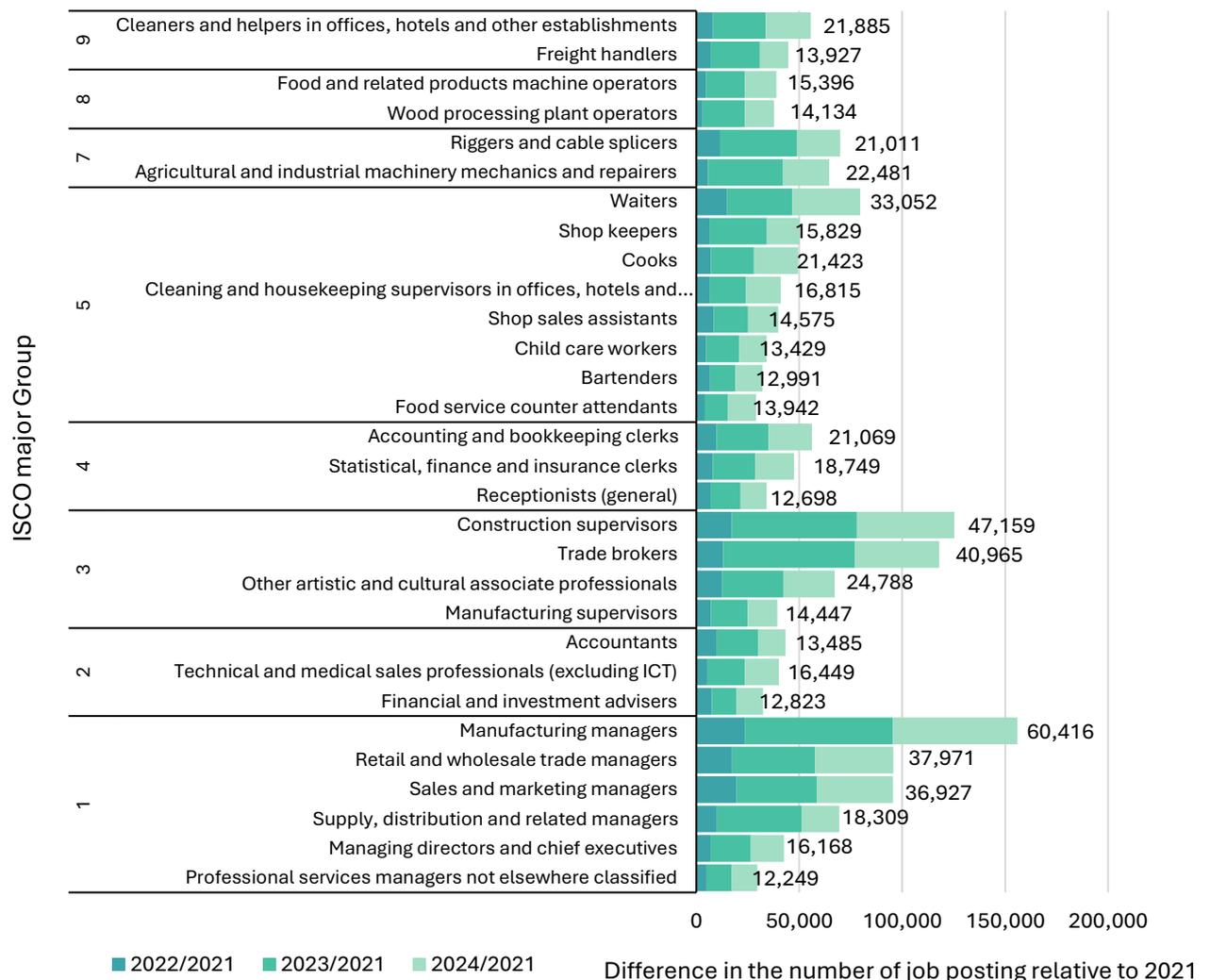
Source: Lightcast—online job vacancies data.

Note: The numbers next to each 4-digit ISCO occupation indicate the corresponding ISCO major group. ICT = information and communication technology; ISCO = International Standard Classification of Occupations.

Assessing Occupational Shortages Through Vacancy Rates

Online job postings help identify where labor demand is concentrated, but vacancy rates measure labor shortages more accurately and capture the intensity of recruitment challenges relative to workforce size. Figure 3.14 illustrates the extent of unmet labor demand across the top 30 occupations and the largest increase in online job postings between 2022 and 2024. The red segments represent unfilled positions (vacancies), while the green ones indicate existing employment. The red segments can be interpreted as a proxy for the "missing workforce" needed for each occupation to function at its full productive capacity.

High-skilled occupations exhibit the most severe shortages. Vacancy rates among wholesale and retail trade managers and manufacturing managers touched 84−98 percent, while technical associate professionals, such as trade brokers and construction supervisors, reported vacancy rates exceeding 80 percent. These findings align with the broader evidence of the scarcity of qualified personnel in Italy.

Mid-skilled occupations face moderate but persistent shortages, particularly in manual and service-oriented jobs. Unmet demand stands at 57 percent for wood and processing plant workers, 44 percent for shopkeepers, and 36−38 percent for clerical and childcare occupations. Employers in these categories continue to report recruitment difficulties, despite having relatively better labor availability than high-skilled occupations.

Low-skilled occupations experience the least pressure, as there is a large pool of available job seekers. The unemployment rate among workers with at least a primary education remains around 10 percent (roughly 674,000 individuals). The surplus of job seekers eases recruitment constraints for low-skilled positions.

Figure 3.14 Unmet Labor Demand Across Top 30 Occupations with the Highest Increase in Online Job Postings, 2022–24

ISCO major group	Occupation	OJV
9	Freight Handlers	19%
9	Cleaners and Helpers in Offices, Hotels and Other...	10%
8	Wood Processing Plant Operators	57%
8	Food and Related Products Machine Operators	23%
7	Riggers and Cable Splicers	92%
7	Agricultural and Industrial Machinery Mechanics and...	33%
5	Food service counter attendants	NA
5	Cleaning and housekeeping supervisors in offices, hotels...	NA
5	Shopkeepers	44%
5	Child Care Workers	36%
5	Waiters	17%
5	Cooks	13%
5	Bartenders	9%
5	Shop Sales Assistants	4%
4	Receptionists (general)	NA
4	Statistical, Finance and Insurance Clerks	38%
4	Accounting and Bookkeeping Clerks	17%
3	Trade Brokers	98%
3	Construction Supervisors	84%
3	Other Artistic and Cultural Associate Professionals	82%
3	Manufacturing Supervisors	17%
2	Technical and medical sales professionals (excluding ICT)	NA
2	Financial and investment advisers	NA
2	Accountants	31%
1	Retail and wholesale trade managers	88%
1	Manufacturing managers	82%
1	Sales and marketing managers	76%
1	Professional services managers not elsewhere classified	73%
1	Supply, distribution and related managers	65%
1	Managing directors and chief executives	31%

Online Job Vacancy rate

■ Total employment ■ OJV

Source: Online job vacancies data from Lightcast combined with occupational data from the Italian LFS.

Note: The numbers next to each 4-digit ISCO occupation indicate the corresponding ISCO major group. ICT = information and communication technology; ISCO = International Standard Classification of Occupations; OJV = online job vacancy; NA = not available.

Box 3.6 Labor Shortages in Human Health and Social Work Activities: A Case in Point

Human health and social work activities are increasingly central to Italy's economy, driven by an aging population and the rising demand for long-term and community-based care. Between 2018 and 2024, employment in these sectors expanded steadily, reaching nearly 2 million workers across human health, residential care, and social work activities (figure B3.6.1). Yet, an estimated 56,800 positions remained unfilled in 2024, equivalent to a 3 percent vacancy rate.

Shortages are most acute in social work activities, with a 6.6 percent vacancy rate, reflecting the mounting demand for care and support services for elderly and vulnerable individuals. By contrast, residential care activities record few online vacancies, likely because recruitment relies heavily on informal networks and offline channels rather than digital platforms.

Figure B3.6.1 Online Job Vacancy Rate in Human Health and Social Work Activities, 2018–24
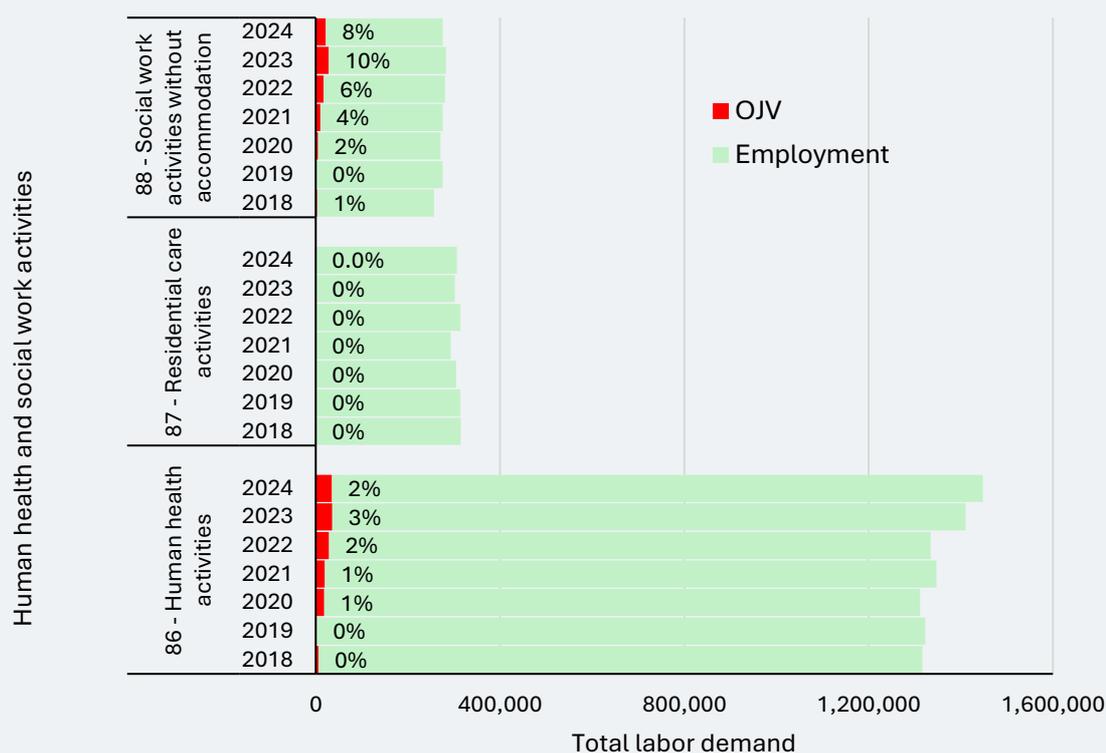
Source: Lightcast—online job vacancies data; ILOSTAT—labor force survey estimates of total employment.
Note: Percentages on each bar indicate the online job vacancy rate. OJV = online job vacancy.

The rapidly growing labor demand in human health and social work activities is reflected in a sharp rise in online job vacancies for several key occupations (figure B3.6.2). Interestingly, the largest number of postings is for waitstaff who serve patients and residents in cafeterias and dining

areas. This trend reflects the operational needs of hospitals, nursing homes, and residential care facilities, indicating that labor demand in these sectors extends beyond medical or caregiving roles.

The sector also demonstrates strong demand for skilled professionals, including dentists, medical researchers, health information specialists, personal care workers, and nurses. This pattern highlights the increasingly complex and interdisciplinary nature of health care delivery, as well as the expanding role of professional social care services in response to Italy's aging population.

However, the most acute shortages are concentrated in just four highly skilled occupations: dentists (55 percent), traditional and complementary medicine professionals (37 percent), health professionals not elsewhere classified (9 percent), and professional services managers (7 percent). The magnitude of unfilled positions in these jobs underscores the critical shortage of qualified personnel in specialized medical and management fields. This highlights the urgent need for targeted training programs and curricula designed to develop the specific competencies required to meet the evolving needs of the labor market.

Figure B3.6.2 Top 15 Occupations in Human Health and Social Work Activities with the Highest Number of Online Job Vacancies, 2024
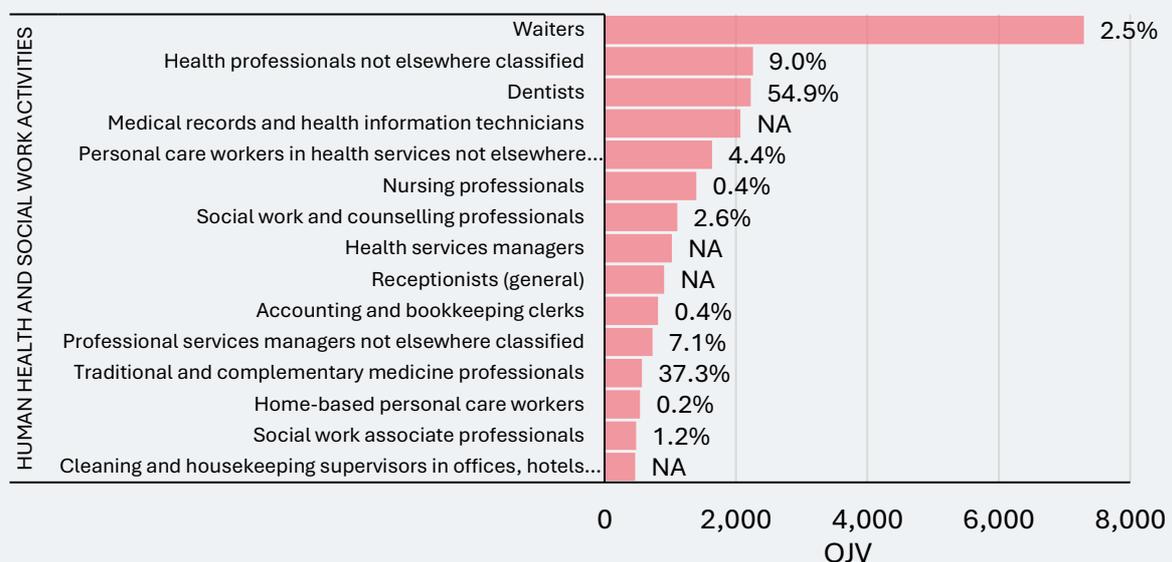
Source: Lightcast—online job vacancy data.
Note: Percentages on each bar indicate the occupational online job vacancy rate. OJV = online job vacancy; NA = not available.

4. BEYOND REPORTED VACANCIES: IDENTIFYING CRITICAL OCCUPATIONS FACING LABOR SHORTAGES THROUGH THE COL METHODOLOGY

4.1. Measuring Occupational Shortages

The previous chapter offered insights into the sectors and occupations driving job creation as well as the areas of emerging labor shortages as indicated by job vacancy data. However, relying solely on vacancy-based evidence offers only a partial picture of labor market imbalances. Vacancies may reflect short-term recruitment challenges rather than structural or persistent shortages, and they may omit occupations where hiring occurs through informal or alternative channels.

To address these limitations, the analysis employs the Critical Occupations List (COL) (see section 2.3), which provides a systematic and data-driven framework for identifying occupations with structural shortages in the Italian labor market. This approach builds upon the descriptive findings by pursuing two complementary objectives. First, it tests whether occupations experiencing rapid employment growth and high vacancy rates also satisfy quantitative thresholds indicative of persistent or structural labor shortages. Second, it broadens the analysis by identifying additional occupations likely to face shortages, even if these are not reflected in vacancy statistics.

In total, 424 occupations at the 4-digit ISCO (International Standard Classification of Occupations) level were initially considered under the COL methodology. After excluding occupations with fewer than three indicators, the final sample comprised 404 occupations. Annex 2 lists the 20 excluded occupations, of which 5 had no available indicators and 15 had only one. Among those with a single indicator, 9 did not show any signs of shortage, while 6 did signal shortages, as their indicator values exceeded the critical threshold. These shortages were primarily found among professionals as well as technicians and associate professionals such as traditional and complementary medicine professionals, medical assistants, ambulance workers, and government social benefits officials. However, the presence of a single indicator is not sufficient to classify these occupations as critical.

Among the 404 occupations included in the COL analysis, 117 had between three and five available indicators, while 287 had between six and eight (figure 4.1). The number of indicators does not directly determine inclusion, but it defines the rule applied for evaluation. Occupations with fewer indicators (three to five) are assessed using a proportional rule that requires at least 66 percent of the indicators to exceed the threshold, which prevents them from being classified as critical based on limited evidence. Conversely, occupations with a greater number of indicators (six to eight) are evaluated against a lower proportional threshold of 50 percent, ensuring they are not penalized simply because more information is available. In this way, the methodology guarantees that inclusion is based not on the quantity of available indicators, but on the strength of the evidence they collectively provide.

Figure 4.1 Distribution of Shortage Occupations by Number of Available Indicators and Rules for Inclusion in the Critical Occupations List
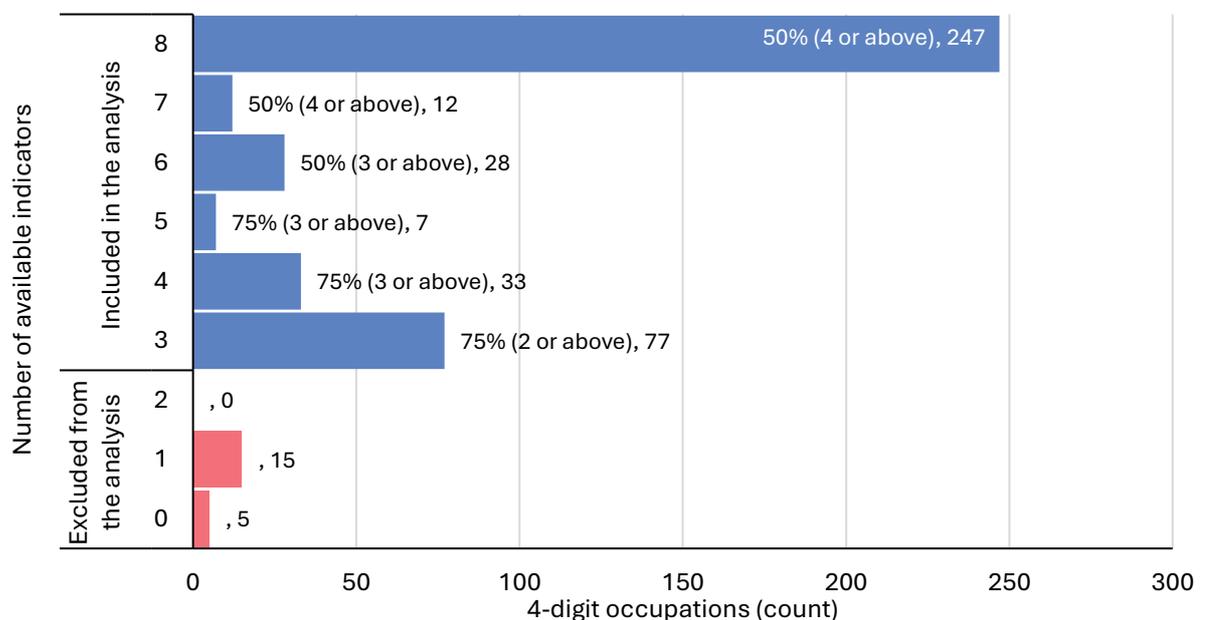
Source: World Bank staff calculations using the COL methodology (compiled from multiple sources).

4.2. Evidence on Occupations in Shortage

Of the 404 occupations with sufficient indicators for the COL analysis, 130 exhibit clear signs of shortage. Together, these account for about one-third of total employees within the analyzed group—about 5.8 million workers out of 16.6 million (figure 4.2).

The complete results are presented in annex 2, where 4-digit occupations in shortage are organized by ISCO major group. For each occupation, the annex provides the: (1) status of the eight indicators relative to their thresholds (above or below), (2) number of indicators

applied, (3) number exceeding the threshold, and (4) employment size, highlighting the relative importance of each occupation.

In absolute terms, the largest shortages are found among the service and sales workers group, which collectively employs around 3.2 million workers across 39 detailed occupations. Within this group, 21 occupations, representing about 1.46 million workers, face shortages (figure 4.2). The most affected occupations include cooks, waiters, and bartenders, which together employ over 1 million workers. Other notable shortages are among health care assistants and bricklayers, which employ about 368,000 and 310,000 workers, respectively.

Figure 4.2 Largest Shortage Occupations (by Number and Share of Workers)
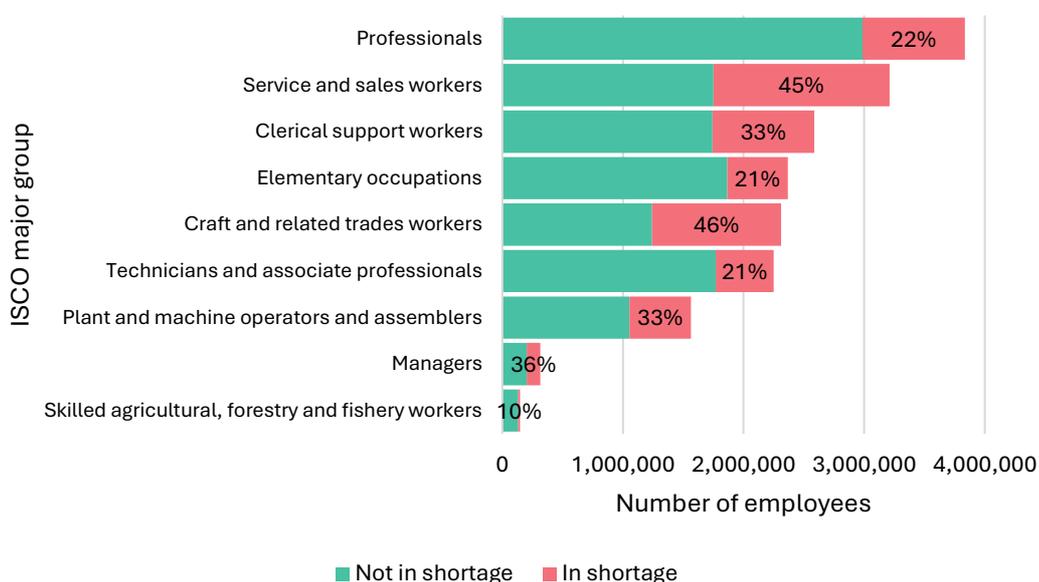
Source: World Bank staff calculations using the COL methodology (compiled from multiple sources).
Note: ISCO = International Standard Classification of Occupations.

Figure 4.3 presents the distribution of shortage indicators across major occupational groups, summarizing both the average and median number of indicators observed at the 4-digit occupation level. The results indicate that service and sales workers (ISCO 5) and clerical support workers (ISCO 4) record the highest average number of shortage indicators, reflecting strong pressure in several occupations, although there is wide variation within each group. By contrast, technicians and associate professionals (ISCO 3) and professionals (ISCO 2) demonstrate a more uniform but somewhat lower average shortage intensity, indicating ongoing structural recruitment challenges across technical and professional roles. Meanwhile, managers (ISCO 1), skilled agricultural workers (ISCO 6), and those in elementary occupations (ISCO 9) exhibit weaker and more stable signals of shortage.

Overall, the evidence suggests that labor shortages in Italy are concentrated in mid- to high-skill technical and professional occupations. In contrast, service and clerical occupations experience significant but uneven shortage pressures.

Figure 4.3 Severity of Labor Shortages Across Major Occupational Groups, Measured by Labor Market Indicators Above Critical Thresholds
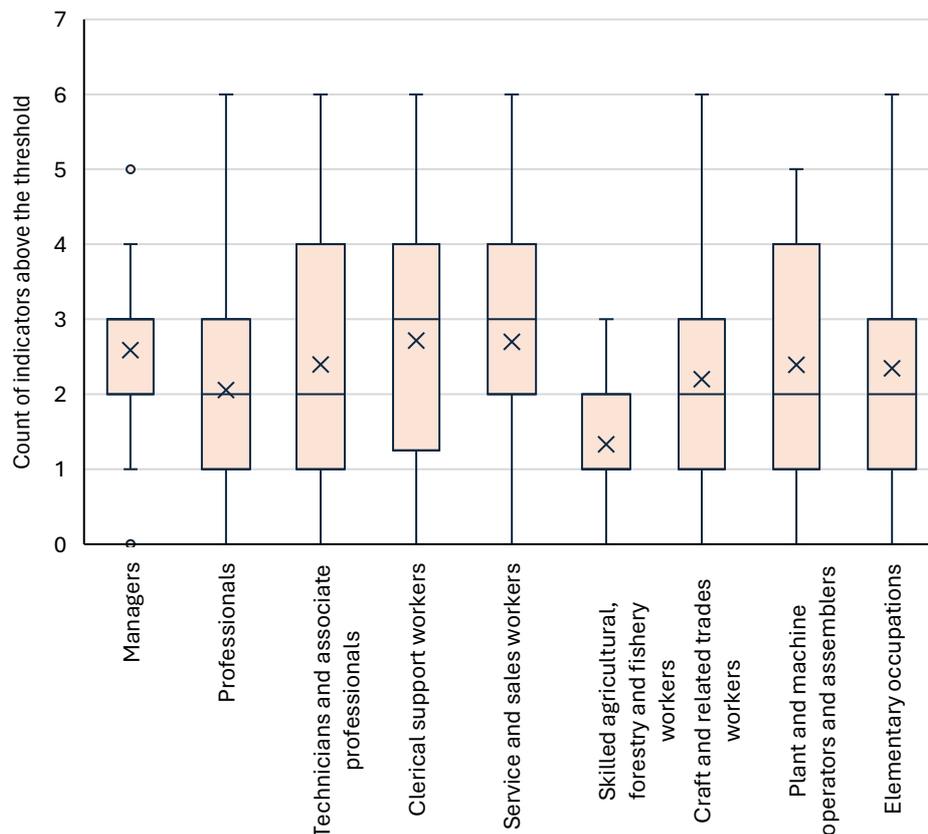
Source: World Bank staff calculations using the COL methodology (compiled from multiple sources).

Across major occupational groups, the highest incidence of shortages is among service and sales workers (54 percent), followed by clerical support workers (38 percent) and technicians and associate professionals (36 percent) (figure 4.4). This indicates that over one in three occupations within these groups face recruitment pressures. In absolute terms, the largest number of 4-digit occupations in shortage is found among technicians and associate professionals (28), professionals (23), and craft and related trades workers (18), which together account for nearly half of all identified occupations in shortage. This pattern suggests that while shortages are most widespread in service and clerical roles, they are numerically concentrated in technical and professional occupations.

Figure 4.4 Share and Number of 4-Digit Occupations in Shortage Within Each Major Group
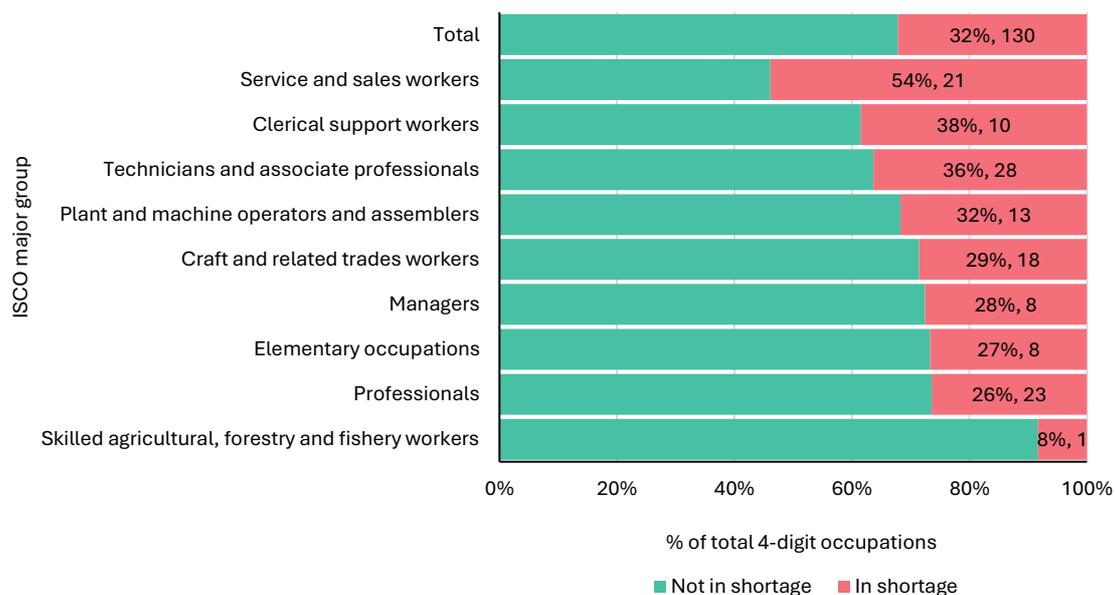
Source: World Bank staff calculations using the COL methodology (compiled from multiple sources).

Note: Numbers in each bar indicate the percentage and total number of 4-digit occupations in shortage within each ISCO major group. ISCO = International Standard Classification of Occupations.

4.3. Top 25 Critical Occupations in Shortage in Italy

The labor shortages in Italy span a wide range of occupations, making it challenging to determine where interventions in the labor market could yield the greatest impact. To provide a more targeted perspective, this section focuses on the 25 most critical shortage occupations, selected based on their employment size. Employment size serves as a key indicator of an occupation's economic and systemic relevance: occupations with larger workforces are crucial for sustaining productivity, ensuring service continuity, and supporting the functioning of entire sectors. Consequently, shortages in these key occupations create structural pressures that affect not just individual firms, but the broader economy as well.

In practice, employment size serves as a proxy for strategic importance. Occupations identified as being in shortage collectively employ nearly 6 million workers, which is approximately one-third of total employment. The top 25 occupations among these account for more than two-thirds (over 4 million workers) of all employment in shortage occupations, indicating that labor pressures are heavily concentrated within a relatively small subset of the labor market (figure 4.5). By focusing on these high-employment occupations, we can identify areas where labor gaps are likely to have the most widespread

economic and operational consequences. This approach provides a solid basis for policy prioritization and targeted workforce interventions.

Among the top 25 occupations in shortage, service and sales workers (ISCO 5) account for the highest number of workers—over 1.28 million across just six occupations: health care assistants, waiters, cooks, bartenders, personal services workers, and hairdressers. Following this is craft and related trades workers (ISCO 7) , at about 875,000 workers across six critical occupations: structural metal preparers and erectors; agricultural and industrial machinery mechanics and repairers; motor vehicle mechanics and repairers; bakers, pastry cooks, and confectionery makers; building and related electricians; and bricklayers and related workers. The professionals (ISCO 2) group includes four critical occupations—telecommunications engineers, personnel and career professionals, special needs teachers, and physiotherapists—collectively employing about 469,000 workers.

The trends emerging from the COL analysis are consistent with the sectoral findings presented in chapter 3, which indicate a structural transformation in Italy's labor market. Private sector labor demand is gradually shifting from high-value-added manufacturing to service-oriented sectors. In particular, accommodation and food services, human health and personal care, motor vehicle and motorcycle repair, wholesale and retail trade, and construction are emerging as key drivers of employment growth. These sectors, together with selected lower-value-added manufacturing niches such as food and beverage processing—are absorbing an increasing share of the workforce and are associated with many occupations facing shortages.

Figure 4.5 Top 25 Critical Occupations As a Share of All Employment in Shortage Occupations

Occupation	Share
Health Care Assistants	6%
Secretaries (general)	6%
Bricklayers and Related Workers	5%
Waiters	5%
Cooks	4%
Bartenders	3%
Fast Food Preparers	3%
Accounting and Bookkeeping Clerks	3%
Odd-job Persons	3%
Physiotherapists	3%
Motor Vehicle Mechanics and Repairers	2%
Special Needs Teachers	2%
Agricultural and Industrial Machinery Mechanics and...	2%
Building and Related Electricians	2%
Inquiry Clerks	2%
Food and Related Products Machine Operators	2%
Manufacturing Labourers not elsewhere classified	2%
Bakers, Pastry Cooks and Confectionery Makers	2%
Government Regulatory Associate Professionals n.e.c.	2%
Personal Services Workers not classified elsewhere	2%
Personnel and Careers Professionals	2%
Managing directors and chief executives	1%
Telecommunications Engineers	1%
Structural Metal Preparers and Erectors	1%
Hairdressers	1%
Long tail of 105 occupations in shortages	31%

Source: World Bank staff calculations using the COL methodology (compiled from multiple sources).

4.4. Geographic Distribution of the Top 25 Critical Occupations in Shortage

In addition to identifying the top 25 occupations experiencing shortages at the 4-digit level with the largest employment size, it is essential to examine where these shortages are most pronounced across Italy. A geographic analysis of labor demand uncovers regional and local disparities, revealing not only the areas with the highest overall demand for workers but also the specific territories where the occupations identified by the COL are most concentrated.

This spatial characterization allows us to move beyond national-level aggregates and understand the regional[6] dynamics of labor shortages. While some occupations may be in high

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[6] Italy is divided into 20 regions (Regioni), which represent the primary level of subnational government. Each region has its own elected government and enjoys a certain degree of administrative and legislative autonomy, especially in areas such as education, health care, vocational training, and labor market policies.

demand across the country, the demand can be particularly acute in specific regions or provinces. This variation reflects localized economic structures, demographic trends, and industrial specialization.

Understanding the concentration of occupations in shortage is crucial for several reasons. First, it provides valuable evidence to guide targeted policy interventions that address regional mismatches between labor supply and demand. Second, it helps in designing training and mobility programs, ensuring that skill development initiatives align with the geographic areas and sectors in greatest need. Third, and most importantly, it helps to overcome information asymmetries in the labor market by identifying job vacancies that could be filled by international migrants more readily, thereby improving job matching and facilitating effective labor mobility.

Table 4.1 displays the geographic distribution of the top 25 occupations in shortage, identified at the 4-digit ISCO level, using data from the Italian Labor Force Survey. Each row represents one of the selected occupations, while the columns correspond to the three main geographic areas of Italy—North, Center, and South and Islands. For each macro-area, the table lists the regions with the highest concentration of employment in that occupation, together with the percentage share of total national employment in that occupation.

Overall, the results indicate that most occupations experiencing shortages are highly concentrated in the northern regions, particularly Lombardy, Veneto, Emilia-Romagna, and, to a lesser extent, Piedmont. A substantial share of jobs in the human health and social work sectors— including health care assistants, physiotherapists, as well as special needs teachers and personal services workers—are clustered in these regions, reflecting the stronger demand for health and care services in the North. Occupations closely linked to the agrifood system—such as waiters, cooks, bartenders, fast food preparers, agricultural and industrial machinery mechanics and repairers, and food and related products machine operators—are also predominantly found in these northern regions. However, a notable share of some of these occupations can be found in Campania (particularly waiters, cooks, and food and related products machine operators) and in Latium (notably waiters, cooks, bartenders, and fast food preparers), where demand for food-service-related occupations is driven by strong tourism and hospitality activities. Annex 4 provides a regional map illustrating the spatial distribution of employment in occupations identified as being in shortage across Italy.

Among these 20 regions, five have special autonomous status—Sicily, Sardinia, Trentino-Alto Adige/Südtirol, Valle d'Aosta/Vallée d'Aoste, and Friuli Venezia Giulia—which grants them broader legislative powers and greater control over fiscal resources, reflecting their unique historical, linguistic, or cultural characteristics.

Table 3.1 Geographic Concentration of the Top 25 Occupations in Shortage

ISCO 4-Digit Code	Occupation	North	Center	South and Islands
5321	Health care assistants	Lombardy (19%), Veneto (16%), Piedmont (9%), Emilia-Romagna (8%)	Tuscany (8%)	
4120	Secretaries (general)	Lombardy (18%), Piedmont (10%), Veneto (8%)	Latium (14%)	Campania (8%)
7112	Bricklayers and related workers	Lombardy (16%), Veneto (8%)	Latium (11%), Tuscany (10%)	Campania (9%)
5131	Waiters	Veneto (14%), Lombardy (13%), Emilia-Romagna (8%)	Latium (11%)	Campania (9%)
5120	Cooks	Lombardy (18%), Emilia-Romagna (8%), Veneto (8%)	Latium (11%)	Campania (8%)
5132	Bartenders	Lombardy (20%), Veneto (12%), Emilia-Romagna (8%)	Latium (8%), Tuscany (7%)	
9411	Fast food preparers	Lombardy (19%), Veneto (10%), Emilia-Romagna (8%)	Latium (11%)	
4311	Accounting and bookkeeping clerks	Lombardy (18%), Veneto (15%), Emilia-Romagna (8%), Piedmont (8%)	Tuscany (11%), Latium (10%)	
9622	Odd-job persons	Lombardy (16%), Veneto (8%)	Latium (8%)	Campania (10%), Sicily (10%)
2264	Physiotherapists	Lombardy (21%), Emilia-Romagna (11%), Piedmont (8%), Veneto (7%)	Latium (10%)	
7231	Motor vehicle mechanics and repairers	Lombardy (15%), Emilia-Romagna (10%), Veneto (9%)	Latium (10%)	Sicily (8%)
2352	Special needs teachers	Lombardy (19%), Emilia-Romagna (7%)	Latium (8%)	Campania (11%), Sicily (11%)
7233	Agricultural and industrial machinery mechanics and repairers	Lombardy (21%), Emilia-Romagna (19%), Veneto (12%), Piedmont (7%)	Tuscany (7%)	
7411	Building and related electricians	Lombardy (15%), Veneto (12%), Piedmont (8%)	Tuscany (9%), Latium (9%)	
4225	Inquiry clerks	Lombardy (24%), Emilia-Romagna (12%), Piedmont (9%)	Tuscany (8%), Latium (8%)	
8160	Food and related products machine operators	Emilia-Romagna (15%), Veneto (15%), Lombardy (15%), Piedmont (8%)		Campania (9%)
9329	Manufacturing laborers n.e.c.	Lombardy (27%), Veneto (21%), Emilia-Romagna (11%), Piedmont (9%)	Tuscany (5%)	

7512	Bakers, pastry cooks, and confectionery makers	Emilia-Romagna (10%)		Apulia (10%), Campania (10%), Sicily (10%)
3359	Government regulatory associate professionals n.e.c.	Lombardy (17%), Veneto (10%), Emilia-Romagna (9%)	Latium (15%)	Sicily (11%)
5169	Personal services workers n.e.c.	Lombardy (26%)	Latium (15%), Tuscany (7%)	Campania (12%), Sicily (10%)
2423	Personnel and career professionals	Lombardy (40%), Veneto (12%), Piedmont (10%), Emilia-Romagna (6%)	Latium (9%)	
1120	Managing directors and chief executives	Lombardy (19%), Veneto (9%), Piedmont (9%)	Latium (20%), Tuscany (10%)	
2153	Telecommunications engineers	Lombardy (24%), Emilia-Romagna (10%), Piedmont (10%)	Latium (21%), Tuscany (10%)	
7214	Structural metal preparers and erectors	Lombardy (20%), Veneto (20%), Emilia-Romagna (7%), Piedmont (7%)		Apulia (8%)

Source: World Bank staff calculations using the COL methodology (compiled from multiple sources) and ISTAT labor force survey data.

Note: ISCO = International Standard Classification of Occupations; n.e.c. = not elsewhere classified.

5. SKILL REQUIREMENTS OF THE TOP 25 OCCUPATIONS FACING SHORTAGES

The main outcome of the Critical Occupations List (COL) methodology, presented in chapter 4, is a comprehensive list of the occupations facing a shortage of labor in the Italian labor market, including the 25 facing the most acute shortages, ranked by their employment size. While this analysis identifies where labor shortages are most pronounced, it does not capture the specific skills required in these occupations. Understanding these skill requirements is critical to designing effective training and mobility policies. This raises two central questions:

    (i)   *The demand for which skills has grown the fastest in Italy's labor market in recent years?*

    (ii)   *Which skills are particularly essential for the occupations most affected by shortages?*

To address these questions, this chapter examines skills in high demand in the Italian labor market. Data from online job postings have been used for the analysis. Given that the dataset includes detailed information on the skills requested in each advertised position, analysis of skill needs across occupations and specific to each occupation has been possible.

The chapter is structured into two sections.

Section 5.1 presents an analysis of the fastest-growing skills in the Italian labor market. This section identifies the 30 skills with the fastest demand growth between 2019 and 2024, measured by their frequency in online job postings. Skills are classified according to the European Skills, Competences, Qualifications and Occupations (ESCO) framework into four categories: Knowledge (K[7]), Language Skills and Knowledge (L[8]), Practical Skills (S[9]), and Transversal Skills (T[10]). The analysis highlights emerging skill trends and provides a forward-looking perspective on the competencies shaping the Italian labor market.

Section 5.2 examines the skill composition of each of the 25 critical occupations in the COL. It presents the 10 most frequently requested skills for each occupation and offers insight into the specific competencies employers are actively seeking to address critical labor gaps.

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[7] **Knowledge** includes the theoretical and practical understanding required for various tasks.
[8] **Language Skills and Knowledge** focuses on language proficiency relevant to the workplace.
[9] **Practical Skills** covers practical abilities and techniques needed to perform tasks.
[10] **Transversal Skills** are general skills applicable across different occupations and sectors, for example, communication, problem solving, and teamwork.

5.1. Emerging Skill Trends in Italy's Labor Market

The analysis of online job postings between 2018 and 2024 provides a detailed picture of how employers' skill needs in Italy have evolved. Figure 5.1 presents the 30 fastest-growing skills, measured by the net increase in their frequency across job advertisements relative to that in 2018. The results reveal an increasing demand for practical technical competencies combined with transversal skills, reflecting both technological change and the growing complexity of organizational structures (box 5.1).

Figure 5.1 Yearly Changes in the Top 30 Skills in Demand in the Italian Labor Market, 2019–24
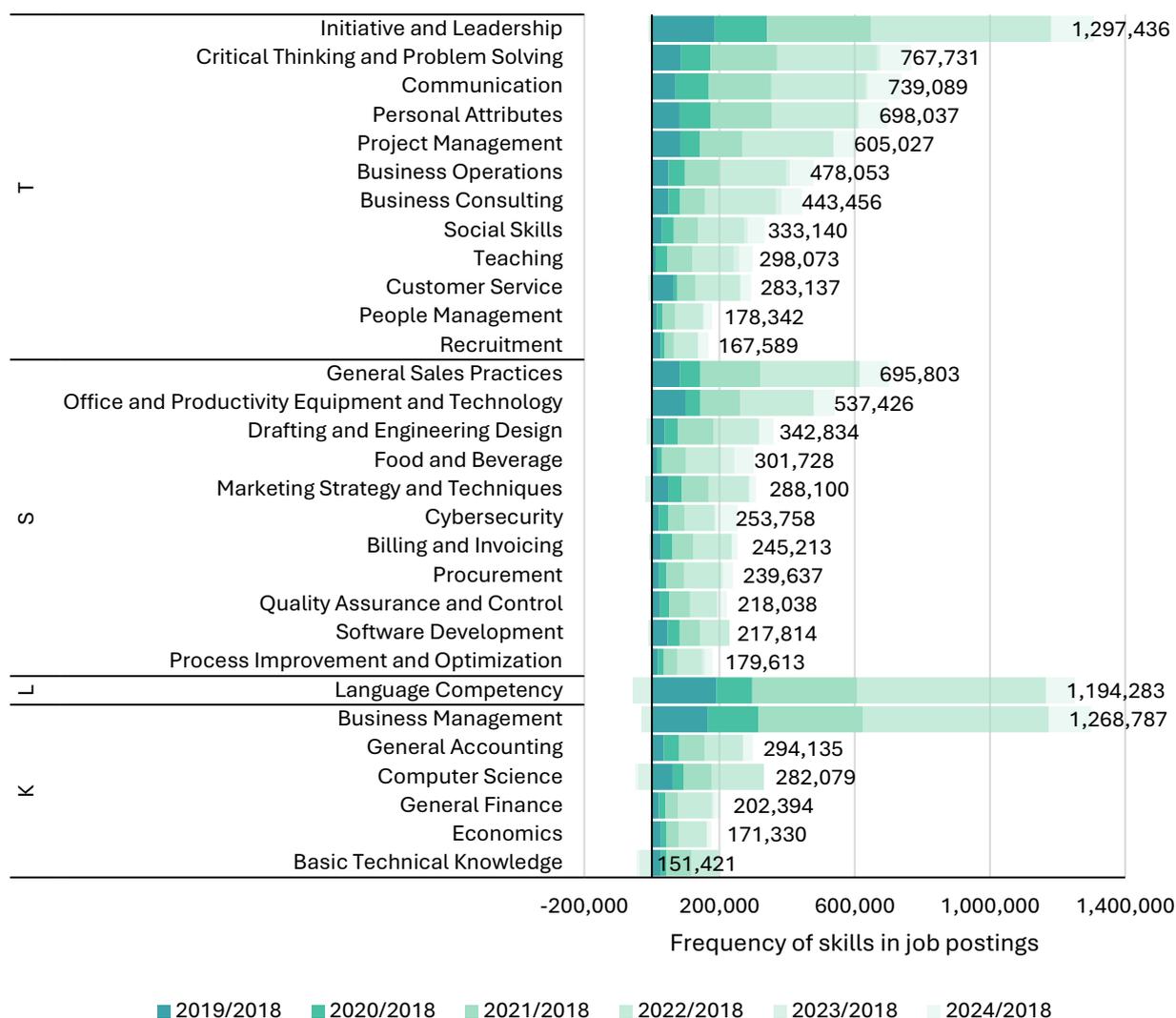
Source: Lightcast online job postings database, 2019−24.
Note: The number next to each bar represents the absolute increase in demand for that skill from 2019 to 2024.

Box 5.1 Competencies of the Fastest-Growing Skills in the Italian Labor Market

Table B5.1.1 presents the 30 fastest-growing skills in Italy alongside the related competencies in brief. The skills are classified into four categories—Knowledge (K), Language (L), Practical Skills (S), and Transversal Skills (T)—according to the European Skills, Competences, Qualifications and Occupations (ESCO) framework. The skill names capture broader sets of the competencies required to perform the related tasks effectively, while the descriptions summarize the key abilities associated with each skill.

Table B5.1.1 Skills and Competencies in Brief

ESCO Category	Skill	Competency
Knowledge (K)	Basic Technical Knowledge	Foundational technical knowledge needed to perform tasks in specific fields.
	Economics	Understanding of economic principles, markets, and financial systems.
	General Finance	Knowledge of financial management, reporting, and analysis.
	Computer Science	Understanding computing principles, algorithms, and software development.
	General Accounting	Managing financial records, reporting, and compliance.
	Business Management	Planning, organizing, and overseeing business operations.
Language (L)	Language Competency	Proficiency in one or more languages for effective communication and collaboration.
Practical Skills (S)	Process Improvement and Optimization	Enhancing operational processes to improve efficiency and quality.
	Software Development	Designing, coding, and testing software applications.
	Quality Assurance and Control	Ensuring products and services meet defined quality standards.
	Procurement	Managing purchasing processes and supplier relationships.
	Billing and Invoicing	Handling financial transactions, invoices, and customer billing.
	Cybersecurity	Protecting systems and networks from digital threats.
	Marketing Strategy and Techniques	Planning and executing marketing campaigns to reach target audiences.
	Food and Beverages	Preparing, handling, and serving food and drinks safely and efficiently.
	Drafting and Engineering Design	Creating, interpreting, and modifying technical drawings and plans.
	Office and Productivity Technology	Using office tools, software, and equipment to support administrative tasks.
	General Sales Practices	Selling products and services, including customer interaction and negotiation.
Transversal Skills (T)	Recruitment	Identifying, attracting, and selecting candidates for positions.
	People Management	Leading and supervising teams to achieve organizational objectives.
	Customer Service	Assisting and responding to customer needs to ensure satisfaction.
	Teaching	Delivering knowledge and skills effectively to learners.
	Social Skills	Interpersonal abilities that support collaboration and teamwork.
	Business Consulting	Advising organizations to improve performance and strategy.
	Business Operations	Managing and coordinating daily business activities.
	Project Management	Planning, executing, and completing projects on time and within scope.
	Personal Attributes	Demonstrating adaptability, resilience, and initiative.
	Communication	Conveying information clearly and effectively, verbally or in writing.

Critical Thinking and Problem Solving	Analyzing complex issues and developing effective solutions.
Initiative and Leadership	Taking proactive action, guiding teams, and driving results.

Source: European Commission 2024 (competencies adapted for the purpose of this report).
Note: ESCO = European Skills, Competences, Qualifications and Occupations.

Between 2018 and 2024, transversal skills registered the sharpest rise in demand, with a cumulative net increase of more than 6 million mentions in online job postings. Within this category, the rise in demand was the highest for initiative and leadership, critical thinking and problem solving, and communication—approximately 1.3 million, 767,000, and 739,000 additional mentions in online postings, respectively. The growing emphasis on these competencies aligns with the continued expansion of service-oriented industries, which increasingly require workers who can navigate complex processes, manage client relationships, and adapt to organizational change.

The demand for practical skills followed a similar trajectory, with a net increase of over 3.5 million mentions. These skills reflect a need for operational and sector-specific expertise, for example, competencies related to general sales practices, office and productivity technology, drafting and engineering design, and food and beverages. This similarity in the growth trajectory of transversal and practical skills indicates that, while employers value soft and cognitive skills, they also place sustained emphasis on hands-on, task-specific abilities required to support production, retail, and service delivery.

Although the overall growth of knowledge-based and language skills is comparatively lower, several of these skills remain consistently in high demand—particularly general accounting, business management, and language competency. These competencies are especially valued in finance, consulting, professional services, and multinational enterprises, where analytical capabilities, business acumen, and communication skills underpin competitiveness.

Skill demand ultimately mirrors the evolution of Italy's economic structure. As shown in figure 5.2, just 30 economic sectors accounted for 88 percent of the total skill demand in 2024, underscoring the high concentration of employment in a few dynamic industries. Growth has largely been driven by service-oriented activities, such as *office administration and business support services* and *information services*, which have fueled the growing demand for transversal and practical skills. In these sectors, job postings frequently mention as requirements competencies in customer service, initiative and leadership, and general sales practices, alongside language-related competencies, which facilitate client engagement and service delivery.

Similar patterns emerge in trade-related sectors, in particular retail, where employers increasingly seek a blend of transversal skills—including business operations, communication, and customer service—and practical skills related to food and beverages, sales, and marketing

techniques. These trends highlight the importance of interpersonal and organizational competencies in consumer-facing activities.

Meanwhile, manufacturing sectors represent a smaller share of total skill demand, but remain crucial for specific practical and technical competencies. Subsectors such as the manufacture of electrical equipment, fabricated metal products, food products, and pharmaceuticals rely heavily on practical, hands-on skills—from quality control to process optimization and production management. High-tech manufacturing—for example, pharmaceuticals—also requires complementary transversal and digital skills, including in the use of office and productivity software, marketing, and sales, reflecting the increasing integration of production, innovation, and business functions.

Figure 5.2 Distribution of the 30 Fastest-Growing Skills in the Italian Labor Market, by Economic Sector, 2024
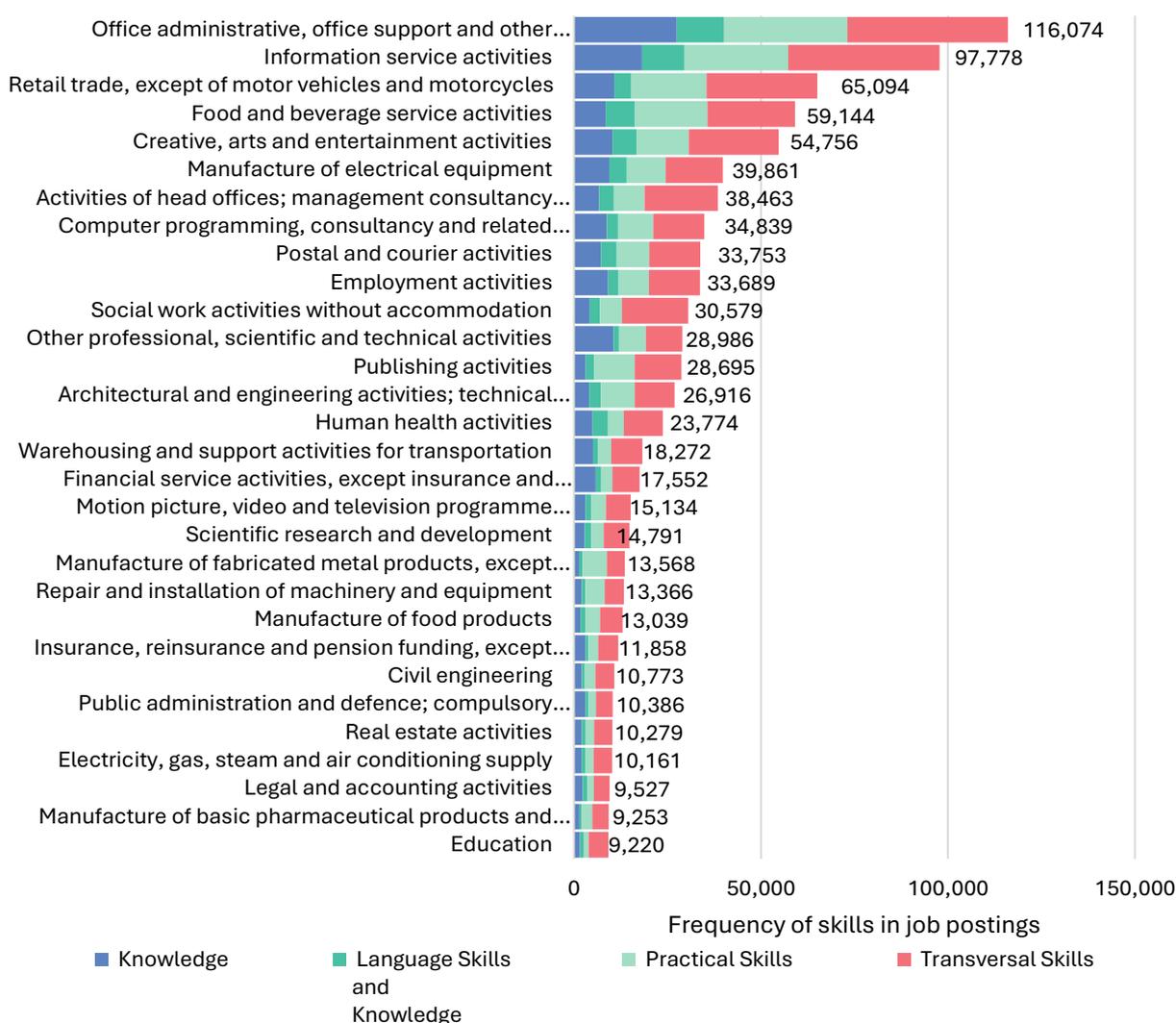
Source: Lightcast online job postings database, 2019–24.

Taken together, these findings suggest that Italy's skill demand is increasingly shaped by service-led growth and the integration of digital and interpersonal competencies across sectors. The ability to combine practical expertise with transversal capabilities—such as adaptability, communication, and leadership—is emerging as a defining feature of labor demand in the Italian economy.

5.2. Skill Content in the Top 25 Occupations Facing Shortages

This section expands on the identification of the 25 most critical occupations, using data from online job postings to analyze the frequency and composition of the skills demanded in these occupations. Given the breadth of the skills associated with each occupation, the focus in this section is on the 10 most frequently requested skills for each occupation, thus capturing the most salient competencies sought by employers.

The analysis in this section examines skills at the level of detailed occupations. The focus is on the major groups of the International Standard Classification of Occupations (ISCO) that have the most occupations facing shortages (see figure 4.4). Major Group 2 (professionals, 23 occupations), Major Group 3 (technicians and associate professionals, 28 occupations), and Major Group 5 (service and sales workers, 21 occupations).

Together, these three major groups account for 11 of the top 25 critical occupations identified using the COL methodology and represent the bulk of the immediate skill gaps reported by employers. This section is structured to distinguish between the high-skilled and mid-skilled occupations among these 11 most critical occupations identified using the COL methodology. This is to further clarify patterns in skill demand and inform targeted responses to skills development. Yet, while the narrative emphasizes these groups, to highlight where mismatches are most acute, annex 5 presents the 10 most frequently demanded skills across all 25 critical occupations.

Figure 5.3 presents the top 10 skills most frequently mentioned in online job postings for 5 of the 11 high-skilled critical occupations. In turn it illustrates the mix of competencies that employers most actively seek for these occupations. These occupations require a balanced combination of transversal competencies and occupation-specific technical skills. Within these groups, several occupations stand out as particularly critical to Italy's labor market, including telecommunications engineers, physiotherapists, special needs teachers, and human resources staff.

For all these occupations, employers consistently emphasize a common set of core transversal skills—notably communication, initiative and leadership, business management, business consulting, and critical thinking and problem solving. The prominence of these skills underscores the growing importance of adaptability, interpersonal effectiveness, and cognitive ability in sustaining performance across high-skilled roles.

However, addressing shortages in these occupations also requires workers to develop the specific technical competencies that meet the functional demands of each role. For example, telecommunications engineers need proficiency in computer science and software development to design, maintain, and optimize communication networks supporting Italy's digital infrastructure. Physiotherapists must demonstrate advanced rehabilitation and therapeutic skills to meet the rising health care needs driven by an aging population. Special needs teachers combine pedagogical expertise with an understanding of mental and behavioral health to support inclusive education, while human resources and career professionals rely on their competencies in recruitment, training, and talent management to strengthen workforce development within organizations.

Figure 5.3 Top 10 Most Frequently Demanded Skills in the High-Skilled Critical Occupations (ISCO Major Groups 2–3) Among the Top 25 Most Critical Occupations (Critical Occupations List)

Telecommunications Engineers (2153)
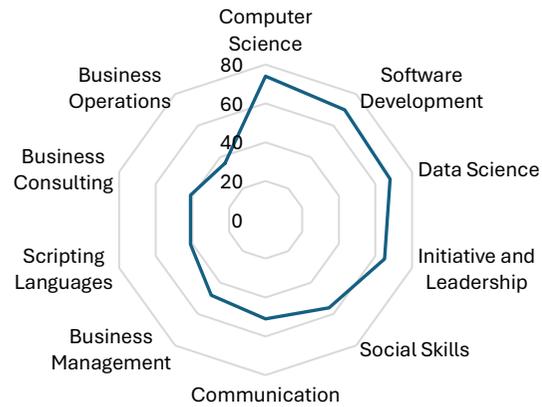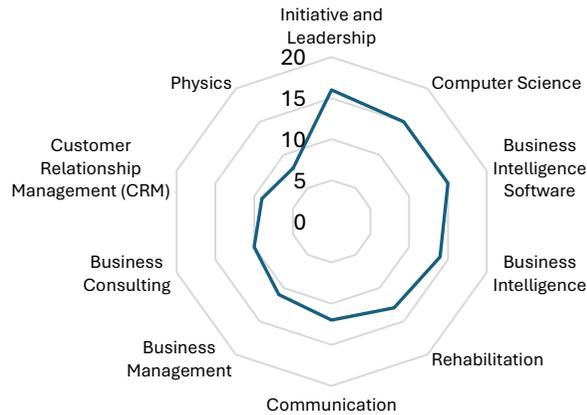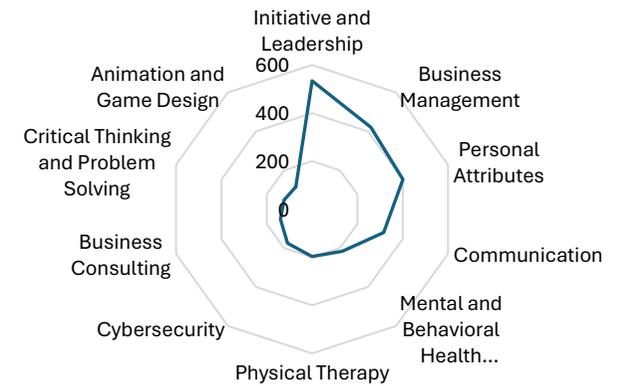
Physiotherapists (2264)

Special Needs Teachers (2352)

Personnel and Career Professionals (2423)

Radar chart axes: Recruitment, Business Consulting, Language Competency, People Management, Initiative and Leadership, Office and Productivity Equipment and..., Personal Attributes, Critical Thinking and Problem Solving, Employee Training, Human Resources Management...

Scale: 0, 500, 1,000, 1,500, 2,000

Regulatory Government Associate Professionals (3359)

Radar chart axes: Language Competency, Initiative and Leadership, Business Management, Customer Service, Critical Thinking and Problem..., Business Consulting, Personal Attributes, Communication, General Sales Practices, Office and Productivity...

Scale: 0, 20, 40, 60

Source: Lightcast online job postings database, 2019–24.

Note: ISCO = International Standard Classification of Occupations.

Growing labor demand in Italy's service and trade sectors has significantly increased the need for mid-skilled workers within ISCO Major Group 5 (service and sales workers). Among the detailed occupations analyzed using the COL methodology in this group, 21 (54 percent) show clear evidence of labor shortages. Among them, six occupations stand out as strategically important, due to their large employment base and central role in driving growth in the service economy (figure 5.4).

With food service growing in importance in Italy's broader service sector, labor shortages are concentrated in occupations central to the sector's growth. Employers continue to struggle to recruit cooks and waiters. Cooks, who prepare and present meals, require vocational or post-secondary culinary training combined with on-the-job experience to master cooking techniques, kitchen management, and food safety standards. Waiters provide table service, take orders, and ensure customer satisfaction; while formal education is not always required for this occupation, short vocational courses or practical training improve service quality, menu knowledge, and client interaction. Bartenders prepare and serve drinks, manage bar operations, and maintain hygiene standards, with hands-on experience and targeted certifications supporting skill development and operational efficiency.

Cooks and waiters have multiple transversal and occupation-specific skills in common. Among transversal skills, both occupations require initiative and leadership, communication, language competency, personal attributes, social skills, and critical thinking skills. These skills support teamwork, customer interaction, and problem solving in dynamic work environments. Language skills remain particularly critical for migrant workers, who leverage these skills to deliver food services efficiently and interact effectively with colleagues and customers. Both also share occupation-specific skills, spanning knowledge of food and beverages to business management, to sector-focused customer service; these skills support the technical proficiency required to deliver a high-quality service.

While the relative importance of each skill varies depending on the specific occupation, communication, as well as expertise in food and beverages, ranks highest. Expertise in food and beverages is vital because it supports the core technical functions of each occupation in the service-oriented industries, from preparing and presenting meals to serving drinks, and ensuring quality, safety, and efficiency in operations. Effective communication is essential for coordinating tasks, interacting with colleagues, and ensuring customer satisfaction; in turn it directly contributes to service quality and operational efficiency in the food service sector.

Within the agrifood system, labor shortages also plague key occupations. These include, among others, mid-skilled occupations across food processing, trading, and service activities (e.g., agricultural machinery mechanics and repairers; food and related products machine operators; bakers, pastry cooks, and confectionery makers; as well as lower-skilled occupations, including fast food preparers). Annex 5 presents the 10 most frequently cited skills considered essential to fill jobs for these occupations.

Within the service and sales workers group, several other critical occupations facing shortages fall outside the agrifood sector. These include personal services workers and health care assistants. Personal services workers typically require secondary education—often complemented by short vocational courses or on-the-job training—and they perform a range of service activities. Health care assistants, who are growing in importance in Italy due to population aging, typically need post-secondary vocational training or certification in health-related fields to be able to handle patient support, safety protocols, and coordination with health care teams. Based on the frequency of the skills mentioned in job postings, transversal skills common to personal services workers and health care assistants include language competency, communication, personal attributes, initiative and leadership, and business management. Occupation-specific skills further differentiate these occupations: personal services workers may require expertise in general sales practices and marketing strategy, while health care assistants rely on nursing and patient care, physical therapy, and specialized applications such as animation and game design for therapeutic purposes.

Figure 5.4 Frequency of the Top 10 Skills Across the Mid-Skilled Critical Occupations (ISCO Major Group 5) on the 2024 Critical Occupations List

Cooks (5120)

Waiters (5131)

Bartenders (5132)

Hairdressers (5141)

(Radar chart axes: Beauty and Body..., Language Competency, Communication, Personal Attributes, Initiative and Leadership, Business Management, Social Skills, Home Health Care and..., Employee Training, Business Consulting. Scale: 0, 50, 100, 150, 200, 250, 300)

Personal Services Workers (5169)

(Radar chart axes: Language Competency, Communication, General Sales Practices, Personal Attributes, Business Management, Marketing Strategy and..., Initiative and Leadership, Food and Beverage, Laboratory Research, Events and Conferences. Scale: 0, 100, 200, 300, 400)

Health Care Assistants (5321)

(Radar chart axes: Home Health Care and..., Language Competency, Business Management, Personal Attributes, Communication, Business Operations, Nursing and Patient Care, Animation and Game Design, Initiative and Leadership, Physical Therapy. Scale: 0, 100, 200, 300, 400)

Source: Lightcast online job postings database, 2019–24.

Note: ISCO = International Standard Classification of Occupations.

5.3. Summary

Italy's labor market is being shaped by deep demographic changes, as the number of people of working age continues to decline, reducing the available labor force. This demographic trend is creating pressure in the labor market and contributing to widespread labor shortages across several sectors and skill levels.

Despite this demographic constraint, total employment has grown over the past two decades (2005–24), though at a modest pace, of 7 percent—among the lowest in the European Union (EU). This growth has been driven almost entirely by migrant workers, who contributed 6 percentage points to total employment growth, against an only 1 percentage point contribution by Italian nationals. Migrants have thus played a critical role in sustaining employment growth and mitigating some of the pressures caused by the declining native workforce.

Sustained labor demand, especially in recent years, has generated pressure in the labor market, as reflected in growing job vacancies and persistent hiring pressure. While lagging the EU average, overall employment growth in Italy has nevertheless outpaced the expansion of the working-age population. This has contributed to a steady decline in the pool of job seekers.

In recent years, labor demand in Italy has been driven by the expansion of service- and trade-oriented sectors, while the relative weight of manufacturing has continued to decline. Analysis of job-creating sectors indicates that labor demand in the private sector will shift away from traditional manufacturing activities in the long term, except in a few high-performing industrial niches that continue to generate employment. Key drivers of labor demand include retail trade, accommodation and food services, and human health and social care, reflecting a labor market increasingly oriented toward service- and trade-related activities. Growth in health and social care, in particular, has been supported by the rising demand for care services associated with Italy's aging population. Absolute employment gains are the largest in accommodation and food services and residential care activities, and construction joins these sectors in driving employment growth.

Within manufacturing, labor demand remains relatively strong in a few specific subsectors, most notably food processing; the manufacture of basic metals and fabricated metal products; and the manufacture of chemicals, chemical products, and pharmaceuticals.

The expansion of service- and trade-oriented sectors has translated into labor demand increasingly concentrated in trade- and service-related occupations, spanning mid-skilled to high-skilled occupations. An assessment of occupational shortages, based on the COL methodology, identified 130 occupations facing shortages at the 4-digit ISCO level. Among occupations at the 1-digit ISCO level, the largest number of critical occupations facing shortages

are professionals (ISCO 2), technicians and associate professionals (ISCO 3), and service and sales workers (ISCO 5). Additional demand is observed among craft and related trades workers (ISCO 7). Together, these 1-digit major groups account for approximately 90 of the 130 occupations at the 4-digit ISCO level identified as facing shortages; their labor market size is estimated to be more than 5.8 million employees.

Consistent with these trends, the most critical occupations in Italy's labor market are concentrated within the same broad occupational groups. Among mid-skilled service and sales workers (ISCO 5), shortages are reported for cooks (5120), waiters (5131), bartenders (5132), hairdressers (5141), personal services workers (5169), and health care assistants (5321).

Shortages are also notable among high-skilled professionals and technicians (ISCO 2 and 3), including telecommunications engineers (2153), physiotherapists (2264), special needs teachers (2352), personnel and career professionals (2423), and regulatory government associate professionals (3359).

Additional critical shortages are observed among craft and related trades workers (ISCO 7), reflecting the expansion of the construction sector and the continued demand for technically skilled trades. These include bricklayers and related workers (7112); structural-metal preparers and erectors (7214); motor vehicle mechanics and repairers (7231); building and related electricians (7411); and bakers, pastry cooks, and confectionery makers (7512).

Labor demand in the manufacturing sector has continued to contract, however, consistent with the broader decline of Italy's industrial base and the resulting reduction in demand for manufacturing-related occupations. Nevertheless, several specialized manufacturing niches— notably food processing and related industries—continue to generate employment opportunities. Within these subsectors, technically specialized occupations such as agricultural and industrial machinery mechanics and repairers (7233) and food and related products machine operators (8160) have emerged among those most affected by shortages.

6. STRATEGIC DIRECTIONS FOR A GLOBAL SKILLS PARTNERSHIP (GSP) WITH TUNISIA

6.1. Key Sectors and Occupations

Considering Italy's labor demand landscape and the composition of the occupations affected by shortages, this section examines which occupations should be prioritized within a GSP with Tunisia. The relative advantages and risks of targeting specific occupations are weighed considering the dynamics of labor demand in Italy, its alignment with labor demand in Tunisia, and the profiles of prospective workers. The discussion in this section is organized around key job-creating sectors. The relevance of the selected occupations and their potential to advance GSP objectives while contributing to broader economic outcomes in both countries and better employment outcomes for migrants is assessed.

Manufacturing—limited short-term potential. Tunisia's manufacturing sector—largely composed of mid-skilled occupations—remains strategically important for the country's industrial base but offers limited potential for short- to medium-term engagement with Italy under a GSP. Although certain subsectors in Italy's manufacturing sector continue to create jobs (e.g., food processing, basic metals, and chemicals), employment is contracting overall. The number of firms is shrinking, and the demand for mid-skilled workers is declining. Employment growth is increasingly concentrated in a narrow set of high-skilled technical occupations, where Tunisia currently lacks sufficient capacity to supply labor. Targeting these occupations could exacerbate risks of brain drain and misalignment with the timelines of the GSP, given the longer training cycles required in technical and engineering fields. Consequently, while upskilling Tunisian workers for these occupations may be a valid long-term strategy, manufacturing is less suited as a short-term anchor for a GSP focused on near-term job placement.

Construction—partial but uncertain alignment. The construction sector remains strategic for both Italy and Tunisia. The sector has a high concentration of mid-skilled occupations with a high number of vacancies in Tunisia and facing critical shortages in Italy (e.g., riggers, cable splicers, and bricklayers). Further, high-skilled and mid-skilled occupations, including civil engineers (2142) and construction managers (1323), as well as mid-skilled supervisory and technical roles such as construction supervisors (3122) and structural-metal preparers and erectors (7214), are facing critical shortages in both countries. Additional supporting trades, including electricians and mechanical engineers (2151 and 2144, respectively) and spray painters and varnishers (7142), also

form part of the broader construction value chain. Despite the relatively high number of vacancies for these occupations in both Italy and Tunisia or their inclusion in the Critical Occupations List (COL), several risks may affect the viability of prioritizing this sector within a GSP.

First, Italy's construction sector has been posting fewer and fewer vacancies since they peaked in the first quarter of 2024. This trend is largely attributed to the slowdown in public investment, which had previously sustained high levels of labor demand. As investment priorities shift, the medium- to long-term sustainability of job opportunities in this sector becomes increasingly uncertain.

Second, the decline in the number of vacancies renders job placement less probable for Tunisian workers, especially when considering the lengthy administrative and preparatory processes under an international labor mobility scheme. There is a real risk of mobilizing workers into a sector where job prospects may have weakened by the time workers are deployed.

Third, from an economic standpoint, the construction sector is generally considered a moderate-to low-productivity sector, with relatively limited value-added per worker or per unit of output than other sectors. While it plays an important role in job creation, its contribution to long-term gross domestic product growth is more modest.

Finally, if labor demand continues to decline and layoffs increase, then Italy faces a potential fiscal risk, as greater public expenditure may be required to support unemployed workers through social protection mechanisms.

Agrifood system—a promising anchor sector within a GSP. The service and trade sectors are among the strongest sources of labor demand in Italy. In Tunisia also, several subsectors within the service and trade sectors show strong employment potential. However, given the diversity within these sectors, a central question for the GSP is which subsectors and occupations offer the highest potential for mutual benefit. Evidence points to the downstream segments of the agrifood system—spanning food processing, logistics, and food services—as the most promising focus sectors.

Several occupations within these segments appear on the COLs of both countries. This reflects overlapping demand and strong potential for bilateral skills partnerships. Among these segments are food and related products machine operators (8160); bakers, pastry cooks, and confectionery makers (7512); chefs (3434) or cooks (5120); waiters (5131); fruit, vegetable, and related preservers (7514); and street food salespersons (5212)—all common to both labor markets. Three considerations support this approach.

First, structural importance for Italy. The downstream agrifood industries are a major driver of Italy's economy. These industries thrive on their strong global reputation and a growing domestic and international demand for high-quality food products. Food exports represented 11 percent in the total merchandise exports in 2023, up from 6 percent in 2000 (World Bank's World Development Indicators), underscoring the sector's expansion and its role in sustaining employment. This growth has intensified the demand for food machine operators, process control technicians, and service-related occupations such as chefs or cooks and waiters. The continued strength of Italy's tourism sector has further driven this growth.

Second, alignment with Tunisia's structural transformation. As agricultural productivity increases in Tunisia—due to mechanization, improved agronomic practices, and more efficient input use— off-farm and higher-value-added activities such as food processing, packaging, logistics, and hospitality are demanding more labor (Christiaensen, Rutledge, and Taylor 2021; Nico and Christiaensen 2023). Agricultural labor productivity has more than doubled since 2000, increasing from about 4,190 to 8,400 constant USD per worker (World Bank's World Development Indicators). Occupations such as waiters, chefs, and food machine operators are increasingly in demand, offering better wages and higher skill intensity than conventional on-farm work. Prioritizing these occupations within the GSP would leverage Tunisia's existing skill base while accelerating its transition toward a more diversified and higher-value economy.

Third, mutual benefits and operational feasibility. The shared demand for the abovementioned occupations in both Tunisia and Italy reduces the risk of failure of job placement and raises potential for circular migration, especially during seasonal peaks in labor demand. Only short- to moderate-duration training is required, enabling efficient preparation and rapid deployment of workers. Further, if labor demand in Italy subsides, the domestic demand for these occupations in Tunisia can serve as a stabilizing fallback, ensuring training investments remain sustainable and mitigating displacement risks.

Fourth, the prioritization of these occupations is supported by three factors. First, the requirement of training over only short durations enables skill acquisition rapidly; in turn workers can be prepared and deployed quickly—a key operational advantage for a GSP. Second, because this is practical training, close alignment between Tunisian training providers and Italian employers becomes possible; in turn it becomes easier to adapt training curricula to Italian standards (e.g., in food hygiene, safety, and service quality) and integrate basic Italian language instructions directly into training. Third, although training duration varies across occupations, it remains relatively short overall—ranging from brief technical preparation for food machine operators and food preservers to slightly longer-duration, service-oriented training for bakers and cooks. Combined, these

features ensure that the occupations targeted are feasible to train for, quick to operationalize, and well aligned with both countries' labor market needs, making them especially suitable for implementation within a GSP framework.

6.2. Priority Geographic Areas for Implementation

Understanding where Tunisians already live and work in Italy provides valuable insights for identifying priority areas for implementing the GSP. From the perspective of labor market integration, this occupational and spatial mapping helps examine whether the occupations prioritized in this labor market assessment reflect actual and sustainable labor demand in the regions where Tunisians are already economically active. It also indicates how existing migration and employment channels function and whether they could serve as a foundation for scaling up future mobility programs. Identifying regions with a strong demand from employers and an established presence of Tunisians enables a more practical and operationally feasible approach to launching GSP pilot initiatives.

According to data from the *Comunicazioni Obbligatorie*—Italy's administrative registry of employer-reported employment contracts—Tunisian workers are relatively well represented in agrifood-related occupations. In 2023, Tunisians in Italy held 71,134 active contracts, of which more than one-third were concentrated in crop-farm-related jobs. Although Tunisians continue to have a more limited presence in the downstream segments of the agrifood system, they also have a notable presence among waiters, cooks, confectionery makers, and food and related products machine operators. Together, these occupations account for over 7 percent of all active contracts, and their share has been steadily increasing since 2021 (figure 6.1).

Figure 6.1 Active Employment Contracts Held by Tunisian Nationals in Italy, by Occupation, 2021–23
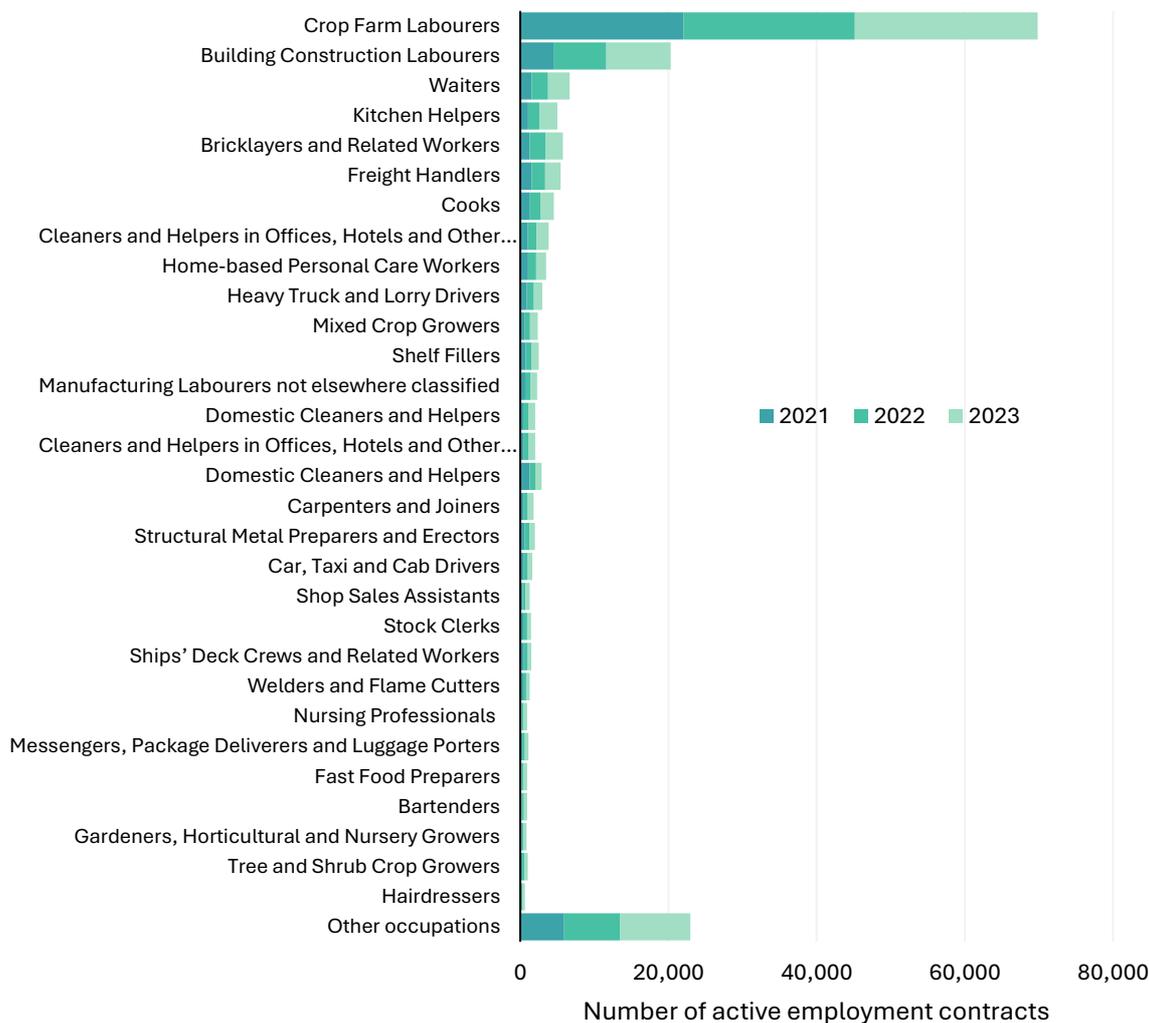
Source: Comunicazioni Obbligatorie, Ministry of Labor and Social Policies.

Tunisian workers are also geographically concentrated in regions with a strong labor demand for the occupations identified as critical in this assessment. According to the Italian Labor Force Survey, the vast majority of Tunisian workers are employed in Emilia-Romagna, Lombardy, and Veneto (figure 6.2)—regions with dense industrial and service clusters and showing persistent shortages in agrifood-related occupations (see annex 4). The Tunisian diaspora is large in Sicily also, where on-farm agricultural activities remain the main source of employment, reinforcing the importance of considering both regional demand patterns and existing migrant networks when identifying priority locations for implementing the GSP.

Figure 6.2 Geographic Concentration of Tunisian Employment in Italy

Share of total employment (%)
- (2028,8976]
- (697.5,2028]
- (363,697.5]
- [42,363]
- No data
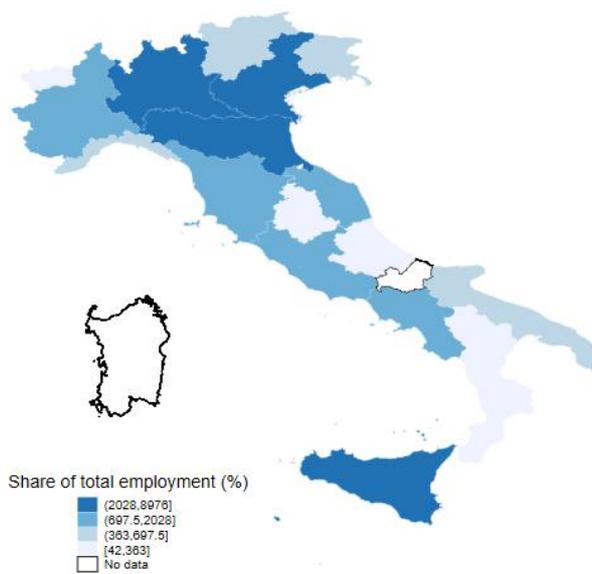
Source: ISTAT Labor Force Survey data.

6.3. Recommendations

A few key recommendations emerge in response to Italy's evolving labor demand landscape, which is shaped by demographic aging, structural shifts across sectors, and persistent skill shortages. To ensure that labor mobility initiatives—such as the GSP with Tunisia—remain relevant and effective, the Italian labor market should be monitored continuously to detect emerging trends and evolving occupational needs. Two main recommendations are proposed:

First, institutionalize a dynamic COL. Embedding the COL methodology within Italy's existing labor market information system would allow updating the list of shortage occupations annually based on data and in a consistent manner. Updating the list thus would make it possible to adjust international labor mobility programs and training priorities more systematically and also timely, in line with shifting labor market needs. A routinely updated COL would capture real-time shifts in labor demand and help the Ministry of Labor and Social Policies quickly identify which sectors and occupations should be prioritized for labor mobility schemes and bilateral agreements.

Italy is well positioned to institutionalize a dynamic COL. Italy's advanced labor market information system—at the national and subnational level—already integrates multiple data sources, including (1) the Indagine sulle Forze di Lavoro (Labor Force Survey), (2) Comunicazioni Obbligatorie (mandatory employer-reported employment records), (3) firm-level surveys, and (4) online job vacancy data. Leveraging these data sets through a standardized COL methodology

would make the identification of critical occupations evidence based, transparent, and responsive to shifting demand.

Comparable institutional models exist elsewhere. In the United Kingdom, for example, the Shortage Occupations List—and, more recently, the Immigration Salary List, introduced in April 2024—forms part of an institutionalized framework for managing the migration of skilled workers. In July 2025, a Temporary Shortage List was also established, to address medium-skilled occupations that are critical to the country's industrial strategy and infrastructure (Government of the United Kingdom 2025). These lists enable employers to recruit foreign workers for occupations facing persistent or emerging shortages while maintaining an agile system that evolves with the economy. Adopting a similar, institutionalized COL mechanism in Italy would ensure that programs such as the GSP remain adaptive, demand driven, and policy coherent, and help stabilize the domestic labor market and support international mobility objectives.

Second, validate and add nuance to hiring frictions captured in the COL. The COL provides a useful overview of occupations that are critical to the Italian labor market but has its limitations. While it identifies which occupations are facing shortages, it does not explain **_why_** they are difficult to fill. Understanding the underlying labor market frictions is essential to designing effective policy responses.

Occupations may appear to be facing shortages for multiple reasons, including supply-side frictions, such as a lack of qualified workers, skill mismatches, or geographic immobility; demand-side frictions, such as firms' inability to offer competitive wages or stable contracts; and institutional frictions, such as regulatory barriers, complex hiring procedures, or slow recognition of foreign qualifications. Shortages may also result from perceptual frictions, when low pay, limited career progression, or poor working conditions render certain occupations unattractive. Interventions should be tailored according to the type of hiring friction—for example, training and upskilling programs to address supply-side issues, wage or incentive adjustments to tackle demand-side constraints, and regulatory or awareness reforms to reduce institutional or perceptual barriers.

Therefore, while the COL should serve as the primary reference for identifying which occupations are facing shortages in Italy and how labor demand in these occupations evolves, its diagnostic value should be strengthened through complementary quantitative and qualitative mechanisms. One such instrument is the Excelsior Information System[11]—Italy's continuous employer survey—which provides a robust quantitative foundation for tracking labor

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[11] https://excelsior.unioncamere.net/en/survey.

demand trends by sector, territory, and occupation. Excelsior—managed jointly by the Ministry of Labor and Unioncamere—collects real-time data on hiring intentions, expected skill needs, and short-term labor demand, and it can be directly used to validate the COL on an annual or semiannual basis by integrating labor needs reported by employers. More importantly, the Excelsior survey includes specific questions on the reasons employers face difficulties in recruiting candidates—which represents an important source of information to complement and enrich the COL.

It is worth noting that the COL and the Excelsior survey do not overlap but complement each other. While the Excelsior system already provides a rich source of information on labor demand and employer perceptions, the COL adds an important independent and methodological layer. Excelsior captures employers' views on current and anticipated hiring challenges, which often reflect short-term labor market conditions and sector-specific dynamics. The COL, instead, relies on objective statistical indicators (e.g., vacancy duration, employment growth, and wage changes) to identify which occupations are structurally in shortage. This makes the COL a more neutral and comparable tool over time.

By combining the COL and the Excelsior survey, policy makers can cross-validate evidence. Excelsior helps detect emerging or cyclical pressures, while the COL confirms whether those signals correspond to longer-term, structural imbalances. In this way, the COL strengthens rather than duplicates Excelsior, providing a more robust basis for decisions on training priorities, migration pathways, and labor market policies.

The second of these instruments are annual or biannual focus group consultations (FGCs) with key stakeholders. The COL should serve as the entry point for these consultations: discussions would start from the occupations identified as facing shortages, allowing stakeholders to confirm, refine, or challenge findings. The Ministry of Labor and Social Policies could coordinate and organize FGCs with industry associations and employer organizations to validate quantitative evidence, identify emerging skill needs not yet reflected in administrative or survey data, and capture early signals of structural or sectoral change.

Institutionalizing this two-tier validation system—where the COL provides the analytical foundation, Excelsior data add quantitative validation, and FGCs offer stakeholders' validation—would enable Italy to promptly detect and address evolving skill shortages, ensuring that training and migration programs remain closely aligned with real labor market needs.

REFERENCES

Acosta, P., C. Özden, J. Lebow, L. Rodriguez, and E. Dahlgren. 2025. *Global Skill Partnerships for Migration: Preparing Tomorrow's Workers for Home and Abroad*. Washington, DC: World Bank. http://hdl.handle.net/10986/42780.

Baeumler, A., O. D'Aoust, M. Das, A. Gapihan, S. Goga, C. Lakovits, P. Restrepo Cavadid, G. Singh, and H. Terraza. 2021. *Demographic Trends and Urbanization*. Washington, DC: World Bank.

Basso, G., E. Gentili, S. Lattanzio, and G. Roma. 2025. "Migration Flows and Policies in Italy and in Other European Countries." Occasional Paper 923, Bank of Italy, Rome. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5252620.

Christiaensen, L., Z. Rutledge, and J. E. Taylor. 2021. "Viewpoint: The Future of Work in Agri-Food." *Food Policy* 99 (February): 101963. https://doi.org/10.1016/j.foodpol.2020.101963.

Confindustria. 2024. "Forecast Reports Rates, PNRR, Superbonus, Energy: What Will Happen to Italian Growth?—Spring 2024." https://www.confindustria.it/en/publications/pnrr-superbonus-energy-rates-what-will-happen-to-italian-growth-spring-2024/?utm_source=chatgpt.com.

Consolo, A., and A. D. da Silva. 2019. "The Euro Area Labour Market Through the Lens of the Beveridge Curve." ECB Economic Bulletin, Issue 4/2019, European Central Bank, Frankfurt am Main, Germany. https://www.ecb.europa.eu/press/economic-bulletin/articles/2019/html/ecb.ebart201904_01~9070de27a0.en.html#toc1.

European Commission. 2023. "Italy's Recovery and Resilience Plan." https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/country-pages/italys-recovery-and-resilience-plan_en?utm_source.

European Commission. 2024. "European Skills, Competences, Qualifications and Occupations (ESCO)." https://esco.ec.europa.eu/en/about-esco/what-esco.

European Commission. 2025. "Superbonus—Strengthening of the Ecobonus and Sismabonus for Energy Efficiency and Building Safety." https://commission.europa.eu/projects/superbonus-strengthening-ecobonus-and-sismabonus-energy-efficiency-and-building-safety_en.

Eurostat. 2024a. . "Healthcare Personnel Statistics 2024." https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Healthcare_personnel_statistics_-_physicians#Healthcare_personnel

Eurostat. 2025. "Employment by Sex, Age and Country of Birth (1,000): EU Labour Force Survey (EU-LFS)." https://ec.europa.eu/eurostat/web/products-datasets/-/lfsa_ergacob.

EY. 2025. *Italian Macroeconomic Bulletin*. https://www.ey.com/it_it/insights/ey-italian-macroeconomic-bulletin.

Farmindustria. 2024. *Indicatori Farmaceutici*. Rome: Farmindustria. https://www.farmindustria.it/app/uploads/2022/03/Indicatori-Farmaceutici-website.pdf.

Government of the United Kingdom. 2025. "Skilled Worker Visa: Temporary Shortage List." https://www.gov.uk/government/publications/skilled-worker-visa-temporary-shortage-list/skilled-worker-visa-temporary-shortage-list.

ILO (International Labour Organization). 2008. "International Standard Classification of Occupations 2008 (ISCO-08)." https://ilostat.ilo.org/methods/concepts-and-definitions/classification-occupation/.

ILO. 2024. "ILOSTAT." https://ilostat.ilo.org/data/.

IMF (International Monetary Fund). 2025a. *2025 Article IV Consultation—Press Release; Staff Report; and Statement by the Executive Director for Italy*. IMF Country Report 2025/201, July 2025. Washington, DC: IMF. https://www.imf.org/en/-/media/files/publications/cr/2025/english/1itaea2025001-source-pdf.pdf.

IMF. 2025b. "World Economic Outlook Database, April 2025 (NGDP_R series, country code 744)." https://www.imf.org/en/Publications/WEO/weo-database/2025/april.

ISTAT (Italian National Statistical Institute). 2021. *Rilevazione sulle Forze di Lavoro. Aspetti metodologici dell'indagine*. Rome: ISTAT.

ISTAT. 2024. "Population and Household Projections." https://www.istat.it/en/press-release/population-and-household-projections-base-1-1-2024/.

ISTAT. 2025. "Italy's Economic Outlook 2025–2026." https://www.istat.it/wp-content/uploads/2025/06/Italys-economic-outlook_june2025_ENG_ultima_ok.pdf.

Lightcast. 2025. "Job Posting Analytics (JPA) Methodology." https://kb.lightcast.io/en/articles/6957446-job-posting-analytics-jpa-methodology.

Nico, G., and L. Christiaensen. 2023. "Jobs, Food and Greening: Exploring Implications of the Green Transition for Jobs in the Agri-food System." Jobs Working Paper 75, World Bank, Washington, DC. https://documents1.worldbank.org/curated/en/099323305162339576/pdf/IDU0daa15a4b067ce0456b084060a9c7a52cbf24.pdf.

OECD (Organisation for Economic Co-operation and Development). 2024. "OECD.Stat." https://data-explorer.oecd.org/.

Onder, H., and P. Pestieau. 2014. "Is Aging Bad for the Economy? Maybe." Economic Premise No. 144, World Bank, Washington, DC, May 2014. https://documents1.worldbank.org/curated/en/898291468335680929/pdf/882210BRI0EP1440 Box385212B00PUBLIC0.pdf.

Ruhs, M., J. Wadsworth, R. Wilson, P. Higson, V. Aldin, A. Ball, C. Dawson, A. Downs, S. Earl, D. James, and A. Watton. 2008. *Identifying Skilled Occupations Where Migration Can Sensibly Help to Fill Labour Shortages: Methods of Investigation and Next Steps for the Committee's First Shortage Occupation List.* London: Migration Advisory Committee. https://assets.publishing.service.gov.uk/media/5a7eeed240f0b6230268c729/Migration-shortage.pdf.

UN (United Nations). 2025. *World Fertility 2024*. New York: UN. https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/undesa _pd_2025_wfr_2024_final.pdf.

UNDESA (United Nations, Department of Economic and Social Affairs), Population Division. 2024. "World Population Prospects 2024." https://population.un.org/wpp/.

World Bank. 2019. *Monitoring Occupational Shortages: Lessons from Malaysia's Critical Occupations List.* Washington, DC: World Bank. https://documents1.worldbank.org/curated/en/877271568138256963/pdf/Monitoring-Occupational-Shortages-Lessons-from-Malaysias-Critical-Occupations-List.pdf.

World Bank. 2020. *Indonesia's Critical Occupations List 2018*. Washington, DC: World Bank. Coordinating Ministry for Economic Affairs of the Republic of Indonesia. https://documents1.worldbank.org/curated/en/763611585857010121/pdf/Indonesias-Critical-Occupations-List-2018-Technical-Report.pdf.

World Bank. 2023. "World Bank Enterprise Survey." https://www.enterprisesurveys.org.

World Bank. 2025. "A Jobs Agenda for the Middle East and North Africa." World Bank Blogs, February 26, 2025. https://blogs.worldbank.org/en/arabvoices/a-jobs-agenda-for-the-middle-east-and-north-africa.

ANNEX 1. LIST OF 4-DIGIT OCCUPATIONS EXCLUDED FROM THE CRITICAL OCCUPATIONS LIST

ISCO-08 4-Digit Code	ISCO-08 4-Digit Label	1-Year Employment Growth	1-Year Contracts Growth	Contract-to-Termination ratio (2023)	2-Year Net Increase in Contracts	1-Year Wage Growth	2-Year Wage Growth	1-Year Job Postings Growth	Job Vacancy Rate	Available Indicators (count)	Indicators Above Threshold (count)	Critical Occupation?	Employment Level (2024)
1312	Aquaculture and fisheries production managers									0		Not included	
2230	Traditional and complementary medicine professionals							Above		1	1	Not included	
2266	Audiologists and speech therapists							Below		1	0	Not included	
2529	Database and network professionals n.e.c.							Below		1	0	Not included	
2612	Judges	Below								1	0	Not included	14,237.55
3135	Metal production process controllers									0		Not included	
3251	Dental assistants and therapists									0		Not included	
3256	Medical assistants							Above		1	1	Not included	
3258	Ambulance workers							Above		1	1	Not included	
3353	Government social benefits officials							Above		1	1	Not included	
3355	Police inspectors and detectives							Below		1	0	Not included	
4411	Library clerks							Below		1	0	Not included	
4413	Coding, proof-reading, and related clerks							Above		1	1	Not included	
5413	Prison guards	Below								1	0	Not included	12,094.875
6224	Hunters and trappers									0		Not included	
7111	House builders									0		Not included	
7224	Metal polishers, wheel grinders, and tool sharpeners							Below		1	0	Not included	
7319	Handicraft workers n.e.c.							Below		1	0	Not included	
9213	Mixed crop and livestock farm laborers							Below		1	0	Not included	
9611	Garbage and recycling collectors							Above		1	1	Not included	

Note: Occupations are excluded when insufficient data are available across the required shortage indicators to ensure a robust classification. ISCO = International Standard Classification of Occupations; n.e.c. = not elsewhere classified.

ANNEX 2. LIST OF 4-DIGIT OCCUPATIONS INCLUDED IN THE CRITICAL OCCUPATIONS LIST

ISCO-08 4-Digit Code	ISCO-08 4-Digit Label	1-Year Employment Growth	1-Year Contracts Growth	Contract-to-Termination Ratio (2023)	2-Year Net Increase in Contracts	1-Year Wage Growth	2-Year Wage Growth	1-Year Job Postings Growth	Job Vacancy Rate	Available Indicators (count)	Indicators Above Threshold (count)	Critical Occupation?	Employment Level (2024)
1120	Managing directors and chief executives	Above	Above	Below	Below	Below	Above	Below	Above	8	4	Yes	84,188
1323	Construction managers	Above	Below	Below	Below	Above	Below	Above	Above	8	4	Yes	5,554
1341	Childcare services managers					Above	Above	Above		3	3	Yes	
1343	Aged care services managers					Above	Above	Above		3	3	Yes	
1345	Education managers	Above	Above	Below	Below	Below	Below	Above	Above	8	4	Yes	3,307
1349	Professional services managers n.e.c.	Above	Above	Below	Below	Below	Below	Above	Above	8	4	Yes	9,488
1412	Restaurant managers	Above	Above	Below	Above	Below	Below	Above	Below	8	4	Yes	7,583
1431	Sports, recreation, and cultural center managers	Below	Above	Above	Above	Below	Below	Above	Above	8	5	Yes	1,729
2120	Mathematicians, actuaries, and statisticians	Above	Above	Below	Above	Below	Below	Above	Below	8	4	Yes	13,738
2132	Farming, forestry, and fisheries advisers	Above	Above	Below	Below	Above	Below	Above	Above	8	5	Yes	3,914
2133	Environmental protection professionals					Above	Below	Above		3	2	Yes	
2142	Civil engineers	Above	Below	Below	Below	Below	Above	Above	Above	8	4	Yes	44,560
2144	Mechanical engineers	Below	Above	Below	Above	Below	Above	Below	Above	8	4	Yes	57,266
2145	Chemical engineers	Above	Above	Above	Below	Below	Below	Above	Above	8	5	Yes	12,821
2149	Engineering professionals n.e.c.	Above	Above	Below	Above	Below	Above	Below	Above	8	5	Yes	13,073
2151	Electrical engineers					Above	Above	Above		3	3	Yes	
2153	Telecommunications engineers	Above	Below	Below	Above	Above	Above	Above	Below	8	5	Yes	79,943
2166	Graphic and multimedia designers	Below	Above	Below	Above	Below	Above	Below	Above	8	4	Yes	35,712
2222	Midwifery professionals					Below	Above	Above		3	2	Yes	
2262	Pharmacists	Below	Below	Below	Below	Above	Above	Above	Above	8	4	Yes	57,434
2264	Physiotherapists	Above	Above	Below	Above	Below	Above	Below	Below	8	4	Yes	160,689
2320	Vocational education teachers	Above	Above	Below	Above	Below	Above	Below	Above	8	5	Yes	49,262
2351	Education methods specialists	Above				Above	Above	Below	Above	5	4	Yes	3,080

2352	Special needs teachers	Above	Above	Below	Above	Above	Above	Below	Below	8	5	Yes	134,608
2423	Personnel and career professionals	Above	Below	Below	Above	Above	Below	Above	Above	8	5	Yes	93,441
2432	Public relations professionals	Above	Above	Below	Above	Below	Above	Above	Above	8	6	Yes	40,854
2632	Sociologists, anthropologists, and related professionals	Above	Below	Below	Above			Above	Below	6	3	Yes	9,442
2634	Psychologists	Above	Above	Below	Above			Below	Below	6	3	Yes	18,717
2651	Visual artists	Below	Above	Below	Above	Below	Below	Above	Above	8	4	Yes	19,484
2656	Announcers on radio, television, and other media		Above	Below	Above	Below	Below	Above	Above	7	4	Yes	648
2659	Creative and performing artists n.e.c.		Above	Below	Above	Below	Below	Above	Above	7	4	Yes	934
3113	Electrical engineering technicians	Below	Above	Below	Above	Below	Above	Below	Above	8	4	Yes	18,076
3115	Mechanical engineering technicians	Above	Above	Below	Above	Below	Below	Above	Above	8	5	Yes	61,445
3119	Physical and engineering science technicians n.e.c.	Above	Above	Below	Above	Below	Below	Below	Above	8	4	Yes	7,321
3123	Construction supervisors	Below	Above	Below	Above	Below	Above	Below	Above	8	4	Yes	18,800
3132	Incinerator and water treatment plant operators	Below	Above	Below	Above	Above	Above	Above	Below	8	5	Yes	42,297
3142	Agricultural technicians	Above	Above	Below	Below	Below	Above	Above	Above	8	5	Yes	11,485
3153	Aircraft pilots and related associate professionals	Below	Below	Below	Below	Above	Above	Above	Above	8	4	Yes	7,887
3214	Medical and dental prosthetic technicians	Above	Below	Below	Below	Above	Above	Above	Above	8	5	Yes	4,417
3253	Community health workers					Below	Above	Above		3	2	Yes	
3315	Valuers and loss assessors	Above	Above	Below	Below	Above	Below	Above	Below	8	4	Yes	14,677
3324	Trade brokers	Above	Above	Below	Below	Above	Below	Below	Above	8	4	Yes	2,236
3332	Conference and event planners	Below	Above	Below	Above	Below	Above	Above	Below	8	4	Yes	15,326
3334	Real estate agents and property managers	Above	Below	Below	Below	Above	Above	Above	Above	8	5	Yes	10,477
3342	Legal secretaries					Above	Above	Below		3	2	Yes	
3351	Customs and border inspectors	Above	Above	Below	Above			Above	Below	6	4	Yes	13,338
3352	Government tax and excise officials	Below	Above	Above	Below			Above	Below	6	3	Yes	16,006
3354	Government licensing officials	Above	Above	Below	Below			Above	Below	6	3	Yes	15,127
3359	Government regulatory associate professionals n.e.c.	Above	Above	Below	Above	Below	Above	Above	Below	8	5	Yes	98,315
3412	Social work associate professionals	Above	Above	Below	Above	Above	Above	Above	Below	8	6	Yes	38,102
3421	Athletes and sports players	Above	Above	Above	Above			Below	Below	6	4	Yes	7,905
3422	Sports coaches, instructors, and officials	Above	Above	Below	Above	Below	Above	Above	Below	8	5	Yes	31,978
3423	Fitness and recreation instructors and program leaders	Below	Above	Below	Above	Below	Below	Above	Above	8	4	Yes	3,538
3431	Photographers	Above	Above	Below	Above	Above	Below	Below	Below	8	4	Yes	7,487

Code	Occupation												
3432	Interior designers and decorators	Above	Above	Below	Above	Below	Above	Above	Above	8	6	Yes	7,132
3435	Other artistic and cultural associate professionals	Above	Above	Below	Above	Below	Above	Below	Above	8	5	Yes	12,328
3512	ICT user support technicians	Below	Above	Below	Above	Below	Above	Below	Above	8	4	Yes	13,139
3514	Web technicians					Below	Above	Above		3	2	Yes	
3522	Telecommunications engineering technicians					Below	Above	Above		3	2	Yes	
4120	Secretaries (general)	Below	Above	Below	Above	Above	Above	Below	Below	8	4	Yes	337,397
4214	Debt collectors and related workers	Above	Above	Below	Below	Below	Below	Above	Above	8	4	Yes	21,451
4221	Travel consultants and clerks	Below	Above	Below	Above	Above	Below	Above	Above	8	5	Yes	14,868
4224	Hotel receptionists	Above	Above	Below	Above	Above	Above	Above	Below	8	6	Yes	71,170
4225	Inquiry clerks	Above	Above	Below	Above	Above	Below	Below	Below	8	4	Yes	112,943
4227	Survey and market research interviewers					Above	Above	Below		3	2	Yes	
4229	Client information workers n.e.c.	Below	Above	Below	Above	Below	Above	Above	Below	8	4	Yes	56,299
4311	Accounting and bookkeeping clerks	Above	Above	Below	Above	Below	Below	Below	Above	8	4	Yes	194,123
4313	Payroll clerks	Below	Above	Below	Above	Above	Above	Below	Above	8	5	Yes	26,724
4419	Clerical support workers n.e.c.	Above	Below	Below	Below	Above	Above	Above	Below	8	4	Yes	10,509
5111	Travel attendants and travel stewards	Below	Above	Below	Above	Above	Above	Below	Above	8	5	Yes	9,226
5120	Cooks	Below	Above	Below	Above	Above	Below	Above	Below	8	4	Yes	256,250
5131	Waiters	Below	Above	Below	Above	Below	Below	Above	Above	8	4	Yes	281,026
5132	Bartenders	Above	Above	Below	Above	Above	Below	Above	Below	8	5	Yes	202,212
5141	Hairdressers	Below	Above	Below	Above	Above	Below	Above	Below	8	4	Yes	77,252
5151	Cleaning and housekeeping supervisors in offices, hotels, and other establishments					Above	Below	Above		3	2	Yes	
5152	Domestic housekeepers					Above	Below	Above		3	2	Yes	
5161	Astrologers, fortune tellers, and related workers		Above	Below	Above					3	2	Yes	–
5162	Companions and valets	Below				Above	Above	Above	Above	5	4	Yes	1,031
5169	Personal services workers n.e.c.	Above	Above	Below	Above			Above	Below	6	4	Yes	96,938
5212	Street food salespersons					Above	Below	Above		3	2	Yes	
5221	Shopkeepers	Above	Above	Below	Above	Above	Above	Below	Above	8	6	Yes	50,279
5241	Fashion and other models		Above	Below	Above	Below	Above	Below	Above	7	4	Yes	952
5242	Sales demonstrators	Below	Above	Below	Above	Above	Above	Above	Below	8	5	Yes	1,809
5243	Door-to-door salespersons	Above	Below	Below	Below	Above	Below	Above	Above	8	4	Yes	16,323
5245	Service station attendants	Above	Above	Below	Above	Below	Below	Above	Below	8	4	Yes	19,406

Code	Title												
5246	Food service counter attendants					Above	Above	Above		3	3	Yes	
5312	Teachers' aides		Above	Below	Below	Below	Above	Above		6	3	Yes	
5321	Health care assistants	Above	Below	Below	Above	Below	Above	Above	Below	8	4	Yes	368,706
5329	Personal care workers in health services n.e.c.	Above	Below	Below	Below	Below	Above	Above	Above	8	4	Yes	35,858
5411	Firefighters	Above	Above	Below	Above					4	3	Yes	43,455
6114	Mixed crop growers	Above	Above	Below	Above					4	3	Yes	15,263
7112	Bricklayers and related workers	Above	Below	Below	Above	Above	Above	Below	Below	8	4	Yes	310,505
7132	Spray painters and varnishers	Above	Above	Below	Above	Above	Below	Below	Below	8	4	Yes	35,312
7213	Sheet metal workers	Above	Above	Below	Above	Above	Below	Below	Below	8	4	Yes	67,232
7214	Structural metal preparers and erectors	Above	Above	Below	Above	Below	Above	Below	Below	8	4	Yes	79,890
7215	Riggers and cable splicers	Above	Above	Below	Below	Above	Above	Below	Above	8	5	Yes	4,655
7231	Motor vehicle mechanics and repairers	Above	Above	Below	Above	Below	Above	Above	Below	8	5	Yes	135,743
7233	Agricultural and industrial machinery mechanics and repairers	Below	Above	Below	Above	Below	Above	Below	Above	8	4	Yes	133,939
7234	Bicycle and related repairers					Above	Above	Above		3	3	Yes	
7411	Building and related electricians	Above	Above	Below	Above	Below	Above	Below	Above	8	5	Yes	112,964
7413	Electrical line installers and repairers	Above	Above	Below	Above	Above	Below	Above	Below	8	5	Yes	37,092
7421	Electronics mechanics and servicers	Above	Above	Below	Above	Above	Above	Above	Below	8	6	Yes	36,022
7422	ICT installers and servicers	Below	Above	Below	Below	Below	Above	Above	Above	8	4	Yes	13,301
7512	Bakers, pastry cooks, and confectionery makers	Above	Above	Below	Above	Below	Below	Above	Below	8	4	Yes	101,745
7514	Fruit, vegetable, and related preservers					Above	Below	Above		3	2	Yes	
7515	Food and beverage tasters and graders	Above	Above	Below	Below	Below	Above	Below	Above	8	4	Yes	1,305
7532	Garment and related pattern-makers and cutters					Above	Above	Below		3	2	Yes	
7541	Underwater divers		Above	Below	Below	Above	Above	Above	Above	7	5	Yes	649
7544	Fumigators and other pest and weed controllers					Above	Below	Above		3	2	Yes	
8112	Mineral and stone processing plant operators	Above	Above	Below	Below	Above	Below	Below	Above	8	4	Yes	3,051
8131	Chemical products plant and machine operators	Below	Above	Below	Above	Below	Above	Above	Below	8	4	Yes	68,967
8154	Bleaching, dyeing, and fabric cleaning machine operators	Above	Below	Below	Below	Above	Above	Below	Above	8	4	Yes	11,218
8155	Fur and leather preparing machine operators	Above	Below	Below	Below	Above	Above	Below	Above	8	4	Yes	16,248
8157	Laundry machine operators	Below	Above	Below	Above	Above	Above	Above	Below	8	5	Yes	17,640
8160	Food and related products machine operators	Below	Above	Below	Above	Above	Below	Below	Above	8	4	Yes	106,776
8172	Wood processing plant operators	Above	Below	Below	Below	Above	Above	Below	Above	8	4	Yes	26,209

Code	Occupation	C1	C2	C3	C4	C5	C6	C7	C8				
8182	Steam engine and boiler operators	Below	Above	Below	Below	Above	Above	Below	Above	8	4	Yes	9,488
8219	Assemblers n.e.c.	Above	Below	Below	Below	Above	Above	Below	Above	8	4	Yes	59,131
8322	Car, taxi, and cab drivers	Below	Below	Below	Above	Above	Above	Above	Above	8	5	Yes	70,952
8331	Bus and tram drivers	Below	Above	Below	Above	Above	Above	Below	Below	8	4	Yes	75,238
8341	Mobile farm and forestry plant operators	Above	Above	Below	Below			Above	Below	6	3	Yes	24,564
8343	Crane, hoist, and related plant operators	Below	Above	Below	Below	Above	Above	Below	Above	8	4	Yes	20,312
9123	Window cleaners					Above	Above	Below		3	2	Yes	
9212	Livestock farm laborers	Above	Above	Below	Above			Above	Below	6	4	Yes	25,781
9329	Manufacturing laborers n.e.c.	Above	Below	Below	Above	Above	Above	Above	Below	8	5	Yes	106,149
9411	Fast food preparers	Below	Above	Below	Above	Above	Below	Above	Below	8	4	Yes	196,317
9520	Street vendors (excluding food)	Above	Above	Below	Above	Below	Above	Above	Below	8	5	Yes	5,130
9613	Sweepers and related laborers					Above	Above	Above		3	3	Yes	
9622	Odd-job persons	Below	Above	Below	Above			Above	Below	6	3	Yes	165,068
9629	Elementary workers n.e.c.	Below	Above	Below	Above	Above	Above	Above	Above	8	6	Yes	2,771

Note: Occupations classified as critical shortages, meeting the minimum threshold of shortage signals under the COL methodology. ICT = information and communication technology; ISCO = International Standard Classification of Occupations; n.e.c. = not elsewhere classified.

ANNEX 3. LIST OF 4-DIGIT OCCUPATIONS IN NONCRITICAL SHORTAGE

ISCO-08 4-Digit Label	1-Year Employment Growth	1-Year Contracts Growth	Contract-to-Termination Ratio (2023)	2-Year Net Increase In Contracts	1-Year Wage Growth	2-Year Wage Growth	1-Year Job Postings Growth	Job Vacancy Rate	Available Indicators (count)	Indicators Above Threshold (count)	Critical Occupation?	Employment Level (2024)
Legislators	Below	Above	Below	Below					4	1	No	4,886
Senior government officials	Above	Above	Below	Below					4	2	No	12,153
Senior officials of special-interest organizations	Below	Above	Below	Above					4	2	No	7,791
Finance managers	Below	Above	Below	Below	Below	Below	Above	Above	8	3	No	11,104
Human resource managers	Above	Above	Below	Below	Below	Below	Below	Above	8	3	No	8,134
Policy and planning managers					Below	Below	Below	Above	4	1	No	920
Business services and administration managers n.e.c.	Above	Above	Below	Below	Below	Below	Below	Above	8	3	No	3,924
Sales and marketing managers	Above	Below	Below	Below	Below	Below	Above	Above	8	3	No	24,458
Advertising and public relations managers		Above	Below	Below	Below	Below	Below	Above	7	2	No	822
Research and development managers	Above	Below	Below	Below	Below	Below	Above	Above	8	3	No	5,824
Agricultural and forestry production managers	Above	Below	Below	Below					4	1	No	3,336
Manufacturing managers	Above	Below	Below	Below	Above	Below	Below	Above	8	3	No	28,347
Mining managers	Above	Below	Below	Below	Below	Below	Below	Above	8	2	No	6,116
Supply, distribution, and related managers	Below	Above	Below	Above	Below	Below	Below	Above	8	3	No	33,654
Information and communication technology services managers	Above	Above	Below	Below	Below	Below	Below	Above	8	3	No	6,422
Health services managers					Below	Below	Above		3	1	No	
Social welfare managers					Below	Below	Below		3	0	No	
Financial and insurance services branch managers	Above	Below	Below	Below	Below	Above	Below	Above	8	3	No	20,683
Hotel and restaurant managers	Below	Above	Below	Above	Below	Below	Below	Below	8	2	No	14,473
Retail and wholesale trade managers	Above	Below	Below	Below	Below	Below	Above	Above	8	3	No	9,615
Services managers n.e.c.					Below	Below	Below		3	0	No	
Physicists and astronomers	Above	Below	Below	Below	Below	Below	Below	Below	8	1	No	23,420
Meteorologists					Below	Below	Above		3	1	No	
Chemists	Below	Below	Below	Below	Below	Above	Above	Below	8	2	No	30,831
Geologists and geophysicists	Below	Below	Below	Below	Below	Above	Below	Below	8	1	No	5,835
Biologists, botanists, zoologists, and related professionals	Below	Above	Below	Below	Below	Above	Below	Below	8	2	No	42,221
Industrial and production engineers	Below	Below	Below	Below	Below	Below	Below	Above	8	1	No	19,650
Environmental engineers					Below	Below	Above		3	1	No	
Mining engineers, metallurgists, and related professionals	Below	Above	Below	Below	Below	Above	Below	Above	8	3	No	1,059
Electronics engineers	Above	Above	Below	Below	Below	Below	Below	Above	8	3	No	14,524

Building architects					Below	Below	Above		3	1	No	
Landscape architects	Below	Below	Below	Below			Above	Below	6	1	No	30,042
Product and garment designers					Below	Above	Below		3	1	No	
Town and traffic planners					Below	Below	Below		3	0	No	
Cartographers and surveyors	Above	Below	Below	Below	Below	Above	Below	Below	8	2	No	3,142
Generalist medical practitioners					Below	Below	Below		3	0	No	
Specialist medical practitioners	Below	Above	Below	Below					4	1	No	122,970
Nursing professionals	Below	Below	Below	Below	Above	Above	Below	Below	8	2	No	359,157
Veterinarians	Below	Below	Below	Below	Below	Below	Below	Below	8	0	No	5,289
Dentists	Above	Below	Below	Below	Below	Below	Below	Above	8	2	No	1,828
Environmental and occupational health and hygiene professionals	Below	Below	Below	Below	Below	Below	Below	Below	8	0	No	25,549
Dieticians and nutritionists					Below	Below	Above		3	1	No	
Optometrists and ophthalmic opticians					Below	Below	Below		3	0	No	
Health professionals n.e.c.	Below	Below	Below	Below	Below	Above	Above	Above	8	3	No	22,836
University and higher education teachers	Below	Below	Below	Below	Below	Above	Below	Below	8	1	No	50,883
Secondary education teachers	Below	Below	Below	Below	Above	Above	Below	Below	8	2	No	460,977
Primary school teachers	Below	Below	Below	Above			Above	Below	6	2	No	482,167
Early childhood educators					Below	Below	Below		3	0	No	
Other language teachers					Below	Below	Below		3	0	No	
Other music teachers					Below	Below	Below		3	0	No	
Other arts teachers	Above	Below	Below	Above	Below	Below	Below	Below	8	2	No	47,078
Information technology trainers					Below	Below	Above		3	1	No	
Teaching professionals n.e.c.					Below	Above	Below	Above	4	2	No	314
Accountants	Above	Below	Below	Above	Below	Below	Below	Above	8	3	No	86,401
Financial and investment advisers					Below	Below	Above		3	1	No	
Financial analysts					Below	Below	Below		3	0	No	
Management and organization analysts	Above	Above	Below	Above	Below	Below	Below	Below	8	3	No	153,251
Policy administration professionals	Above	Below	Above	Above	Below	Below	Below	Below	8	3	No	133,650
Training and staff development professionals					Below	Above	Below		3	1	No	

	1	2	3	4	5	6	7	8				
Advertising and marketing professionals	Above	Below	Below	Above	Below	Below	Below	Above	8	3	No	177,791
Technical and medical sales professionals (excluding ICT)					Below	Below	Below		3	0	No	
ICT sales professionals					Below	Below	Below		3	0	No	
Systems analysts	Below	Below	Below	Above	Below	Below	Below	Above	8	2	No	139,990
Software developers					Below	Below	Below		3	0	No	
Web and multimedia developers	Above	Below	Below	Below	Below	Below	Below	Above	8	2	No	6,199
Applications programmers	Below	Below	Below	Below	Below	Below	Below	Below	8	0	No	165,863
Software and applications developers and analysts n.e.c.	Below	Below	Below	Below	Below	Below	Below	Below	8	0	No	115,750
Database designers and administrators	Below	Below	Below	Below			Below	Above	6	1	No	3,284
Systems administrators	Below				Below	Above	Below	Below	5	1	No	46,656
Computer network professionals	Below	Below	Below	Below	Above	Below	Above	Below	8	2	No	13,752
Lawyers	Below	Below	Below	Below	Below	Above	Above	Below	8	2	No	32,267
Legal professionals n.e.c.	Below	Below	Above	Below	Below	Below	Below	Above	8	2	No	12,979
Archivists and curators	Below	Below	Below	Above	Below	Above	Below	Below	8	2	No	18,373
Librarians and related information professionals					Below	Below	Above		3	1	No	
Economists	Below	Above	Below	Above	Below	Below	Below	Below	8	2	No	27,324
Philosophers, historians, and political scientists	Below	Below	Below	Above	Below	Above	Above	Below	8	3	No	5,712
Social work and counselling professionals	Above	Below	Below	Below	Below	Above	Below	Above	8	3	No	40,963
Religious professionals	Above	Above	Below	Below					4	2	No	18,652
Authors and related writers	Above	Below	Below	Below	Below	Below	Below	Above	8	2	No	6,741
Journalists					Below	Above	Below		3	1	No	
Translators, interpreters, and linguistics	Below	Below	Below	Below	Below	Above	Below	Below	8	1	No	19,046
Musicians, singers, and composers	Below	Above	Below	Above	Below	Below	Above	Below	8	3	No	5,430
Dancers and choreographers		Above	Below	Above	Below	Below	Below	Above	7	3	No	295
Film stage and related directors and producers	Above	Below	Below	Above	Below	Below	Below	Above	8	3	No	6,147
Actors					Above	Below	Below		3	1	No	
Chemical and physical science technicians	Below	Below	Below	Below	Below	Above	Below	Below	8	1	No	38,581
Civil engineering technicians	Below	Below	Below	Below	Below	Above	Above	Above	8	3	No	81,174
Electronics engineering technicians	Below	Above	Below	Above	Below	Below	Below	Below	8	2	No	51,912

Chemical engineering technicians					Below	Above	Below		3	1	No	
Mining and metallurgical technicians	Above	Below	Below	Below	Below	Above	Below	Above	8	3	No	3,803
Draughts persons	Below	Below	Below	Above	Below	Above	Below	Below	8	2	No	82,807
Mining supervisors		Below	Below	Below	Below	Below	Below	Above	7	1	No	407
Manufacturing supervisors	Below	Below	Below	Above	Below	Below	Below	Above	8	2	No	146,213
Power production plant operators					Below	Above	Below		3	1	No	
Chemical processing plant controllers					Below	Below	Above		3	1	No	
Petroleum and natural gas refining plant operators	Below	Below	Below	Below	Below	Below	Below	Below	8	0	No	5,870
Process control technicians n.e.c.	Above	Below	Below	Below	Below	Above	Below	Below	8	2	No	44,042
Life science technicians (excluding medical)	Below	Above	Below	Below	Below	Above	Above	Below	8	3	No	20,005
Forestry technicians					Below	Below	Above		3	1	No	
Ships' engineers	Above	Above	Below	Below	Below	Below	Below	Above	8	3	No	19,791
Ships' deck officers and pilots	Above	Above	Below	Above	Below	Below	Below	Below	8	3	No	7,421
Air traffic controllers	Above	Below	Above	Below	Above	Below	Below	Below	8	3	No	17,648
Air traffic safety electronics technicians	Above	Below	Below	Above	Below	Below	Above	Below	8	3	No	12,189
Medical imaging and therapeutic equipment technicians	Above	Below	Below	Below			Below	Below	6	1	No	18,627
Medical and pathology laboratory technicians	Below	Below	Below	Below	Below	Above	Above	Below	8	2	No	48,704
Pharmaceutical technicians and assistants					Below	Above	Below		3	1	No	
Midwifery associate professionals					Below	Below	Above		3	1	No	
Traditional and complementary medicine associate professionals		Above	Below	Below					3	1	No	959
Veterinary technicians and assistants					Below	Below	Below		3	0	No	
Medical records and health information technicians					Below	Below	Above		3	1	No	
Dispensing opticians					Below	Below	Below		3	0	No	
Physiotherapy technicians and assistants		Below	Below	Above	Below	Above	Below		6	2	No	
Environmental and occupational health inspectors and associates	Below	Above	Below	Above	Below	Below	Above	Below	8	3	No	56,196
Health associate professionals n.e.c.	Above	Below	Below	Below	Below	Below	Below	Below	8	1	No	21,443
Securities and finance dealers and brokers	Below	Below	Below	Above	Below	Below	Below	Below	8	1	No	70,413
Credit and loans officers	Below	Below	Below	Above	Below	Below	Below	Below	8	1	No	117,052
Accounting associate professionals	Above	Below	Below	Above	Below	Below	Below	Below	8	2	No	274,268

	Col1	Col2	Col3	Col4	Col5	Col6	Col7	Col8				
Statistical, mathematical, and related associate professionals	Above	Above	Below	Below			Below	Below	6	2	No	4,675
Insurance representatives	Above	Below	Below	Below	Below	Above	Above	Below	8	3	No	26,471
Commercial sales representatives	Below	Below	Below	Above	Above	Above	Below	Below	8	3	No	210,978
Buyers	Below	Below	Below	Above	Below	Below	Below	Below	8	1	No	113,641
Clearing and forwarding agents	Below	Below	Below	Below	Below	Above	Below	Below	8	1	No	85,656
Employment agents and contractors		Below	Below	Below	Above	Below	Below	Above	7	2	No	-
Business services agents n.e.c.	Above	Below	Below	Below	Below	Above	Below	Below	8	2	No	12,941
Office supervisors	Below	Above	Below	Above	Below	Below	Above	Below	8	3	No	124,479
Administrative and executive secretaries					Below	Below	Below		3	0	No	
Medical secretaries					Below	Below	Below		3	0	No	
Legal and related associate professionals					Below	Above	Below		3	1	No	
Religious associate professionals		Above	Below	Below					3	1	No	827
Gallery, museum, and library technicians	Above	Above	Below	Below	Below	Below	Below	Below	8	2	No	13,544
Chefs					Below	Below	Above		3	1	No	
ICT operations technicians					Below	Below	Above		3	1	No	
Computer network and systems technicians					Below	Below	Below		3	0	No	
Broadcasting and audiovisual technicians	Below	Below	Below	Above	Below	Above	Below	Below	8	2	No	37,246
General office clerks	Below	Below	Below	Above	Below	Above	Below	Below	8	2	No	868,110
Typists and word processing operators	Above	Below	Below	Below	Above	Above	Below	Below	8	3	No	4,577
Data entry clerks	Below	Below	Below	Above	Below	Above	Above	Below	8	3	No	34,985
Bank tellers and related clerks	Below	Below	Below	Below	Below	Above	Above	Below	8	2	No	70,462
Bookmakers, croupiers, and related gaming workers	Below	Above	Below	Above	Below	Below	Below	Above	8	3	No	5,985
Pawnbrokers and moneylenders		Above	Below	Below			Below	Below	5	1	No	142
Contact center information clerks	Below	Below	Below	Below	Above	Above	Below	Below	8	2	No	57,647
Telephone switchboard operators	Below	Below	Below	Below	Below	Above	Above	Above	8	3	No	19,907
Receptionists (general)					Above	Below	Below		3	1	No	
Statistical, finance, and insurance clerks	Above	Below	Below	Below	Below	Below	Below	Above	8	2	No	54,371
Stock clerks	Below	Below	Below	Above	Below	Below	Below	Below	8	1	No	303,159
Production clerks					Below	Below	Below		3	0	No	

Transport clerks	Below	Below	Below	Below	Below	Below	Above	Below	8	1	No	60,081
Mail carriers and sorting clerks	Below	Below	Below	Above	Below	Above	Above	Below	8	3	No	70,984
Filing and copying clerks	Above	Above	Below	Above	Below	Below	Below	Below	8	3	No	69,449
Personnel clerks	Below	Below	Below	Above	Above	Above	Below	Below	8	3	No	121,783
Transport conductors					Below	Below	Above		3	1	No	
Travel guides	Above	Above	Below	Above	Below	Below	Below	Below	8	3	No	6,837
Beauticians and related workers	Below	Above	Below	Above	Below	Below	Below	Below	8	2	No	55,256
Building caretakers					Below	Below	Below		3	0	No	
Undertakers and embalmers	Below	Below	Below	Below	Below	Above	Above	Below	8	2	No	10,094
Pet groomers and animal care workers	Below	Below	Below	Above	Above	Below	Below	Above	8	3	No	1,873
Driving instructors	Below	Above	Below	Below			Above	Below	6	2	No	4,448
Stall and market salespersons					Below	Below	Below		3	0	No	
Shop supervisors	Above	Above	Below	Above	Below	Below	Below	Below	8	3	No	63,923
Shop sales assistants	Below	Above	Below	Above	Below	Below	Below	Below	8	2	No	825,374
Cashiers and ticket clerks	Below	Above	Below	Above	Below	Below	Below	Below	8	2	No	132,720
Contact center salespersons					Below	Above	Below		3	1	No	
Sales workers n.e.c.					Below	Below	Below		3	0	No	
Childcare workers	Below	Above	Below	Above	Below	Below	Below	Above	8	3	No	36,725
Home-based personal care workers	Below	Below	Below	Above	Below	Below	Above	Below	8	2	No	335,627
Police officers	Below	Below	Below	Below					4	0	No	114,855
Security guards	Below	Above	Below	Above	Below	Below	Below	Below	8	2	No	90,075
Protective services workers n.e.c.	Below	Above	Below	Below	Above	Below	Below	Below	8	2	No	72,191
Field crop and vegetable growers	Below	Above	Below	Above					4	2	No	13,842
Tree and shrub crop growers	Below	Below	Below	Below					4	0	No	15,576
Gardeners, horticultural, and nursery growers	Below	Above	Below	Below					4	1	No	59,400
Livestock and dairy producers	Above	Below	Below	Below					4	1	No	6,068
Poultry producers	Above	Below	Below	Below					4	1	No	4,928
Animal producers n.e.c.	Above	Above	Below	Below					4	2	No	4,819
Mixed crop and animal producers	Above	Above	Below	Below					4	2	No	11,940
Forestry and related workers	Below	Below	Below	Below					4	0	No	5,263

Occupation												
Aquaculture workers	Above	Above	Below	Below					4	2	No	1,535
Inland and coastal waters fishery workers	Below	Above	Below	Below					4	1	No	4,228
Deep-sea fishery workers	Above	Below	Below	Below					4	1	No	4,239
Stonemasons, stone cutters, splitters, and carvers	Above	Below	Below	Below					4	1	No	13,929
Concrete placers, concrete finishers, and related workers					Above	Below	Below		3	1	No	
Carpenters and joiners	Above	Above	Below	Below	Below	Above	Below	Below	8	3	No	35,804
Building frame and related trades workers n.e.c.	Above	Below	Below	Below	Above	Below	Above	Below	8	3	No	35,071
Roofers	Below	Above	Below	Below			Below	Below	6	1	No	4,553
Floor layers and tile setters	Below	Below	Below	Below					4	0	No	15,110
Plasterers	Below	Below	Below	Below					4	0	No	6,477
Insulation workers	Below	Above	Below	Below	Below	Below	Below	Below	8	1	No	2,737
Glaziers	Above	Below	Below	Below	Below	Above	Above	Below	8	3	No	4,762
Plumbers and pipe fitters	Below	Below	Below	Below	Below	Below	Above	Below	8	1	No	80,114
Air-conditioning and refrigeration mechanics	Below	Below	Below	Below					4	0	No	38,159
Building finishing and related trades workers n.e.c.	Above	Below	Below	Above					4	2	No	29,966
Painters and related workers	Below	Below	Below	Below					4	0	No	30,219
Building structure cleaners		Above	Below	Below	Above	Below	Below	Above	7	3	No	119
Metal molders and coremakers	Below	Below	Below	Below	Below	Below	Below	Above	8	1	No	4,269
Welders and flame cutters	Below	Below	Below	Above	Above	Above	Below	Below	8	3	No	92,536
Blacksmiths, hammersmiths, and forging press workers	Above	Below	Below	Below			Below	Below	6	1	No	32,515
Toolmakers and related workers	Below	Below	Below	Below			Above	Below	6	1	No	37,354
Metal working machine tool setters and operators	Above	Below	Below	Above	Below	Below	Below	Below	8	2	No	193,135
Aircraft engine mechanics and repairers	Below	Below	Below	Below	Below	Below	Below	Below	8	0	No	5,293
Precision instrument makers and repairers	Above	Below	Below	Above	Below	Below	Below	Below	8	2	No	79,655
Musical instrument makers and tuners		Above	Below	Below	Below	Above	Below	Above	7	3	No	459
Jewelry and precious metal workers	Below	Below	Below	Above	Above	Above	Below	Below	8	3	No	22,601
Potters and related workers	Above	Below	Below	Below	Below	Above	Below	Below	8	2	No	7,773
Glass makers, cutters, grinders, and finishers	Below	Above	Below	Below			Below	Below	6	1	No	5,564
Signwriters, decorative painters, engravers, and etchers	Below	Below	Below	Below	Below	Below	Above	Below	8	1	No	11,972
Handicraft workers in wood, basketry, and related materials	Below	Below	Below	Below	Above	Above	Below	Below	8	2	No	7,644

	C1	C2	C3	C4	C5	C6	C7	C8	N	N2		Value
Handicraft workers in textile, leather, and related materials	Below	Below	Below	Above			Below	Below	6	1	No	40,602
Prepress technicians	Below	Below	Below	Below	Below	Below	Below	Below	8	0	No	8,273
Printers	Above	Below	Below	Below	Above	Below	Below	Above	8	3	No	16,132
Print finishing and binding workers	Below	Below	Below	Below			Above	Below	6	1	No	2,140
Electrical mechanics and fitters	Below	Above	Below	Above	Below	Above	Below	Below	8	3	No	91,740
Butchers, fishmongers, and related food preparers	Below	Below	Below	Below	Above	Above	Above	Below	8	3	No	60,323
Dairy products makers	Above	Above	Below	Below			Below	Below	6	2	No	14,937
Tobacco preparers and tobacco products makers		Below	Below	Below	Above	Below	Above	Above	7	3	No	–
Wood treaters	Below	Below	Below	Below	Above	Above	Below	Above	8	3	No	1,887
Cabinet makers and related workers	Below	Below	Below	Above	Above	Below	Below	Below	8	2	No	73,636
Woodworking machine tool setters and operators					Below	Below	Below		3	0	No	
Woodcraft workers n.e.c.	Above	Below	Below	Below					4	1	No	1,889
Tailors, dressmakers, furriers, and hatters	Below	Above	Below	Above	Below	Above	Below	Below	8	3	No	66,141
Sewing, embroidery, and related workers	Above	Below	Below	Below			Below	Below	6	1	No	12,986
Upholsterers and related workers	Below	Below	Below	Below	Below	Below	Above	Below	8	1	No	19,229
Shoemakers and related workers	Below	Below	Below	Above	Below	Below	Below	Below	8	1	No	32,871
Shotfirers and blasters		Above	Below	Below			Above	Below	5	2	No	738
Product graders and testers (excluding foods and beverages)					Below	Below	Below		3	0	No	
Miners and quarriers	Below	Above	Below	Below	Below	Above	Below	Above	8	3	No	4,629
Well drillers and borers and related workers	Below	Below	Below	Below	Below	Above	Above	Above	8	3	No	2,046
Cement, stone, and other mineral products machine operators					Above	Below	Below		3	1	No	
Metal processing plant operators	Above	Below	Below	Below	Below	Above	Below	Below	8	2	No	47,213
Metal finishing, plating, and coating machine operators	Below	Below	Below	Below	Above	Below	Below	Above	8	2	No	15,830
Metal processing plant operators n.e.c.	Below	Below	Below	Below					4	0	No	27,632
Photographic products machine operators		Below	Below	Below	Below	Below	Below	Below	7	0	No	522
Rubber products machine operators	Below	Below	Below	Below	Below	Above	Above	Below	8	2	No	24,254
Plastic products machine operators	Above	Below	Below	Below	Above	Below	Below	Above	8	3	No	65,382
Paper products machine operators	Below	Below	Below	Below	Above	Above	Below	Above	8	3	No	22,782
Fibre preparing, spinning, and winding machine operators	Below	Below	Below	Below	Below	Below	Below	Below	8	0	No	13,208
Weaving and knitting machine operators	Below	Below	Below	Above	Above	Below	Below	Below	8	2	No	20,787

Occupation	1	2	3	4	5	6	7	8	9	10	11	12
Sewing machine operators	Below	Above	Below	Above	Below	Below	Below	Below	8	2	No	17,760
Shoemaking and related machine operators	Below	Below	Below	Below	Above	Below	Below	Below	8	1	No	25,053
Textile, fur, and leather products machine operators n.e.c.	Below	Below	Below	Below	Below	Below	Below	Above	8	1	No	8,079
Pulp and papermaking plant operators	Below	Below	Below	Below	Above	Below	Below	Below	8	1	No	13,654
Glass and ceramics plant operators	Below	Below	Below	Below	Above	Below	Below	Above	8	2	No	17,313
Packing, bottling, and labelling machine operators	Below	Below	Below	Above	Below	Below	Above	Below	8	2	No	60,654
Stationary plant and machine operators n.e.c.	Below	Below	Below	Above	Above	Above	Below	Below	8	3	No	151,490
Mechanical machinery assemblers	Below	Below	Below	Below	Below	Above	Below	Below	8	1	No	40,910
Electrical and electronic equipment assemblers	Below	Below	Below	Below	Below	Below	Above	Below	8	1	No	59,337
Locomotive engine drivers	Above	Below	Below	Below			Above	Below	6	2	No	16,812
Railway brake, signal, and switch operators	Below	Below	Below	Below	Below	Below	Above	Above	8	2	No	12,141
Motorcycle drivers					Below	Below	Below		3	0	No	
Heavy truck and lorry drivers	Below	Below	Below	Below	Below	Below	Below	Below	8	0	No	296,914
Earthmoving and related plant operators	Below	Above	Below	Below	Below	Above	Below	Above	8	3	No	40,464
Lifting truck operators	Below	Below	Below	Below	Below	Below	Below	Below	8	0	No	36,312
Ships' deck crews and related workers	Below	Above	Below	Above	Below	Below	Below	Above	8	3	No	13,551
Domestic cleaners and helpers	Below	Above	Below	Below	Above	Below	Below	Below	8	2	No	358,640
Cleaners and helpers in offices, hotels and other establishments	Below	Below	Below	Above	Above	Below	Below	Below	8	2	No	353,178
Hand launderers and pressers					Below	Below	Above		3	1	No	
Vehicle cleaners	Above	Above	Below	Above	Below	Below	Below	Below	8	3	No	16,389
Other cleaning workers	Above	Below	Below	Below	Above	Above	Below	Below	8	3	No	6,902
Crop farm laborers	Below	Below	Below	Below	Above	Below	Below	Below	8	1	No	274,241
Garden and horticultural laborers	Below	Above	Below	Above	Above	Below	Below	Below	8	3	No	31,619
Forestry laborers	Above	Above	Below	Below					4	2	No	17,082
Fishery and aquaculture laborers		Above	Below	Below			Above	Below	5	2	No	559
Mining and quarrying laborers	Below	Below	Below	Below					4	0	No	1,676
Civil engineering laborers	Below	Below	Below	Below	Above	Below	Above	Above	8	3	No	37,613
Building construction laborers	Below	Above	Below	Above	Below	Below			6	2	No	63,129
Hand packers					Above	Below	Below		3	1	No	

Occupation									Count	Signals	Critical	Employment
Hand and pedal vehicle drivers					Below	Below	Below		3	0	No	
Drivers of animal-drawn vehicles and machinery		Above	Below	Below			Below		4	1	No	
Freight handlers	Below	Below	Below	Above	Below	Below	Below	Above	8	2	No	145,764
Shelf fillers	Below	Below	Below	Above	Below	Above	Below	Below	8	2	No	310,287
Kitchen helpers	Below	Above	Below	Above	Below	Below	Above	Below	8	3	No	48,051
Street and related services workers		Below	Below	Below			Below	Above	5	1	No	84
Refuse sorters	Below	Above	Below	Above	Below	Below	Above	Below	8	3	No	88,265
Messengers, package deliverers, and luggage porters	Above	Below	Below	Below	Below	Below	Above	Below	8	2	No	102,570
Meter readers and vending machine collectors	Below	Above	Below	Above	Below	Below	Below	Above	8	3	No	8,822

Note: Occupations showing some shortage signals but not reaching the threshold required for inclusion in the Critical Occupation List. ICT = information and communication technology; ISCO = International Standard Classification of Occupations; n.e.c. = not elsewhere classified.

1120 – Managing directors and chief executives
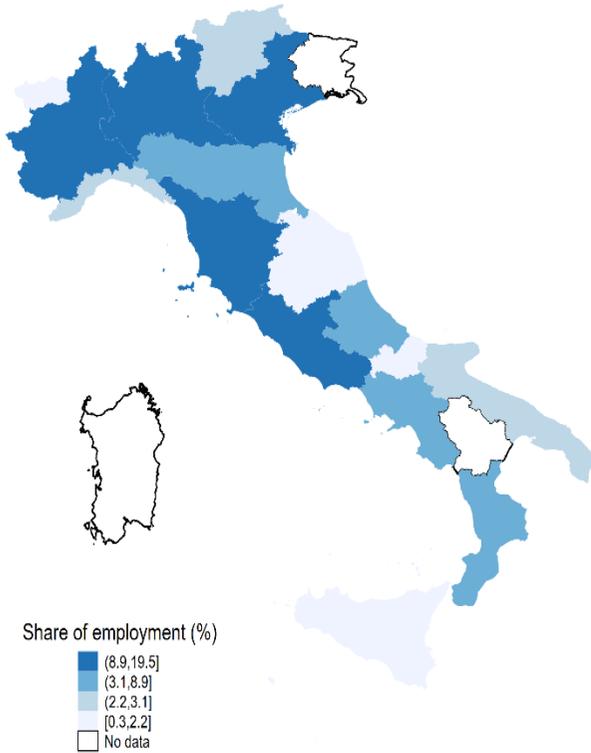
2153 – Telecommunications Engineers
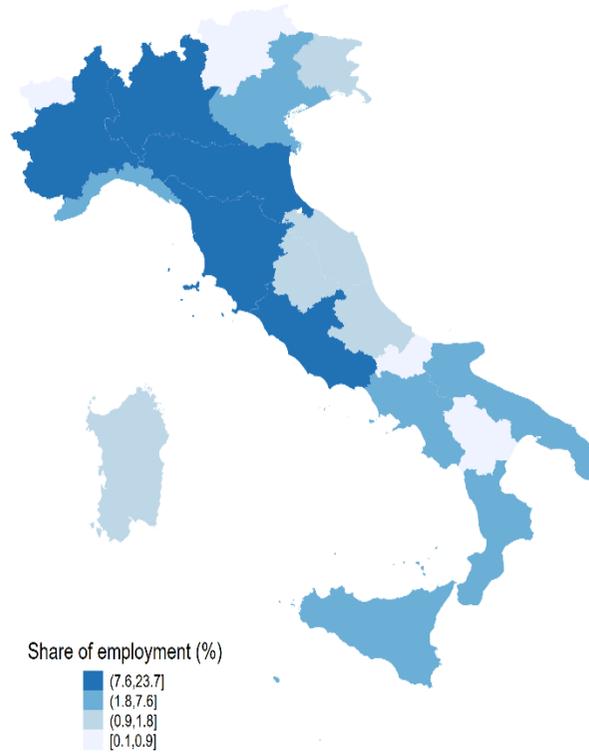
2264 – Physiotherapists
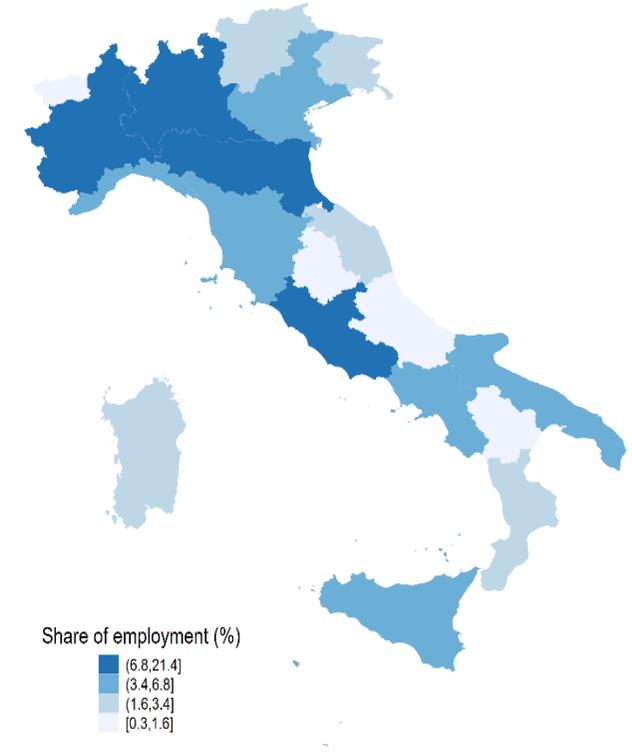
2352 – Special Needs Teachers
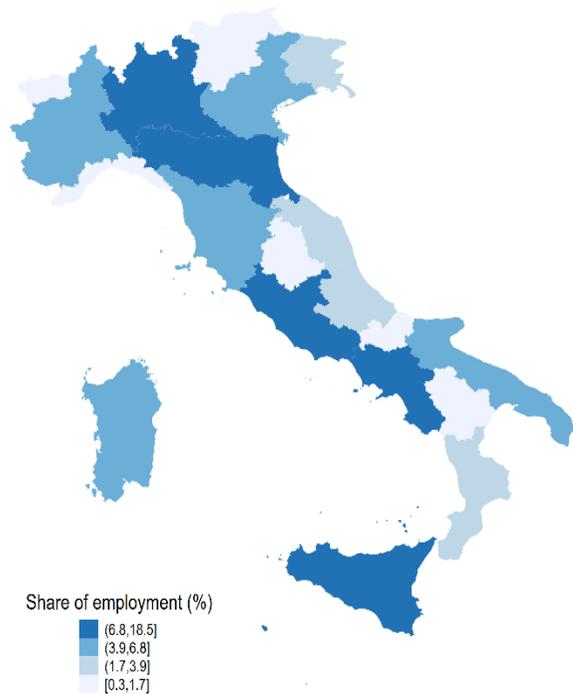
2423 – Personnel and Careers Professionals

3359 – Government Regulatory Associate Professionals n.e.c

Share of employment (%)
- (6.8,18.5]
- (3.9,6.8]
- (1.7,3.9]
- [0.3,1.7]

Share of employment (%)
- (5.7,40.2]
- (2.4,5.7]
- (0.8,2.4]
- [0.1,0.8]
- No data

Share of employment (%)
- (7.8,17.0]
- (3.3,7.8]
- (0.9,3.3]
- [0.3,0.9]
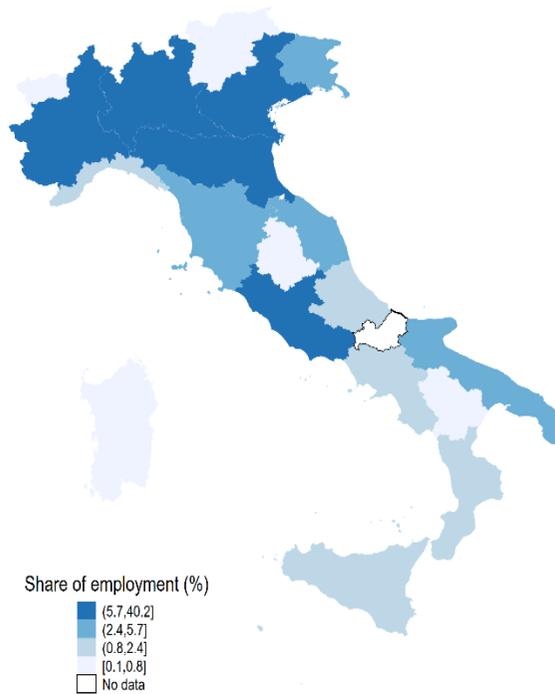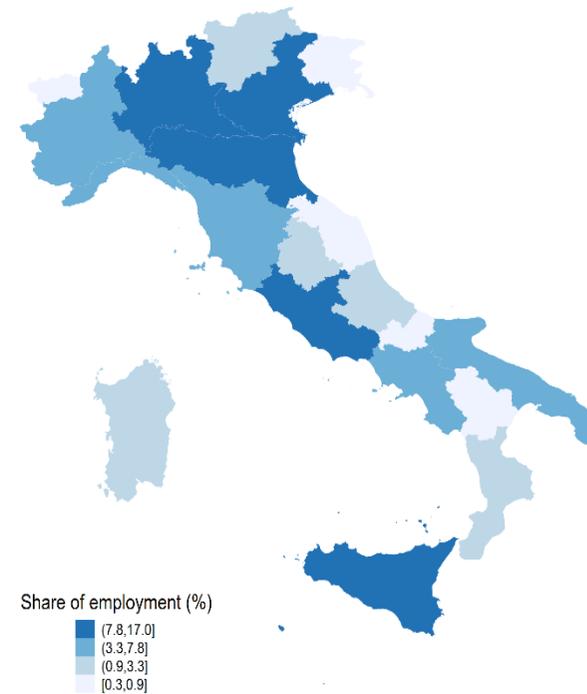
4120 – Secretaries (general)
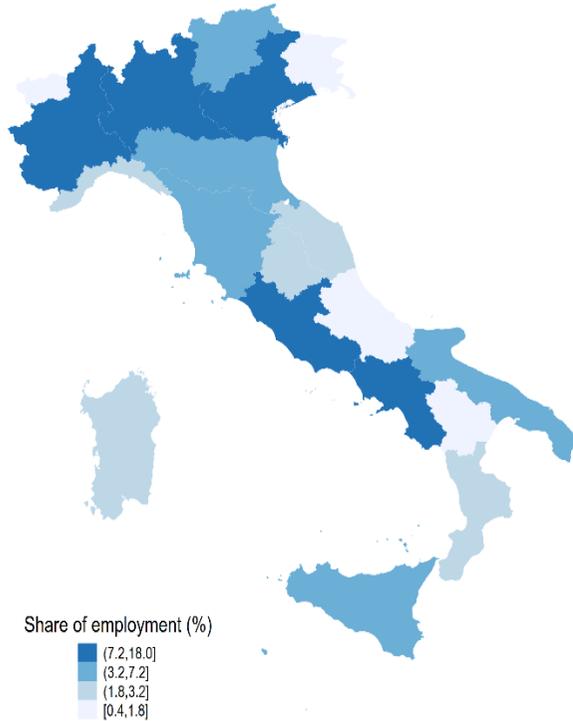
4225 – Inquiry Clerks

4311 – Accounting and Bookkeeping Clerks

Share of employment (%)
- (7.2,18.0]
- (3.2,7.2]
- (1.8,3.2]
- [0.4,1.8]

Share of employment (%)
- (7.5,23.7]
- (2.2,7.5]
- (1.6,2.2]
- [0.2,1.6]

Share of employment (%)
- (8.9,18.2]
- (2.2,8.9]
- (1.5,2.2]
- [0.3,1.5]
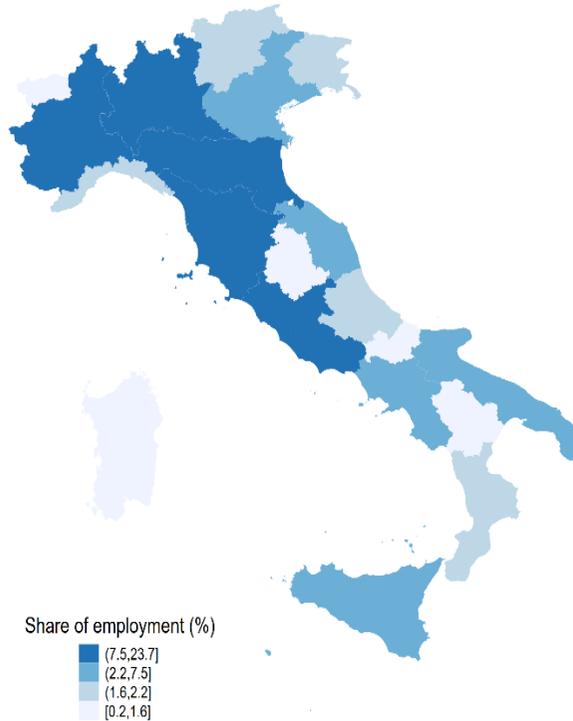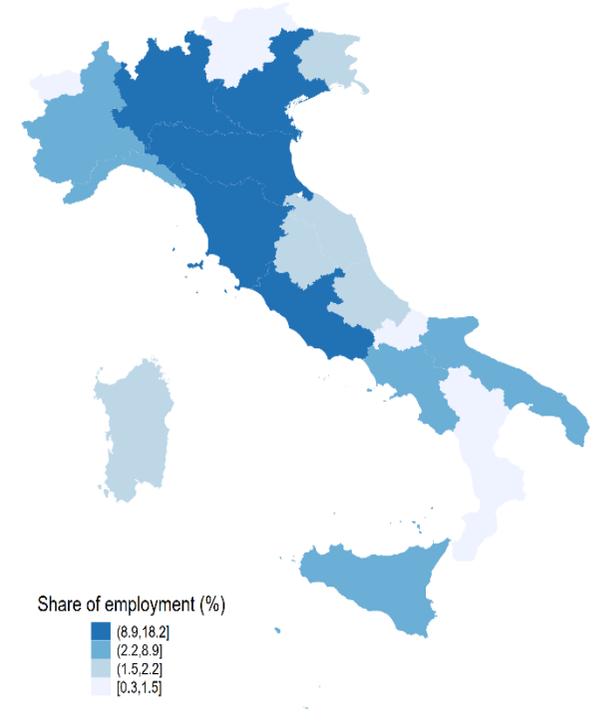
5120 – Cooks
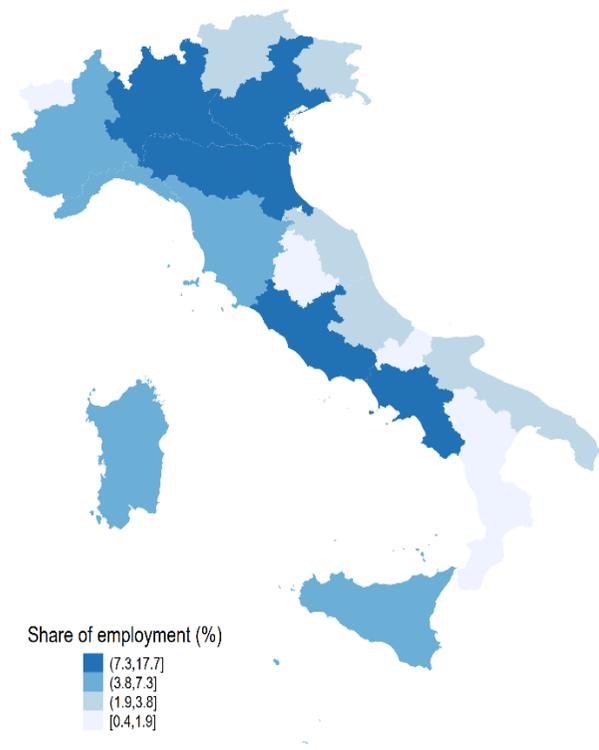
5131 – Waiters

5132 – Bartenders

Share of employment (%)
- (7.3,17.7]
- (3.8,7.3]
- (1.9,3.8]
- [0.4,1.9]

Share of employment (%)
- (7.8,13.6]
- (3.8,7.8]
- (2.0,3.8]
- [0.2,2.0]

Share of employment (%)
- (7.2,19.5]
- (3.2,7.2]
- (2.1,3.2]
- [0.3,2.1]
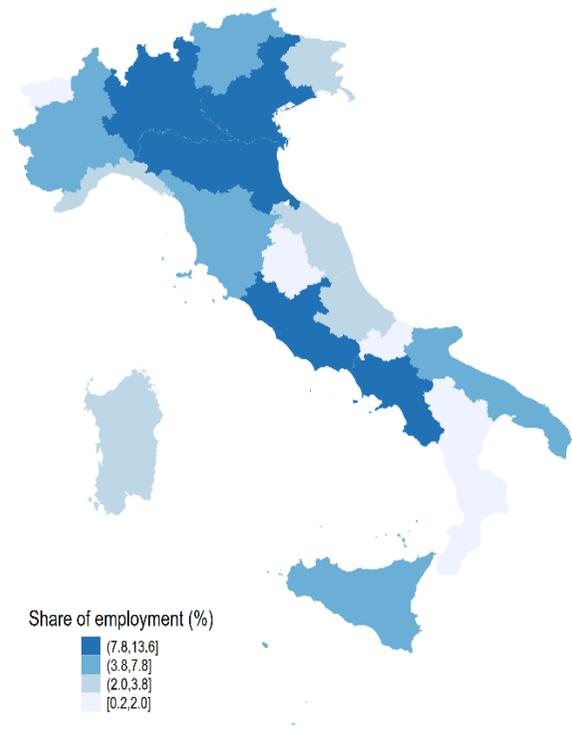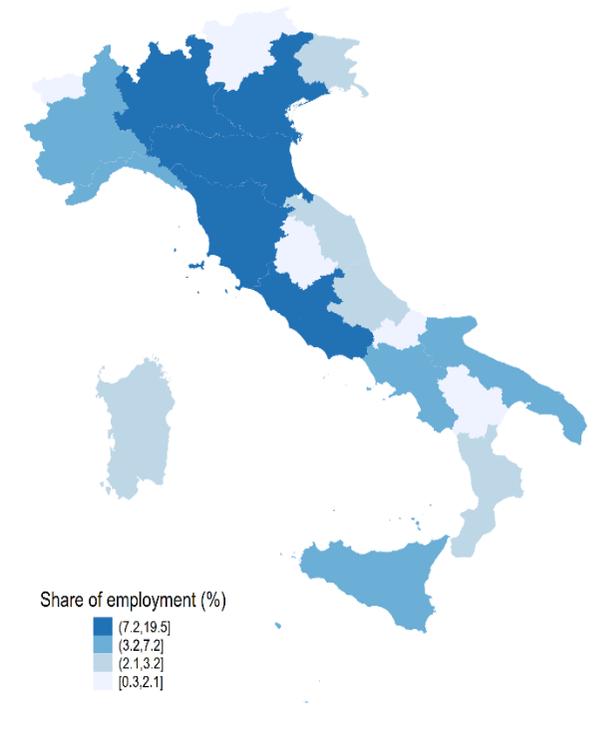
5169 – Personal Services Workers n.e.c.
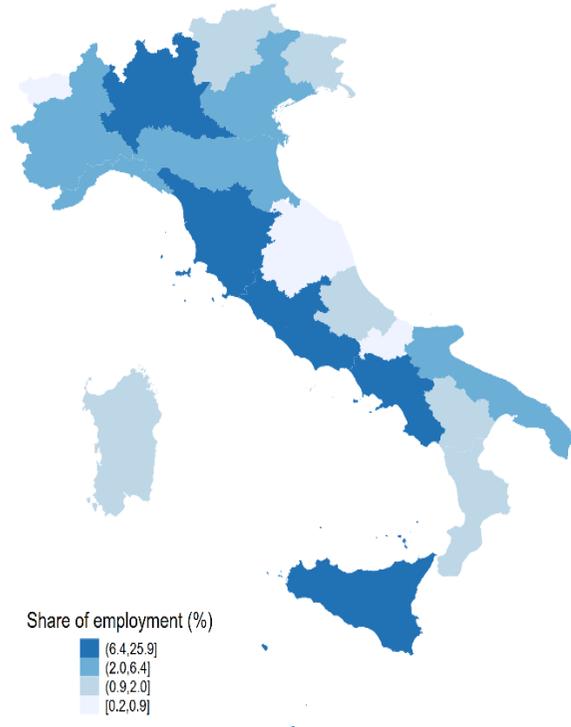
5321 – Health Care Assistants
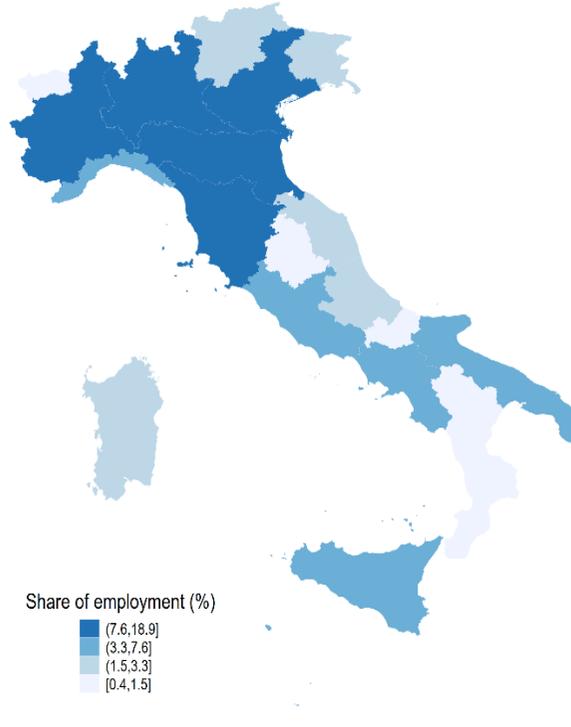
7112 – Bricklayers and Related Workers
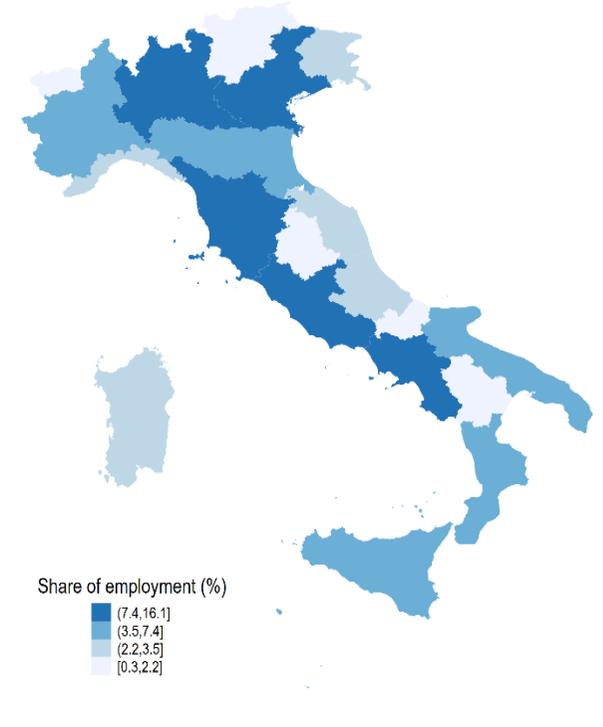
Share of employment (%)
- (6.4,25.9]
- (2.0,6.4]
- (0.9,2.0]
- [0.2,0.9]

Share of employment (%)
- (7.6,18.9]
- (3.3,7.6]
- (1.5,3.3]
- [0.4,1.5]

Share of employment (%)
- (7.4,16.1]
- (3.5,7.4]
- (2.2,3.5]
- [0.3,2.2]

7214 – Structural Metal Preparers and Erectors

Share of employment (%)
- (6.2,20.3]
- (3.2,6.2]
- (1.1,3.2]
- [0.1,1.1]

7231 – Motor Vehicle Mechanics and Repairers

Share of employment (%)
- (8.1,14.7]
- (3.3,8.1]
- (1.8,3.3]
- [0.2,1.8]
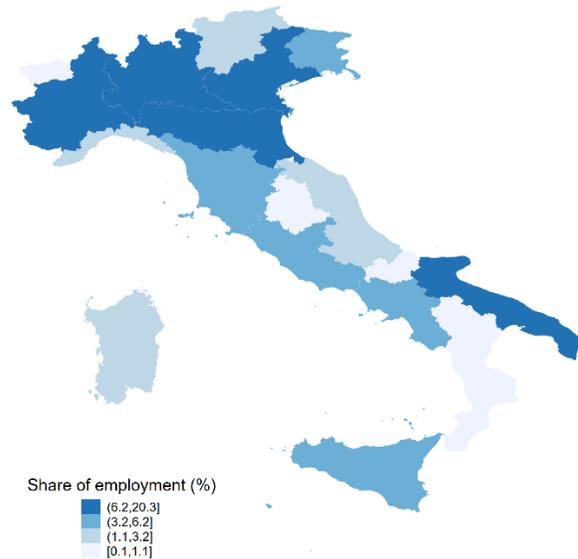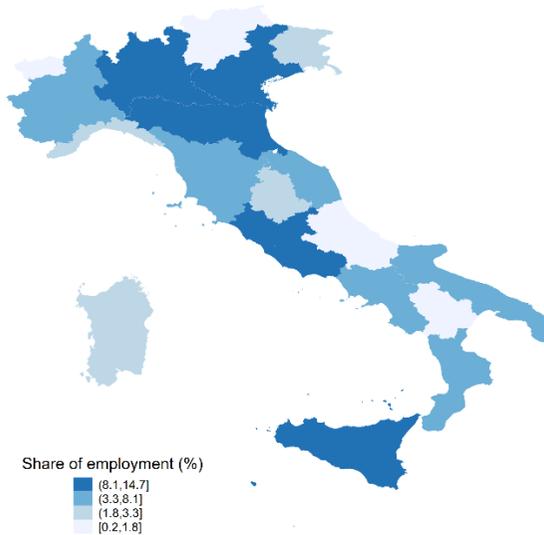
7233 – Agr. & Ind. Machinery Mechanics and Repairers

Share of employment (%)
- (6.2,21.3]
- (3.0,6.2]
- (1.2,3.0]
- [0.2,1.2]

7411 – Building and Related Electricians

Share of employment (%)
- (7.9,15.4]
- (2.8,7.9]
- (1.9,2.8]
- [0.4,1.9]
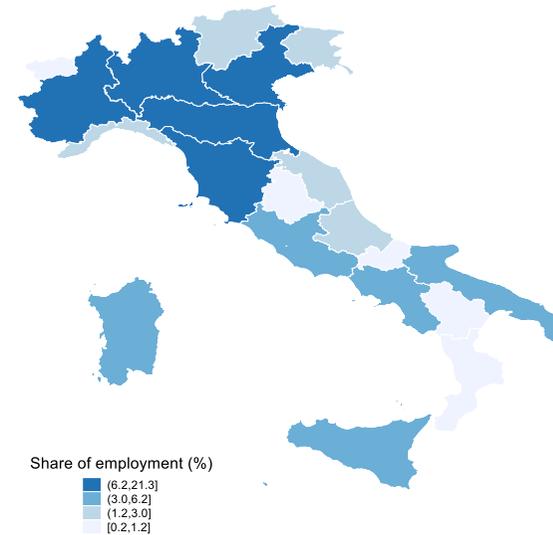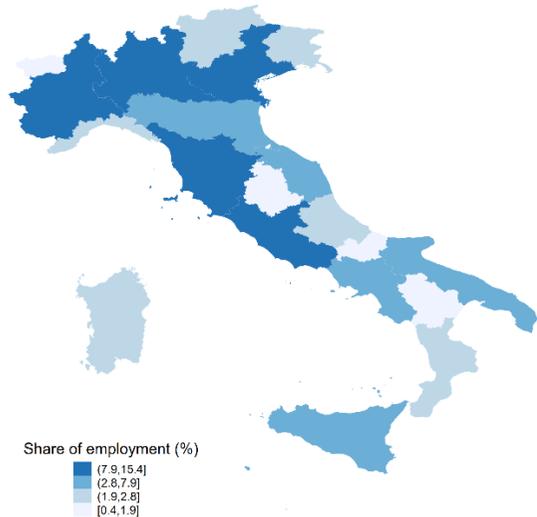
7512 – Bakers, Pastry Cooks & Confectionery Makers

Share of employment (%)
- (8.7,11.1]
- (4.0,8.7]
- (1.9,4.0]
- [0.2,1.9]
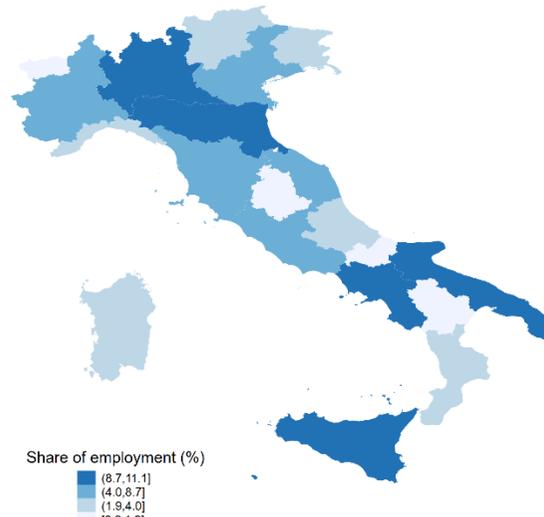
8160 – Food & Related Products Machine Operators

Share of employment (%)
- (7.1,15.1]
- (3.5,7.1]
- (1.8,3.5]
- [0.2,1.8]
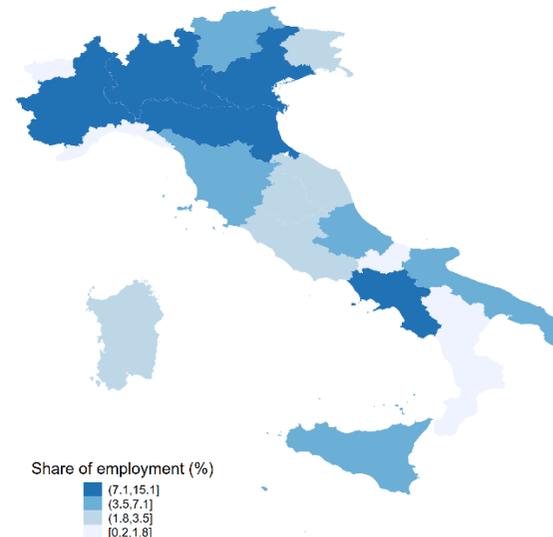
9329 – Manufacturing Labourers n.e.c.
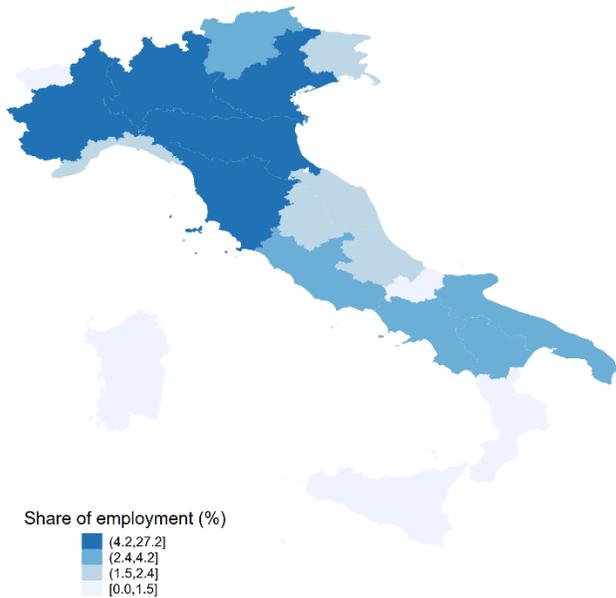
9411 – Fast Food Preparers

9622 – Odd-job Persons

Share of employment (%)
- (4.2,27.2]
- (2.4,4.2]
- (1.5,2.4]
- [0.0,1.5]

Share of employment (%)
- (7.4,18.8]
- (3.2,7.4]
- (1.8,3.2]
- [0.2,1.8]

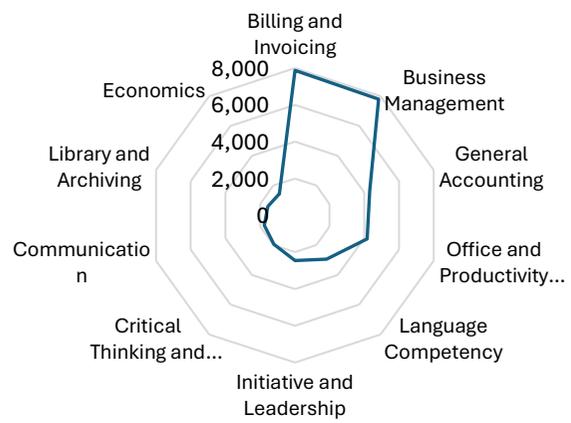Share of employment (%)
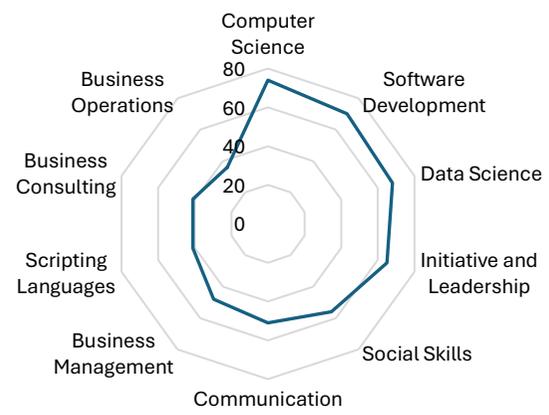- (7.1,15.6]
- (4.0,7.1]
- (2.2,4.0]
- [0.2,2.2]
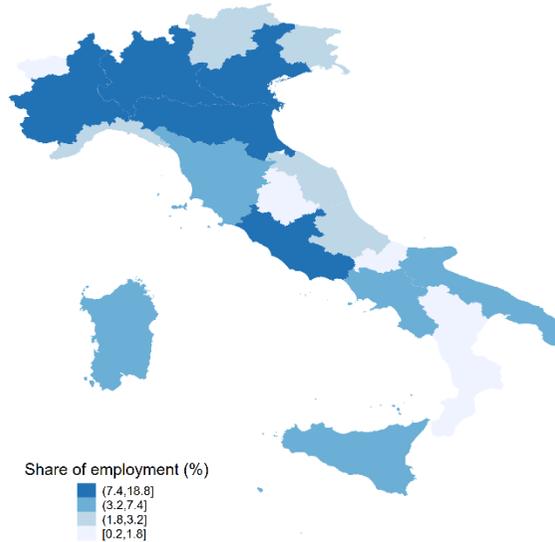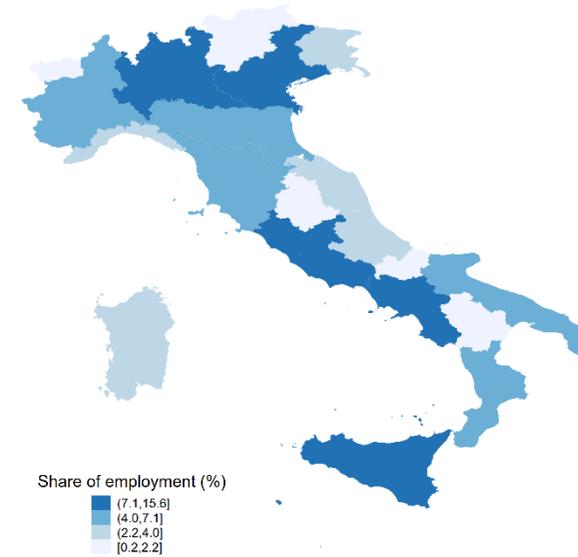
Source: ISTAT labor force survey data.

ANNEX 5. SKILLS CONTENT IN THE TOP 25 CRITICAL OCCUPATIONS IN SHORTAGES
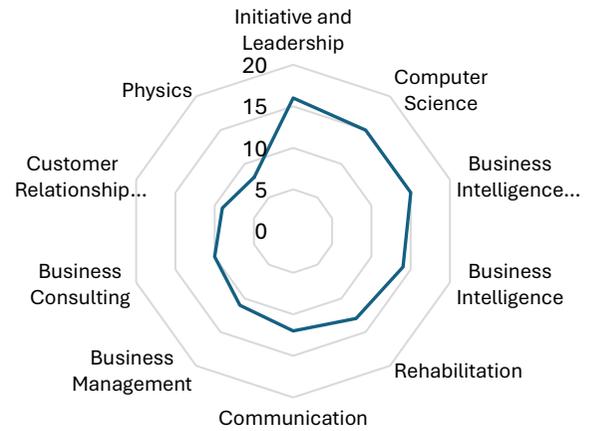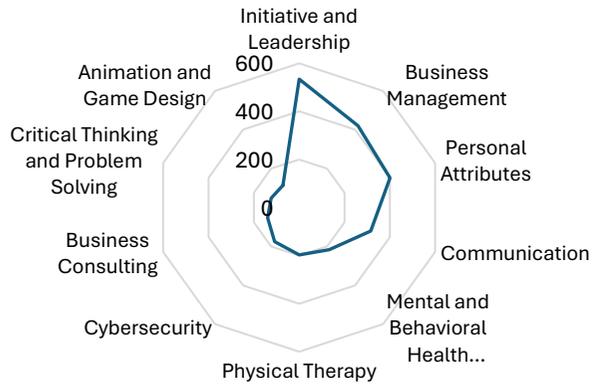
Managing directors and chief executives (1120)

Telecommunications engineers (2153)

Physiotherapists (2264)

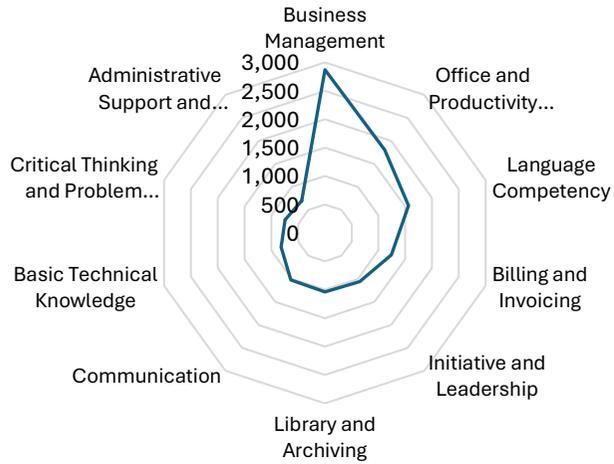## Special needs teachers (2352)

Personnel and career professionals (2423)
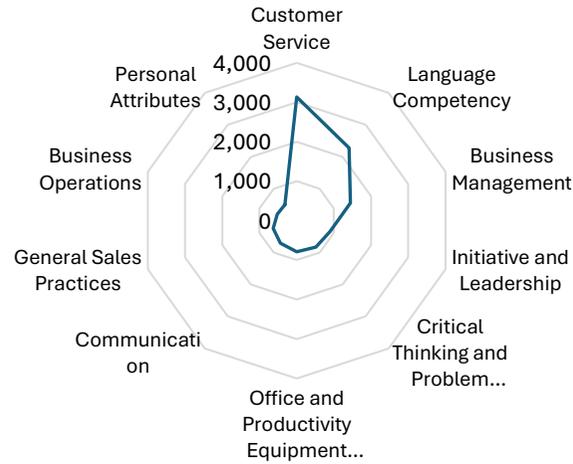

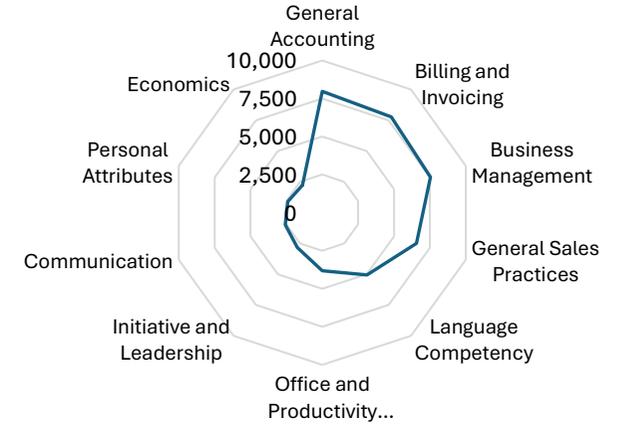## Regulatory government associate professionals (3359)

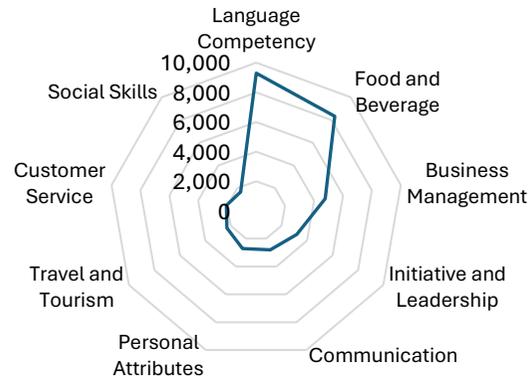## Secretaries (general) (4120)

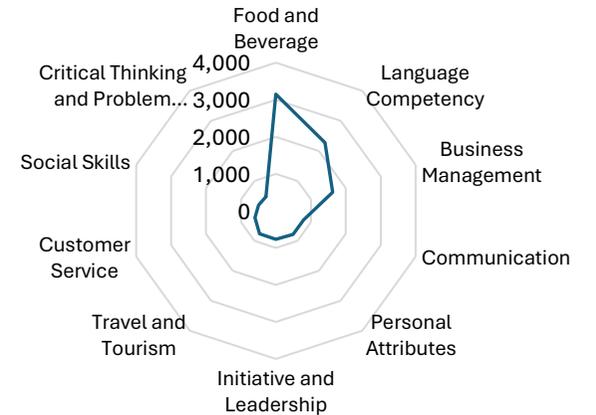## Enquiry clerks (4225)

Accounting and bookkeeping clerks (4311)

Cooks (5120)

Waiters (5131)

Bartenders (5132)

Hairdressers (5141)

Radar chart axes: Beauty and Body Treatments..., Language Competency, Communication, Personal Attributes, Initiative and Leadership, Business Management, Social Skills, Home Health Care and..., Employee Training, Business Consulting. Scale: 0, 50, 100, 150, 200, 250, 300.

Personal services workers (5169)

Radar chart axes: Language Competency, Communication, General Sales Practices, Personal Attributes, Business Management, Marketing Strategy and..., Initiative and Leadership, Food and Beverage, Laboratory Research, Events and Conferences. Scale: 0, 100, 200, 300, 400.

Health care assistants (5321)

Radar chart axes: Home Health Care and..., Language Competency, Business Management, Personal Attributes, Communication, Business Operations, Nursing and Patient Care, Animation and Game Design, Initiative and Leadership, Physical Therapy. Scale: 0, 100, 200, 300, 400.

Bricklayers and related workers (7112)

Radar chart axes: Language Competency, General Construction..., Mergers and Acquisitions, Metal Fabrication, Drafting and Engineering..., Transportation Equipment..., Road and Bridge Construction. Scale: 0, 2, 4, 6, 8, 10, 12.

Structural metal preparers and erectors (7214)

Radar chart axes: Welding, Brazing, and Soldering, General Construction and Construction..., Construction Management, Production and Assembly, Initiative and Leadership, Business Management, Language Competency, General Repairs and Maintenance, Critical Thinking and Problem Solving, Engineering Software. Scale: 0, 50, 100, 150.

Motor vehicle mechanics and repairers (7231)

Radar chart axes: Vehicle Repair and Maintenance, Initiative and Leadership, General Repairs and Maintenance, Drafting and Engineering..., Critical Thinking and Problem..., Business Management, Language Competency, Personal Attributes, Mechanical Engineering, Electronics Engineering. Scale: 0, 500, 1,000, 1,500.

Agricultural and industrial machinery mechanics and repairers (7233)

Radar chart axes: Drafting and Engineering..., Machinery, Initiative and Leadership, Language Competency, Business Management, Critical Thinking and..., General Repairs and..., Mechanical Engineering, Business Consulting, Personal Attributes. Scale: 0, 2,000, 4,000, 6,000, 8,000, 10,000.

Building and related electricians (7411)

Radar chart axes: Drafting and Engineering..., Basic Electrical Systems, Computer Hardware, Electrical and Computer..., Electronics Engineering, Computer Science, Initiative and Leadership, Critical Thinking and..., Language Competency, Business Management. Scale: 0, 1,000, 2,000, 3,000, 4,000, 5,000, 6,000.

Bakers, pastry cooks, and confectionery makers (7512)

Radar chart axes: Food and Beverage, Business Management, Language Competency, Library and Archiving, Communication, Personal Attributes, Initiative and Leadership, Critical Thinking and..., Food Science and..., General Sales Practices. Scale: 0, 200, 400, 600.

Food and related products machine operators (8160)

Radar chart axes: Food and Beverage 7512, Business Management..., Language Competency..., Library and Archiving 7512, Communication 7512, Personal Attributes 7512, Initiative and Leadership 7512, Critical Thinking and Problem..., Food Science and..., General Sales Practices 7512. Scale: 0, 100, 200, 300, 400, 500, 600.

Manufacturing labourers n.e.c.(9329)

Radar chart axes: Business Consulting, Quality Assurance and Control, Recruitment, Initiative and Leadership, Policy Analysis, Research, and..., General Shipping and Receiving, Drafting and Engineering..., Language Competency, Business Management, Personal Attributes. Scale: 0, 20, 40, 60, 80.

Fast food preparers (9411)

Radar chart axes: Food and Beverage, Business Management, Language Competency, Initiative and Leadership, Communication, Travel and Tourism, Personal Attributes, Critical Thinking and Problem Solving, Social Skills, Machinery. Scale: 0, 1,000, 2,000, 3,000.

Odd-job persons (9622)

Source: Lightcast online job postings database, 2024.

Note: ISCO = International Standard Classification of Occupations.