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AN ASSESSMENT OF TUNISIA'S LABOR MARKET

In Support of a Tunisia–Italy Global Skills Partnership

2025

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EXECUTIVE SUMMARY

Tunisia's labor market has faced persistent challenges over the past two decades, with low and uneven growth constraining the economy's capacity to generate sufficient job opportunities, particularly for young people. These pressures have been compounded by the COVID-19 pandemic, prolonged droughts, tightening financial conditions, and a slow pace of reform. As a result, unemployment remains structurally high, and a growing share of the working-age population has withdrawn from the labor force. These trends highlight deep patterns of labor underutilization and skills waste that threaten long-term inclusive growth.

Tunisia's labor market stands at a crossroads. Its workforce is growing, with many young people achieving higher levels of education than previous generations. Yet, job creation has not kept pace, leaving a large share of human capital underutilized. This imbalance—between a labor force ready to contribute and an economy unable to absorb it—represents the country's central policy challenge.

Tunisia's labor supply is diverse and segmented. For educated but unemployed workers, the main barrier is access to opportunities—whether at home or abroad. For inactive workers, discouraged from seeking work and often with limited skills, the priority is targeted training to improve employability. And for the underqualified—who make up nearly one-third of the workforce—skills upgrading is key to raising productivity and aligning with labor market needs.

And on the demand side, the economy generates too few vacancies, and those that do exist are concentrated in a narrow set of medium-skilled technical occupations. Employers in agrifood production and services consistently report shortages, not only in technical expertise but also in soft skills. This mismatch between a growing, increasingly educated labor supply and weak, narrowly concentrated demand highlights the structural nature of Tunisia's employment problem.

In this context, expanding access to international labor markets through well-governed mobility pathways can complement domestic job creation efforts. By enabling Tunisian workers to contribute abroad in sectors where their skills are most needed, while ensuring they acquire new competencies that can benefit Tunisia in the long term, mobility can complement domestic strategies. Yet, if unmanaged, outward migration threatens to erode Tunisia's skilled workforce, particularly in sectors critical for recovery and growth. This calls for a balanced strategy that simultaneously fosters international mobility and strengthens the domestic pool of skilled workers.

One of the potential markets for Tunisian workers is Italy. Italy is among the fastest-aging countries in the European Union, with nearly one in four people now beyond working age and only

15 percent of the population between 15 and 29. Amid labor supply constraints, Italy is now facing a growing shortage of workers across key sectors. Many of these positions remain unfilled for extended periods, with average posting durations exceeding several months—reflecting persistent mismatches between available workers and employers' skill needs. Tunisia and Italy illustrate two sides of the same demographic and labor-market paradox: Tunisia has a large and growing pool of young job seekers but too few jobs, while Italy has millions of vacancies but too few workers. Yet, despite these differences, Italy and Tunisa show overlapping shortage occupations.

The Promise of the Global Skills Partnership Model

The Global Skills Partnership (GSP) model offers a promising framework to achieve this balance (Acosta et al. 2025). By linking skills development in Tunisia with labor demand both at home and abroad (for example, Italy), GSPs can expand the supply of skilled workers, reduce shortages in both origin and destination countries, and create meaningful job opportunities for migrants. Unlike traditional migration agreements, GSPs invest in training that benefits both local retention and international placement, turning labor market challenges into shared opportunities.

A robust, evidence-based analysis of Tunisia'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 local workers who choose to remain in Tunisia, and (2) strategic value for the country's broader economic growth and structural transformation.

This report provides an essential foundation for the design of such a partnership. Its purpose is not to diagnose employment constraints, as a standard job diagnostic would, but rather to deliver an evidence-based assessment of Tunisia's labor market. It identifies the sectors and occupations where targeted skills development can generate the greatest impact for both Tunisia and its partner countries. With a particular focus on a potential GSP with Italy, the report highlights overlapping labor needs and the specific skills Tunisian workers can work to develop to address shortages in both labor markets. By grounding policy in robust analysis, the assessment informs the design of a Tunisia–Italy 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, providing a solid foundation for the design of a Tunisia–Italy GSP. These key findings are summarized below, grouped into three areas: (1) demographic and labor market fundamentals, (2) profiles of workers and potential GSP participants, and (3) private sector labor demand.

Demographic and Labor Market Fundamentals

Tunisia is in a demographic window of opportunity to implement a GSP. Tunisia's working-age population is projected to grow until 2052, when it will reach its peak. Thereafter, a gradual decline is expected, which will drive a transition toward an aging population structure.

Job creation has not kept pace with the growth of the working-age population, keeping youth unemployment structurally high and constraining the benefits of the demographic dividend.

Tunisia's labor supply holds significant untapped potential for both the local and international labor market. Despite strong educational attainment, a significant portion of the workforce remains underutilized. Weak labor demand constrains the workforce's ability to contribute to economic growth and the economic transformation of Tunisa.

Profiles of Workers and Potential GSP Participants

Tunisia's potential labor supply comprises over 900,000 working-age individuals potentially available for employment, either domestically or abroad. This includes approximately 650,000 unemployed job seekers, extending to an additional 250,000 inactive workers who, despite being available for work, are not actively searching for jobs due to perceived job scarcity, limited job search knowledge, or skills mismatches with employer requirements.

Many unemployed individuals—and unemployed youth in particular—have relatively high degrees of educational attainment. About 15 percent hold technical certificates, and an additional 50 percent have completed tertiary education.

In contrast, most inactive workers lack the skills demanded by the local labor market. Eight out of ten have no more than a primary education, and only a small share holds technical certificates required for the medium-skilled technical jobs in demand in the Tunisian labor market.

Over 1 million workers, 29 percent of the employed population, are underqualified for their current jobs, lacking the foundational technical and vocational education and training (TVET) qualifications typically required for their occupations. Many of these underqualified workers are employed in technical occupations, which enjoy strong labor demand. Underqualification tends to be more pronounced among adults than youth, who generally enter the labor market with stronger human capital.

Private Sector Labor Demand

Recent employment growth in Tunisia has been driven by medium-skilled technical occupations, most of them in manufacturing. Job growth has been strongest for plant and machine operators, assemblers, skilled agricultural workers, and craft and related trade workers. Conversely, private sector labor demand for low-skilled workers has fallen sharply—reflecting a transformation in manufacturing industries such as computer, electronic, optical, textile, and apparel manufacturing. As these sectors become more capital intense, the demand for low-skilled labor has declined, while the need for medium-skilled workers with specialized technical competencies has risen.

Overall labor demand in Tunisia remains weak. Fewer than 25 percent of firms—predominantly large-scale enterprises—are currently recruiting, while some, mainly those with seasonal production cycles, plan to hire in the near future. At present, there are only about 57,900 unfilled job positions (mostly in manufacturing and construction) for a pool of 650,000 unemployed job seekers. This corresponds to roughly one job vacancy for every eleven candidates, highlighting a significant gap between labor supply and demand. (If inactive workers no longer seeking work are included in the ratio, this figure worsens to one vacancy for every sixteen candidates.)

Job vacancies in employers' self-reported critical occupations are highly concentrated in a small number of mostly technical occupations. Eighty percent of total unfilled job positions are found in just 25 occupations, most of which are hands-on, operational jobs key to firm productivity. At the sector level, the textile industry has the highest number of vacancies, with over 21,800 open job positions, particularly for **sewing machine operators** and **embroidery workers**. Other sectors showing strong demand include accommodation and food services, and food and beverage production, with large numbers of open job positions for **chefs**, **waiters**, and **food-processing machine operators**. Importantly, several of these 25 occupations are not only in high demand but also face persistent and well-documented labor shortages. Occupations such as **sewing machine operators, commercial sales representatives, chefs, waiters, accountants, manufacturing supervisors, metal working machine tool setters and operators, primary school teachers**, and **industrial and production engineers** meet multiple shortage criteria, including persistent employer-reported hiring difficulties and challenges in reaching suitable candidates.

Potential for a GSP with Italy

Considering Italy's labor demand landscape and the composition of in-demand occupations, the report assesses which occupations should be prioritized within a Global Skills Partnership (GSP). The analysis addresses this question by weighing 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, assessing the relevance of selected occupations and their potential to advance GSP objectives while supporting broader economic growth outcomes in both countries.

Among several potential sectors, the report finds that agrifood is the most promising sector for a GSP with Italy. Four considerations underpin this choice. First, shifting demand dynamics in Tunisia. As on-farm productivity rises through mechanization and improved agronomic practices, labor demand naturally shifts toward off-farm segments such as processing, packaging, cold-chain logistics, and retail. These occupations are typically more skill intensive and better remunerated than traditional farm work. Second, strategic importance for Italy. Food processing and hospitality are cornerstones of Italy's economy, supported by global demand for high-quality food products and a dynamic tourism industry. Persistent labor shortages in these occupations underscore the sector's relevance. Third, reduced placement risks. Because both Tunisia and Italy face ongoing shortages in these occupations, the likelihood of successful job matching is high. This also creates space for circular migration arrangements, particularly seasonal mobility during periods of increased labor demand. Fourth, training feasibility. The required skillsets are midlevel and training pathways relatively short, making it possible to prepare prospective migrants quickly for both the domestic and international tracks of a GSP.

STRUCTURE OF THE REPORT

The report is organized into seven main chapters, complemented by concluding sections and annexes.

The first chapter sets the stage by presenting Tunisia's macroeconomic, demographic, and labor market context. It provides an overview of the country's economic outlook, demographic trends, and their implications for the labor force, including the capacity of younger cohorts to support an aging population. It also highlights Tunisia's employment gap and the potential role of its untapped workforce in addressing international labor demand amid persistent domestic job shortages.

The second chapter introduces the conceptual and statistical framework guiding the analysis. It first explains the approach used to provide a descriptive assessment of labor demand and supply, and then details how critical shortage occupations are identified through a critical occupation list, along with the main data sources employed.

The third chapter examines the characteristics and availability of Tunisia's workforce. It profiles the employed, inactive, and unemployed populations; assesses sectoral and occupational patterns of employment; and investigates qualification and skills mismatches. It also reviews the formal technical and vocational education and training system and explores the labor market characteristics of current and prospective emigrants, providing inputs for identifying potential participants of a Global Skills Partnership.

Chapter 4 presents an in-depth assessment of labor demand. It discusses the characteristics of private sector firms and their job creation potential, sectoral and occupational employment dynamics, and unfilled demand as reflected in vacancies, recruitment plans, and hiring challenges. The analysis also highlights the paradox of surplus workers coexisting with persistent shortages, and explains the drivers of unmet labor demand.

The fifth chapter builds on this evidence by focusing on the skill requirements of the most critical occupations. It identifies emerging skill trends, unpacks the skill content of the top 25 occupations with the largest number of vacancies, and describes the candidate profiles sought by employers.

Chapter 6 complements this analysis by using a critical occupation list. It provides a broader measure of occupational shortages, presents evidence on persistent demand-supply mismatches, and compares these findings with employer-reported critical occupations.

The report concludes by translating the analytical findings into actionable recommendations, outlining why certain sectors and occupations are particularly suited to a Global Skills Partnership between Tunisia and Italy. References and annexes provide supplementary details, methodological notes, and additional evidence supporting the analysis.

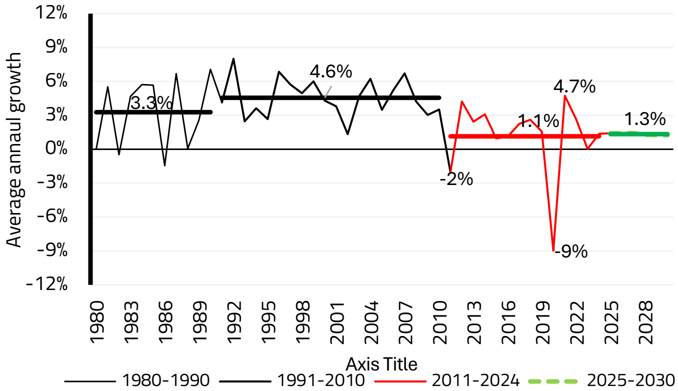
1. MACROECONOMIC, DEMOGRAPHIC, AND LABOR MARKET CONTEXT

1.1 Macroeconomic Outlook

Since 2012, Tunisia has faced a prolonged period of weak economic performance, marked by increased vulnerability to both external and domestic shocks. This contrasts with the robust expansion of the early 1990s up to 2010, when real gross domestic product (GDP) per capita grew by an annual average of 4.6 percent, driving steady improvements in living standards and labor market outcomes. In 2011, amid the fall-out of the 2008 global financial crisis, slowed markedly. The outbreak of the COVID-19 pandemic in 2020 triggered a deep recession, with output contracting by nearly 9 percent, the sharpest decline in decades (figure 1.1).

A recovery began in mid-2021 — GDP expanded by 4.7 percent between 2020 and 2021, and by 2.7 percent between 2021 and 2022—but the momentum quickly dissipated (see Figure 1.1). By 2023, growth had stalled at zero, constrained by a severe drought, tight financing conditions, and delayed reforms. Agricultural value added fell by 11 percent as water scarcity curtailed irrigation, exposing structural fragilities in the sector and weighing on overall economic activity (World Bank 2024, 2025a).

Figure 1.1 ▪ Annual Change in GDP (Constant LCU)



Source: IMF 2024.

Note: The graph shows the real GDP growth rate, measured in inflation-adjusted Tunisian dinars (i.e., constant local currency unit) until 2024, and IMF projections for 2025–30. Projections for future years are based on IMF projections. GDP = gross domestic product; LCU = local currency unit.

Looking ahead at 2030, challenges persist. According to International Monetary Fund projections (IMF 2024), Tunisia is expected to record only modest real GDP growth over 2025–30, translating into an average annual GDP growth of just 1.3 percent. This slow growth trajectory underscores the persistence of several structural bottlenecks—weak productivity growth, fiscal rigidities, and external shocks—that continue to undermine the economy's potential output and limit its capacity to generate sufficient employment opportunities (IMF 2025).

Tunisia's prolonged period of weak economic growth has translated into poor labor market outcomes. Over the past five years, job creation has been sluggish, driving down the ratio of jobs to people. The resulting high unemployment rates are particularly acute among young people (see section 1.3).

Demographic dynamics compound the challenge (see section 1.2). Although population growth is gradually slowing, both the total and the working-age populations (15–64) continue to rise and are projected to do so until 2052. This trend places mounting pressure on the labor market to generate sufficient employment opportunities.

As a result, a persistent disequilibrium has emerged between an expanding labor supply and insufficient labor demand. Employment creation has consistently fallen short of workforce growth, leaving a substantial share of working-age individuals—particularly youth—unemployed or inactive. This underscores a structural deficiency in the economy's absorptive capacity (see section 1.3).

In 2023, the jobs gap was estimated at no less than 900,000 positions. The gap, which had already widened prior to the pandemic, shows little sign of narrowing. It comprises approximately 650,000 jobs needed to absorb the unemployed, along with an additional 250,000 jobs required to engage individuals currently outside the labor force but potentially employable—most of them inactive workers no longer seeking employment.

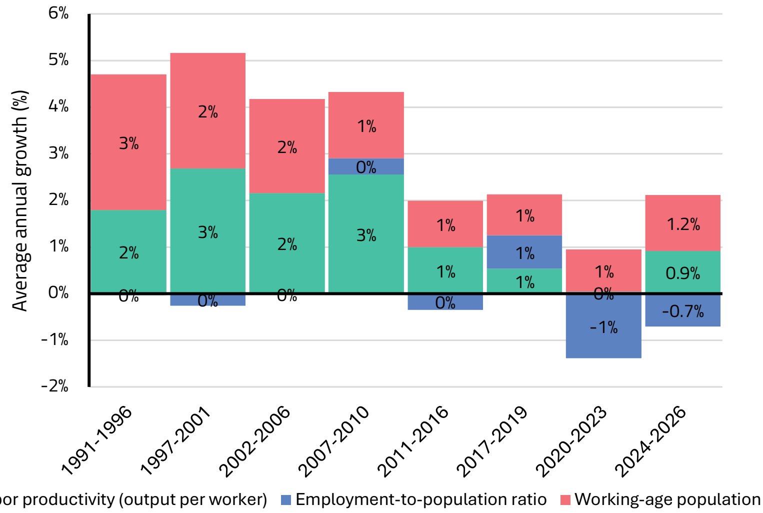
Box 1.1 Tunisia's Jobs Agenda Must Align Training Curricula with the Skill Requirements of the Private Sector

To assess the implications of Tunisia's slow growth for the labor market, gross domestic product (GDP) can be divided across three contributing factors: (1) growth of the working-age population, (2) changes in the employment rate, and (3) labor productivity growth (Onder and Pestieau 2014).

The first two reflect workforce expansion ("more jobs"), while the third captures improvements in labor productivity (GDP share per worker, or "better jobs") (World Bank 2025c).

On average, GDP growth was 0 percent per year in 2021–24. Demographic expansion contributed about 1 percentage point, but this was more than offset by a 1 point decline in the employment-to-population ratio, underscoring the economy's inability to create enough jobs for its growing workforce. At the same time, labor productivity growth averaged 0 percent, offering no additional boost to GDP growth. As a result, overall growth remained stagnant, driven by both weak job creation and the absence of productivity gains.

Figure B1.1.1 ▪ Decomposition of GDP Growth in Tunisia



Source: United Nations, World Population Prospects; International Labour Organization, ILOSTAT; International Monetary Fund, World Economic Outlook.

Looking ahead (2024–26), average annual GDP growth is projected to remain weak. Demographic expansion is expected to contribute about 1.2 percentage points, while labor productivity is projected to recover only marginally, adding roughly 0.9 percentage points per year. These gains will be offset by a 0.7 point decline in the employment-to-population ratio, underscoring the economy's persistent inability to generate sufficient jobs. As a result, overall growth is likely to remain subdued, constrained by both limited job creation and weak productivity dynamics.

This underscores the need for a two-pronged jobs agenda: one that promotes both the *quantity* and, importantly, the *quality* of jobs. The private sector will need to play a central role in driving this transformation. However, for it to generate more and better-quality jobs, Tunisia must act on both supply- and demand-side fronts.

On the supply side, efforts should focus on modernizing training curricula and strengthening education-to-employment linkages. Technical and vocational education and training need to keep pace with the rapid technological shifts in the private sector. Empowering job seekers with market-relevant skills will be essential to sustain a competitive workforce that aligns with the evolving demands of the labor market.

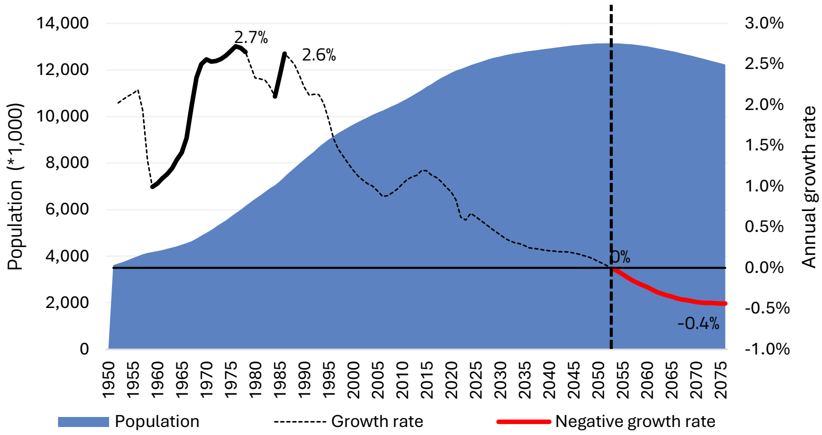
On the demand side, policy efforts should aim to stimulate labor demand and raise firm-level productivity. This includes providing targeted support for employment-intensive sectors, offering incentives for firms to invest in on-the-job training and workforce upskilling. Coordinated action on both supply and demand is essential to expand employment, raise productivity, and build a more competitive and inclusive private sector capable of absorbing new labor market entrants.

1.2 Demographic Outlook

As estimated by the United Nations Department of Economic and Social Affairs (UNDESA 2025), Tunisia's population was 12.4 million in 2025, continuing the slow and steady growth trend of recent years (figure 1.2). Population growth peaked at 2.1 percent annually in the 1990s before falling to 1.2 percent between 1991 and 2006, rising slightly in 2006–14, and then resuming a downward trend. Since 2018, growth has averaged just 0.8 percent per year.

Looking ahead, Tunisia's population is projected to continue expanding at a decelerating pace until 2052, when it will peak at around 13.1 million. Thereafter, it is expected to decline, reaching about 12.2 million by 2075—similar to its 2023 level (figure 1.2).

Figure 1.2 ▪ Population Levels and Growth in Tunisia, 1950–2075



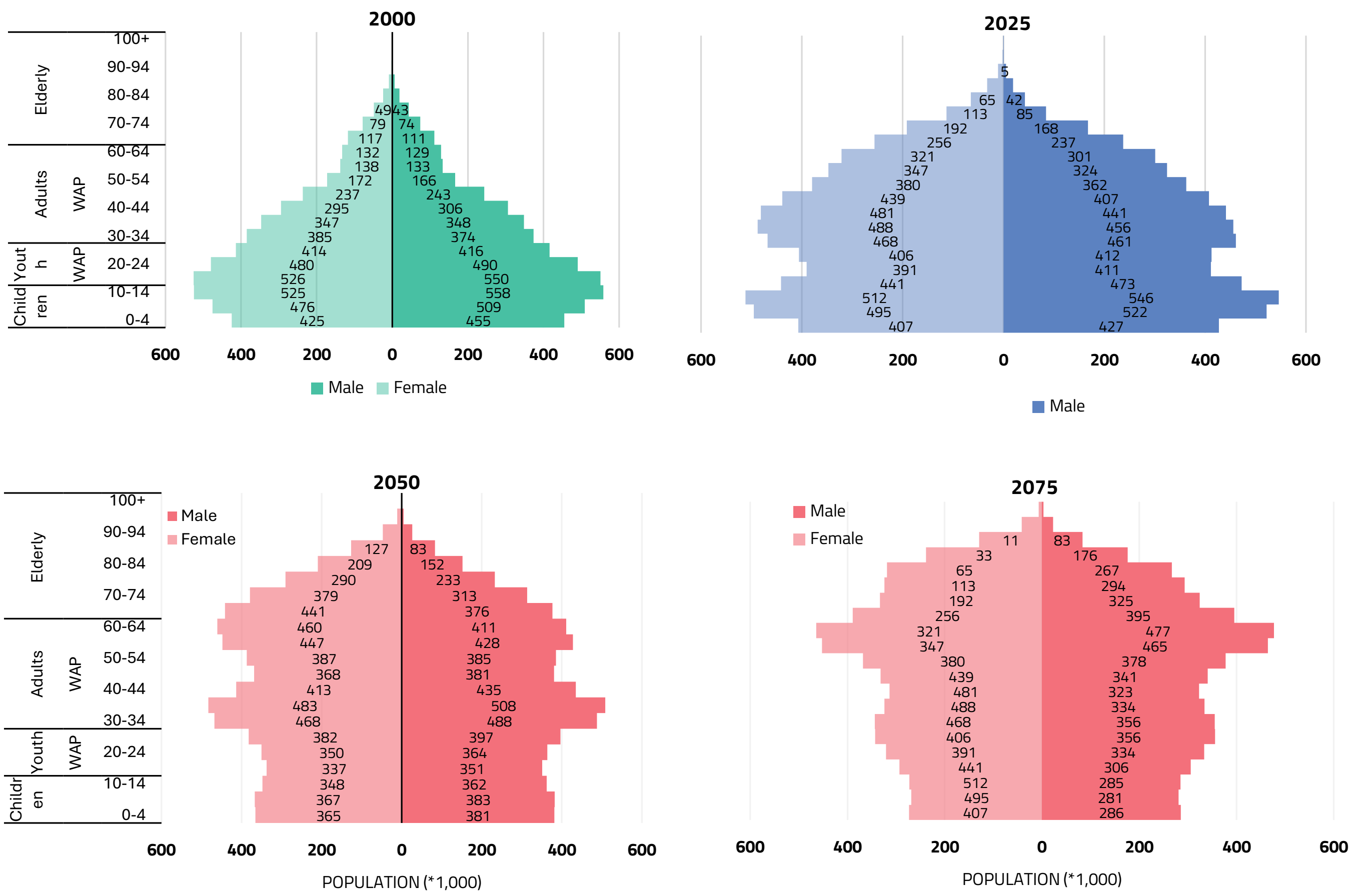
Source: UNDESA 2024.

Tunisia's slowing population growth is primarily driven by a declining fertility rate. The decline in fertility aligns with broader megatrends associated with an economy in transition. As gross national income (GNI) per capita has risen, urbanization has accelerated, shifting family structures from extended rural households to smaller urban ones. This shift has contributed to lower fertility due to space constraints, higher living costs, and increased access to modern family planning. For instance, according to the World Bank (2024, 2025b), the share of Tunisia's urban population rose significantly, from 39.7 percent in 1965—when the fertility rate exceeded 7 live births per woman—to 70.5 percent in 2023, when fertility had dropped below 2 (World Bank 2025b).

Alongside economic factors, family planning measures have played a crucial role in reducing Tunisia's fertility rate (Frini and Muller 2023). Tunisia has long promoted family planning through legal frameworks and public campaigns. Contraceptive use increased from 31 percent in 1978 to 62 percent in 2001, with little variation across regions or education levels. As a result, the crude birth rate has fallen by 71 percent since 1950. However, this sharp drop in birth rates has been largely counterbalanced by a 78 percent reduction in mortality rates, resulting in continued population growth, albeit at a slower pace.

As fertility rates decline more gradually than mortality rates, Tunisia's population structure has shifted, becoming progressively older (figure 1.3). Overall population growth will continue until 2052, much of it due to the substantial growth of the elderly population. The youth population will contract, alongside a decline in fertility rates, leading to fewer children and a smaller working-age cohort. If these projections hold, Tunisia's demographic profile, now relatively young, will be shifting toward a mature one by midcentury

Figure 1.3 ▪ Historical and Projected Population Structure in Tunisia: 2000, 2025, 2050, and 2075



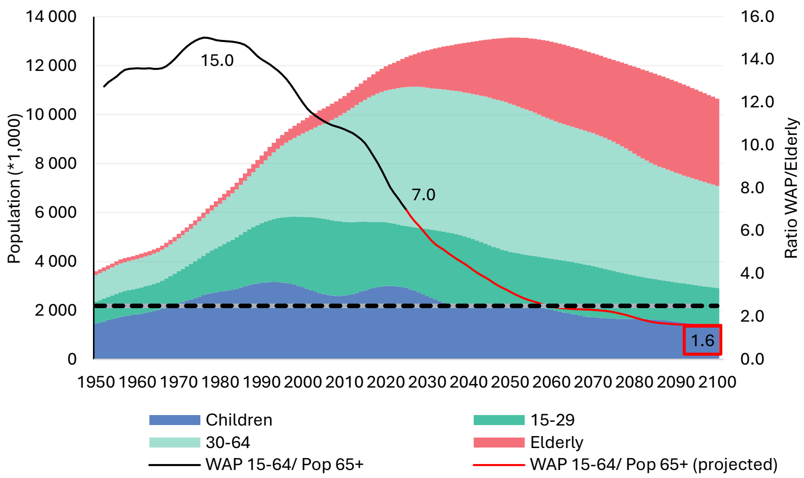
Source: UNDESA 2024.

The Capacity of the Labor Force to Support an Aging Population

Changes in Tunisia's demographic structure are expected to accelerate the decline in the ratio of working-age individuals to elderly persons. The inverse dependency ratio—measuring the number of people aged 15–64 for every person aged 65+—fell from 15 in 1975 to just 7 in 2023. This shift reflects declining fertility and rising life expectancy, which are simultaneously expanding the elderly population and shrinking the working-age group.

This trajectory is an early signal of the growing challenges Tunisia will face in sustaining pensions, health care, and an adequate labor supply over the long term. Although Tunisia's inverse dependency ratio remains well above the critical threshold of 2.5, commonly viewed as the point where labor markets and social protection systems face unsustainable pressures (Acosta et al. 2025), it is projected to reach this level by 2058 and to decline further to 1.6 by 2100 (figure 1.4).

Figure 1.4 ▪ Tunisian Population Structure and Inverse Dependency Ratio, 1950–2100

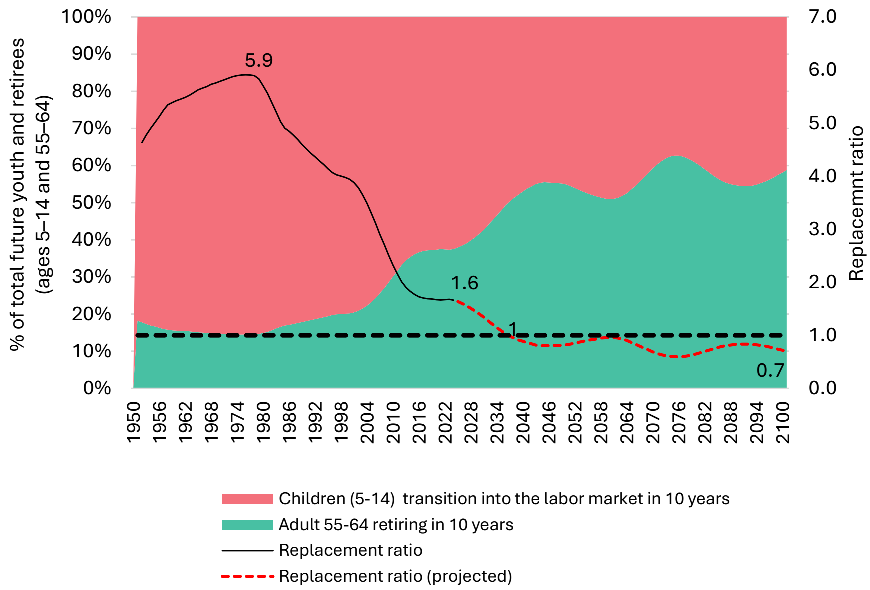


Source: UNDESA 2024.
WAP = working-age population.

The changing demographic structure will inevitably put pressure on Tunisia's labor market. As fewer young people enter the workforce, the country may face increasing challenges in sustaining labor supply. Over the next 10 years, children currently aged 5–14 will transition to the youth working-age population (15–24), forming a potential pool of new workers. At the same time, adults aged 55–64 will begin to retire, exiting the labor market.

The replacement ratio measures the number of today's children (aged 5–14) who will soon become the youth cohort of the working-age population (15–24), compared with today's adult working-age population (55–64), who will transition into retirement (65–74) over the same period. Reflecting Tunisia's demographic shift, the replacement ratio has declined sharply—from 5.9 in the mid-1970s to just 1.6 in 2023 (figure 1.5). This means that in 2023, there were still 1.6 young people available for every adult leaving the workforce in the following 10 years (figure 1.5). However, by 2037, the replacement ratio is projected to fall below 1, meaning that for the first time, the number of young people entering the workforce will no longer be sufficient to fully replace those retiring in subsequent years. While this demographic trend suggests a shrinking labor force, its impact will depend on additional factors such as labor force participation rates, retirement policies, and labor productivity gains.

Figure 1.5 ▪ Labor Replacement Ratio, 1950–2100



Source: UNDESA 2024.

Importantly, Tunisia remains within a demographic window of opportunity: the inverse dependency ratio is still above the critical threshold. In the short term, migration outflows are unlikely to undermine labor supply. However, careful management of migration will be key to safeguarding long-term demographic and economic stability.

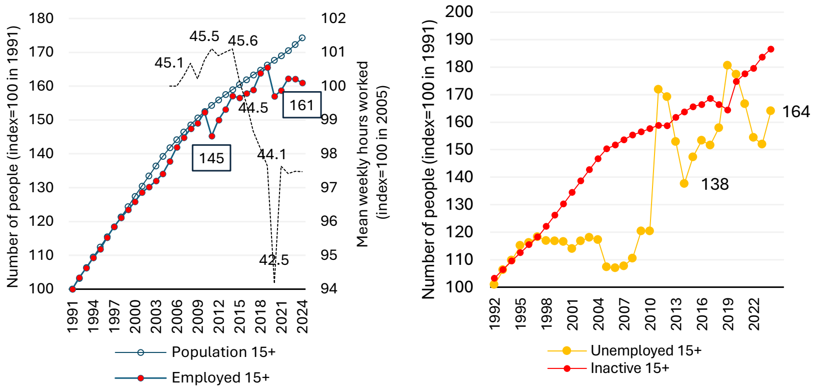
1.3 Labor Market Outlook

Over the past three decades, employment in Tunisia has grown, but at a slower pace than the working-age population (figure 1.6, panel A). According to International Labour Organization (ILO 2025) estimates, the working-age population (15+) rose steadily from 5.3 million in 1991 to about 9.3 million in 2024—a 74 percent increase. Over the same period, the number of employed individuals grew from 2.2 million to 3.5 million, a 61 percent increase. Yet, since employment expanded more slowly than the working-age population, the employment-to-population ratio declined. This trend was particularly pronounced in the aftermath of the 2011 economic crisis. Although a partial recovery followed, the COVID-19 pandemic led to renewed losses, with total employment in 2024 returning to its 2017 level.

Adjustments at the intensive margin of employment became more pronounced during the COVID-19 pandemic, although the decline in working hours had started earlier. Average weekly hours fell from a peak of 45.6 in 2011 to 44.1 in 2019, and further to 42.5 in 2020. By 2024, total weekly hours worked are estimated at 156.5 million, broadly returning to the level observed in 2017 (156.48 million). This sustained decline in hours worked points to a structural shift in labor market dynamics, with a growing share of workers engaged in part-time or reduced-hour employment.

As employment growth lagged demographic expansion, unemployment rose significantly faster over the same period (figure 1.6, panel B). Between 1991 and 2024, the number of unemployed increased by 64 percent, from 419,000 to 688,000. The sharpest increases occurred in 2011, amid the fall-out of the 2008 global financial crisis, and again at the outbreak of the COVID-19 pandemic in 2020, when job losses forced many previously employed individuals back into the labor market as job seekers.

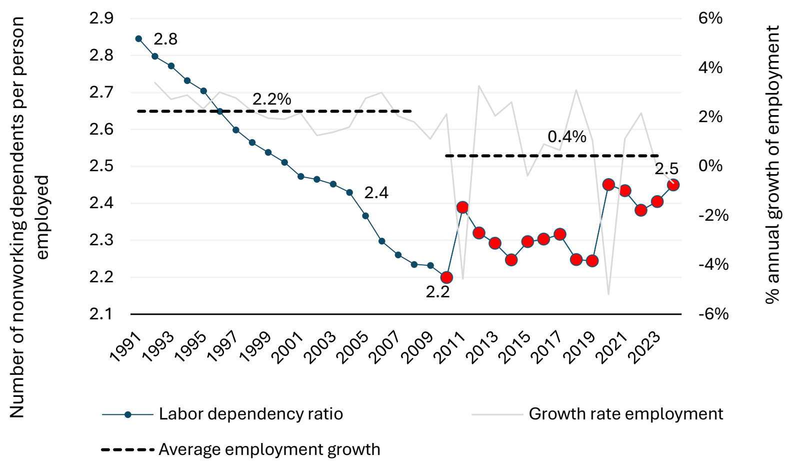
Figure 1.6 Trends in the Working-Age Population and Employment (left); Trends in Unemployment and Inactivity (right)



Source: ILO 2024a; UNDESA 2024.

Since 2011, Tunisia's labor dependency ratio has been on the rise, as slowing employment growth and demographic shifts have increased the burden on workers (figure 1.7). The ratio—measuring the number of nonworking individuals (children aged 0–14, and those 15+ who are unemployed or outside the labor force) relative to total employment—provides a snapshot of the combined demographic and labor market pressures in Tunisia. A higher ratio implies that each worker supports more dependents, intensifying pressure on labor markets and social protection systems. In Tunisia, the ratio declined sharply until 2011, consistent with sustained employment growth, reaching a low of 2.2 dependents per worker. Since then, however, the trend has reversed, as employment expanded by only 0.4 percent annually between 2012 and 2024.

Figure 1.7 Trends in Tunisia's Labor Dependency Ratio and Employment Growth



Source: ILO 2024b.

1.4 Closing Tunisia's Employment Gap: What Will It Take?

Closing Tunisia's employment gap and absorbing new labor market entrants will depend on three factors:

- **Macroeconomic conditions** that drive investment and growth;
- **Demographic dynamics** that determine labor supply and reshape demand through changes in population growth, aging, and migration; and
- The speed of **technological transformation,** which can displace jobs but also create new ones by boosting productivity.

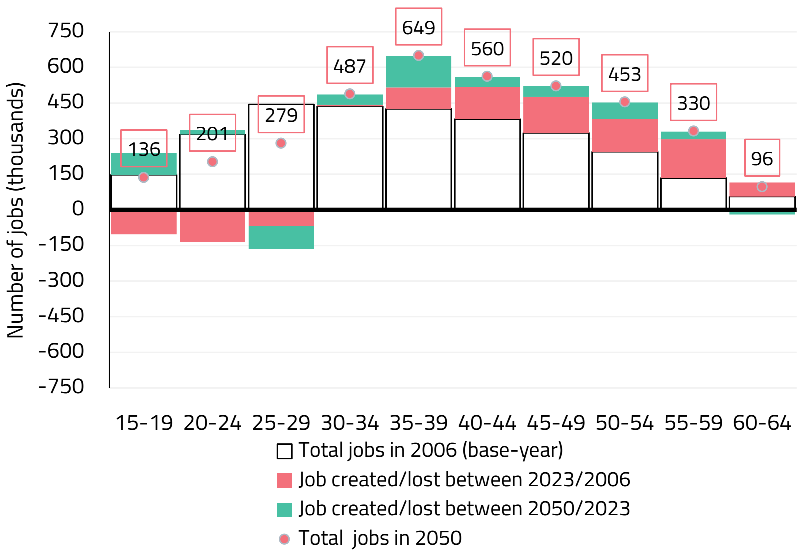
While precise job projections are difficult to make, demographic trends combined with econometric analysis provide useful insights into the scale of the challenge.

Tunisia's labor force survey data for 2006–23 allow an assessment of how employment responds to population growth across age groups. Toward this aim, the employment of five-year cohorts was regressed on cohort population, with controls for GDP per capita and its lag. Results show that youth and mature cohorts exhibit elasticities above 1, meaning employment expands faster than population. By contrast, elasticities for the 30–44 age cohorts are lower, and for the entire working-age population (15–64) elasticities fall to 0.61, confirming that overall job growth lags behind demographic growth.

Applying these elasticity estimates to United Nations population projections for 2050, with GDP per capita assumed to grow 2 percent a year (consistent with Tunisia's 2006–23 trend excluding COVID-19), suggests that around 359,000 additional jobs will be created by 2050 relative to 2023. This translates to an average of 13,300 net new jobs per year. Yet the distribution across age groups will be uneven. Middle-aged cohorts are projected to see the largest gains (+132,000 jobs, rising from 515,000 in 2023 to 648,000 in 2050). By contrast, gains among the youngest groups will be more modest: +91,000 jobs for those aged 15–19, and +18,000 for those aged 20–24. Despite these increases, employment among youth will remain below 2006 levels, reflecting the lasting effects of earlier job losses (figure 1.8).

The outlook for the cohort aged 25–29 is particularly concerning (figure 1.8). Employment is projected to fall by 97,000 jobs compared to 2023, and by 164,000 relative to 2006, with total employment declining from 435,000 in 2006 to 376,000 in 2023, and further to 279,000 by 2050. This contraction mirrors demographic trends, with the population aged 25–29 expected to shrink by 19 percent compared to 2006 and 11 percent compared to 2023. These projections underscore how demographic pressures are reshaping Tunisia's labor market and highlight the urgency of policies to boost job creation, particularly for young adults.

Figure 1.8 Projected Number of Jobs Created in Tunisia by 2050

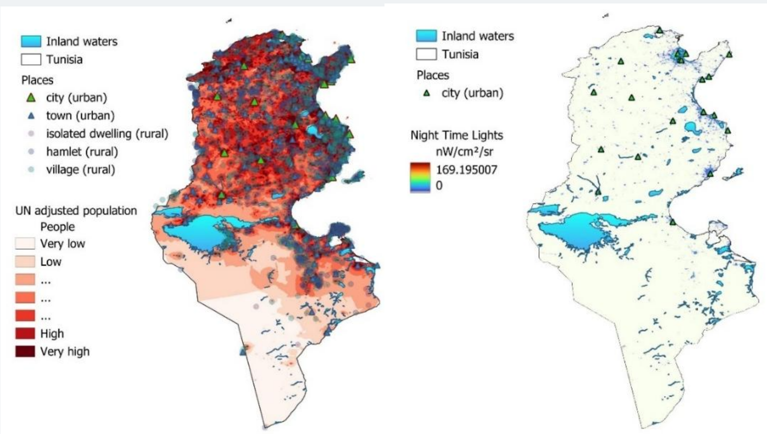


Source: Original calculations based on data from UNDESA, Population Division.

Box 1.2 Where Will New Jobs Likely Need to Be Created?

To identify the geographic areas where new jobs are most likely to emerge, a spatial analysis was conducted, combining several data sources and assuming no change in relevant policies. Subnational data from the 2013–17 Tunisian Labor Force Survey provided employment-to-population ratios for urban and rural areas across the 24 governorates. These were combined with United Nations spatial data and OpenStreetMap features to estimate population distribution across different settlement types (cities, towns, villages, and isolated settlements). Jobs were then allocated to these settlements in proportion to their populations. To account for local economic conditions and produce more accurate estimates, nightlight intensity—a proxy for economic activity—was incorporated to adjust the job estimates and reflect variation in economic activity that may not be explained by population size alone (figure B1.2.1).

Figure B1.2.1 Population Density Distribution across Tunisia (left); Spatial Distribution of Nighttime Light Intensity (right)

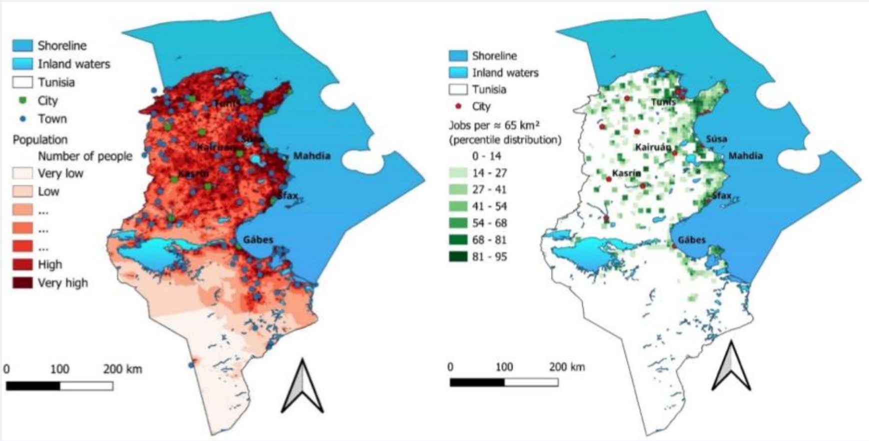


Source: World Bank staff calculations using data from United Nation, 2013–17 labor force survey, VIIRS Nighttime Lights Open Street Map.

The results forecast that, assuming no policy change, an estimated 90 percent of jobs in Tunisia will be held by people living in urban areas—including cities, towns, and peri-urban settlements where commuting is common—while only 9 percent will be held by residents of rural areas. This aligns with Tunisia's ongoing urbanization trend: around 70 percent of the population resides in urban centers (World Bank 2025b).

Most new jobs will be concentrated along Tunisia's coastal urban corridor (figure B1.2.2, right panel). Tunis alone is expected to account for about 60 percent of new jobs, followed by Gabès and Sfax (10 percent each), and Bizerte (8 percent).

Figure B1.2.2 Population density distribution across Tunisia (left); areas with the largest number of jobs expected to be created, highlighting key urban centers (right)



Source: World Bank staff calculations using data from United Nations and 2013–17 labor force survey.

The Role of Tunisia's Untapped Workforce in Addressing International Labor Demand amid Domestic Job Shortages: Tunisia's Untapped Workforce

As Tunisia faces both high unemployment and high inactivity rates, a large share of its workforce remains underutilized. More than half of the working-age population is outside the labor market (neither employed nor unemployed), while 16 percent of the active labor force is unemployed.

Inactivity is concentrated among those with lower levels of education, women, and young people (figure 1.9). Among the 2.25 million working-age Tunisians with no formal schooling, nearly 9 in 10 are inactive. Inactivity declines sharply with higher education—only 2 in 10 individuals with tertiary education are inactive. This pattern suggests that many low-educated individuals withdraw from the labor force because they perceive themselves as lacking the skills required by the labor market.

Yet higher education does not guarantee employment (figure 1.9). While graduates are more likely to participate in the labor market, their unemployment rate is nearly 1.5 times the national average, reaching 23 percent. Young people are particularly disadvantaged: their unemployment rate is 3.5 times higher than that of adults and more than double the national average.

Figure 1 Labor Market Indicators by Age, Gender, and Level of Education, 2023

Source: INS 2023.

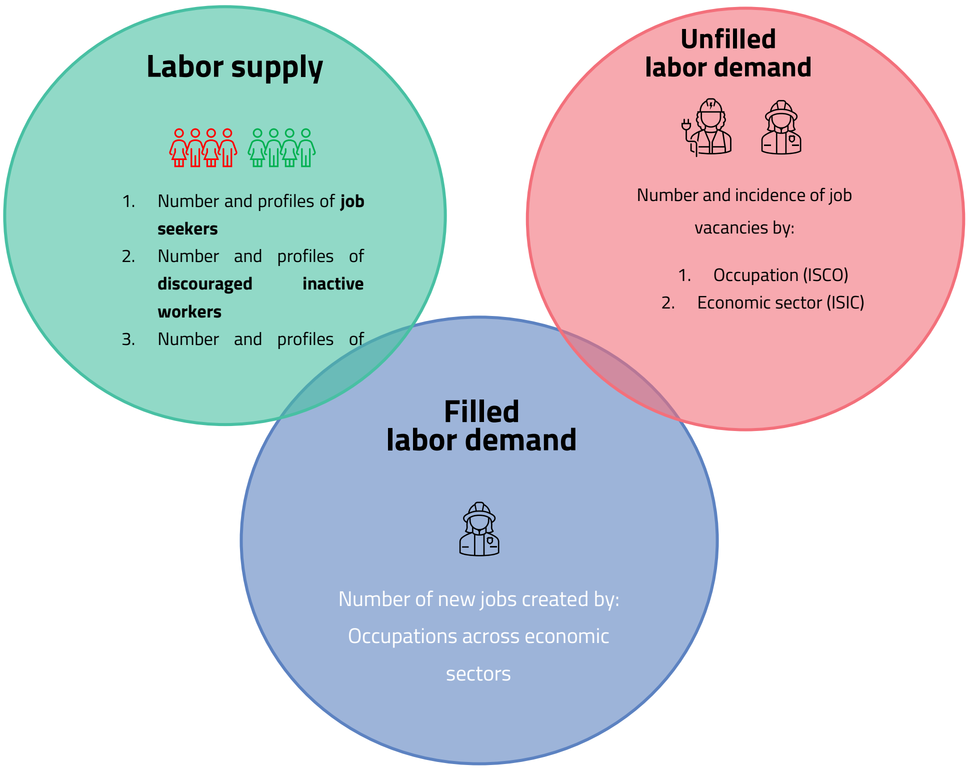
These parallel trends—low inactivity but high unemployment among the more educated, alongside high inactivity but low unemployment among the less educated—highlight deep structural mismatches in Tunisia's labor market. Addressing these mismatches would require not only encouraging low-educated workers to enter the labor force but also ensuring that educated job seekers can access available opportunities—whether in domestic markets or through international labor mobility.

2. CRITICAL OCCUPATIONS FACING A LABOR SHORTAGE

2.1 Conceptual Framework of the Labor Market Assessment

This labor market assessment looks at three factors—labor supply, filled labor demand, and unfilled labor demand—from the perspective of both supply and demand (figure 2.1). Taken together, these factors capture the availability of workers and the extent to which jobs are created and matched, while also highlighting the unmet demand that persists in the market. The result is a comprehensive view of Tunisia's labor market dynamics that can be used to inform the design of a Global Skills Partnership (GSP).

Figure 2.1 Three Factors Considered in the Labor Market Assessment



The assessment relies on two complementary levels of analysis. First, descriptive statistics provide a broad overview of labor supply and demand trends, highlighting patterns of employment, unemployment, inactivity, job creation by sector and occupation, and vacancies (chapters 3 and 4). Second, a Critical Occupation List (COL) is used to help identify specific occupations in shortage (chapter 6). Together, these two levels of analysis link general labor market dynamics to actionable evidence on where policy interventions and skills development are best targeted.

2.2 Descriptive Analysis

A profile of the working-age population can be defined by considering three groups: (1) the unemployed, representing the immediate pool of available labor; (2) people currently detached from the labor market who could reenter under favorable conditions; and (3) the employed, engaged in formal or informal work. Each group is systematically profiled by age, sex, and education to reveal which segments of the workforce hold untapped potential. These profiles are instrumental in anticipating where domestic labor may be insufficient and where external opportunities—including those made possible by a Global Skills Partnership—could become relevant.

A descriptive analysis of filled labor demand focuses on net job creation, disaggregated by sector and occupation. This makes it possible to identify the economic activities that generate the largest employment gains and the occupations that absorb the bulk of new jobs. Understanding these dynamics is essential for distinguishing sectors that can absorb labor domestically from those where demand is stagnant.

The descriptive analysis of unfilled labor demand examines the stock of open vacancies, disaggregated by sector and occupation, in both absolute and relative terms. Investigating the reasons why positions remain unfilled—such as skills mismatches, geographic barriers, poor working conditions, or wage constraints—helps to pinpoint the structural frictions that limit labor market adjustment.

2.3 The Critical Occupation List

After mapping broad labor market trends with descriptive statistics, the analysis turns to identifying specific occupations where shortages are structural rather than temporary. To this end, the assessment uses the Critical Occupation List—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 difficulties and persistent mismatches between labor demand and supply (World Bank 2019, 2020a).

Box 2.1 The Critical Occupation List at a Glance

The Critical Occupation 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**[1] at the 4-digit level, ensuring:

1. **Precision and operational relevance**. Shortages are identified at a granular level that distinguishes 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 chapter 3, box 3.3, 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

[1] The International Standard Classification of Occupations (ISCO), developed by the 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/.

initiatives. Second, it provides international comparability, allowing the findings for Tunisia to be benchmarked against other countries that employ the same classification system.

The construction of the COL relies on a set of quantitative indicators designed to capture various dimensions of occupational tightness (i.e., situations where job vacancies for certain occupations outnumber available workers) 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 skills' 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.

Eight indicators are computed at the 4-digit ISCO level, drawing on two complementary sources: the Tunisian Labor Force Surveys (Enquête nationale sur la population et l'emploi) and data on online job postings from Lightcast. They are grouped into three analytical categories, each capturing a distinct dimension of labor demand dynamics:

- **First, employment-based indicators (2)** track changes in employment levels and contract creation, signaling shifts in labor utilization at the extensive margin. Rising employment in specific occupations may point to increasing demand.
- **Second, earnings-based indicators (3)** measure changes in median posted wages. Persistent wage growth suggests supply constraints, as employers raise pay to attract scarce skills.
- **Finally, volume-based indicators (3)** monitor job vacancy postings over short- and medium-term horizons. Sustained increases, especially when not matched by hiring, reflect employer difficulties in filling positions and tightening labor markets.

Table 2.1 Indicators Used to Construct the Critical Occupation List (COL), with Data Sources and Interpretation as Signals of Shortage

Indicator	Data Source	Rationale
1-year employment growth	Labor Force Survey (2022–23)	A positive annual change in total wage employment indicates rising demand for an occupation, suggesting potential unmet labor needs.
1-year decrease in education level	Labor Force Survey (2022–23)	A decline in average education levels among employed workers may imply that employers are lowering qualification requirements to fill vacancies.
1-year growth in median hours worked	Labor Force Survey (2022–23)	An increase in median weekly hours worked suggests employers are relying more heavily on existing staff due to hiring difficulties.
1-year wage growth (median)	Lightcast online job postings (2022–24)	Short-term wage increases may reflect rising demand or employer efforts to attract scarce workers.
3-year wage growth (median)	Lightcast online job postings (2022–24)	Sustained wage growth over a longer period strengthens the signal of persistent shortages and heightened competition for workers.
1-year growth in job vacancy postings	Lightcast online job postings (2022–24)	A steady increase in postings indicates strong employer demand and potential hiring challenges.
3-year growth in job vacancy postings	Lightcast online job postings (2022–24)	Persistent growth over three years suggests structural rather than cyclical recruitment challenges.
1-year growth in job vacancy rate	Lightcast online job postings (2022–23); Labor Force Survey (2022–23)	By controlling for employment levels, this indicator captures the intensity of unmet demand within each occupation.

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.

The threshold used is a distribution-based one 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 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 support a reliable assessment. For occupations with three to five indicators, a stricter rule is applied: at least 75 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 eight 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.

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, strengthen training systems, and improve labor market efficiency.

Box 2.2 Testing Overlap and Complementarity of Labor Market Indicators Signaling Shortages

Before combining shortage signals into the Critical Occupation List (COL), it is essential to test how the eight indicators relate to one another. This correlation analysis (table B2.2.1) 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 (for example, 1- and 3-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 occupations is retained.

The results show that no indicator pair is strongly correlated (|r| > 0.5). The highest observed correlation—between 1- and 3-year job vacancy growth—is only 0.40. This confirms that while some indicators capture related pressures, they remain sufficiently distinct to warrant retention. Accordingly, all eight are included, ensuring that the COL reflects a comprehensive and multidimensional picture of occupational shortages.

Table B2.2.1 Correlation Matrix of Labor Market Shortage Indicators

	Employment Growth (1 year)	Increase in Hours (1 year)	Education Decline (1 year)	Wage Growth (1 year)	Wage Growth (3 years)	Job Vacancy Growth (1 year)	Job Vacancy Growth (3 years)	Job Vacancy Growth Rate (1 year)
Employment growth (1 year)	**1.00**							
Increase in hours (1 year)	0.00	**1.00**						
Education decline (1 year)	0.01	0.08*	**1.00**					
Wage growth (1 year)	-0.07	-0.13*	-0.01	**1.00**				
Wage growth (3 years)	-0.06*	-0.27*	-0.06	0.25*	**1.00**			
Job vacancy growth (1 year)	0.07	0.18*	0.03	-0.01	0.01	**1.00**		
Job vacancy growth (3 years)	0.01	0.04	0.13*	0.04	0.03	0.40*	**1.00**	
Job vacancy growth rate (1 year)	-0.26*	0.00	-0.04*	0.00	0.31*	-0.21*	0.22*	**1.00**

*Significant at the 10 percent level ($p < 0.10$)

2.3 Data Sources

To analyze the Tunisian labor market, this report combines multiple complementary data sources at the individual, firm, and country levels. Together, they provide a solid foundation for assessing labor supply, filled and unfilled labor demand, and the skill content of occupations—ultimately supporting evidence-based recommendations for a GSP. The paragraphs below describe the main data sources used, structured around the three components of the labor market.

Labor supply. The primary source of supply-side data is the Tunisian Labor Force Survey 2023 (Enquête Nationale sur la Population et l'Emploi, ENPE), which offers nationally representative data on the working-age population, disaggregated as employed, unemployed, and inactive individuals. Key variables include:

1. **Labor force status:** Employed, unemployed, and inactive individuals.
2. **Employment characteristics**: Occupation, sector of activity, type of employment (wage, self-employed, informal), hours worked, contract type.
3. **Unemployment and inactivity**: Job search activity, reasons for unemployment or inactivity, duration of unemployment.
4. **Demographic information**: Age, sex, education level, region, and other sociodemographic characteristics.

Box 2.3 Employed, Unemployed, and Inactive: Who Are They?

The **21st International Conference of Labour Statisticians (ICLS)**, convened in Geneva, Switzerland, by the Governing Body of the International Labour Office on October 11–20, 2023, established updated international standards for work statistics. These standards provide countries with harmonized reference concepts and definitions of **work, employment, unemployment,** and **inactivity**, ensuring comparability across statistical systems (ILO 2023).

1. **Work** refers to any activity performed by persons of any sex and age to produce goods or provide services for their own use or for others. Five mutually exclusive forms of work are identified, of which the two most relevant for this report are:
   - **Own-use production work**: The production of goods and services for final use by the household (e.g. subsistence farming, collection of water, care services).
   - **Employment work**: Work performed for others in exchange for pay or profit, whether in cash or in kind.
2. **Subsistence foodstuff producers**, mostly found in the informal sector, are an important category of own-use production workers. They are individuals engaged in agriculture, fishing, hunting, or gathering to produce food for household consumption, excluding activities carried out for leisure or recreation.
3. **Employment workers (persons in employment)** are all working-age individuals (15 years and above) who, during a short reference period (typically one week), engaged in any activity to produce goods or provide services for pay or profit. This group includes those:
   - **"At work,"** that is, who worked at least one hour in a job.
   - **"Not at work"** due to a temporary absence or specific working-time arrangements (e.g., shift work, flexitime, compensatory leave).

The key distinction between own-use production workers and employment workers lies in the intended destination of production: the former produce goods and services for household consumption, while the latter work for pay or profit.

It should be noted, however, that the data used in this report, drawn from the *Tunisian Labor Force Survey*, are based on the 13th ICLS definition of employment (ILO 2013), under which employed persons include all individuals of working age engaged in work either for their own consumption or for pay/profit.

4. **Persons in unemployment (job seekers)** are defined as all working-age individuals who:
   - Were **not in employment** during the short reference period;
   - Had undertaken **job-search activities** in the preceding four weeks (such as seeking wage work, self-employment, or agricultural opportunities, including part-time, informal, temporary, seasonal, or casual jobs, domestically or abroad);
   - Were **available to start work** if a suitable opportunity arose.

Taken together, the employed and unemployed constitute the **labor force**, which reflects the extent of labor availability in a country—capturing both those already contributing to economic activities and those actively seeking to do so.

5. **Inactive persons** are all working-age individuals who are neither employed nor unemployed and therefore fall outside the labor force. Inactivity may result from being engaged in education or household responsibilities, being in retirement, or being discouraged. So-called discouraged individuals are available for work but have stopped searching because they believe no suitable opportunities exist. Unlike the unemployed, they are not actively seeking employment and are therefore excluded from official unemployment statistics. Nevertheless, they represent a **potential labor force** that, with targeted labor market interventions, could be reengaged in the labor market.

The National Survey on International Migration in Tunisia (HIMS, 2021) adds a cross-border perspective to the labor supply analysis, by profiling two key groups: (1) Tunisians currently living abroad, and (2) those expressing intentions to emigrate. For the first group, the survey provides information on destination countries, changes in labor force status pre- and post-migration, and current employment sectors. For the second group, the survey reveals intended destinations and current labor market status in Tunisia.

Labor demand is captured by combining several complementary data sources:

- **Tunsian Labor Force Survey (Enquête Nationale sur la Population et l'Emploi, ENPE), 2022 and 2023,** to estimate the number of paid jobs created or lost during the period, disaggregated by economic sector and occupation.

- **Tunisian World Bank Enterprise Survey (WBES 2023),** which, based on a representative sample of private sector firms in Tunisia (excluding agriculture), provides information on firms' hiring difficulties. Sectors where a large share of firms face recruitment challenges offer a proxy for skill shortages across the labor market.

- **Enterprise Survey on Job Vacancies and Skills**. Conducted by the World Bank in collaboration with the Institut National de la Statistique (INS) and the Italian-Tunisian Chamber of Commerce, this nationally representative survey of small (5–19 employees), medium (20–49 employees), and large private firms (50+ employees) provides detailed information on open positions (see box 2.4 for a detailed description of the survey). It captures the number of vacancies per firm, the occupations and skills required to fill these vacancies, and the reasons certain vacancies remain unfilled, thereby shedding light on structural recruitment challenges and skill mismatches.
- **Online job vacancies (OJV) data from LightCast** allow analysis of the skill content of in-demand occupations, including trends in job postings, wage patterns, and skill requirements across sectors and occupations at the ISCO-4 digit level. They also help detect emerging skills that are gaining relevance in the Tunisian labor market.

Box 2.4 The Enterprise Survey on Job Vacancies and Skills: A New Data Source for Labor Demand Analysis in Tunisia

The Enterprise Survey on Job Vacancies and Skills is the central data source used in this report to analyze the drivers of labor demand and skill shortages in Tunisia. The survey was designed and implemented by the World Bank, in collaboration with the Institut National de la Statistique (INS) and the Tunisian-Italian Chamber of Commerce. Its primary objective is to identify the sectors that create jobs, the occupations most in demand, and the specific skills employers are seeking—covering both Tunisian and Italian-owned firms.

To ensure national representativeness, the survey employs a one-stage stratified sampling design. Firms are classified by economic activity (according to Tunisia's national classification of economic activities) and by size, distinguishing between small (6–19 employees), medium (20–49), and large (50+) enterprises. The target sample includes 2,000 firms, of which 250 are Italian owned, allowing for a robust analysis of skill requirements. With this design, results are nationally representative within a margin of error of 3 percent.

The questionnaire consists of three main modules. The first collects information on firm characteristics, such as sector, size, ownership, workforce composition, and orientation toward domestic or international markets. The second focuses on recruitment activity and hiring intentions, capturing current and planned vacancies, seasonal hiring, and the skills and qualifications sought. The third module investigates recruitment challenges and skill gaps, exploring both technical and soft skill shortages as well as broader hiring constraints, such as limited access to candidates or ineffective job matching.

All firms in the sample are georeferenced, enabling integration with spatial datasets (e.g., OpenStreetMap). This feature allows the analysis of firm concentration in economically dynamic zones; proximity to infrastructure such as ports, roads, and industrial areas; and the spatial distribution of labor demand and recruitment challenges.

By providing detailed, up-to-date evidence at the firm level, this survey fills a critical gap in Tunisia's labor market data landscape. Unlike standard household or enterprise surveys, it offers granular insights into vacancies and occupation-specific skill requirements. These findings directly inform the design of GSPs, ensuring that vocational training systems and mobility pathways are better aligned with labor market needs, thereby strengthening employment prospects domestically and abroad.

This chapter has outlined the analytical approach and data sources used to assess labor market dynamics in Tunisia. The next chapter builds on this foundation by operationalizing the assessment, beginning with an analysis of the labor supply.

3. AN ANALYSIS OF TUNISIA'S LABOR SUPPLY

Looking specifically at labor supply, the assessment provides a comprehensive characterization of Tunisia's working-age population (15+) and their participation in the labor market. Using data from the 2023 Tunisian Labor Force Survey (Enquête nationale sur la population et l'emploi), the assessment examines the size and composition of both the labor force and the inactive population, and develops detailed profiles of employed, unemployed, and inactive individuals by age, gender, and education.

The analysis is guided by several key questions: *How large is Tunisia's labor force, and how many people remain inactive? What are the main characteristics of employed, unemployed, and inactive groups, and to what degree are workers underqualified or overqualified for their jobs? How do unemployed people search for employment, and what are the main reasons for inactivity—whether education, household responsibilities, lack of skills, or discouragement?* Importantly, the analysis also considers the possibility of engaging segments of the inactive population and reintegrating them into the local or international labor market.

Beyond describing current labor force dynamics, the analysis emphasizes their policy relevance. Persistent inactivity and unemployment—particularly among youth and women—represent untapped potential that could support local or international economic growth if effectively mobilized. Understanding these dynamics is therefore central for policies on skills development, job creation, and international labor mobility**.**

Additionally, the chapter draws on microdata from the Tunisian International Migration Survey (Tunisia-HIMS) to profile both current and prospective migrants. It explores their age, gender, education, and labor market status, as well as their actual or intended destination countries. Taken together, this information offers a comprehensive view of Tunisia's labor supply—spanning workforce participation, skills mismatches, job search behavior, and migration aspirations—and provides a solid foundation for designing strategies that align skills with domestic opportunities while managing international mobility.

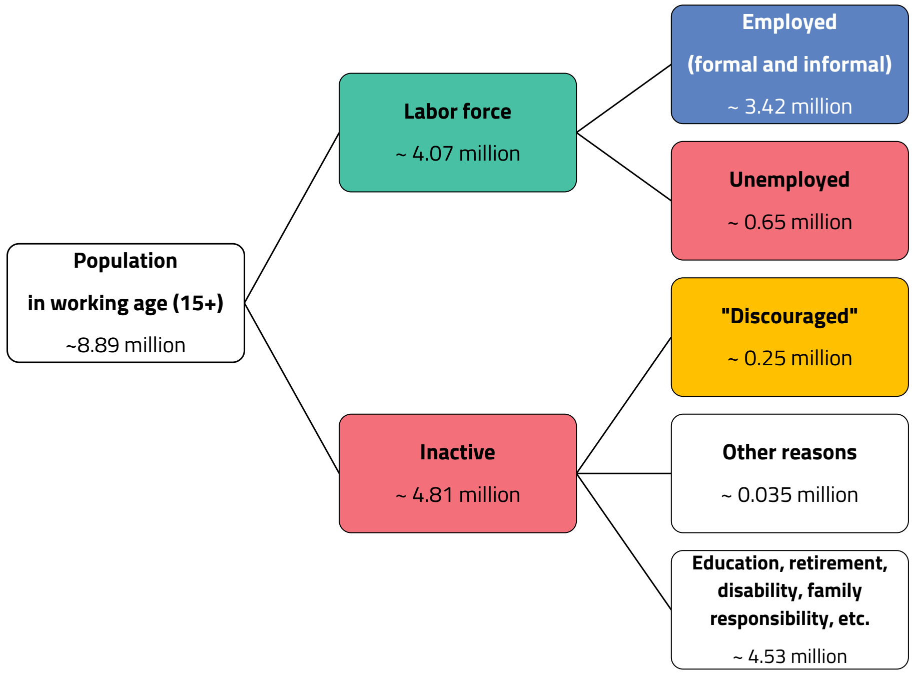
3.1 Structure of the Working-Age Population

In 2023, Tunisia's working-age population (15+) stood at 8.9 million (figure 3.1). According to the 2023 Labor Force Survey, Tunisia's working-age population was almost evenly divided between those in the labor force and those outside the labor force. In the labor force, 4.1 million were employed and about 650,000 were unemployed. Meanwhile, 4.8 million were economically inactive.

Most of the 4.53 million inactive individuals were outside the labor market due to being engaged in education, retirement, or family responsibilities, or simply being discouraged from job seeking. The assessment finds that within this large group population, an estimated 250,000 could potentially reenter the labor force if provided with adequate support. This untapped labor reserve represents about 5.3 percent of the inactive population.

Taken together, almost 10 percent of Tunisia's working-age population (about 900,000 people) is either unemployed or discouraged but willing and able to work. This pool of potential workers (650,000 unemployed and 250,000 discouraged) represents an important labor supply that could be mobilized to meet domestic labor market needs or tapped for international labor mobility initiatives.

Figure 3.1 Composition of the Working-Age Population in Tunisia



Source: Based on data from INS (2023).
Note: "Discouraged" workers are willing to work but discouraged from seeking employment.

Box 3.1 Discouraged Workers in Tunisia: Who Are They?

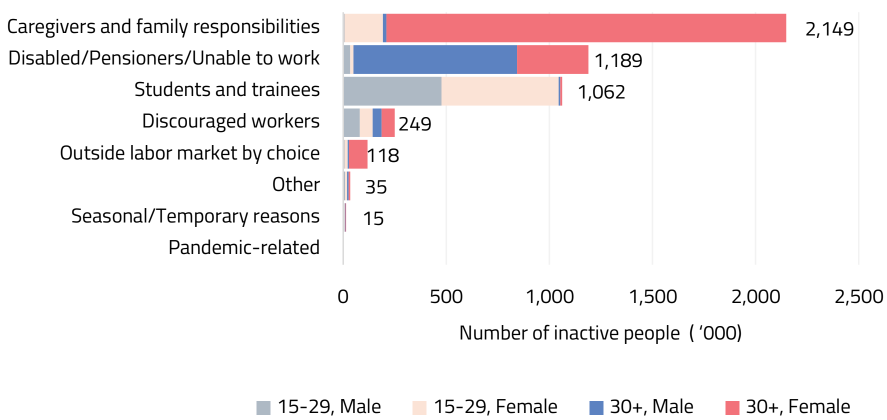
According to the International Labour Organization (ILO 2015), *discouraged workers* are individuals who want to work but are not actively seeking employment because they believe that no suitable jobs are available for them. Under current international statistical standards, discouraged workers are classified as not economically active and therefore outside the labor force. As a result, they are not counted among the unemployed in official statistics, even though they represent a potential labor reserve.

This assessment of Tunisia's labor market uses the ILO definition of discouraged workers to include all persons of working age who are willing to work but not actively seeking employment, citing one or more of the following reasons: (1) financial or logistical barriers (e.g., cost of job search, transport difficulties); (2) perceived age-related discrimination by employers; (3) limited knowledge of job search methods or channels; (4) frustration or loss of hope after unsuccessful job search efforts; (5) perceived mismatch between available skills and labor market requirements; and (6) perceived lack of suitable job opportunities in the local area.

3.2 A Profile of the Inactive

Of 4.8 million inactive individuals in Tunisia, nearly 2.1 million (45 percent) are inactive due to caregiving and family responsibilities (figure 3.2). This is followed by 1.18 million who are inactive because of retirement or inability to work, and just over 1 million who are inactive due to participation in education or training.

Figure 3.2 Number of Inactive Individuals in Tunisia, by Reason for Inactivity

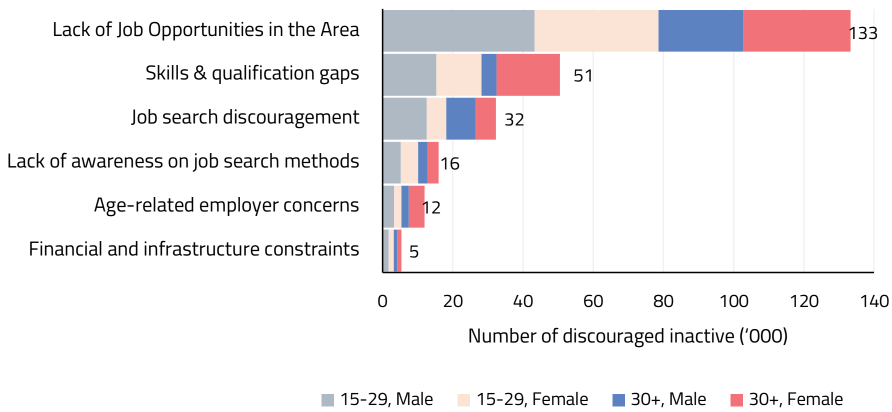


Source: Based on data from INS (2023).

Women are disproportionately represented among the inactive population. They account for more than two-thirds of all inactive individuals—about 3.3 million women. Young women (ages 15–29) representing 18 percent and adult women another 51 percent of the total inactive population. This imbalance is largely driven by caregiving responsibilities: of the 2.1 million people inactive due to family duties, 99 percent are women, underscoring the gender-specific constraints that limit women's labor force participation in Tunisia.

Despite being classified as inactive, a segment of this population retains a potential attachment to the labor market, particularly those identified as discouraged workers. This group—around 250,000 people, or 5.3 percent of the inactive population—has stopped seeking employment due to barriers such as lack of suitable job opportunities, mismatches between skills and labor demand, or job search fatigue (see box 3.1). Although currently inactive, they constitute a latent labor reserve that could be reengaged through targeted interventions (figure 3.3).

Figure 3.3 Discouraged Inactive Population in Tunisia, by Reason for Discouragement



Source: Based on data from INS (2023).

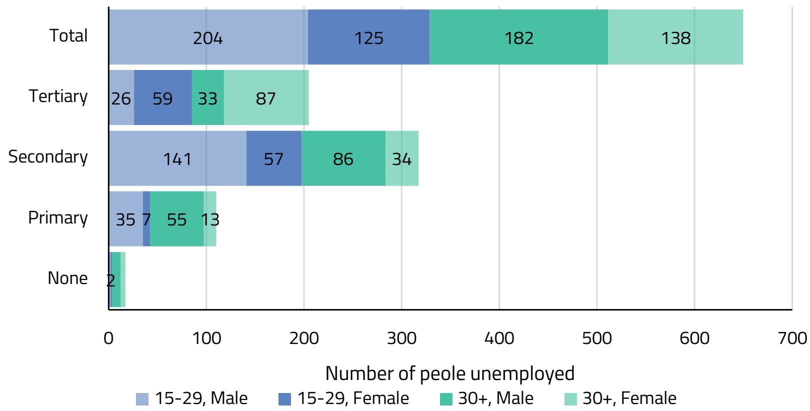
Among discouraged workers, an estimated 133,000 individuals have abandoned their job search because they believe no suitable jobs exist in their area. Notably, youth (ages 15–29) account for 58 percent of this group. Another 51,000 individuals, 55 percent of whom are young women and men, have stopped searching because they believe their skills do not match those demanded in the labor market.

The discouraged represent a largely untapped pool of human capital. Among the 133,000 individuals who report lack of local job opportunities, over two-thirds possess at least a secondary education, and 12 percent hold tertiary qualifications. This educational profile suggests there is significant potential to mobilize this group. By strategically aligning the skills of this group with emerging employment opportunities—both domestically and abroad—Tunisia can mitigate the risk of talent erosion and foster a more resilient workforce capable of adapting to global labor market demands.

3.3 A Profile of the Unemployed

Tunisia's unemployed population is estimated at 650,000 individuals, with youth representing the largest share (figure 3.4). More than half of the unemployed (329,000) are young people aged 15–29, and men account for three out of five unemployed individuals, making young men the most affected group. Education levels among the unemployed are relatively high: eight in ten have completed at least secondary schooling, while three in ten hold a tertiary degree.

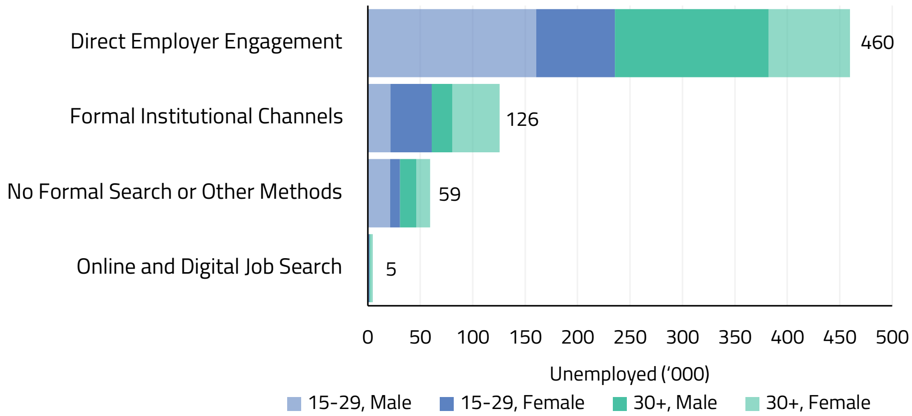
Figure 3.4 Unemployed Individuals in Tunisia, Classified by Level of Education Attained



Source: Based on data from INS (2023).

The majority of job seekers rely on direct applications to employers, highlighting a strong preference for informal job search methods (figure 3.5). A majority of the unemployed (71 percent, or about 460,000 individuals) report applying directly to employers as their main method of seeking work. By contrast, only 27 percent (126,000 individuals) use formal institutional channels, including registration with employment offices or participation in government labor programs.

Figure 3.5 Unemployed Individuals in Tunisia, Classified by Method of Job Searching



Source: Based on data from INS (2023).

This evidence shows that while direct applications to employers remain the dominant job search strategy, formal support systems—such as employment offices and government programs—continue to serve a crucial share of unemployed individuals. Both channels attract a broad spectrum of job seekers, spanning youth and adults alike, underlining their complementary role in linking workers with opportunities.

Unemployment in Tunisia—especially among youth—remains structurally high, reflecting deep-rooted economic constraints and limited job creation. Yet, this challenge is exacerbated by inefficiencies in job matching, which prevent available workers and existing vacancies from being effectively connected. In other words, even when jobs exist, the lack of efficient matching mechanisms can worsen already high unemployment levels.

Enhancing the efficiency of job matching through modern, technology-driven solutions could help reduce these inefficiencies and better align labor supply with demand. Strengthening institutional systems would not only improve access to domestic opportunities but, if linked to international job vacancy databases, could also expand pathways for skilled workers abroad. This would help absorb Tunisia's surplus of educated job seekers while mitigating risks of long-term unemployment, skills erosion, and talent underutilization.

Box 3.2 Leveraging Machine Learning for Job Matching

Machine learning is reshaping how job seekers and employers connect. Public employment agencies increasingly use skills-based matching platforms that go beyond formal qualifications to include technical, generic, and soft skills (World Bank 2023).

For these systems to work, structured data on both job vacancies and job seekers are essential, categorized under a common skills taxonomy. With this foundation, algorithms such as Random Forest can predict how well candidates fit vacancies by analyzing historical hiring patterns and identifying complex relationships between skills, experience, and job requirements.

Unlike keyword-based systems, machine learning models generate probabilistic match scores, dynamically ranking candidates and vacancies. As new data on skills demand and hiring trends are added, the algorithms adapt, continuously improving the accuracy and relevance of job recommendations

3.4 A Profile of the Employed

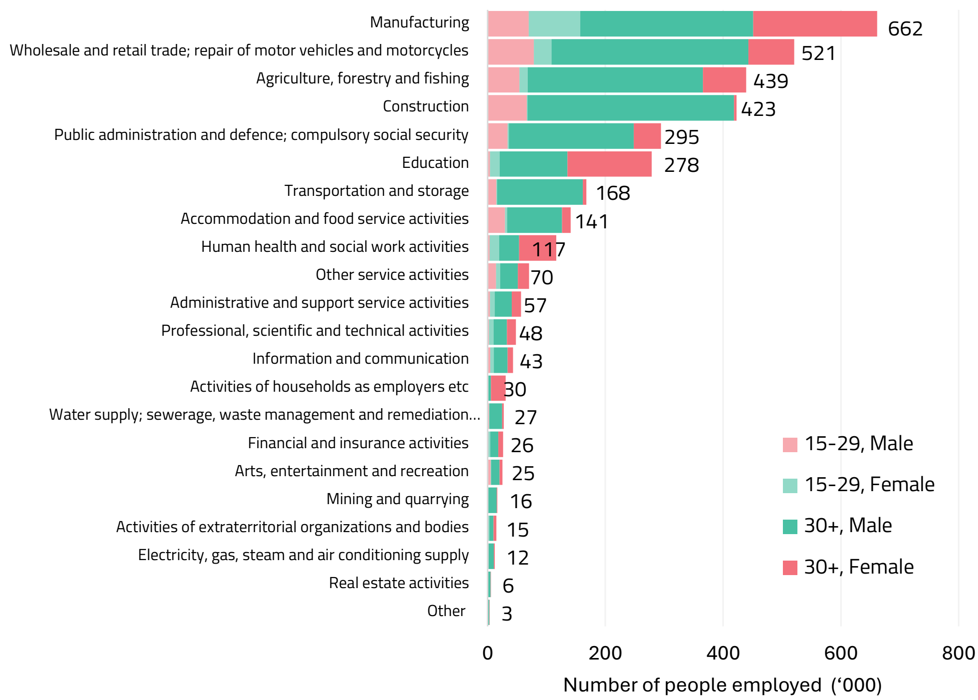
In 2023, most employed Tunisians worked in just three sectors: manufacturing, trade, and agriculture. Together, these absorbed nearly half of the country's 3.4 million workers, underlining how Tunisia's labor supply remains concentrated in a few key activities (figure 3.6).

Manufacturing was the single largest source of employment, at about 660,000 workers (19 percent). The workforce is dominated by adults (76 percent), though the sector is also the main employer of young people, who despite being a minority (24 percent) account for one in four of all employed youth nationwide. Women are relatively well represented among young manufacturing workers, outnumbering young men. Within the sector, apparel stands out as the largest employer (26 percent), followed by food processing (15 percent) and motor vehicles and related industries (11 percent), reflecting the sector's diversity.

Agriculture continues to provide jobs for more than 439,000 Tunisians (13 percent), but its workforce is overwhelmingly adult and male, with youth making up less than one in five workers. Most agricultural employment is in on-farm activities (86 percent), while fishing and aquaculture (9 percent) and forestry (5 percent) remain smaller niches. Looking beyond the farm, the agrifood system is a major source of work, engaging nearly 650,000 people across food processing and trading, each of which absorbs significant shares of labor.

Wholesale and retail trade employed about 510,000 workers (15 percent), making it another importance source of demand for Tunisia's labor supply. Together with manufacturing, it attracts a relatively more educated workforce than agriculture. In both sectors, around half of workers have completed secondary education and more than one in ten hold a tertiary degree. By contrast, agriculture relies heavily on low-educated labor: two-thirds of its workforce have no more than primary schooling, and only 1 percent are educated at a tertiary level.

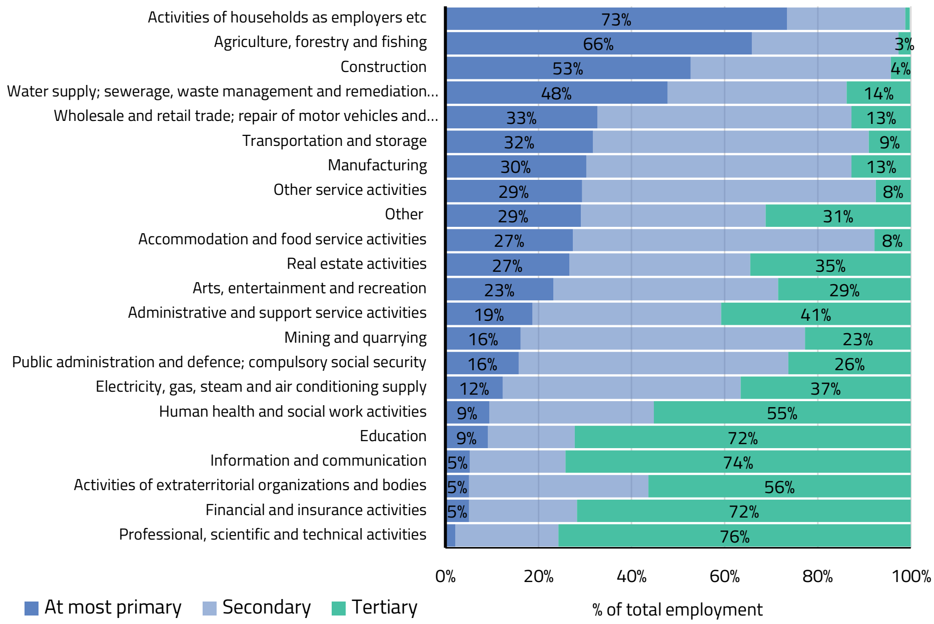
Figure 3.6 Sectoral Distribution of Employment in Tunisia



Source: Based on data from INS (2023).

Taken together, these patterns reveal that Tunisia's employed population is concentrated in labor-intensive sectors, with education levels varying widely across them (figure 3.7). Agriculture remains the main absorber of less-educated workers, while manufacturing and trade draw from a more diverse educational base. This distribution highlights both the importance of traditional sectors for employment and the challenges of creating pathways for workers into more skill-intensive activities.

Figure 3.7 Sectoral Distribution of Employment by Level of Education in Tunisia



Source: Based on data from INS (2023).

Employment in Tunisia is heavily concentrated in low- to medium-skilled occupations, which together account for nearly two-thirds of all jobs (figure 3.8). According to the International Standard Classification of Occupations (ISCO), service and sales workers make up about 19.8 percent of the employed population (670,000 people), elementary occupations (characterized by simple, routine tasks that require little education or training) represent 17 percent (550,000 workers), and manual technical occupations absorb 27.2 percent (930,000 workers). Within this last group, employment is split between craft and related trades (13.6 percent) and plant and machine operators and assemblers (13.6 percent).

Box 3.3 What Is 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 hierarchically 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 B3.3.1).

Table B1.3.1 ISCO Major Group and Associated Level of Skills and Education Required

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.

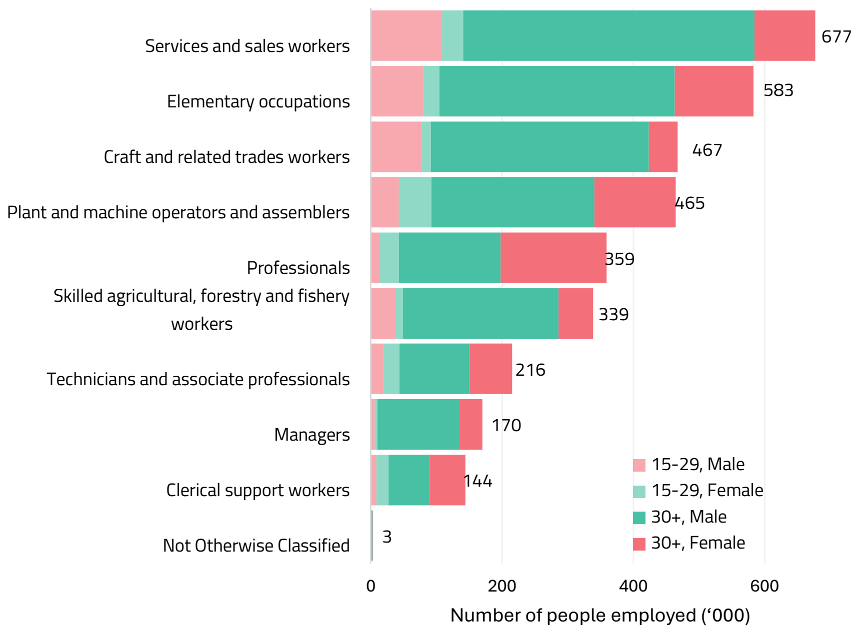
Note: ISCED = International Standard Classification of Education; ISCO = International Standard Classification of Occupations.

Altogether, more than 1.27 million Tunisians (37.1 percent) are employed in midlevel technical jobs. This includes approximately 467,000 craft and trades workers (ISCO 7), 465,000 machine operators and assemblers (ISCO 8), and 340,000 skilled agricultural workers (ISCO 6). These occupations are dominated by adults (about 80 percent) and by men (roughly three out of four workers), reflecting the strong gender and age skew in Tunisia's medium-skilled workforce.

At the lower end of the skills spectrum, elementary occupations employ around 580,000 Tunisians (17 percent). These jobs involve simple, routine, and often physically demanding tasks, with men again accounting for the majority—three-quarters of all adults in this group.

By contrast, high-skilled occupations remain relatively limited. Only one in four workers—about 850,000 people (25 percent)—are employed as managers, professionals, or technicians and associate professionals (ISCO 1–3). Within this group, professionals dominate (14 percent of total employment), followed by technicians (6 percent) and managers (5 percent) (figure 3.8).

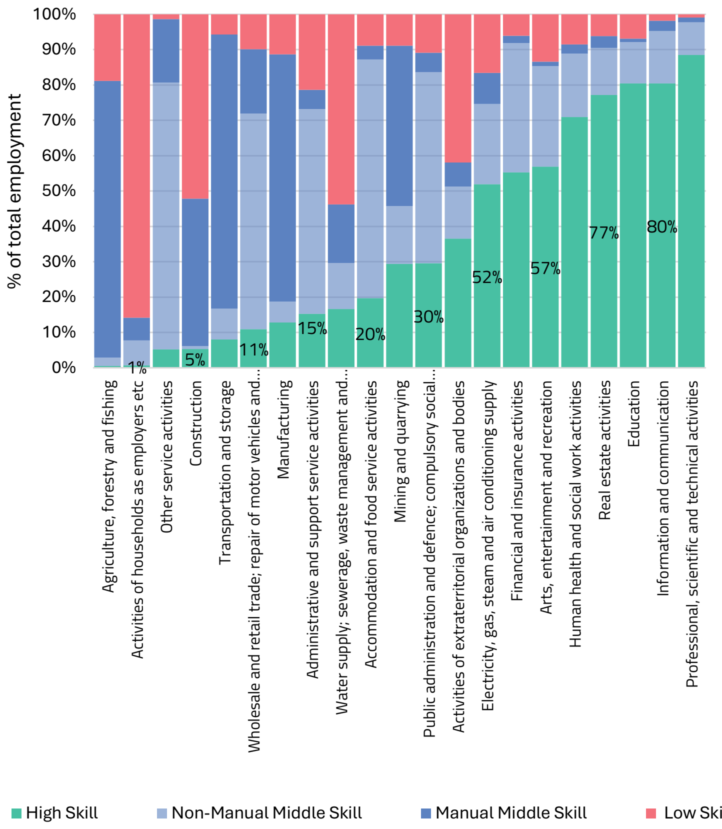
Figure 3.8 Distribution of Employment across Major Occupation Groups, by Gender and Age Cohort



Source: Based on data from INS (2023).

High-skilled employment is concentrated in a few, large public and social sectors, particularly education, health, and public administration and defense, which together employ more than 392,000 high-skilled workers. In relative terms, however, the share of high-skilled jobs is highest in knowledge- and service-intensive industries such as electricity and gas, financial services, information and communications technology (ICT), real estate, arts and entertainment, and professional and technical activities, where they represent more than half of all employment (figure 3.9).

Figure 3.9 Distribution of Employment by Economic Sector and Occupational Skill Groups



Source: Based on data from INS (2023).

Note: Occupational skill groups: high skill (ISCO 1–3); nonmanual, middle skill (ISCO 4–5); manual, middle skill (ISCO 6–8); and low skill (ISCO 9).

A more detailed look at employment by occupation (ISCO-4 level) reveals a striking concentration of Tunisia's labor supply in a small number of occupations (table 3.1). The top 20 occupations employ about 1.65 million people—half of the national workforce. Most are low to medium-skilled, with particularly large numbers working as building construction laborers, shopkeepers, drivers, sewing machine operators, and sales workers. These six alone account for a quarter of all employment nationwide.

High-skilled jobs are much less common among the top 20. Only secondary school teachers, primary school teachers, and nursing associate professionals appear in the list, together representing 11 percent of the top 20 occupations and just 6 percent of total employment.

Table 3.1 Employment Characteristics of the Top 20 Occupations in Tunisia, 2023

ISCO Code	Occupation Name	Employed (000)	Mean Age	Male (%)	Female (%)	No educ. (%)	Primary (%)	Secondary (%)	Tertiary (%)
9313	Building construction laborers	220.4	40.5	99	1	6.9	51.7	39.9	1.5
5221	Shopkeepers	164.6	45.4	79.8	20.2	3.7	30.8	56.7	8.7
8322	Car, taxi, and cab drivers	139	43.5	99.4	0.6	1.5	34.2	61.6	2.7
5419	Protective services workers n.e.c.	125.2	37.8	95.5	4.5	1.3	4.9	78.6	15.2
8153	Sewing machine operators	114	37.2	8.3	91.7	1.4	40.8	55.6	2.1
5223	Shop sales assistants	93	34.9	62.8	37.2	2.1	19.9	63.9	14.1
2330	Secondary education teachers	91.7	44.9	45.4	54.6	0.3	0.2	0.7	98.8
7111	House builders	80.2	46.7	99.6	0.4	6.3	59.5	33.4	0.8
5413	Prison guards	66.3	45.8	99.1	0.9	6.2	50.7	41.8	1.2
2341	Primary school teachers	66	41.6	25.7	74.3	0.3	0	11.2	88.4
9112	Cleaners and helpers in offices, hotels, etc.	62.7	45.6	30.3	69.7	15.6	51.7	31.7	0.9
9211	Crop farm laborers	54.5	40.8	68.8	31.2	20.5	50.3	28.3	0.9
6111	Field crop and vegetable growers	50.9	48	97.3	2.7	9.6	49.5	36.6	4.3
7231	Motor vehicle mechanics and repairers	49.2	36.4	99	1	1.5	37.7	58.9	1.8
9329	Manufacturing laborers n.e.c.	47.9	35	40.4	59.6	4.5	28.8	62.6	4
5141	Hairdressers	44.9	34.2	58.3	41.7	1.9	26.2	69.8	2
4120	Secretaries (general)	42.6	40.4	28.2	71.8	0.3	2.8	65.8	31.1
8332	Heavy truck and lorry drivers	39.7	41.8	99.8	0.2	1.9	35.8	58.2	4.1
7131	Painters and related workers	34.4	40.9	99.4	0.6	3.4	46.3	47.6	2.7
3221	Nursing associate professionals	31.2	39.3	25.9	74.1	0	0.5	36.2	63.3
7512	Bakers, pastry cooks, and confectionery makers	31	38.9	61.1	38.9	4.7	33.8	56.1	5.3
Total	**—**	**1,649.5**	**41.3**	**72.3**	**27.7**	**4.3**	**32.5**	**48**	**15.2**

Source: Based on data from INS (2023).

Note: n.e.c. = not elsewhere classified.

3.5 A Mismatch between Qualifications and Skill Requirements

Formal TVET System

The country's formal technical and vocational education and training (TVET) system can be mapped onto the eight levels of the International Standard Classification of Education (ISCED) classification, ranging from early childhood education (ISCED 0) to the doctoral or equivalent level (ISCED 8) (World Bank 2020b). The intermediate levels include: primary education (ISCED 1), lower secondary education (ISCED 2), upper secondary education (ISCED 3), postsecondary nontertiary education (ISCED 4), short-cycle tertiary education (ISCED 5), bachelor's or equivalent level (ISCED 6), and master's or equivalent level (ISCED 7).

Basic education consists of nine years of compulsory schooling, divided into six years of primary (ISCED 1) and three years of lower secondary (ISCED 2). At the preparatory stage of lower secondary, vocational training programs are available for learners aged 15+ who have completed at least seven years of schooling. One example is the Competency Certificate Program, which provides a minimum of 700 hours of initial training, including 160 hours of company-based internships.

At the upper secondary level (ISCED 3), TVET is delivered mainly by public training centers, complemented by some private institutions. Two main qualifications are offered: (1) the Certificate of Professional Aptitude (Certificat d'Aptitude Professionnelle, CAP), open to those who have completed nine years of basic education; and (2) the Professional Technician Certificate (Brevet de Technicien Professionnel, BTP), available to CAP holders and students who have completed at least the second year of secondary education.

At the post-secondary nontertiary level (ISCED 4), learners can pursue the Higher Technician Certificate (Brevet de Technicien Supérieur, BTS). This program is open to holders of the Baccalauréat or, under certain conditions, BTP holders.

Higher education (ISCED 5–8) is provided mainly by universities, higher education institutions, and colleges, including the Institutes of Technological Studies. At the bachelor's level (ISCED 6), programs are divided into: (1) academic (fundamental) bachelor's degrees, oriented toward theory and further academic study; and (2) applied bachelor's degrees, designed to build practical skills through mandatory internships, supporting direct entry into the labor market. At the master's level (ISCED 7), students may pursue either: (1) academic master's degrees (research oriented and preparing for PhD studies); or (2) professional master's degrees, geared toward immediate employment. At the doctoral level (ISCED 8), PhD programs typically require at least three years of research and coursework.

Tunisia also applies a dual approach at the upper levels of tertiary education, combining academic learning with TVET (table 3.2). A key institution is the National Engineering School of Tunisia (ENIT), which offers research-oriented programs in computer science, ICT, electrical and mechanical engineering, chemistry, and physics. ENIT also delivers master's and PhD programs through its Doctoral School of Engineering Sciences and Technology, emphasizing innovation and applied research. The school maintains strong partnerships with domestic and international companies, enabling students to integrate theoretical study with enterprise-based training.

Table 3.2 Tunisian TVET System: Educational Levels and Types of Technical and Vocational Training

ISCED Level	ISCED Label	Number of Years	Entry Age	Exit Age	General/Academic Education	Vocational and Educational Training
8	Doctoral or equivalent level	3	27/28	30/31	Ph.D. National Diploma programs	
7	Master's or equivalent level	2 or 3	23	27/28		National Engineering Diploma
6	Bachelor's or equivalent level	4 (3)	19	23	Bachelor's degree; Teacher Training: Applied license, Basic License	
5	Short-cycle tertiary education					
4	Post-secondary nontertiary education	2	19	21		Higher Technician Certificate (BTS)
3	Upper secondary education	4 (2+2)	15	19	Baccalaureate	Professional Technician Certificate (BTP); Certificate of Professional Aptitude (CAP)
2	Lower secondary education	3 (2)	12	15	Preparatory stage of basic education (general education)	Competency program; Preparatory stage, technical education
1	Primary education	6	6	12	Primary stage of basic education	
0	Early childhood education ('less than primary')					

Source: Adapted from World Bank (2020a).

Note: ISCED = International Standard Classification of Education; TVET = technical and vocational education and training.

Box 3.4 Profiles of Formal TVET Graduates upon Completion in Tunisia

Graduates of Tunisia's TVET system acquire a mix of **technical skills, workplace competencies,** and **foundational knowledge**, which prepare them for labor market entry and professional integration. Exit profiles vary by certification level (OECD 2014).

ISCED level 2: Competency Certificate (CC). Structured around *700 hours of training, including 160 hours of company-based internship.* Graduates are able to:

- Perform simple, repetitive tasks using standardized tools and techniques in stable work environments.
- Follow basic oral and written instructions and monitor their own work progress.
- Assess the quality of completed tasks and report results orally or in writing.
- Demonstrate basic understanding of rights and responsibilities as workers.
- Communicate effectively in routine workplace situations.

ISCED level 3: Certificate of Professional Aptitude (CAP). Structured around 1,200 hours of training, including 320 hours of company-based internship; training cycles are organized by field. Graduates are able to:

- Perform tasks in a restricted activity field, following defined procedures.
- Select and apply tools and techniques relevant to the job.
- Assess the quality of completed work and provide oral/written reports.
- Read and interpret notes or data related to their field.

ISCED level 3: Professional Technician Certificate (BTP). Structured around 1,800 hours of training, including 320 hours of company-based internship in training centers. Graduates are able to:

- Apply operating procedures using techniques relevant to their activity and work context.
- Select and apply methods, tools, and materials to complete tasks independently, based on instructions.
- Formulate solutions to work-related problems.
- Assess the quality of completed work and report orally or in writing.
- Read and interpret notes or data relevant to their occupational field.

ISCED level 4: Higher Technician Certificate (BTS). Structured around 2,200 hours of training, including 320 hours of company-based internship in training centers. Graduates are able to:

- Establish and implement procedures for sequential tasks in work contexts subject to external factors or changes.
- Select and adapt methods, tools, and materials to solve problems using general guidelines.
- Integrate information from different sources to propose solutions in their field.
- Evaluate the quality of both individual and team work, and prepare detailed oral and written reports.

Do Qualifications (and Skills) Align with Jobs in Tunisia?

Understanding whether workers' qualifications align with labor market needs is central to evaluating how effectively Tunisia's education and training systems prepare people for work. Skills mismatches occur when the abilities workers bring do not correspond to those demanded by employers. They typically take two forms: workers may be underskilled, that is, lacking the capabilities needed for their jobs; or overskilled, that is, bringing qualifications beyond what their current roles require (McGuinness, Pouliakas, and Redmond 2017).

Box 3.5 Skills, Tasks, and Competencies: Definitions

Skills mismatch occurs at the labor market level, when the economy produces workers with certain qualifications and skills that do not align with employers' needs**.** In contrast, **skills gaps** occur at the individual level, when an employee already in a job lacks some of the competencies required to perform it effectively**.**

Skills refer to the ability and capacity to apply knowledge and expertise to complete tasks and solve problems, especially at work. They are generally categorized as:

- Technical (hard) skills: Job-specific abilities required for particular tasks or roles.
- Transferable (soft) skills: Abilities applicable across various jobs and industries (e.g., critical thinking, problem solving, teamwork).

Tasks are the specific activities or duties performed to achieve a particular outcome. From the **labor demand** perspective, tasks represent what needs to be done. From the **supply side**, skills are the capabilities required to perform those tasks effectively.

Competencies are broader, combining knowledge, skills, and attitudes needed to perform successfully in a professional environment, beyond just executing tasks.

Skill gaps often result from insufficient formal training or education. Examples of skill gaps that can be addressed through education and training include:

- Digital and IT skills (e.g., programming, data analysis, cybersecurity)
- Engineering skills (e.g., CAD design, mechanical troubleshooting)
- Medical and health care skills (e.g., patient care, diagnostics)

Source: European Commission 2024.

Measuring skills mismatches and identifying affected groups are critical not only for education and training policy, but also for assessing the wider economic implications. Overskilled workers often experience wage penalties and lower job satisfaction, resulting in inefficient use of human capital. Underskilled workers, in turn, reduce firm productivity and competitiveness, limiting business innovation and growth potential. At the macroeconomic level, persistent underskilling can undermine foreign investment as firms struggle to access adequate talent, ultimately contributing to structural unemployment through weaker labor demand.

In practice, however, measuring mismatches directly through skills data is challenging, as detailed microdata on workers' actual skills are rarely available. For Tunisia, this report instead relies on indicators of qualification mismatch, using workers' educational attainment as a proxy for the skills required in their jobs.

Box 3.6 Measuring Skill Mismatches in Tunisia

In Tunisia, skill mismatches are assessed by comparing workers' educational attainment with the typical requirements of their occupations, following international standards (Comyn and Strietska-Ilina 2019). The approach combines the International Standard Classification of Occupations (ISCO-98), which groups jobs by tasks and skill levels, with the International Standard Classification of Education (ISCED), which classifies workers by their highest qualification attained.

1. **High-skilled occupations** (ISCO 1–3: managers, professionals, technicians) are expected to correspond to tertiary education (ISCED 5–8).
2. **Medium-skilled occupations** (ISCO 4–8: clerical support, sales and services, skilled agriculture, craft and trades, plant and machine operators) correspond to secondary education (ISCED 3–4).

3. **Low-skilled occupations** (ISCO 9: elementary jobs) correspond to basic education (ISCED 1–2).

Within this framework, workers are classified as underqualified if they possess lower education than typically required for their occupation (e.g., primary education in ISCO 4–8, or secondary education in ISCO 1–3). Conversely, they are considered **overqualified** if they have completed a higher education level than the job requires (e.g., tertiary graduates in ISCO 4–9, or secondary graduates in ISCO 9).

The strength of this approach lies in its simplicity and scalability, making it particularly suitable for large datasets such as Tunisia's Labor Force Survey, which captures both occupation and education. However, it also has limitations: the method does not account for the actual skills required to perform a job, nor for how these requirements evolve over time. Instead, it reflects the average educational level usually associated with entry into an occupation, rather than the competencies necessary to succeed within it.

Despite these caveats, the method offers a useful proxy for quantifying mismatches and profiling affected workers. It provides insights into how Tunisia's human capital may be underutilized or misallocated across the labor market, with implications for both workforce development and economic competitiveness.

Analysis of the 2023 Labor Force Survey shows that nearly one in three workers in Tunisia is underqualified for their job—equivalent to more than 1 million individuals (table 3.3). These workers lack the minimum education levels typically associated with their occupations.

Table 3.3 reports the distribution of employed individuals (in thousands) by occupation and education level. Orange cells highlight cases of underqualification, where a worker's education falls below the expected requirement, while red cells indicate overqualification, where workers' qualifications exceed those typically required for the job.

Underqualification is particularly pronounced in manual and technical occupations. For example, two-thirds of skilled agricultural, forestry, and fishery workers—engaged in specialized activities such as planting, harvesting, and animal breeding—have completed no more than primary education. Similarly, almost half of technicians and associate professionals, employed in fields such as engineering, health, and research, hold only secondary-level qualifications, despite the high technical skills normally required.

At the opposite end, overqualification affects more than 12 percent of the workforce, or about 415,000 individuals. These workers possess higher educational attainment than typically required for their jobs, reflecting a potential underutilization of human capital.

Table 3.3 Number of Underqualified (orange) and Overqualified (red) Individuals Employed in Tunisia (in thousands)

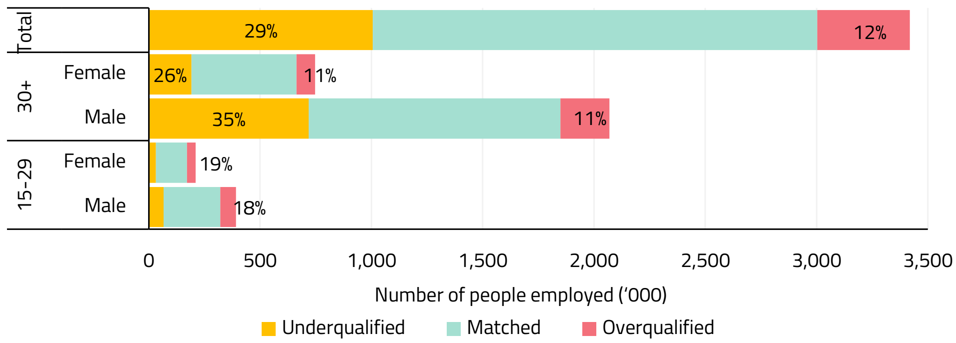
ISCO-08	No Education	Primary Education	Secondary Education	Tertiary Education	Education Not Stated	Total
1. Managers	0.7	13.5	69.1	86.8	0.1	170.1
2. Professionals	3.4	3.5	34.8	317.5	-	359.2
3. Technicians and associate professionals	1.9	9.4	91.8	112.4	-	215.5
4. Clerical support workers	0.7	6.1	86.0	51.5	-	144.4
5. Services and sales workers	19.4	174.5	418.7	64.0	0.3	676.9
6. Skilled agricultural, forestry and fishery workers	62.6	157.8	109.1	8.8	0.3	338.5
7. Craft and related trades workers	14.0	185.3	248.6	19.5	0.1	467.5
8. Plant and machine operators and assemblers	8.1	149.5	288.0	19.0	-	464.6
9. Elementary occupations	58.4	271.9	237.9	14.5	0.2	582.8
n.e.c. (not elsewhere classified)	0.1	0.8	1.2	0.9	-	3.0
Total	169.3	972.4	1,585.1	695.0	0.8	3,422.6

Source: Based on data from INS (2023).
Note: ISCO = International Standard Classification of Occupations.

Underqualification is particularly pronounced among adult males (figure 3.10). Around 32 percent of adults are underqualified for their jobs—double the rate observed among young people (16 percent). Among adults, men are especially affected: 35 percent of adult men are underqualified compared with 26 percent of adult women.

Meanwhile, overqualification is more prevalent among youth. Nearly 18 percent of young workers are overqualified for their jobs, compared to 11 percent of adults. While adults are far more likely to be underqualified than overqualified, the reverse holds for youth, with a greater share of young people—particularly young women—working in jobs below their level of education.

Figure 3.10 Number of Underqualified (orange) and Overqualified (red) Individuals Employed in Tunisa, by Age and Sex (in thousands)



Source: Based on data from INS (2023).

Taken together, these findings point to a dual challenge in Tunisia's labor market. On the one hand, large numbers of adult workers perform jobs without the level of education typically expected, which constrains productivity and hinders the upgrading of economic activities. On the other hand, a growing share of educated youth is unable to find jobs that correspond to their qualifications, leading to talent underutilization. The coexistence of underqualification and overqualification highlights inefficiencies in how human capital is allocated and underscores the need to improve both the quality of job creation and the responsiveness of education and training systems to labor market demand.

3.6 Who Could Benefit Most from a Global Skills Partnership?

Given Tunisia's labor supply landscape, and the current size and composition of the working-age population, a key question arises: which segments of the working-age population are best positioned to participate in a GSP, and which stand the greatest chance of meeting both local and international labor market needs?

A central priority of the GSP is to avoid fueling brain drain and the permanent loss of valuable skills from Tunisia. For this reason, prospective migrants and local workers should be carefully selected to ensure that those already well matched and successfully integrated into the local labor market are not displaced. Instead, priority should be given to individuals who are detached from the labor market or struggling to find suitable employment, and whose participation in a GSP could expand their opportunities while also addressing skill shortages at home and abroad.

In line with this priority, four broad groups within the working-age population could be targeted for inclusion in either the "home" or "away" track of the GSP (table 3.4). Each group presents distinct characteristics and would require tailored labor market interventions to maximize their employability and contribution.

- **Inactive individuals (2.3 million in total).** This group includes around 250,000 discouraged workers and 2.1 million inactive due to family responsibilities. Both groups are predominantly low educated—8 in 10 discouraged and 9 in 10 inactive individuals have at most a primary education. Only a small fraction, particularly among the discouraged, hold technical certificates. Their integration into the GSP would require significant investments in upskilling, with a focus on sectors experiencing shortages of less-educated workers (e.g., accommodation and food services, basic manufacturing).
- **Unemployed workers (650,000).** Unemployed individuals represent a more educated segment of the labor force, with about 15 percent holding technical certificates and 50 percent having a tertiary education. Many are considered "job-ready" and could more easily be connected to international or domestic opportunities through targeted intermediation, mobility programs, or sector-specific matching. Their profiles are particularly relevant for higher-skilled shortage occupations identified in the demand analysis, such as commercial sales representatives, chefs, accountants, and civil engineering technicians.
- **Underqualified workers (1 million).** This group is employed but concentrated in low-skilled or elementary occupations, with more than 8 in 10 having at most a primary education. For these workers, participation in a GSP would require upskilling to raise their productivity and facilitate their mobility into higher value-added roles. Their skills could be leveraged in manual technical occupations where shortages are acute—such as sewing machine operators, riggers, or industrial mechanics—provided that adequate training and certification are offered.

In summary, the labor supply analysis points to differentiated pathways for GSP participation. For unemployed Tunisians, the priority is to improve job matching and access to opportunities, both locally and internationally. For inactive individuals, particularly discouraged workers and those burdened with family responsibilities, stronger investments in basic skills, reentry programs, and enabling measures are required. For underqualified workers, upskilling is the central lever to unlock productivity gains and improve employability. Linking these groups to Tunisia's current shortage patterns ensures that the GSP strengthens the domestic labor market, while also contributing to international mobility in a way that avoids brain drain and maximizes shared benefits.

Table 3.4 Potential Groups for a GSP, by Level and Type of Education Attained

	People (thousands) (% of each group in each cell)				
	Inactive		Labor force		
Education Level Type	**Discouraged**	**Family resp.**	**Unemployed**	**Underqualified**	**Total**
0 – No education	9%	29%	2%	10%	19%
1 – Primary stage of basic education	73%	63%	50%	75%	64%
2 – Preparatory stage of basic education	0%	0%	0%	1%	1%
3 – Secondary (Baccalaureate)	2%	2%	3%	3%	2%
3 – Certificate of Professional Aptitude (CAP)	3%	1%	5%	2%	2%
3 – Professional Technician Certificate (BTP)	3%	1%	6%	3%	3%
4 – Higher Technician Certificate (BTS)	1%	0%	2%	1%	1%
4 – Other advanced technical certificates	1%	0%	3%	0%	1%
5 – Bachelor's degree	1%	1%	3%	0%	1%
6 – Applied license	2%	0%	8%	0%	2%
6 – Basic license	4%	1%	9%	–	2%
7 – National diploma programs, including:	1%	0%	7%	0%	1%
▪ Engineer	1%	0%	2%	–	0%
▪ Architect	0%	0%	0%	–	0%
▪ Medicine or pharmacy	0%	–	0%	–	0%
▪ MA or equivalent	1%	0%	5%	–	1%
▪ Other higher education degrees	0%	0%	0%	0%	0%
8 – PhD	0%	0%	0%	–	0%
Others	2%	2%	3%	4%	3%
Total (people, in thousands)	**249**	**2,110**	**650**	**1,006**	**4,015**

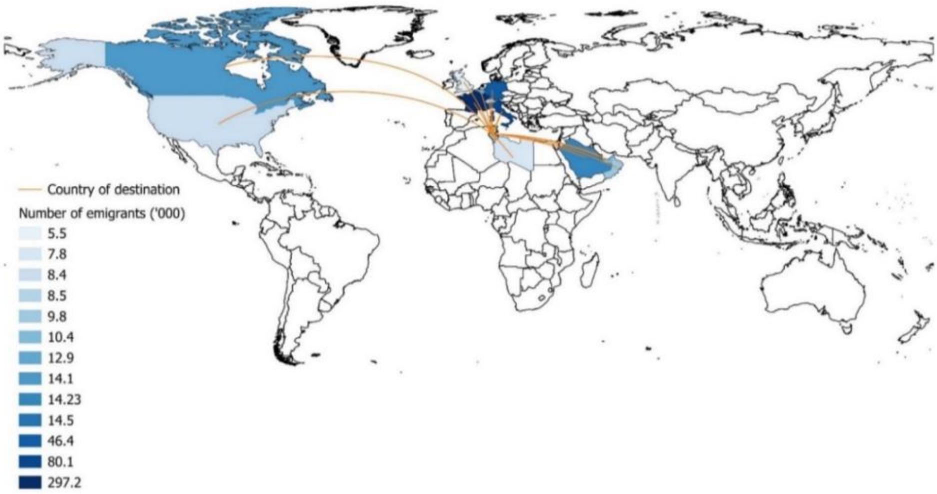
Source: Based on data from INS (2023).

Note: MA = master's.

3.7 Profiles of Tunisians Living Abroad

According to the 2021 National Survey on International Migration, around 566,000 working-age Tunisians (15+) reside abroad, mostly in France, Italy, and Germany, which together host nearly three-quarters of the migrant population (figure 3.11). Migration patterns reflect geographic and cultural proximity and also economic incentives: distance reduces migrant stock, while higher productivity in destination countries attracts more migrants. Language similarity further strengthens these flows.

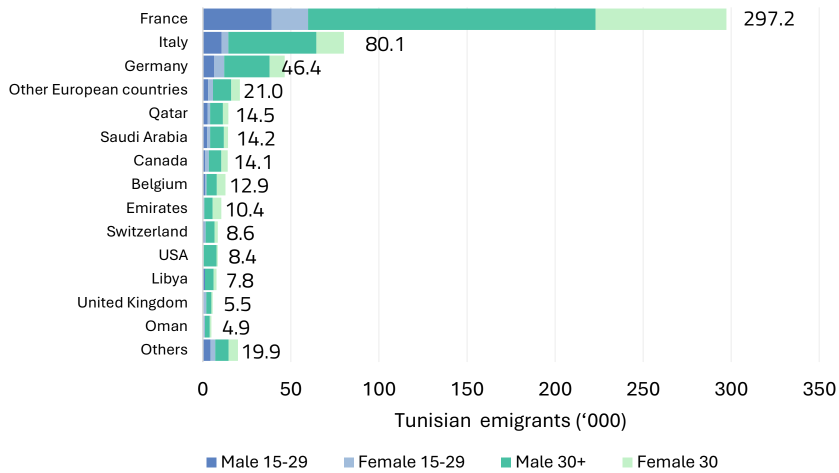
Figure 3.11 Distribution of Tunisian Emigrants by Country of Destination



Source: Based on data from INS (2021).
Note: The map does not show the 21,000 Tunisians living in several European countries not highlighted.

Migrant profiles vary across destinations (figure 3.12). Youth account for just one-fourth of all migrants; their share is highest in Germany (where they compose almost 26 percent of all Tunisian migrants), followed by France (where they compose 20 percent of all Tunisian migrants) and Italy (17 percent).

Figure 3.12 Distribution of Tunisian Emigrants by Destination Country, Disaggregated by Age and Sex



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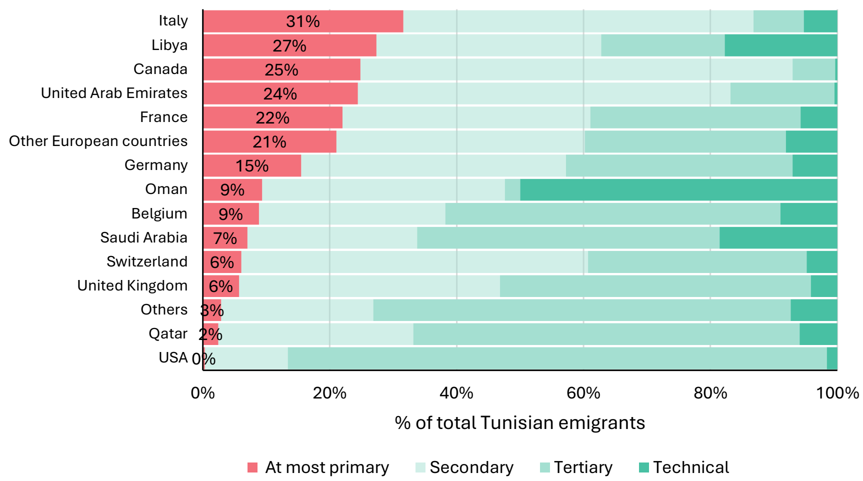
Source: Based on data from INS (2021).

Educational profiles also differ across destination countries (figure 3.13). Germany and France attract more tertiary-educated Tunisians (35 percent and 33 percent, respectively), while Italy hosts the largest share of low-educated workers, reflecting its demand for low-skilled labor. This pattern highlights labor market segmentation: Italy predominantly attracts low-skilled workers, while France and Germany tend to absorb migrants with higher qualifications and skill levels.

2

Figure 3.13 Educational Attainment of Tunisian Emigrants across Destination Countries



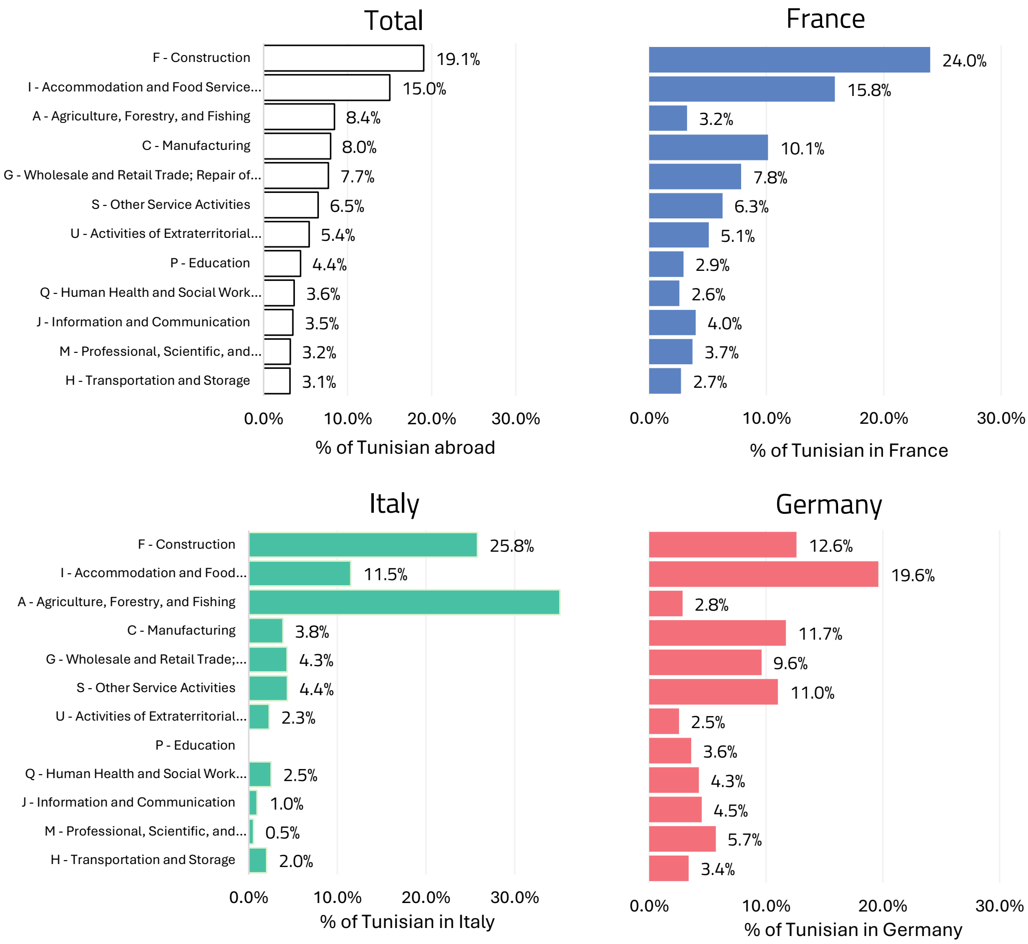
Source: Based on data from INS (2021).

Pre- and post-migration labor market outcomes differ across destination countries. Before migrating, Tunisian workers heading to Italy had higher employment rates (49 percent) than those bound for France (39 percent) or Germany (36 percent), with correspondingly lower unemployment rates. This suggests that Italy tends to attract migrants who were already active in the labor market in Tunisia though, often, in occupations with lower entry requirements. By contrast, France and Germany received a larger share of unemployed Tunisians, many with higher qualifications but fewer suitable opportunities at home.

Overall, migration expands employment prospects significantly. Across all destinations, the employment-to-population ratio rises from 43 percent before departure to nearly 70 percent after migration—a 27-point increase. Italy records the highest absolute post-migration employment rate (72.1 percent), though the strongest relative gains occur in France (+31.7 percentage points) and Germany (+28.2), reflecting the transition of many unemployed Tunisians into work.

Sectoral patterns help explain these outcomes (figure 3.14). In Italy, 35 percent of Tunisian migrants work in agriculture and many others in construction, sectors with relatively easy entry but more limited mobility prospects. In France and Germany, the sectoral employment distribution of Tunisian migrants is more diversified, with significant shares in accommodation and food services, construction, and especially manufacturing. The latter, which employs over 10 percent of Tunisians in both countries compared to less than 4 percent in Italy, typically offers higher wages, greater stability, and better career progression—factors that support stronger labor market transitions after migration.

Figure 3.14 Distribution of Tunisian Migrants Abroad, by Economic Sector

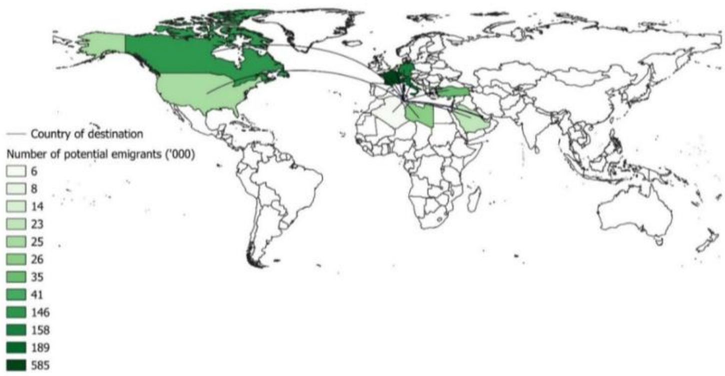


Source: Based on data from INS (2021).

3.8 Profiles of Prospective Tunisian Emigrants

The 2021 National Survey on International Migration estimates that 1.66 million working-age Tunisians—one in four—intend to emigrate. Intentions are highly concentrated: nearly two-thirds target just four destinations—France (35 percent), Italy (11 percent), Germany (10 percent), and Canada (9 percent). Traditional destinations with established diasporas remain dominant, but new destinations such as Turkey and Algeria are emerging (figure 3.15).

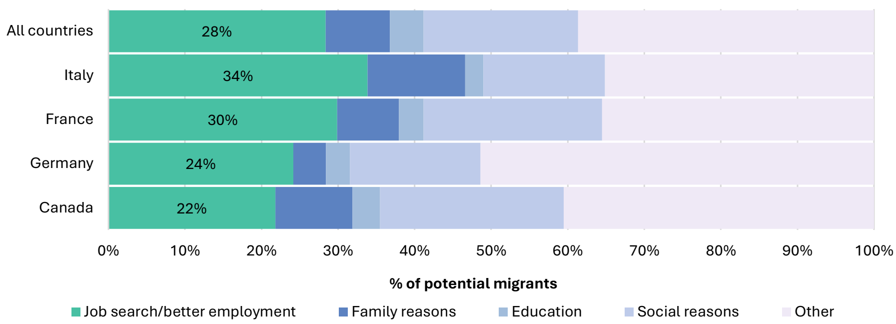
Figure 3.15 Potential Tunisian Emigrants by Country of Destination



Source: Based on data from INS (2021).

Employment opportunities are the main driver. More than a quarter of aspiring migrants cite jobs as their primary motive. The share is even larger among those wanting to go to Italy (34 percent), reflecting easier access to low-skilled sectors (figure 3.16). By contrast, those hoping to go to France, Germany, and Canada combine employment motives with longer-term aspirations shaped by more selective entry channels.

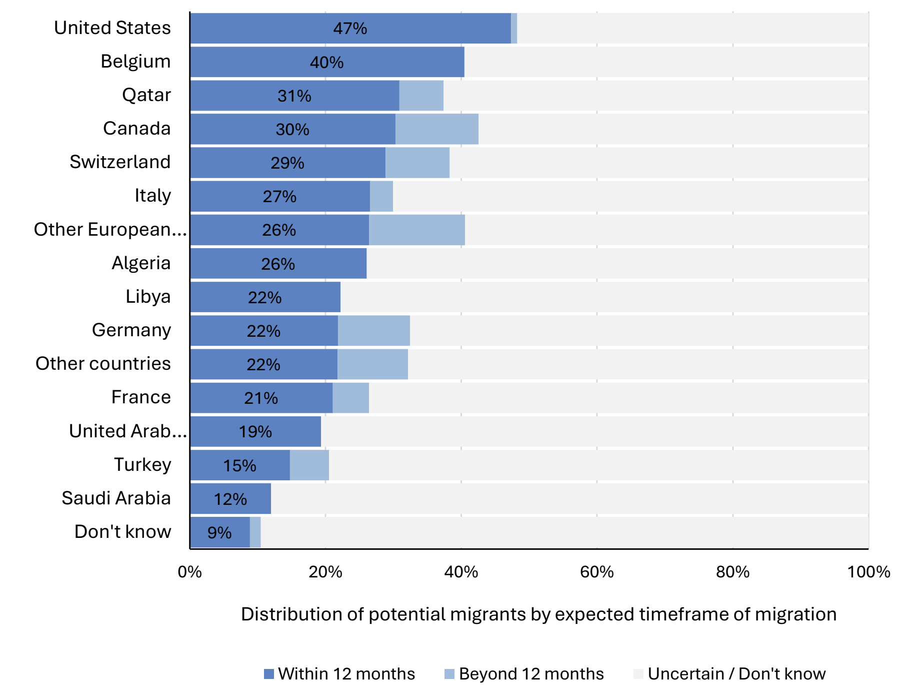
Figure 3.16 Distribution of Tunisians Planning to Emigrate, by Reason for Emigration



Source: Based on data from INS (2021).

About a quarter of potential migrants planned to leave within 12 months of the survey, while nearly three-quarters had not yet set a time frame (figure 3.17). Short-term intentions are more common among those targeting Canada (30 percent) and Italy (27 percent), whereas prospective migration to Germany (22 percent) and France (21 percent) appears more long term. This partly reflects more selective admission systems, but also differences in costs, preparation requirements, and migrant networks across destinations. If realized within a year, these intentions would expand the migrant stock by 36 percent overall.

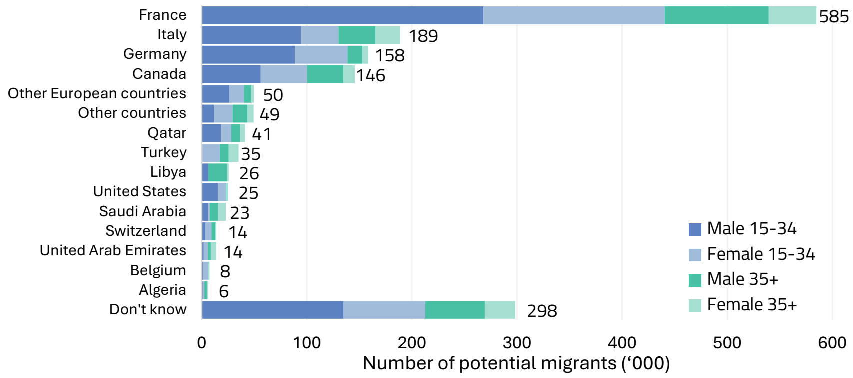
Figure 3.17 Distribution of Tunisians Planning to Emigrate, by Expected Time Frame of Emigration



Source: Based on data from INS (2021).

Youth dominate migration intentions, with most aspiring migrants under 35 years old—reaching as high as 89 percent for those targeting Germany (figure 3.18). This trend reflects Tunisia's high youth unemployment and structural skill mismatches. Among young potential migrants, 67 percent are unemployed, underscoring weak domestic labor absorption. Correlation analysis further suggests that youth are more strongly attracted to destinations with relatively low youth unemployment, where employment prospects appear more favorable.

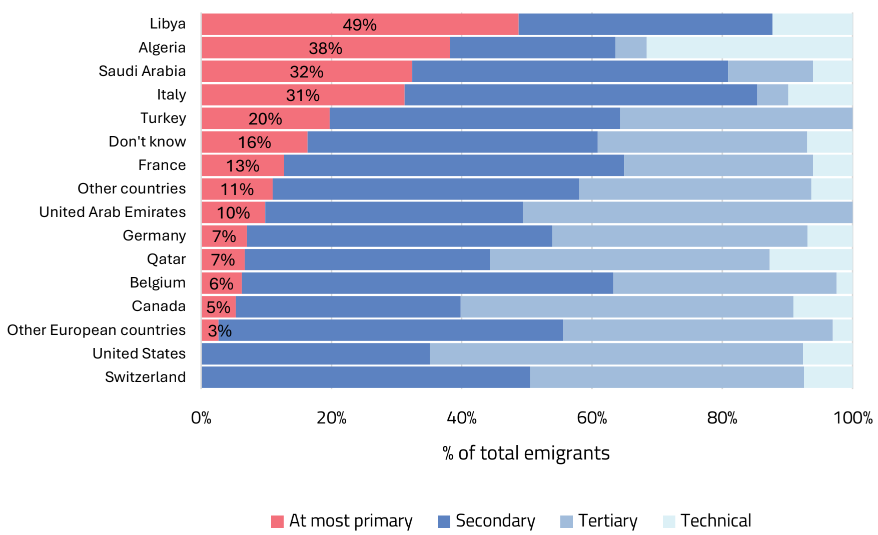
Figure 3.18 Number of Tunisians Planning to Emigrate, by Age and Sex



Source: Based on data from INS (2021).

Education and sectoral profiles point to clear segmentation. Among European Union destinations, Italy continues to attract the largest share of low-educated potential migrants—31 percent have at most a primary education—compared with 13 percent for France, 7 percent for Germany, and only 5 percent for Canada (figure 3.19).

Figure 3.19 Distribution of Tunisians Planning to Emigrate, by Level of Education Attainment

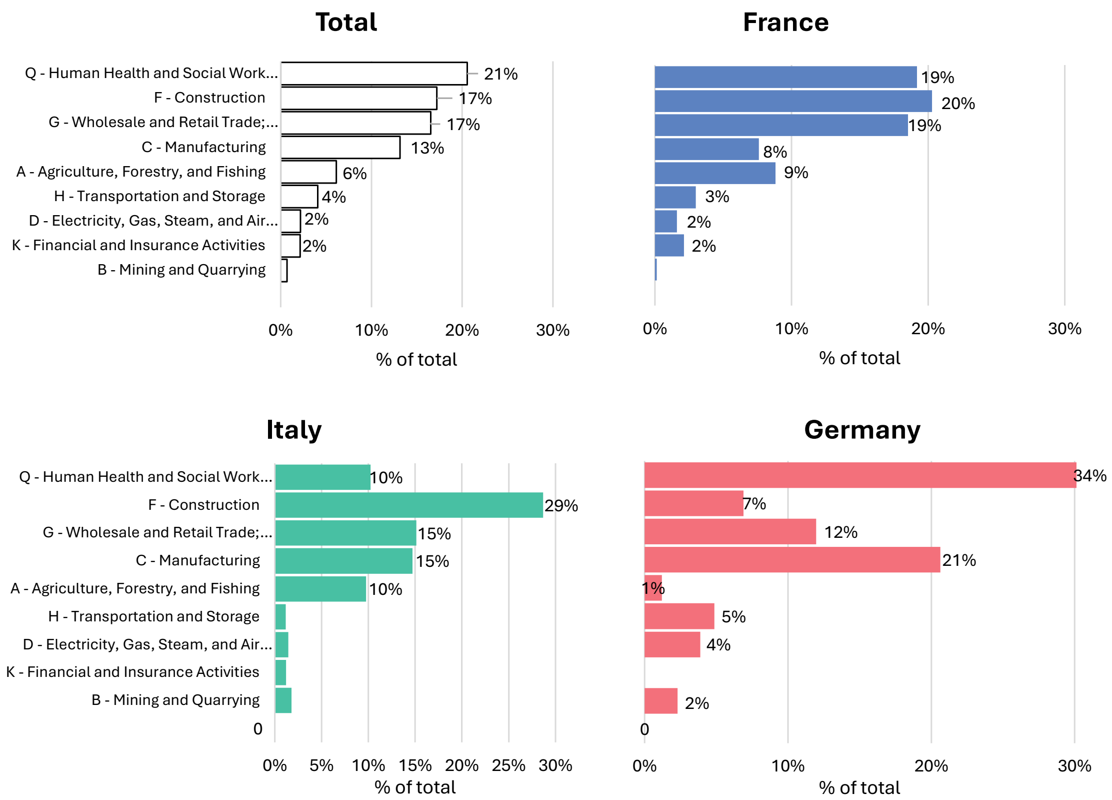


Source: Based on data from INS (2021).

The sectoral profiles of aspiring migrants in the Tunisian labor market underscore strong segmentation across destinations (figure 3.20). Those planning to migrate to Italy are largely concentrated in lower-skilled sectors, with most employed in construction and a comparatively high share in agriculture (10 percent). This reflects Italy's continuing role as a primary outlet for low-skilled Tunisian labor, offering easier market entry but limited opportunities for advancement.

By contrast, Germany attracts aspiring migrants from more skill-intensive sectors. Over one-third (34 percent) of employed potential migrants bound for Germany work in health and social work, while another fifth are engaged in manufacturing. These patterns align with Germany's demand for skilled labor and the more selective nature of its admission system. Canada shows a similar orientation, drawing younger and more educated Tunisians into high-skilled sectors. France occupies an intermediary position. Its long-standing diaspora networks sustain inflows of low- and medium-skilled workers, while at the same time providing entry points for more diversified labor demand.

Figure 3.20 Distribution of Employed Tunisians Planning to Emigrate, by Sector of Employment



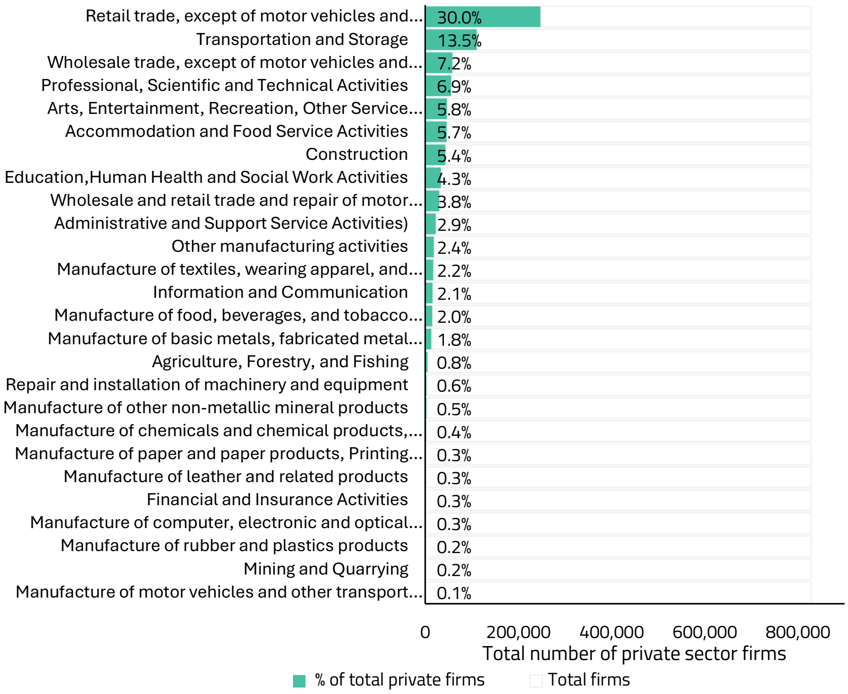
Source: Based on data from INS (2021).

4. ANALYSIS OF LABOR DEMAND

4.1 Private Firms in Tunisia: Characteristics and Job Creation Potential

The private sector in Tunisia is dominated by microenterprises, many of them in trade and services. Of 828,821 private firms, more than three-quarters (76 percent) are clustered in just eight economic sectors. Retail trade (excluding motor vehicles and motorcycles) alone accounts for 248,847 firms—30 percent of the total—followed by transportation and storage (14 percent), wholesale trade (7 percent), and professional, scientific, and technical activities (6 percent) (figure 4.1).

Figure 4.1 Distribution of Private Sector Firms in Tunisia, by Economic Sector



Source: Based on data from INS 2021

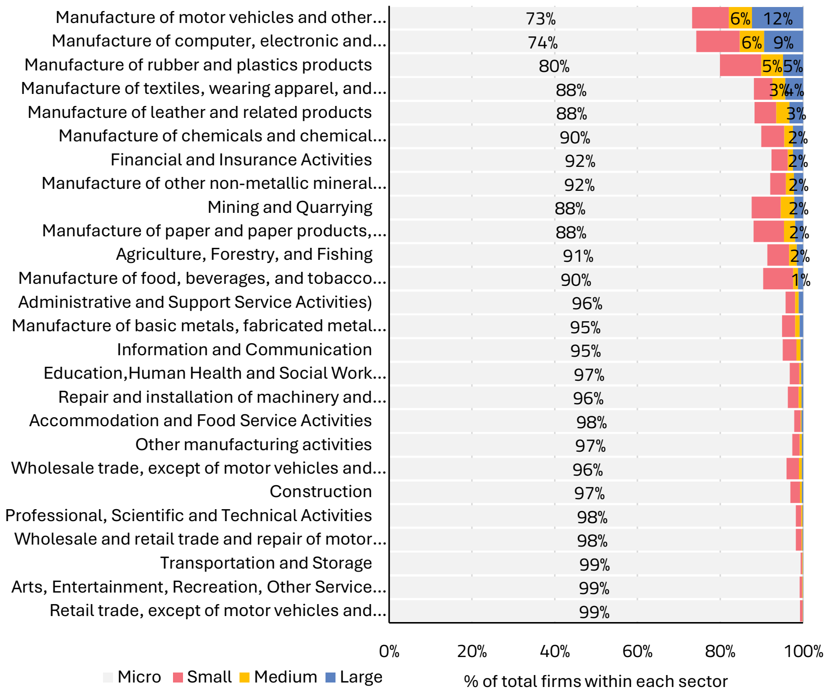
Note: Percentages represent the share of firms within each sector as a proportion of total private firms.

Microenterprises represent 97.5 percent of all firms, of which the majority (88.1 percent) are sole proprietorships with no employees. Another 9.4 percent employ between 1 and 5 workers.

These micro firms are particularly concentrated in retail trade, transportation and storage, professional and technical activities, administrative and support services, education, health, and social work. The accommodation and food service sectors illustrate this pattern: they comprise 47,331 firms (5.7 percent of the total), of which 98 percent are microenterprises and 82 percent operate without employees.

By contrast, small (6–19 employees), medium (20–49), and large (50+) firms account for only 20,871 enterprises (2.5 percent of the private sector) and are primarily concentrated in manufacturing. Within this group, manufacturing dominates, representing 43 percent of medium-sized firms (3,819 total) and 57 percent of large firms (3,336 total). Sectors with the highest shares of medium and large firms include motor vehicles and transport equipment (6 percent of medium, 12 percent of large), followed by the manufacture of electronics, electrical equipment, and machinery, as well as rubber, plastics, textiles, apparel, and leather products (figure 4.2).

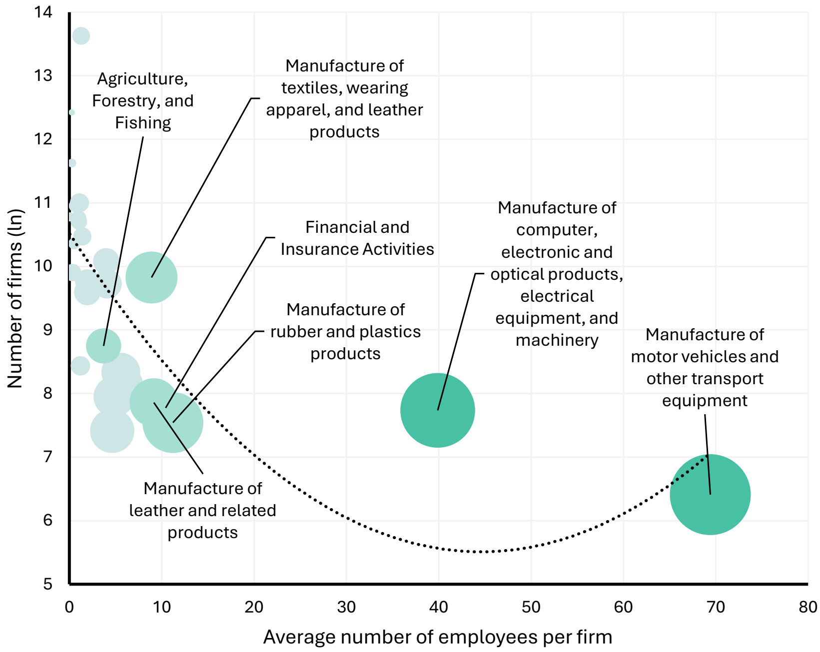
Figure 4.2 Distribution of Micro, Small, Medium, and Large Private Firms Across Economic Sectors in Tunisia



Source: Based on data from INS 2021

Sectors with fewer enterprises are precisely those where firms employ more workers on average (figure 4.3). This pattern is especially pronounced in motor vehicle manufacturing, transport equipment, and electronics, where firms employ on average 40–80 workers per enterprise, compared to much lower averages in low-technology sectors.

Figure 4.3 Correlation Between the Number of Firms in Each Sector and the Average Number of Employees Per Firm



Source: Based on data from INS **2021**

Note: Bubble size indicates the share of medium and large firms relative to total firms within each sector.

This finding underlines two key dynamics. First, capital intensity in high-technology industries reduces the labor-to-capital ratio but still requires substantial workforce numbers due to the size of firms, complexity of production, oversight, and maintenance. Second, labor-intensive, low-technology sectors remain important sources of employment generation, despite lower productivity levels.

Together, these dynamics suggest that Tunisia's job creation potential rests on a dual structure: scaling up microenterprises in services and trade to absorb large numbers of low-educated workers, while simultaneously supporting medium and large manufacturing firms in technology-driven sectors that can generate higher-quality jobs for skilled labor.

Box 4.1 Technology Adoption and Labor Needs Across Economic Sectors

Large firms in Tunisia are concentrated in medium- to high-technology sectors, according to the United Nations Industrial Development Organization's Technology Classification of Industrial Activities (UNIDO 2019, 2022; table B4.1.1). Industries such as the manufacture of motor vehicles and transport equipment, as well as the production of computers, electronics, optical products, electrical equipment, and machinery, fall into the medium-high to high technology category. Firms in these sectors are typically capital intensive, relying on advanced machinery and infrastructure, and depend on a smaller (relative to capital), but highly skilled, workforce to operate, maintain, and manage complex technologies effectively.

Table B4.1.1 Technology Classification of Industrial Activities

ISIC Code	Industry Description	Technolog Level
10	Manufacture of food products	**Low**
11	Manufacture of beverages	**Low**
12	Manufacture of tobacco products	**Low**
13	Manufacture of textiles	**Low**
14	Manufacture of wearing apparel	**Low**
15	Manufacture of leather and related products	**Low**
16	Manufacture of wood and products of wood and cork (except furniture); straw and plaiting	**Low**
17	Manufacture of paper and paper products	**Low**
18	Printing and reproduction of recorded media	**Low**
19	Manufacture of coke and refined petroleum products	**Medium-low**
20	Manufacture of chemicals and chemical products	**Medium-high and high**
21	Manufacture of basic pharmaceutical products and preparations	**Medium-high and high**
22	Manufacture of rubber and plastics products	**Medium-low**
23	Manufacture of other nonmetallic mineral products	**Medium-low**
24	Manufacture of basic metals	**Medium-low**
25	Manufacture of fabricated metal products (except machinery and equipment)	**Medium-low**
26	Manufacture of computer, electronic, and optical products	**Medium-high and high**
27	Manufacture of electrical equipment	**Medium-high and high**
28	Manufacture of machinery and equipment n.e.c.	**Medium-high and high**
29	Manufacture of motor vehicles, trailers, and semi-trailers	**Medium-high and high**
30	Manufacture of other transport equipment	**Medium-high and high**
31	Manufacture of furniture	**Low**
32	Other manufacturing	**Low**

Note: n.e.c. = not elsewhere classified.

Medium and large firms are also found, though to a lesser extent, in low-technology industries such as textiles, apparel, and leather products. While classified as low technology, these industries are more labor intensive. Their relatively higher number of medium and large enterprises means they play a significant role in employment generation, particularly for lower-skilled workers.

A further example is food and beverage manufacturing, another low-technology but labor-intensive sector. Although medium and large firms represent only 2 percent of all enterprises in the sector, they account for 395 firms—the second-largest share of medium and large enterprises among all Tunisian manufacturing industries. Jobs in these firms are generally more routine and less dependent on advanced technologies than in high-tech sectors, but their labor-intensive production processes sustain substantial workforce demand.

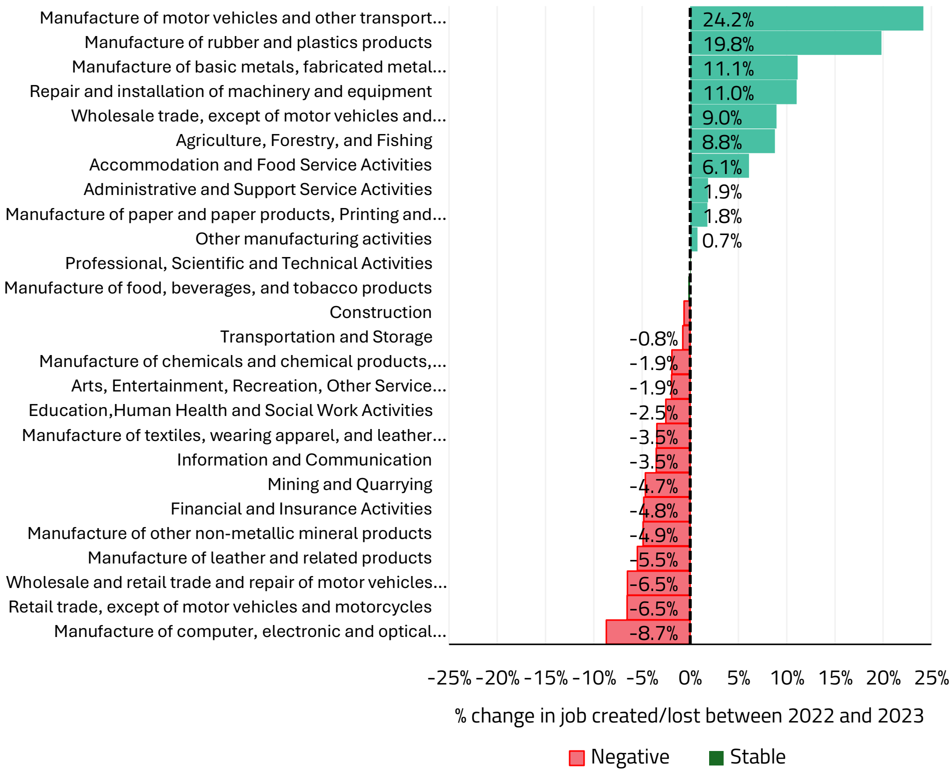
4.2 Sectoral Dynamics of Job Creation and Contraction

Job creation in Tunisia has recently been concentrated in technology-intensive sectors, although their capacity to absorb labor remains limited relative to the scale of unemployment. Between 2022 and 2023, the strongest gains occurred in motor vehicles and transport equipment (+24 percent), followed by rubber and plastics (+19.8 percent), basic metals and fabricated metal products (+11 percent), and the repair and installation of machinery and equipment. Together, these four sectors generated more than 25,000 jobs, including over 19,000 new positions in motor vehicle manufacturing alone (figure 4.4).

Despite this dynamism, the weight of these industries in the labor market remains modest. Collectively, they account for less than 3 percent of all private firms and employ only about 125,800 workers—just under 6 percent of total private sector employment across 26 sectors. By contrast, agriculture, forestry, and fisheries together with accommodation and food services created 22,300 jobs (16,600 and 5,700, respectively), underscoring the continued centrality of the agrifood system in employment generation.

At the same time, several labor-intensive industries suffered significant contractions. Job losses totaled 10,800, almost evenly split between textiles, wearing apparel, and leather products (–5,600; –3.5 percent) and electronics, computers, optical products, electrical equipment, and machinery (–5,200; –8.7 percent). Together, these sectors accounted for 10 percent of total employment in 2023. Employment in textiles, apparel, and leather has been on a sustained downward trend since 2019, with a net decline of 23,000 jobs, largely driven by contraction in apparel manufacturing. By contrast, electronics and related products had registered growth between 2019 and 2023 (+3,600 jobs) before posting losses in 2022–23.

Figure 4.4 Net Job Creation by Economic Sector, 2022–23 (%)



Source: Based on data from INS (2023)

Box 4.2 Hiring Difficulties and Job Dynamics

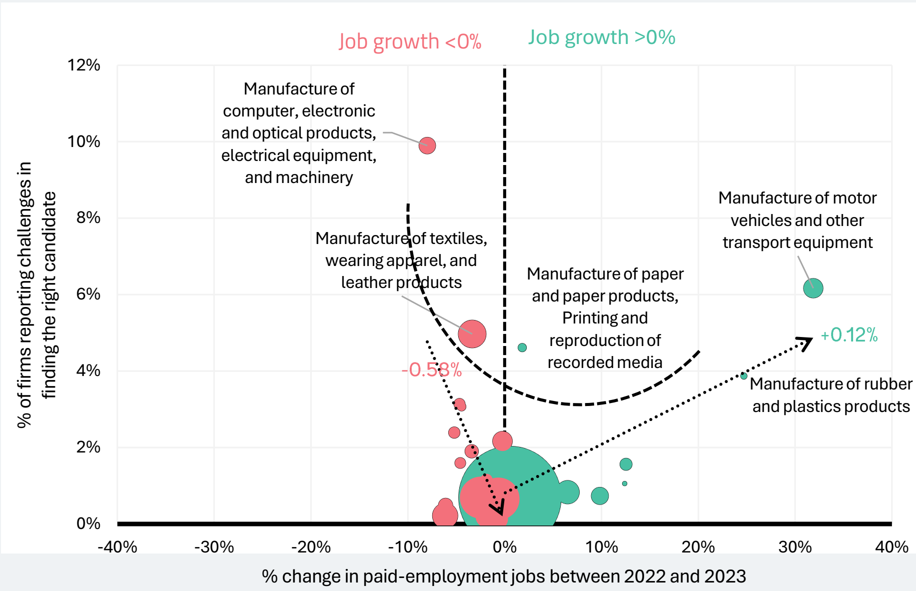
Hiring difficulties are not confined to sectors that create jobs; they are equally acute in sectors where jobs are disappearing. A correlation analysis shows a U-shaped relationship between job growth and recruitment challenges (figure B4.2.1).

In contracting industries, job destruction often affects low-skilled positions, while the remaining opportunities require higher qualifications. For example, in electronics and machinery manufacturing, 6,000 low-skilled jobs were lost but only 2,000 technical jobs were created, leaving firms unable to find suitably skilled candidates.

In fast-growing sectors, rapid expansion intensifies competition for scarce technical workers. In motor vehicle and transport equipment manufacturing, nearly all 19,000 new jobs created in 2022–23 were for medium-skilled technical occupations, while low-skilled employment fell (–1,000).

On average, a 1 percent rise in job creation is associated with a 0.12 percentage point increase in reported recruitment difficulties. In contrast, a 1 percent rise in job destruction corresponds to a much steeper 0.58 percentage point increase.

Figure B4.2.1 Correlation Between Net Job Creation and the Share of Small, Medium, and Large Firms Reporting Hiring Difficulties (% of firms)



Source: Based on data from INS (2022–23); World Bank's Enterprise Survey on Job Vacancies and Skills.

Note: Bubble size represents the number of paid employment jobs in each economic sector.

This dual pattern explains why recruitment challenges are most severe in both **declining sectors,** where mismatches dominate, and **expanding sectors,** where demand for technical skills rapidly outpaces supply.

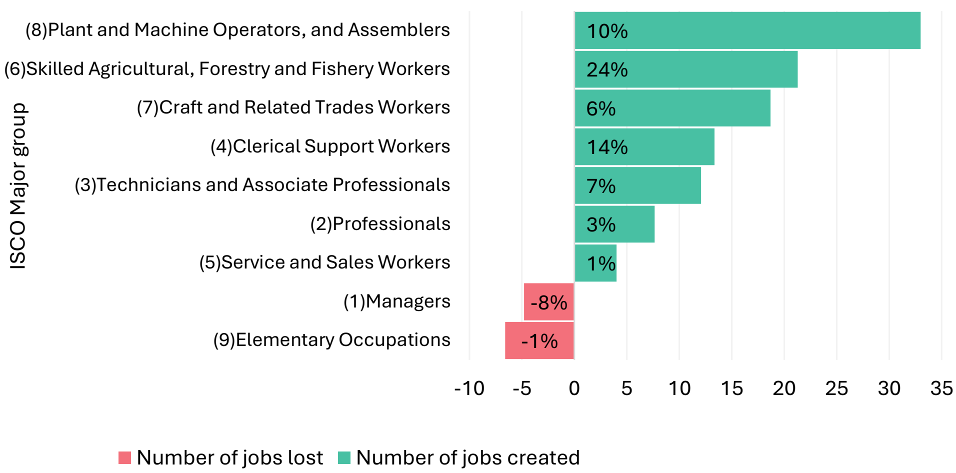
4.3 Occupational Dynamics of Job Creation and Contraction

Job creation in Tunisia has been driven primarily by medium-skilled manual and technical occupations (International Standard Classification of Occupations [ISCO] major groups 6, 7, and 8), reflecting rising demand from firms in medium- to high-technology sectors (figure 4.5). The largest increase occurred among plant and machine operators and assemblers, which gained 33,000 jobs between 2022 and 2023 (+9.7 percent). The International Labour Organization's time-series data confirm a long-term upward trend: these occupations rose from 9 percent of total employment in 1991 to 21 percent in 2023.

Other medium-skilled manual occupations also expanded. Skilled agricultural workers created 21,200 jobs, while craft and related trades workers added 18,700 jobs. The latter category shows particularly strong structural growth, increasing from 11.5 percent of total employment in 1991 to 23 percent in 2023.

By contrast, demand for low-skilled elementary occupations (ISCO 9) has declined, with a net loss of 7,000 jobs between 2022 and 2023. This contraction is consistent with the large pool of discouraged inactive individuals (see chapter 3, section 3.2), many of whom report skills and qualification gaps as the main barrier to reentering the labor market.

Figure 4.5 Jobs Created, by Major ISCO Group (%)

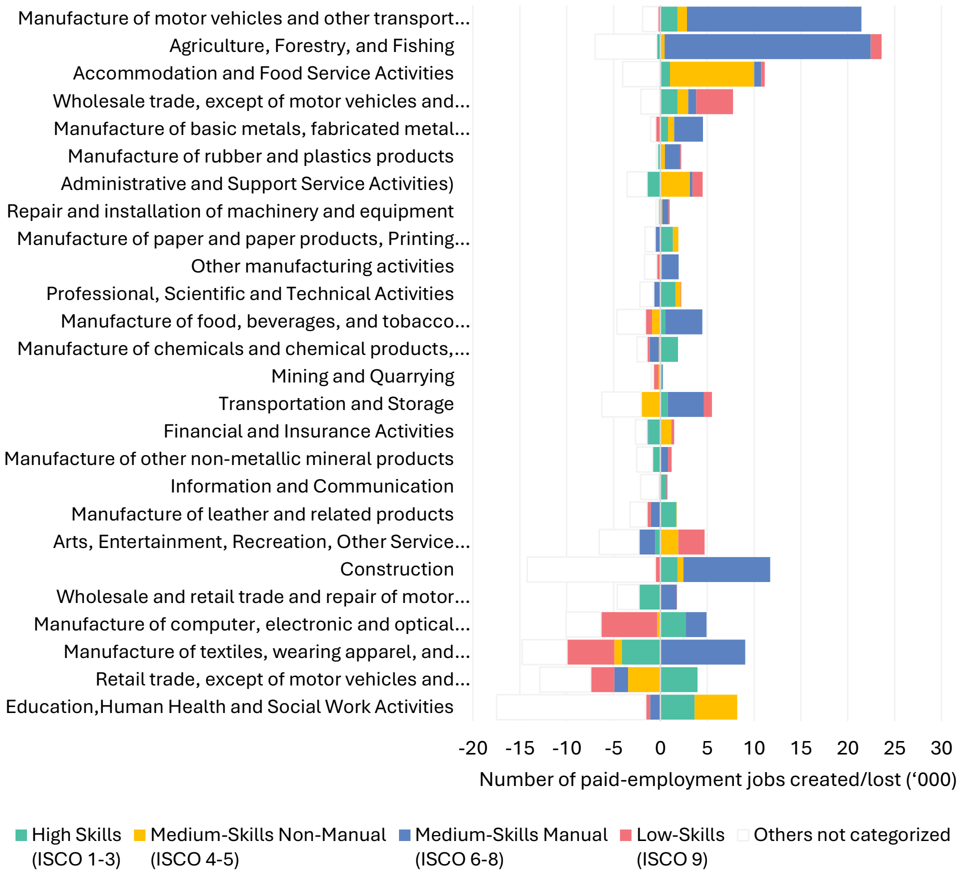


Source: Based on data from INS (2022–23).

Note: ISCO = International Standard Classification of Occupations.

Figure 4.6 presents the distribution of jobs created and lost by skill level and occupation, delineating high-skilled jobs (managers, professionals, and technicians, ISCO 1–3), mid-skilled nonmanual jobs (clerical support and service and sales workers, ISCO 4–5), mid-skilled manual technical jobs (skilled agricultural workers, craft and related trades, and plant and machine operators and assemblers, ISCO 6–8), and low-skilled jobs (elementary occupations, ISCO 9).

Figure 4.6 Jobs Created and Lost, by Skill Level, Across Economic Sectors



Source: Based on data from INS (2022–23).

Three key findings emerge. First, job growth was led by medium-skilled technical jobs in high-tech sectors. The manufacture of motor vehicles and transport equipment generated a net increase of 19,000 jobs, including 13,000 plant and machine operators and assemblers (ISCO 8) and 5,000 craft and related trades workers (ISCO 7). This illustrates how high-technology industries are shaping labor demand, primarily for medium-skilled technical roles.

Second, there are structural employment shifts within low-tech sectors. Even in textiles, apparel, and leather, where overall job creation has weakened, medium-skilled technical occupations increased while low-skilled jobs declined. This pattern reflects two main dynamics: First, the textile industry, historically labor intensive and characterized by low productivity, employed workers with predominantly basic skills. However, with the phasing out of the Multi-Fibre Arrangement, which had previously protected the industry with export quotas to developed countries, the sector was exposed to global competition, particularly from low-cost producers such as China. As a result, Tunisia's textile sector experienced a decrease in its contribution to gross domestic product, and its share of total merchandise exports dropped significantly (OECD 2022), which has contributed to a reduction in low-skilled job opportunities. Second, despite these challenges, firms within the sector are undergoing structural transformations, shifting toward higher value-added activities. While jobs in textile fiber production have notably declined, employment in apparel and footwear has increased (OECD 2022). Notably, the unit value of Tunisian textile exports to the European Union (EU) remains among the highest across EU importers (Grumiller et al. 2018). This shift toward higher value-added activities help explains the reduction in job creation within low-productivity, low-skill firms within this sector, and the expansion of jobs in medium-skilled technical occupations.

Third, agrifood systems serve as engines of medium-skilled job creation. Agriculture, fisheries, and aquaculture added 22,000 jobs for skilled agricultural workers (ISCO 6), reflecting gradual modernization and increased demand for specialized tasks beyond traditional harvesting. Recent initiatives—such as the Nexus Skills and Jobs for Youth Project (2023) under the Tunisian Rural and Agricultural Chains of Employment Program (TRACE)—have further reinforced this trend.

Box 4.3 Which Occupations Are Driving Job Growth?

An analysis at the 4-digit ISCO-08 (International Standard Classification of Occupations 2008) level identified the 25 occupations with the largest net job gains and losses between 2022 and 2023, based on microdata from the Tunisian Labor Force Survey. To ensure statistical reliability, occupations with fewer than 30 unweighted observations were excluded, reducing the sample from 378 to 225 occupations. While this filtering removed some rare jobs (e.g. food and beverage tasters, actors, chemists), it strengthened robustness. Two caveats apply: the survey records only the main job of respondents, thus missing secondary jobs, and the focus on paid employees excludes self-employed and informal work.

Findings confirm a structural shift in labor demand toward medium-skilled technical occupations, particularly in production and industrial processes (table B4.3.1). More than half of the top 25 expanding occupations fall into ISCO's major groups 7 and 8 (craft and related trades workers; plant and machine operators and assemblers). In absolute terms, the largest gains were:

1. Stationary plant and machine operators: +7,200 jobs (+37 percent)
2. Electrical and electronic equipment assemblers: +4,100 jobs (+24 percent)
3. Welders and flame cutters: +3,900 jobs (+17 percent)

In textiles and apparel, sewing machine operators added +2,400 jobs, reflecting the sector's transformation toward higher value-added, design-intensive production. Unlike mass low-cost manufacturing, these roles involve specialized functions—stitching, repairing, and finishing—that raise value added per worker.

The largest overall gain, however, was recorded among skilled agricultural, forestry, and fishery workers (+23,000 jobs). This broad group likely includes specialized occupations in modern agriculture, livestock, and aquaculture. For instance, Tunisia's mariculture sector now employs roughly 3,000 workers, including scuba divers and engineers, and is set for further expansion as private investment grows.

Table B4.3.1 Top 25 Occupations, by Net Jobs Created, 2022–23

Rank	Skill Level	ISCO Code	Detailed Occupation Label (4-digit)	Occupation Major Group	Jobs Created 2022–23 (thousands)	% Change 2023/2022
1	Medium	62	N.A.	Skilled agricultural, forestry, and fishery workers	23.0	32%
2	Medium	8189	Stationary plant and machine operators	Plant and machine operators and assemblers	7.2	37%
3	Medium	5413	Prison guards	Services and sales workers	5.8	9%
4	High	2341	Primary school teachers	Professionals	5.0	8%
5	High	2421	Management and organization analysts	Professionals	4.1	37%
6	Medium	8212	Electrical and electronic equipment assemblers	Plant and machine operators and assemblers	4.1	24%
7	Medium	8219	Assemblers n.e.c.	Plant and machine operators and assemblers	3.9	17%
8	Medium	7231	Motor vehicle mechanics and repairers	Craft and related trades workers	3.5	12%
9	High	3322	Commercial sales representatives	Technicians and associate professionals	3.5	25%

10	Medium	7214	Structural metal preparers and erectors	Craft and related trades workers	3.2	41%
11	Medium	5130	Waiters	Services and sales workers	3.1	4%
12	High	3213	Pharmaceutical technicians and assistants	Technicians and associate professionals	3.0	41%
13	Medium	7131	Painters and related workers	Craft and related trades workers	3.0	9%
14	High	1112	Senior government officials	Managers	2.8	16%
15	Medium	7522	Cabinet-makers and related workers	Craft and related trades workers	2.6	17%
16	Medium	7411	Building and related electricians	Craft and related trades workers	2.5	18%
17	High	3113	Electrical engineering technicians	Technicians and associate professionals	2.4	38%
18	Low	9215	Forestry laborers	Elementary occupations	2.4	33%
19	Medium	8153	Sewing machine operators	Plant and machine operators and assemblers	2.4	2%
20	Medium	8332	Heavy truck and lorry drivers	Plant and machine operators and assemblers	2.4	7%
21	Medium	8331	Bus and tram drivers	Plant and machine operators and assemblers	2.3	22%
22	Low	9613	Sweepers and related laborers	Elementary occupations	2.2	21%
23	Medium	5120	Cooks	Services and sales workers	2.1	15%
24	Medium	7316	Signwriters, decorative painters, engravers and etchers	Craft and related trades workers	2.0	43%
25	Medium	8141	Rubber products machine operators	Plant and machine operators and assemblers	1.9	26%

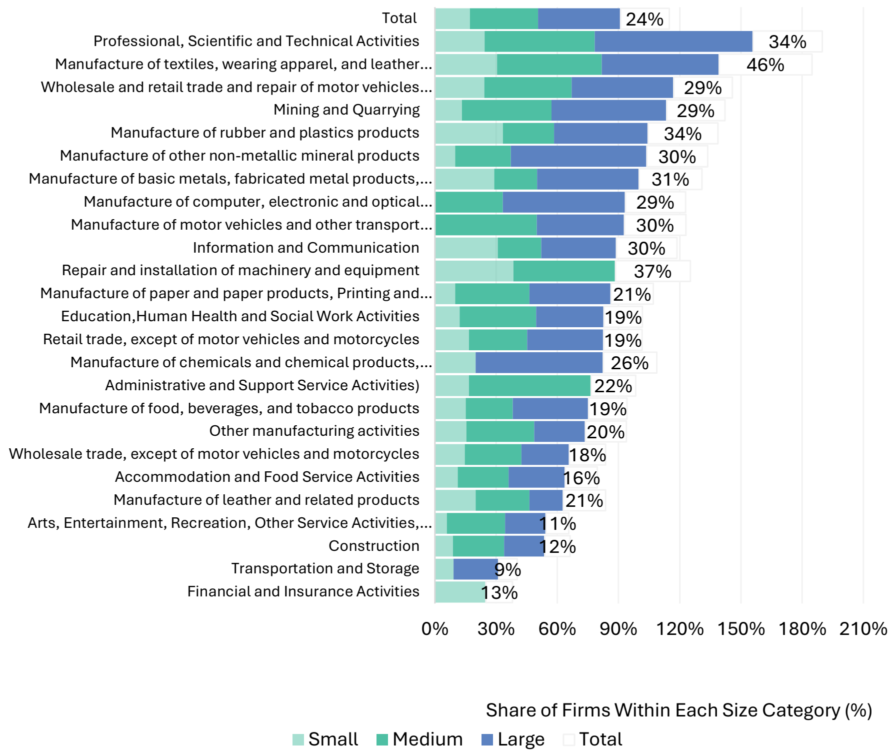
Note: ISCO = International Standard Classification of Occupations; n.e.c. = not elsewhere classified.

4.4 Unfilled Labor Demand: Hiring Firms

Less than a quarter (24 percent) of small, medium, and large private sector firms in Tunisia are actively recruiting (figure 4.7). Among the 4,847 firms seeking to hire, recruitment activity is split almost evenly between manufacturing (2,613 firms, including construction) and services (2,233 firms). Within manufacturing, recruitment is most concentrated in textiles, apparel, and leather (46 percent of firms), followed by repair and installation of machinery and equipment (37 percent). In services, professional, scientific, and technical activities stand out, with 337 of 999 firms (34 percent) reporting vacancies.

Recruitment intensity rises consistently with firm size. Small firms are less likely to hire, whereas medium and large firms show significantly higher recruitment activity. In textiles, apparel, and leather, for example, only 30 percent of small firms are actively hiring compared to 58 percent of large firms with more than 50 employees.

Figure 4.7 Share of Firms Hiring, by Firm Size and Economic Sector

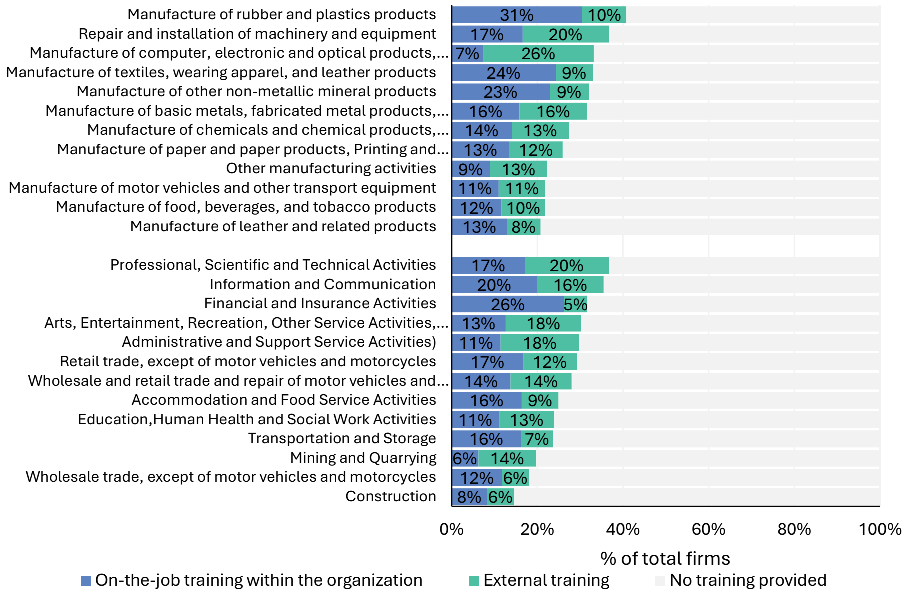


Source: World Bank's Enterprise Survey on Job Vacancies and Skills (2025).

Recruitment demand also shapes firms' training practices (figure 4.8). The share of firms providing training—whether internal or external—tends to increase in sectors with higher vacancy rates. Employers in high-demand sectors often respond to hiring pressures by investing in workforce development. Yet, exceptions remain. Transportation and storage, construction, and accommodation and food services report high recruitment difficulties but low training activity, pointing to deeper structural mismatches but also to the smaller size of firms within this sector. By contrast, professional and technical services and machinery and equipment repair combine high hiring intensity with strong training investment, and face fewer recruitment obstacles.

The textile and apparel sector stands out as a clear outlier. It combines strong hiring demand and persistent recruitment difficulties with very low investment in training, as only one-third of firms provide either on-the-job or external training. This disconnect suggests that firms are not addressing skills shortages through workforce development despite pressing labor needs. Training practices also vary across sectors. In industries with high hiring activity, such as rubber and plastics or textiles, apparel, and leather, training is predominantly internal, reflecting the task-specific nature of required skills. By contrast, in technology-intensive sectors such as electronics and optical products, training is more often external, pointing to demand for specialized and rapidly evolving competencies that firms cannot easily provide in-house.

Figure 4.8 Share of Firms Within Sector Providing Training



Source: World Bank's Enterprise Survey on Job Vacancies and Skills (2025)

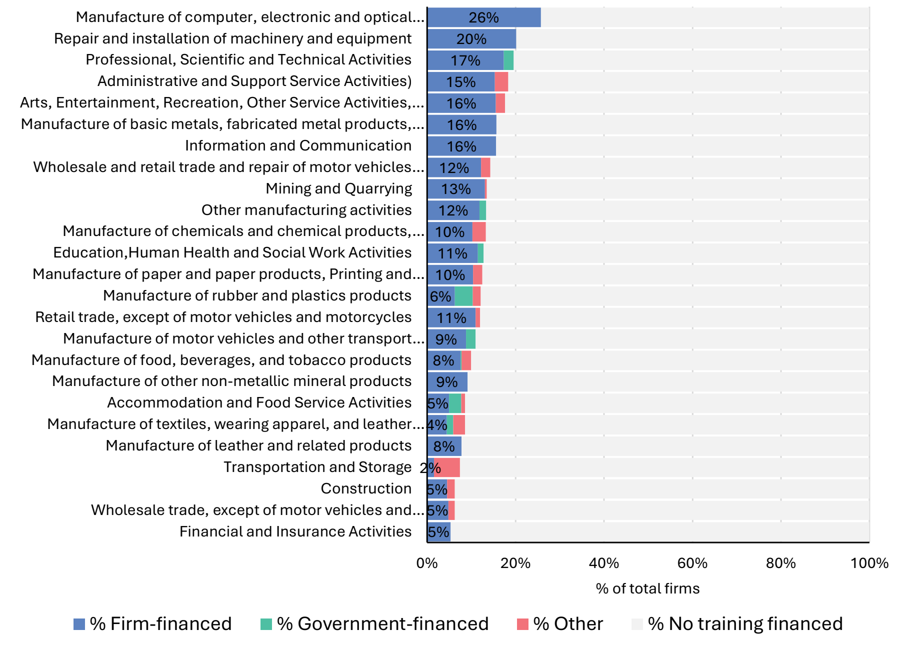
Box 4.4 Who Pays for Training?

Only 12 percent of private firms finance training directly—through internal resources, government programs, or other channels. Larger firms are far more likely to invest: they are 1.6 times more likely than medium firms and 4.2 times more likely than small firms to finance training.

The propensity to finance training also rises almost linearly with hiring intensity, indicating that firms under stronger labor demand are more inclined to support workforce development. Still, exceptions persist. In textiles, apparel, and leather, despite high hiring rates, only 4 percent of firms finance training, reflecting a persistent disconnect between demand and investment in skills.

The highest incidence of firm-financed training is observed in technology-intensive industries (figure B4.4.1), such as computers, electronics, and optical products (26 percent) and machinery repair and installation (20 percent), where firms face specialized skill needs that require structured investment.

Figure B4.4.1 Proportion of Firms Offering Training by Financing Source Across Sectors

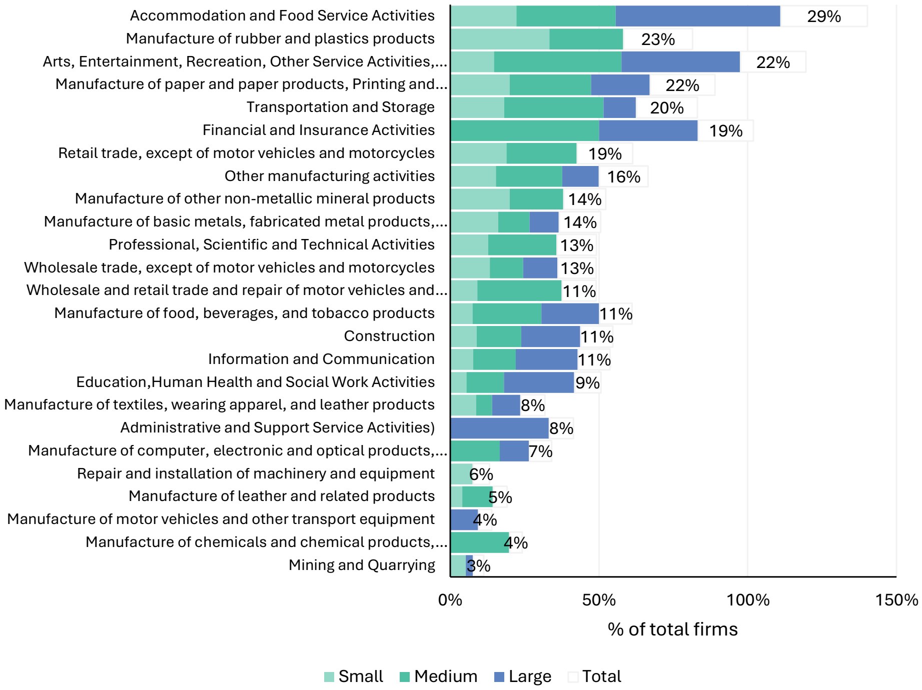


Source: World Bank's Enterprise Survey on Job Vacancies and Skills (2025).

4.5 Future Recruitment Plans

In Tunisia, 24 percent of firms report at least one active job vacancy, while an additional 13 percent indicate an intention to recruit in the near future, despite not currently hiring (figure 4.9). Sectors with the strongest hiring intentions are those inherently seasonal or heavily affected by fluctuations in demand. This is most evident in accommodation and food services, where 29 percent of firms plan to recruit, followed by arts, entertainment, recreation, and other services (22 percent). Both sectors typically experience cyclical recruitment patterns, with demand peaking during tourism seasons or major cultural events.

Figure 4.9 Share of Firms with Hiring Intentions, by Size and Economic Sector



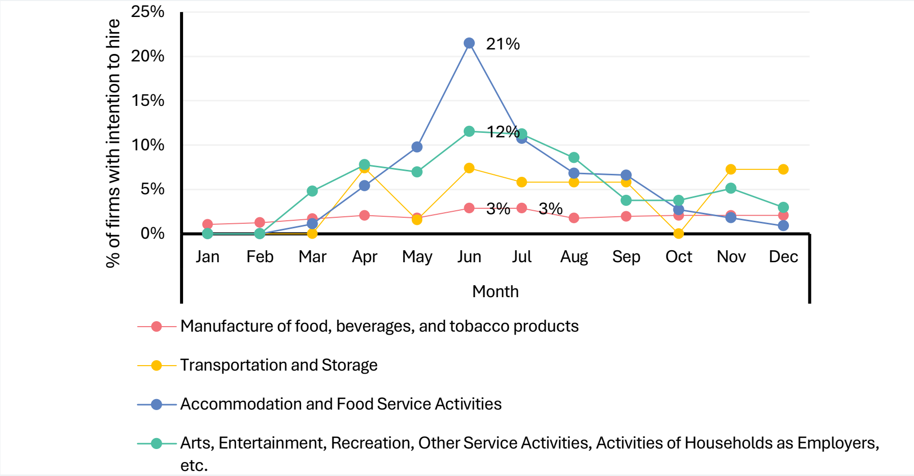
Source: World Bank's Enterprise Survey on Job Vacancies and Skills (2025).

Some nonseasonal sectors also display reliance on seasonal cycles. For instance, transportation and storage are closely linked to accommodation and food services: during holidays or tourist peaks, demand for logistics and passenger transport rises sharply, driving temporary recruitment increases. These spillover effects show how seasonal surges in one sector can cascade across related industries.

Box 4.5 Seasonal Hiring Patterns, and Implications for Training

Understanding seasonal recruitment cycles is critical for aligning training provision with labor demand. Hiring intentions typically peak in the summer months, though intensity varies by sector. In June, for example, intentions reach 21 percent in accommodation and food services, and 12 percent in arts, entertainment, and recreation, both reflecting tourism and event-driven demand (figure B4.5.1).

Figure B4.5.1 Monthly Distribution of Firms Planning to Hire



Source: World Bank's Enterprise Survey on Job Vacancies and Skills (2025).

The interconnected nature of these industries also stimulates labor demand in related sectors. Accommodation and food services drive higher activity in food and beverage manufacturing and transportation and storage, as firms scale up to meet seasonal needs. Likewise, cultural events boost demand for catering, logistics, and distribution services, reinforcing seasonal hiring cycles.

These patterns suggest that training programs should be timed to precede peak recruitment periods, ensuring workers acquire relevant skills in advance. Aligning training delivery with labor market cycles would improve workforce readiness, reduce hiring frictions, and help firms respond more effectively to seasonal surges.

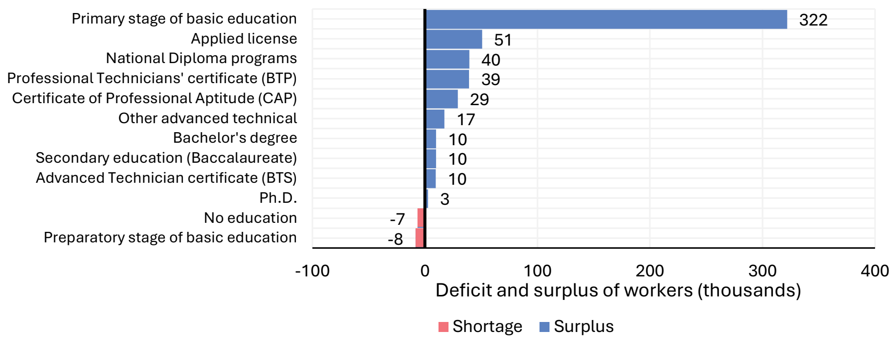
4.6 Tunisia's Labor Market Paradox: Surplus Workers, Unfilled Jobs

Given the weak recruitment patterns described above and the abundance of job seekers highlighted in chapter 3, a key question is whether Tunisia truly faces a labor shortage. Effective job matching depends on three conditions: workers must have the right skills, be available in the right place, and be ready at the right time. When any of these elements is missing, firms face hiring difficulties. Such difficulties can take the form of labor shortages, when there are simply too few workers available, or skills shortages, when enough workers are present but they lack the qualifications and competencies that employers demand. In the Tunisian labor market, the evidence suggests that hiring difficulties stem not from a shortage of job seekers, but from structural imbalances in their location, qualifications, and how well their skills align with employer needs.

The data show that Tunisia does not face a general labor shortage. In 2024, firms reported about 58,000 job vacancies, compared to nearly 650,000 active job seekers—an average of 11 job seekers per vacancy. Even excluding discouraged workers, the labor supply vastly exceeds current demand. At the regional level, surpluses are especially acute in the western governorates (up to 81 job seekers per vacancy in the southwest), reflecting limited economic activity and weak demand absorption. By contrast, tighter labor markets in the northeast and central-east (four to five job seekers per vacancy) reflect stronger economic dynamism but still stop short of signaling true shortages.

Yet, by education level the imbalance takes a different shape. Workers with only primary education are scarce, while those with vocational and tertiary qualifications are in chronic oversupply. For example, surpluses reach 51,000 among applied license holders and 40,000 among national diploma holders (figure 4.10). This "education paradox" reflects an economy unable to absorb the growing stock of educated workers.

Figure 4.10 Surplus and Deficit of Workers by Educational Level



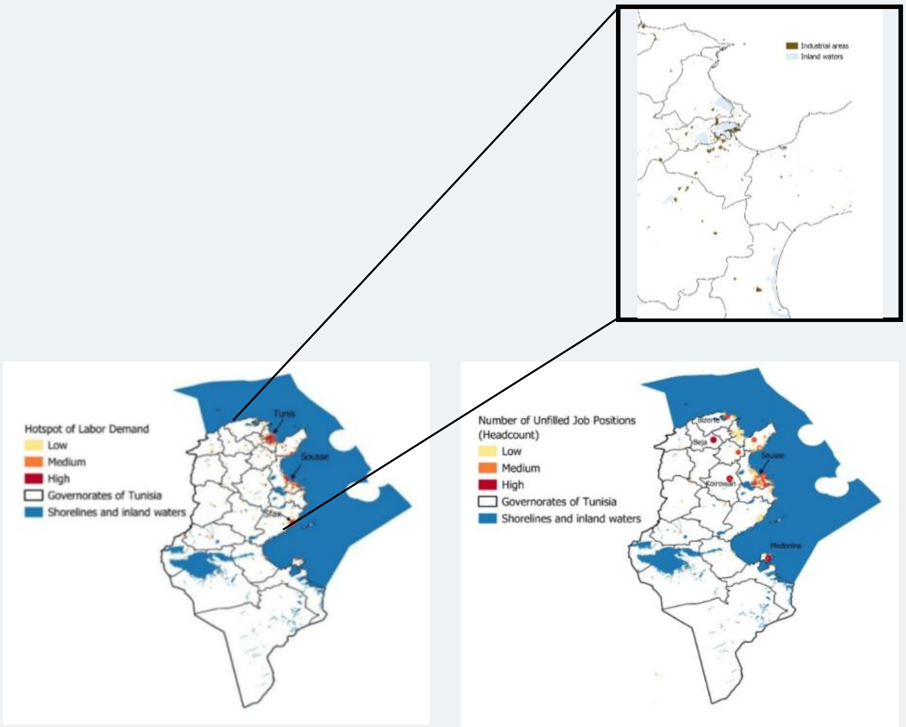
Source: Based on data from INS (2023) and World Bank's Enterprise Survey on Job Vacancies and Skills.

Box 4.6 Geographic Hotspots of Labor Demand in Tunisia

Geo-referenced data from the Enterprise Survey on Job Vacancies and Skills highlight the spatial concentration of labor demand in Tunisia. Four governorates—Tunis (17 percent), Sfax (16 percent), Sousse (16 percent), and Monastir (12 percent)—together account for nearly two-thirds of all reported vacancies, reflecting the concentration of industrial and economic activity in these regions.

Greater Tunis stands out as an outlier. While it hosts many hiring firms, the average number of vacancies per firm is relatively low. This fragmentation explains its position in figure B4.6.1: despite a dense cluster of firms, overall recruitment intensity per firm remains modest.

Figure B4.6.1 Hotspots of Labor Demand (left), Industrial Areas (right), and Firms with the Highest Number of Open Job Positions



Source: World Bank's Enterprise Survey on Job Vacancies and Skills.

4.7 Sectoral Vacancies and Skills Shortages: Reasons for Unmet Labor Demand

While section 4.5 highlighted a general surplus of labor compared to demand, this does not rule out the presence of skill shortages in specific sectors. On the contrary, such shortages may be even more acute in contexts characterized by excess labor supply. This apparent paradox stems from at least two structural dynamics.

First, in an economy with persistently weak labor demand, individuals—particularly young people—may have limited incentives to invest in education and training, especially when the perceived returns are low. As a result, a significant portion of the labor force may enter or remain in the market with only basic or outdated skills, poorly aligned with the evolving needs of employers.

Second, even when job seekers acquire relevant skills through formal channels such as technical and vocational education and training (TVET) systems, extended periods of unemployment or underemployment can erode these competencies. Without opportunities to apply and update their skills, workers may face a gradual depreciation of their human capital, leaving them less competitive or mismatched for available positions.

Against this backdrop, the analysis presented in the following subsections examines Tunisia's labor market imbalances at two levels:

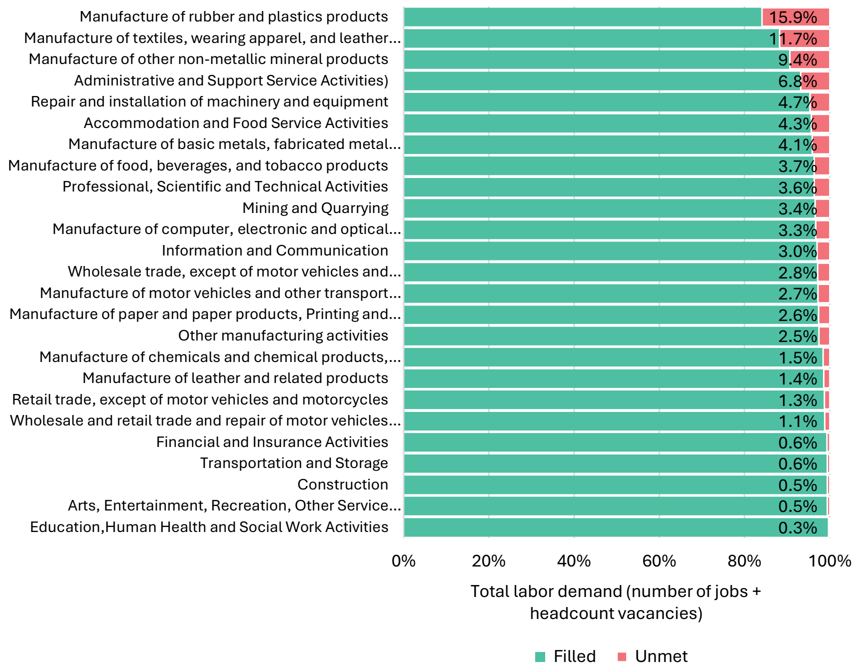
- **Sectoral shortages.** The extent of unfilled labor demand by sector, in order to identify which parts of the economy are driving job vacancies. The vacancy rate at this level captures aggregate unmet demand but does not distinguish whether gaps are driven by quantitative shortages (an insufficient number of workers), qualitative shortages (a lack of adequate skills), or normal frictions inherent to the labor market, such as the time it typically takes firms to fill open positions
- **Occupational shortages.** Analyzing recruitment difficulties at the level of specific occupations, focusing on the types of jobs that firms struggle most to fill and the reasons underlying these persistent vacancies.

Sectoral Evidence of Job Vacancies

To begin with the sectoral analysis, figure 4.11 presents total labor demand, distinguishing between filled positions (paid employment) and unfilled positions (job vacancies). Two contrasting patterns emerge. There are acute but small-scale shortages: the manufacture of rubber and plastic products registers the highest relative shortage, with 15.9 percent of demand unmet. Yet because the sector itself is small, this translates to only 1,678 vacancies. Second, there are large-scale shortages in traditional industries: textiles, including wearing apparel and leather, record an 11.7 percent shortage but also the largest absolute number of unfilled positions (21,845), making it the single-largest source of unmet labor demand.

Other sectors stand out for their sizable contribution to overall vacancies. Accommodation and food services show 4.3 percent of demand unmet (5,200 vacancies), while food and beverage manufacturing registers 3.7 percent (3,139 vacancies). Taken together, these sectors account for some of the highest absolute vacancy levels across the economy and highlight where employment opportunities are present but remain unfilled.

Figure 4.11 Percentage of Unfilled Jobs by Sector

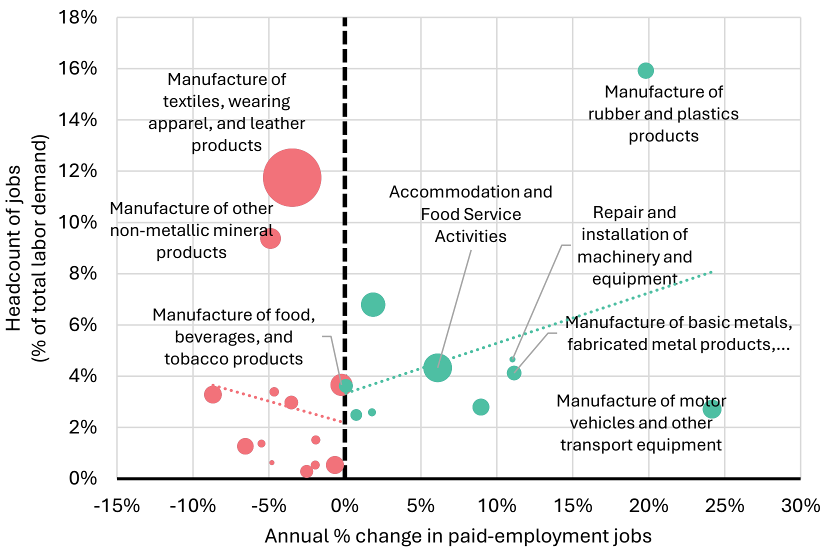


Source: Based on data from the World Bank's Enterprise Survey on Job Vacancies and Skills.

The relationship between job creation and unmet labor demand reveals important structural dynamics in Tunisia's labor market (figure 4.12). In industries such as textiles, apparel, and leather, employment is contracting (net job growth of −3.5 percent), yet vacancy rates remain high. Similarly, food and beverage manufacturing shows a small employment decline (−0.2 percent) and significant recruitment difficulties, with 34 percent of firms unable to find technically qualified candidates. These cases illustrate how structural change and automation reduce overall employment opportunities, while simultaneously increasing the demand for more specialized skills. In such contexts, shortages are not the result of insufficient workers, but of workers lacking the right qualifications.

Other parts of the economy show the opposite trajectory: employment growth is strong, but labor supply cannot keep up. Accommodation and food services, for example, recorded net job creation of +6.1 percent, yet nearly 39 percent of firms reported difficulties in hiring. Information and communication present an even more striking case: despite moderate levels of labor demand, over half of the firms (50.1 percent) reported technical skills gaps—the highest across all sectors. These patterns suggest that in growing industries, the speed of expansion is outpacing the training system's capacity to deliver workers with the required skills.

Figure 4.12 Correlation Between Vacancy Rate and Net Job Creation



Source: Based on data from the World Bank's Enterprise Survey on Job Vacancies and Skills; and INS.

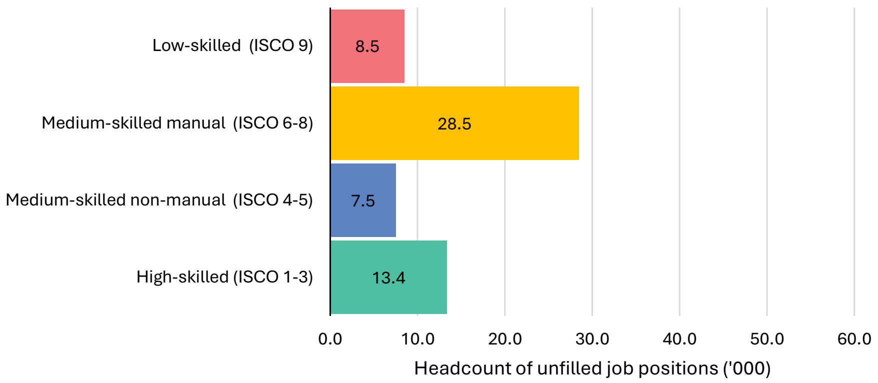
Taken together, these findings show that skills shortages emerge in both contracting and expanding sectors, though for different reasons. In declining industries, they are rooted in structural transformation that alters the nature of work faster than the workforce adapts. In expanding industries, they reflect the inability of the education and training system to keep pace with rapidly growing labor demand. **(Annex 1 summarizes these dynamics**, presenting the total number of unfilled jobs by sector together with the share of firms reporting recruitment difficulties.)

Occupational Evidence of Job Vacancies and Skill Shortages

Analyzing shortages at the occupational level provides sharper insights into the roles where recruitment difficulties are most pronounced and why. The analysis draws on three complementary lenses: (1) the scale of shortages, measured by the absolute number of vacancies (headcount) to identify the occupations with the largest gaps; (2) the severity of shortages, measured by the vacancy rate (the share of unfilled jobs relative to total demand) to capture how acute shortages are regardless of occupation size; and (3) the drivers of shortages, based on employer-reported reasons for unfilled vacancies, which distinguish between genuine skills gaps, weak intermediation, and issues of job attractiveness.

Shortages are concentrated in technical medium-skilled jobs. Vacancies are not evenly distributed across the labor market. As shown in figure 4.13, medium-skilled manual technical occupations—craft and related trades workers, plant and machine operators, and assemblers—account for nearly half of all unfilled positions. High-skilled occupations (managers, professionals, and technicians) make up 23 percent of vacancies, showing that shortages extend beyond manual trades into technical and professional domains.

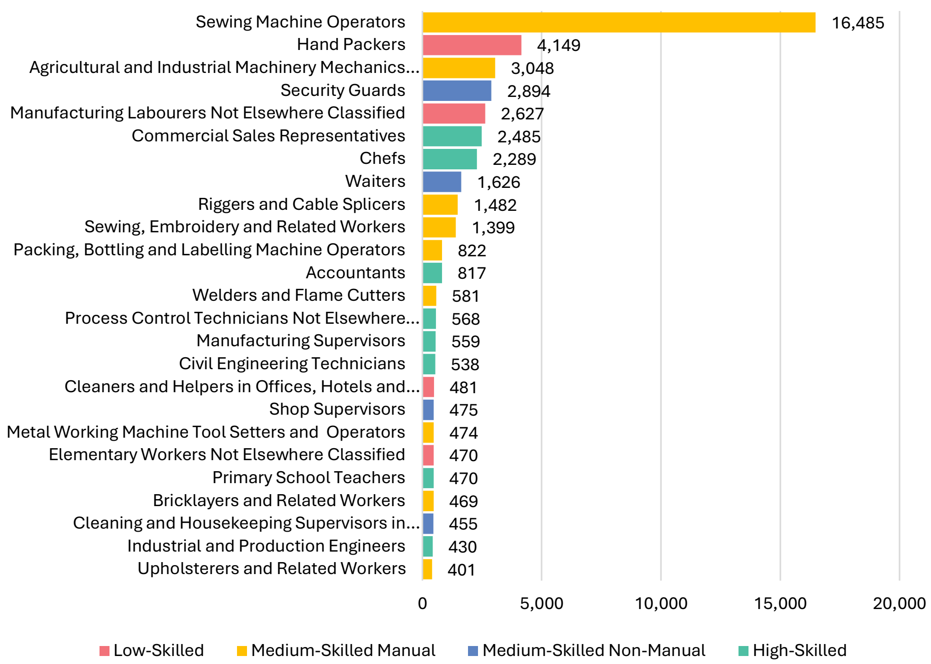
Figure 4.13 Number of Job Vacancies, by Skill Level



Source: Based on data from the World Bank's Enterprise Survey on Job Vacancies and Skills.

At a more detailed level (figure 4.14), 80 percent of all vacancies are concentrated in just 25 occupations, most of which require vocational training. The largest gaps are for sewing machine operators, agricultural and industrial machinery mechanics, sewing and embroidery workers, and riggers and cable splicers, which together represent nearly 39 percent of all open positions. High-skilled roles such as commercial sales representatives, chefs, accountants, and civil engineering technicians also emerge as critical shortage occupations.

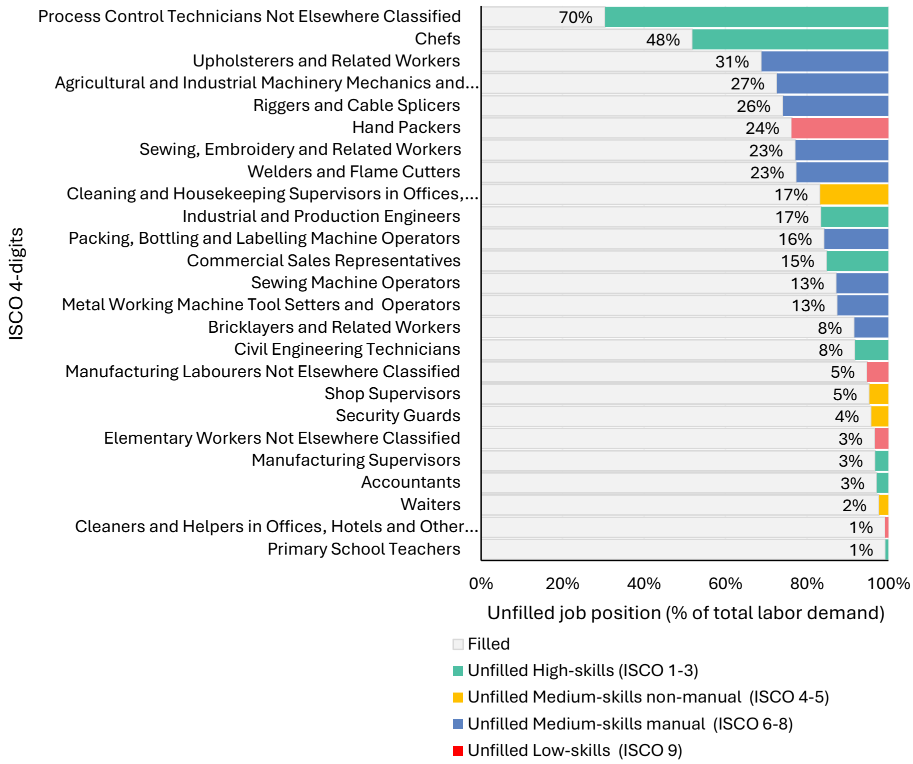
Figure 4.14 Job Vacancies by Detailed Occupation (ISCO 4-Digit Codes)



Source: Based on data from Based on data from the World Bank's Enterprise Survey on Job Vacancies and Skills.

Severe shortages are predominantly concentrated in technical and professional occupations. While headcounts highlight the overall scale of unmet demand, vacancy rates capture its intensity by measuring the number of "missing workers" relative to total labor demand within each occupation. Figure 4.15 shows that the most acute shortages occur in high-skilled technical roles—such as process control technicians (70 percent) and chefs (48 percent)—despite their relatively modest size. At the same time, large medium-skilled occupations combine substantial vacancy volumes with high vacancy rates, notably agricultural machinery mechanics (27 percent) and sewing machine operators (13 percent). These findings underscore a dual challenge: widespread shortages in vocational trades and acute bottlenecks in technical and professional jobs.

Figure 4.15 Job Vacancy Rate, by Occupation (ISCO 4-Digit Codes)



Source: Based on data from the World Bank's Enterprise Survey on Job Vacancies and Skills.

Focusing on the drivers of persistent vacancies across the 25 occupations with the highest unmet demand, the evidence shows that labor shortages are primarily explained by skill mismatches and inefficiencies in job matching systems. Table 4.1 summarizes these dynamics, reporting both the number and share of vacancies that remain unfilled, and classifying the underlying causes into three categories: (1) skills gaps, (2) weak employer–job seeker intermediation, and (3) lack of job attractiveness.

Job unattractiveness is the leading factor behind shortages in lower-skilled occupations. Repetitive tasks, low wages, limited job security, and geographic barriers discourage candidates from applying. Five of the top 25 occupations are affected, including two low-skilled occupations (manufacturing laborers and cleaners) and three medium-skilled technical roles (riggers, sewing workers, and welders). In these cases, unattractive wages are the single-most important driver of recruitment difficulties.

Weak job matching mechanisms contribute to shortages in 7 of the top 25 occupations. Information asymmetries between employers and job seekers limit recruitment in three medium-skilled technical occupations (sewing machine operators, agricultural and industrial machinery mechanics and repairers, and bricklayers), one medium-skilled nonmanual occupation (cleaning and housekeeping supervisors), one high-skilled technical occupation (civil engineering technicians), and two low-skilled occupations (hand packers and elementary workers n.e.c. [not elsewhere classified]). Among medium-skilled manual jobs, employers report both outreach challenges and skill mismatches, but weak intermediation remains the dominant constraint. In higher-skilled technical occupations, shortages are mainly driven by limited outreach, suggesting that qualified workers may exist but are disconnected from available opportunities.

Genuine skills shortages—a lack of workers with the required qualifications or competencies—are the dominant factor in 10 of the top 25 occupations. These are concentrated in medium- to high-skilled occupation and include four high-skilled technical and associate professional occupations (commercial sales representatives, chefs, process control technicians, and manufacturing supervisors), three high-skilled professions (accountants, primary school teachers, and industrial and production engineers), two medium-skilled service and sales jobs (waiters and shop supervisors), and one medium-skilled craft occupation (upholsterers and related workers). In these cases, labor shortages reflect a true skills gap rather than frictions or poor job quality.

Two key messages emerge. First, in many medium-skilled technical occupations, high levels of unmet demand are driven less by a lack of qualified workers than by weak intermediation systems that prevent candidates—often with the Certificate of Professional Aptitude (CAP), Professional Technician Certificate (BTP), or Higher Technician Certificate (BTS) qualifications—from connecting with available jobs. Second, despite overall labor surpluses, genuine skills shortages persist in both high-skilled technical/professional occupations and medium-skilled service and sales jobs. This underscores the need for a dual response: strengthening training systems to close skill gaps, while also improving labor market intermediation to ensure that existing talent can be effectively matched to labor demand.

Table 4.1 Tunisia's Top 25 Most In-Demand Occupations and Main Reasons for Recruitment Difficulties

	Occupation	Number of Unfilled Job Positions	Rate of Unfilled Job Position	Weighted Rate of Unfilled Job Position	Driving Factors of Labor Shortages: None	Lack of Skill/ Experience	Don't Know How to Reach Job Seekers	Job Is Not Interesting	Identified Factor
8153	**Sewing machine operators**	**16,485**	**12.7%**	**4.5%**	**8.2%**	**22.0%**	**56.5%**	**13.3%**	**Job matching**
9321	Hand packers	4,149	23.7%	2.1%	3.2%	18.8%	71.6%	6.3%	Job matching
7233	**Agricultural and industrial machinery mechanics and repairers**	**3,048**	**27.4%**	**1.8%**	**4.1%**	**11.3%**	**77.8%**	**6.9%**	**Job matching**
5414	Security guards	2,894	4.2%	0.3%	98.4%	1.6%	0.0%	0.0%	None
9329	Manufacturing laborers n.e.c.	2,627	5.2%	0.3%	2.0%	23.3%	4.9%	69.8%	Attractiveness
3322	Commercial sales representatives	2,485	15.1%	0.8%	31.3%	44.1%	5.3%	19.3%	Lack of skills
3434	**Chefs**	**2,289**	**48.1%**	**2.4%**	**11.9%**	**46.0%**	**38.7%**	**3.4%**	**Lack of skills**
5131	**Waiters**	**1,626**	**2.3%**	**0.1%**	**0.0%**	**75.1%**	**24.9%**	**0.0%**	**Lack of skills**
7215	**Riggers and cable splicers**	**1,482**	**25.9%**	**0.8%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**	**Attractiveness**
7533	**Sewing, embroidery, and related workers**	**1,399**	**22.8%**	**0.7%**	**27.5%**	**20.2%**	**0.0%**	**52.3%**	**Attractiveness**
8183	Packing, bottling, and labelling machine operators	822	15.7%	0.3%	41.9%	17.7%	23.3%	17.1%	None
2411	Accountants	817	2.8%	0.0%	23.2%	48.8%	14.6%	13.4%	Lack of skills
7212	Welders and flame cutters	581	22.6%	0.3%	0.0%	7.8%	12.3%	79.9%	Attractiveness
3139	**Process control technicians n.e.c.**	**568**	**69.6%**	**0.8%**	**11.6%**	**84.5%**	**0.0%**	**3.9%**	**Lack of skills**
3122	Manufacturing supervisors	559	3.3%	0.0%	37.0%	61.4%	0.0%	1.7%	Lack of skills
3112	Civil engineering technicians	538	8.2%	0.1%	0.0%	8.5%	91.5%	0.0%	Job matching
9112	Cleaners and helpers in offices, hotels, and other establishments	481	0.8%	0.0%	0.0%	0.0%	0.0%	100.0%	Attractiveness
5222	Shop supervisors	475	4.7%	0.0%	4.6%	81.4%	14.0%	0.0%	Lack of skills
7223	Metal working machine tool setters and operators	474	12.5%	0.1%	49.9%	0.0%	3.8%	46.3%	None

9629	Elementary workers n.e.c.	470	3.3%	0.0%	0.0%	0.0%	81.1%	18.9%	Job matching
2341	Primary school teachers	470	0.7%	0.0%	2.6%	66.9%	16.2%	14.4%	Lack of skills
7112	Bricklayers and related workers	469	8.4%	0.1%	0.0%	25.0%	75.0%	0.0%	Job matching
5151	Cleaning and housekeeping supervisors in offices, hotels, and other establishments	455	16.7%	0.2%	0.0%	7.6%	90.9%	1.5%	Job matching
2141	Industrial and production engineers	430	16.5%	0.2%	11.1%	88.9%	0.0%	0.0%	Lack of skills
7534	Upholsterers and related workers	401	31.2%	0.3%	45.6%	54.4%	0.0%	0.0%	Lack of skills

Source: Based on data from the World Bank's Enterprise Survey on Job Vacancies and Skills.

Note: n.e.c. = not elsewhere classified.

Box 4.7 From Data to Dialogue: Confirming Occupations in Shortage with Key Stakeholders

On July 28, 2025, the World Bank convened a meeting in Tunis with key Tunisian institutions and private sector representatives to validate quantitative findings on occupations in shortage. The meeting gathered stakeholders from the National Observatory of Employment and Qualifications (Observatoire de l'Emploi et des Qualifications), the National Employment and Self-Employment Agency (Agence Nationale pour l'Emploi et le Travail Indépendant, ANETI), the Tunisian-Italian Chamber of Commerce (Chambre Tuniso-Italienne de Commerce), the Tunisian Federation of Textile and Clothing (Fédération Tunisienne du Textile et de l'Habillement, FTTH), the Tunisian Automotive Association, the International Organization for Migration (IOM), and representatives from the construction sector, among others.

Participants confirmed both the scale of vacancies and the list of occupations in shortage identified by the quantitative analysis. Discussions emphasized the persistence of labor shortages across textiles, construction, and automotives, as well as in selected technical and professional occupations. Stakeholders highlighted the importance of adapting training cycles to business needs, improving job attractiveness in sectors such as textiles and construction, and addressing skill gaps in emerging industries.

The session also validated the relevance of the World Bank's findings while highlighting areas for further collaboration, including consolidating sectoral studies (such as FTTH's identification of 19 new occupations), clarifying methodological details, and sharing detailed data on skill requirements and vacancy breakdowns. Follow-up actions were agreed with the Ministry of Employment and social partners to integrate these insights into training and labor intermediation strategies, including for an Italy-Tunisia Global Skills Partnership.

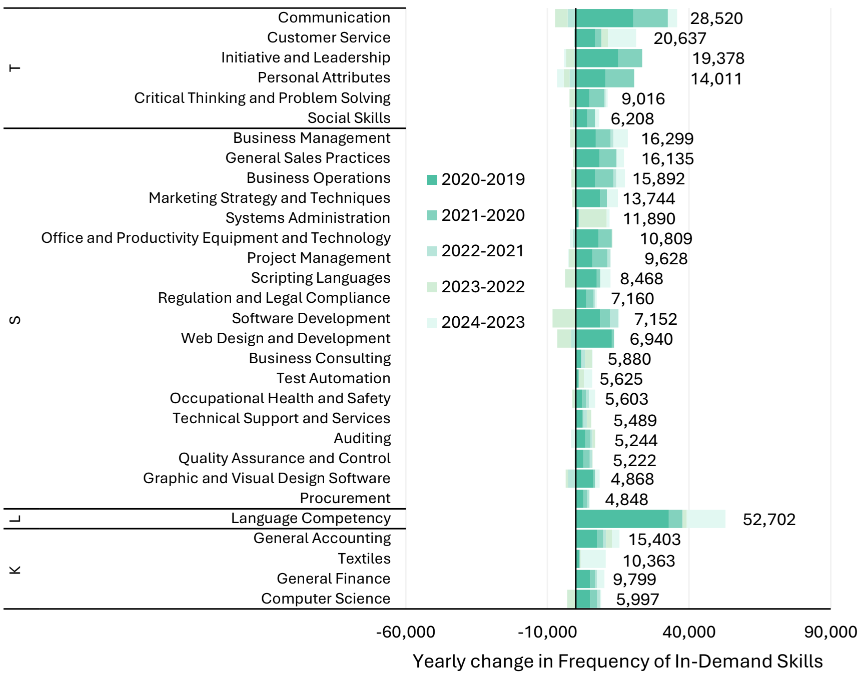
5. REQUIRED SKILLS AND QUALIFICATIONS OF THE TOP 25 SHORTAGE OCCUPATIONS

5.1 Emerging Skill Trends in Tunisia's Labor Market

Before examining the skills content of the top 25 shortage occupations, it is useful to first take a broader view of how skill demand is evolving in Tunisia's labor market. Online job postings data provide a dynamic picture of emerging trends, highlighting the competencies that are gaining importance across the economy.

Figure 5.1 presents the 30 fastest-growing skills in Tunisia between 2019 and 2024, measured by their net increase in job postings. Skills are classified using the European Skills, Competences, Qualifications, and Occupations (ESCO) framework into four categories (European Commission 2024): Knowledge (K), Language Skills and Knowledge (L), Practical Skills (S), and Transversal Skills (T).

Figure 5.1 Yearly Change in the Top 30 Skills in Demand in the Tunisian Labor Market, 2019–24



Source: Lightcast 2024.

Note: The number next to each bar represents the absolute increase in demand for that skill from 2019 to 2024.

Box 5.1 Definition of the Top 30 Fastest-Growing Skills in the Tunisian Labor Market

To illustrate the meaning of these trends, Table B5.1.1 provides the list of the 30 fastest-growing skills with a short description of the competencies each encompasses. Each skill is categorized under the ESCO (European Skills, Competences, Qualifications, and Occupations) framework. The skill names represent broad sets of competencies required to perform related tasks effectively, while the last column specifies the concrete tasks and abilities associated with each.

Table B5.1.1 Definition of Skills

ESCO Category	Skill	Definition
Knowledge	Computer Science	Understanding computing principles, algorithms, and software development.
	General Accounting	Knowledge of financial records, reporting, and compliance practices.
	General Finance	Knowledge of financial management, markets, and analysis.
	Textiles	Understanding of textile materials, production processes, and applications.
Language Skills and Knowledge	Language Competency	Proficiency in one or more languages for effective communication and collaboration.
Technical Skills	Auditing	Reviewing financial accounts, processes, and systems for compliance and accuracy.
	Business Consulting	Advising organizations to improve performance and strategy.
	Business Management	Planning, organizing, and overseeing business operations.
	Business Operations	Managing and coordinating daily organizational activities.
	General Sales Practices	Selling products and services, including customer interaction and negotiation.
	Graphic and Visual Design Software	Using digital tools to create and edit visual content.
	Marketing Strategy and Techniques	Planning and executing marketing campaigns to reach target audiences.
	Occupational Health and Safety	Applying practices to ensure safe and healthy workplaces.
	Office and Productivity Equipment/Technology	Using office software, tools, and equipment to support administrative tasks.
	Procurement	Managing purchasing processes, suppliers, and contracts.
	Project Management	Planning, executing, and completing projects within time and scope.
	Quality Assurance and Control	Ensuring that products and services meet defined quality standards.
	Regulation and Legal Compliance	Applying and adhering to laws, regulations, and compliance standards.

ESCO Category	Skill	Definition
	Scripting Languages	Writing and using code scripts to automate tasks and processes.
	Software Development	Designing, coding, and testing software applications.
	Systems Administration	Managing and maintaining IT systems, networks, and infrastructure.
	Technical Support and Services	Providing technical assistance and troubleshooting for users or systems.
	Test Automation	Developing automated procedures to test software and systems.
	Web Design and Development	Creating and maintaining websites and web applications.
Transversal Skills	Communication	Ability to convey information clearly and effectively, both verbally and in writing.
	Critical Thinking and Problem Solving	Analyzing complex issues and developing effective solutions.
	Customer Service	Responding to and assisting customer needs to ensure satisfaction.
	Initiative and Leadership	Taking proactive action, guiding teams, and driving results.
	Personal Attributes	Traits such as adaptability, resilience, and initiative.
	Social Skills	Interpersonal abilities that support collaboration and teamwork.

Source: European Commission 2024 (definitions adapted for the purpose of this report).

The results point to four broad patterns in skill demand. First, there is the rising importance of transversal and interpersonal skills—language proficiency, communication, customer service, and leadership are increasingly valued, reflecting the demand for adaptability, collaboration, and client-facing abilities across industries. Second, applied business and task-specific technical skills—such as business management, sales practices, project coordination, and quality assurance—are on the rise, showing that firms need workers who combine technical expertise with commercial and organizational know-how. Third, accelerating digital transformation—software development, systems administration, test automation, and technical support—is among the fastest-growing skills, underscoring the role of information and communications technology (ICT) in driving competitiveness and innovation across sectors. Fourth, emerging but limited demand for green skills—though still marginal (4 percent of postings)—is rising in energy, utilities, waste management, and agriculture, suggesting the early stages of a shift toward sustainability. These broad trends set the backdrop for examining how skills requirements manifest within Tunisia's 25 most critical shortage occupations.

Box 5.2 Green and Digital Skills in the Tunisian Labor Market

Digital skills are becoming a core requirement, with over 40 percent of job postings specifying at least one digital competency. Demand is strongest in high-skilled occupations: half of managerial postings now require digital skills, compared to one in three postings for craft and trade jobs. Even elementary occupations increasingly feature digital requirements, signaling broad diffusion of technology across occupational levels.

By contrast, green skills appear in only 4 percent of postings. They are most frequently demanded in electricity, gas, steam, and air conditioning supply (28 percent); water supply, sewerage, and waste management and remediation (12 percent); and agriculture, forestry, and fishing (3 percent).

These patterns underscore a dual transition: a rapid digitalization reshaping all sectors and occupations, and an early but uneven uptake of green skills, currently limited to energy and environmental services. Strengthening training in both domains—integrating digital literacy across education systems and embedding green competencies into vocational training—will be critical to prepare Tunisia's workforce for future labor market demands.

Source: Based on Lightcast (2024).

5.2 Skills of the Top 25 Shortage Occupations

Building on the top 25 most critical occupations, as reported by employers in the Survey on Job Vacancies and Skills (see chapter 4), this section draws on Lightcast's online job database to unpack the skill composition of these occupations. The analysis of online job postings provides a window into the skills most frequently requested for Tunisia's 25 occupations with the largest number of vacancies. The evidence reveals that recruitment is shaped above all by two pillars: specialized, occupation-specific competencies and transversal "common" skills. Together, these two dimensions form the backbone of employability.

Specialized skills dominate almost universally across the top 25 occupations with the largest job vacancies, underscoring that technical proficiency remains the primary gateway into employment (table 5.1). Employers continue to value workers' ability to perform precise, occupation-specific tasks—whether in technical roles, supervisory positions, or craft-based jobs. Yet technical know-how alone is no longer sufficient. Employers are increasingly looking for common skills such as communication, teamwork, and adaptability. What is striking is how pervasive these requirements have become: soft skills are now demanded not only in service occupations, but also in manual and technical work. A sewing machine operator, a process control technician, and a shop supervisor are all expected to demonstrate collaboration and initiative alongside their technical functions.

By contrast, certified skills—those that require formal validation through a license or training certificate—appear less frequently in job postings (table 5.1). Only a small group of occupations stand out for their reliance on certifications, including process control technicians, agricultural and industrial machinery mechanics, upholsterers, and certain sales representatives. In these cases, certification acts as a clear signal of competence and safety, but also as a potential bottleneck: when the pool of certified workers is too small, vacancies remain unfilled. This helps explain why employers report particularly high recruitment difficulties in precisely these certification-heavy occupations.

Table 5.1 Share of Job Postings by Top 25 Occupations with the Largest Number of Vacancies Requiring at Least One Skill in the Common, Certified, Specialized, Digital, AI-related, or Green Categories

ISCO	ISCO Label	% of Firms Reporting Skill Shortages	Common Skills (%)	Certified Skills (%)	Specialized Skills (%)	Digital Skills (%)	AI-related Skills (%)	Green Skills (%)
8153	Sewing machine operators	22%	62%	2%	99%	62%	0%	0%
9321	Hand packers	19%	90%	0%	80%	60%	0%	0%
7233	Agricultural and industrial machinery mechanics and repairers	11%	67%	17%	96%	68%	0%	2%
5414	Security guards	2%	74%	7%	97%	84%	2%	3%
9329	Manufacturing labourers n.e.c.	23%	57%	13%	97%	81%	4%	3%
3322	Commercial sales representatives	44%	86%	16%	98%	85%	1%	3%
3434	Chefs	46%	71%	4%	98%	67%	1%	2%
5131	Waiters	75%	71%	2%	92%	69%	0%	3%
7215	Riggers and cable splicers	0%	81%	7%	96%	77%	1%	4%
7533	Sewing, embroidery, and related workers	20%	48%	3%	100%	77%	3%	0%
8183	Packing, bottling, and labelling machine operators	18%	100%	0%	100%	50%	0%	0%
2411	Accountants	49%	76%	5%	99%	79%	1%	3%
7212	Welders and flame cutters	8%	60%	6%	99%	73%	0%	5%
3139	Process control technicians n.e.c.	85%	86%	18%	100%	96%	14%	4%
3122	Manufacturing supervisors	61%	83%	7%	96%	75%	2%	5%
3112	Civil engineering technicians	9%	88%	7%	98%	81%	2%	12%
9112	Cleaners and helpers in offices, hotels, and other establishments	0%	75%	0%	100%	82%	0%	5%
5222	Shop supervisors	81%	81%	5%	97%	81%	3%	3%
7223	Metal working machine tool setters and operators	0%	73%	8%	98%	73%	1%	4%
9629	Elementary workers n.e.c.	0%	85%	17%	97%	74%	1%	2%
2341	Primary school teachers	67%	100%	0%	38%	35%	0%	0%
7112	Bricklayers and related workers	25%	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5151	Cleaning and housekeeping supervisors in offices, hotels, and other establishments	8%	77%	11%	96%	45%	0%	0%

2141	Industrial and production engineers	89%	77%	4%	96%	73%	1%	0%
7534	Upholsterers and related workers	54%	64%	16%	100%	84%	0%	0%

Source: Lightcast 2024.

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

Digital competencies, meanwhile, have become a baseline expectation across the majority of shortage occupations. In almost all the 25 occupations, more than 60 percent of postings mention at least one digital skill. This is true not only for traditionally ICT-related jobs, but also for roles that were once thought of as manual or interpersonal in nature. Process control technicians and commercial sales representatives, for instance, both record particularly high demand for digital proficiency, while even waiters and cleaners are increasingly expected to operate digital tools. At the same time, AI-related skills remain confined to a narrow set of roles, with only process control technicians showing notable demand.

Green skills, in contrast, are still at an early stage of adoption. Only a few occupations, such as civil engineering technicians, welders, and manufacturing supervisors, report modest demand for sustainability-related competencies. This limited footprint suggests that Tunisia's labor market is still in the early phases of integrating green practices into job profiles.

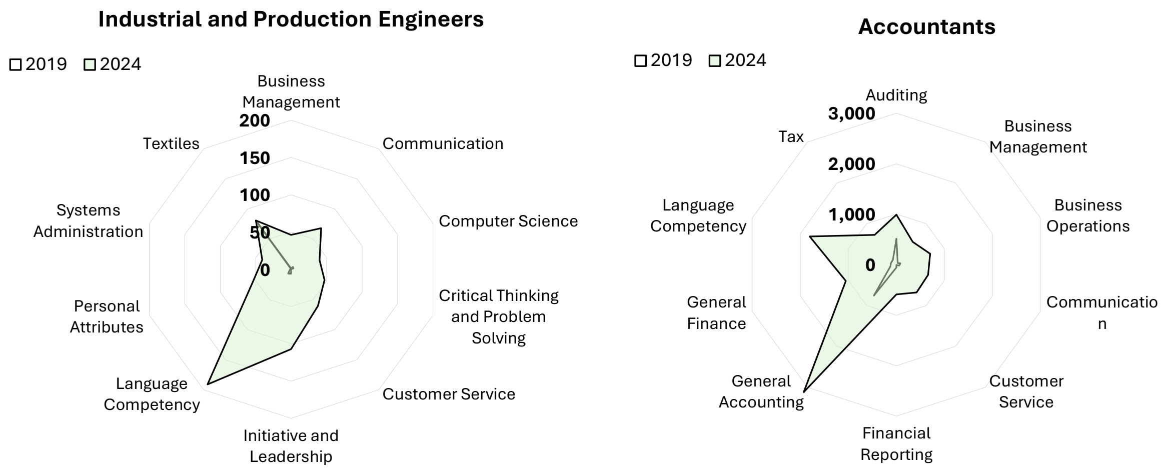
Taken together, these findings paint a picture of a labor market in transition. Employers continue to value specialized, technical know-how, but are increasingly layering on requirements for transversal and digital skills. Certification plays a selective but important role, sometimes acting as a bottleneck to hiring. And while green and AI-related competencies remain niche, their presence in certain occupations hints at where future demand may expand.

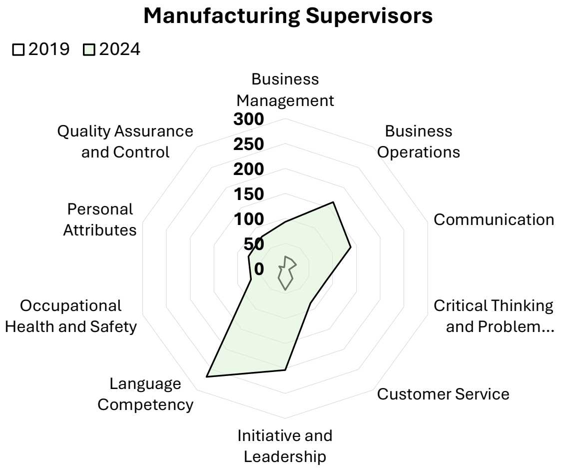
To provide a more granular perspective, figure 5.2 examines the specific skills most frequently requested by employers, moving beyond broad categories to detailed competencies. The analysis focuses on 12 of the 25 critical occupations—those where at least 20 percent of firms identified skill gaps as the main recruitment barrier. This restriction ensures that the spotlight remains on occupations where shortages are genuinely driven by skills deficits, rather than by factors such as unattractive working conditions or limited outreach to job seekers.

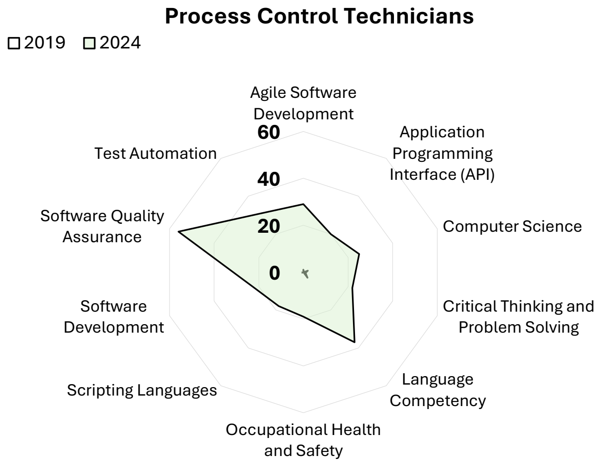
In occupations where at least one in five employers cite skill gaps as the main barrier to recruitment, three patterns stand out. First, interpersonal and transversal skills dominate across both service and technical roles, signaling that communication and teamwork have become universal requirements. Second, technical and analytical skills drive demand in higher-skilled occupations, particularly those connected to Tunisia's industrial transformation. Third, practical, task-oriented skills remain indispensable in manual trades, where dexterity and equipment handling are essential.

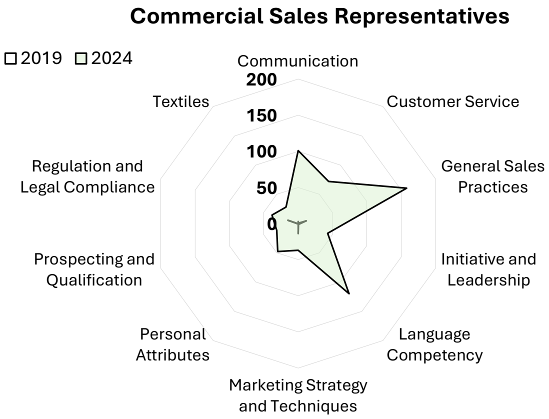
This evidence highlights the dual challenge Tunisia faces: ensuring that vocational training continues to deliver solid technical foundations, while also equipping workers with transversal and digital competencies that employers now consider essential.

Figure 5.2 Frequency of the Top 10 Skills Across the Most Critical Occupations Where At Least 20% of Employers Reported Hiring Difficulties Due to Skill Gaps

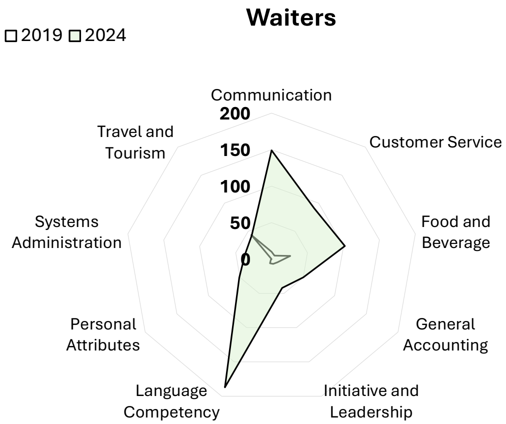



Manufacturing Supervisors
2019
2024
Business Management
Business Operations
Communication
Critical Thinking and Problem...
Customer Service
Initiative and Leadership
Language Competency
Occupational Health and Safety
Personal Attributes
Quality Assurance and Control
300
250
200
150
100
50
0


Process Control Technicians
2019
2024
Agile Software Development
Application Programming Interface (API)
Computer Science
Critical Thinking and Problem Solving
Language Competency
Occupational Health and Safety
Scripting Languages
Software Development
Software Quality Assurance
Test Automation
60
40
20
0

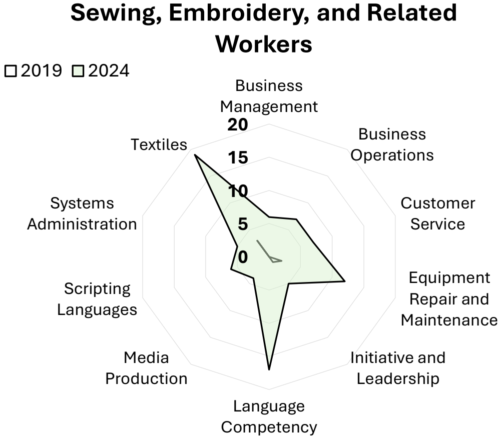

Commercial Sales Representatives
2019
2024
Communication
Customer Service
General Sales Practices
Initiative and Leadership
Language Competency
Marketing Strategy and Techniques
Personal Attributes
Prospecting and Qualification
Regulation and Legal Compliance
Textiles
200
150
100
50
0

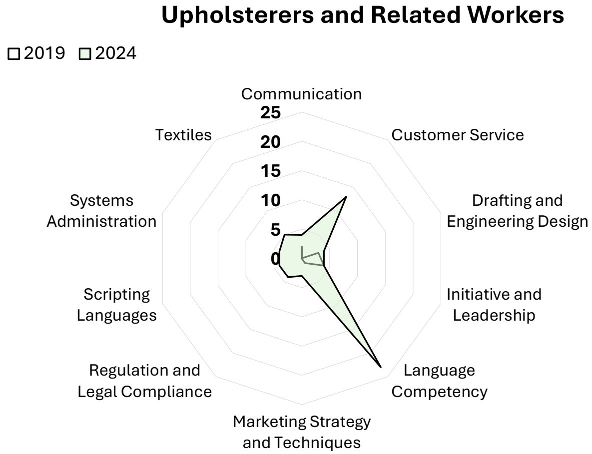

Chefs
2019
2024
Business Management
Business Operations
Communication
Customer Service
Food and Beverage
General Sales Practices
Initiative and Leadership
Language Competency
Occupational Health and Safety
250
200
150
100
50
0



Waiters
2019
2024
Communication
200
150
100
50
0
Customer Service
Food and Beverage
General Accounting
Initiative and Leadership
Language Competency
Personal Attributes
Systems Administration
Travel and Tourism

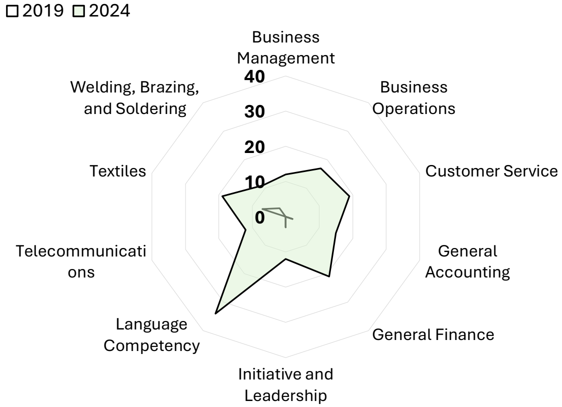
Shop Supervisors
2019
2024
Business Management
400
300
200
100
0
Business Operations
Communication
Customer Service
General Sales Practices
Initiative and Leadership
Inventory and Warehousing
Language Competency
Office and Productivity Equipment and Technology
Personal Attributes


Sewing, Embroidery, and Related Workers
2019
2024
Business Management
Business Operations
Customer Service
Equipment Repair and Maintenance
Initiative and Leadership
Language Competency
Media Production
Scripting Languages
Systems Administration
Textiles
20
15
10
5
0


Upholsterers and Related Workers
2019
2024
Communication
Customer Service
Drafting and Engineering Design
Initiative and Leadership
Language Competency
Marketing Strategy and Techniques
Regulation and Legal Compliance
Scripting Languages
Systems Administration
Textiles
25
20
15
10
5
0

Sewing Machine Operators

Manufacturing Labourers, n.e.c.



5.3 Ideal Candidate Profiles for the Top 25 Shortage Occupations

Data from the Survey on Job Vacancies and Skills shed light on the types of workers most sought by employers to fill Tunisia's most pressing vacancies in the top 25 occupations (table 5.2). Employer preferences for age, gender, language, education, and experience reveal distinct demographic patterns that shape who gains access to different segments of the labor market.

Youth are strongly favored in occupations requiring manual dexterity, adaptability, or frequent customer interaction. More than four-fifths of firms recruiting packing machine operators (87 percent), waiters (86 percent), and sewing workers (79 percent) express a preference for younger candidates, who are perceived as easier to train and better suited to fast-paced work environments. By contrast, adults are more often targeted for physically demanding or less attractive jobs—such as cleaners (81 percent) and cleaning supervisors (78 percent)—which have low appeal among younger generations, many of whom pursue higher education and career mobility, leading employers to rely on adults who are seen as more willing to accept such positions.

Data point to pronounced gender segmentation across occupations. Some remain heavily male dominated—such as security guards, welders, and bricklayers (100 percent men)—while others are predominantly female, including cleaners (90 percent), upholsterers (73 percent), and sewing, embroidery, and related workers (66 percent). Yet there are signs of greater neutrality in certain jobs. Among sewing machine operators, over half of recruiting firms (51 percent) report no sex preference, suggesting that practical considerations sometimes override traditional gender norms.

In contrast to these demographic filters, higher-skilled occupations show greater neutrality. Employers recruiting accountants, process control technicians, and industrial engineers report far fewer preferences by age or gender, focusing instead on competence, credentials, and qualifications. This highlights a clear divide between lower-skilled or physically intensive jobs—where demographic filters remain strong—and higher-skilled occupations, where the emphasis shifts to measurable competencies.

Table 5.2 Demographic Characteristics of Preferred Candidates (% of Recruiting Firms)

		Worker Profiles Searched by Firms (% of Recruiting Firms)					
Code	ISCO	Youth (%)	Adults (%)	No Age Preference (%)	Men (%)	Women (%)	No Sex Preference (%)
8153	Sewing machine operators	53%	1%	46%	1%	47%	51%
9321	Hand packers	51%	24%	25%	30%	32%	39%
7233	Agricultural and Industrial machinery mechanics and repairers	76%	14%	11%	67%	0%	33%
5414	Security guards	100%	0%	0%	100%	0%	0%
9329	Manufacturing laborers n.e.c.	48%	16%	36%	43%	25%	32%
3322	Commercial sales representatives	42%	18%	40%	18%	16%	66%
3434	Chefs	60%	26%	14%	10%	0%	90%
5131	Waiters	86%	14%	0%	82%	0%	18%
7215	Riggers and cable splicers	57%	43%	0%	0%	57%	43%
7533	Sewing, embroidery and related workers	79%	21%	0%	0%	34%	66%
8183	Packing, bottling, and labelling machine operators	87%	13%	0%	30%	31%	39%
2411	Accountants	49%	9%	43%	30%	15%	55%
7212	Welders and flame cutters	42%	0%	58%	100%	0%	0%
3139	Process control technicians n.e.c.	33%	24%	42%	22%	9%	69%
3122	Manufacturing supervisors	79%	21%	0%	36%	18%	47%
3112	Civil engineering technicians	49%	15%	37%	37%	15%	49%
9112	Cleaners and helpers in offices, hotels, and other establishments	0%	81%	19%	0%	90%	10%
5222	Shop supervisors	48%	23%	29%	55%	0%	45%
7223	Metal working machine tool setters and operators	8%	0%	92%	8%	83%	9%
9629	Elementary workers n.e.c.	40%	0%	60%	49%	51%	0%
2341	Primary school teachers	19%	0%	81%	0%	45%	55%
7112	Bricklayers and related workers	33%	0%	67%	100%	0%	0%
5151	Cleaning and housekeeping supervisors in offices, hotels, and other establishments	0%	78%	22%	41%	59%	0%

2141	Industrial and production engineers	54%	0%	46%	13%	6%	81%
7534	Upholsterers and related workers	73%	0%	27%	27%	0%	73%

Source: Based on data from the World Bank's Enterprise Survey on Job Vacancies and Skills.

Note: The sum of each percentage totals 100 percent. n.e.c. = not elsewhere classified.

Language proficiency plays a critical role in shaping access to employment (table 5.3). Arabic remains a foundational requirement for nearly all jobs, especially low-skilled occupations such as cleaners, elementary workers, and sewing machine operators. By contrast, French emerges as a key differentiator for access to medium- and high-skilled jobs. In occupations such as accountants, commercial sales representatives, process control technicians, and industrial engineers, French is not only preferred but often essential. English, though less commonly required, is increasingly relevant in technical and supervisory occupations, particularly for industrial engineers, manufacturing supervisors, and process control technicians—likely reflecting the role of foreign firms and international market linkages.

Importantly, language requirements increase with job complexity, creating barriers for workers with limited educational backgrounds or poor access to language instruction. Many young people, even if technically trained, may lack sufficient proficiency in French or English to compete for skilled jobs, leaving them confined to lower-paying roles. Integrating language training—especially in French—into vocational curricula, alongside targeted upskilling, could therefore expand access to better-quality employment.

Experience requirements further compound barriers to entry. Even in low-skilled jobs, employers tend to prefer candidates with prior experience. For example, firms hiring hand packers, despite requiring only primary education, expect an average of 4.2 years of experience. Cleaners and helpers, often with no formal education, are expected to have around 3 years. In higher-skilled occupations such as engineers and accountants, employers typically require 2–3 years of prior work experience, even for recent graduates.

This strong preference for job-ready candidates creates a structural disadvantage for first-time job seekers, especially youth. Expanding access to internships, apprenticeships, and first-job schemes—and embedding work-based learning into both vocational and higher education—will be critical to easing labor market entry and reducing the mismatch between employer expectations and worker readiness.

Table 5.3 Language, Education and Experience Requirements by Occupation (% of Recruiting Firms)

Code	ISCO		Median Level of Education	Mean Years of Experience	Language Required (% of Recruiting Firms)			
					Arabic	French	Italian	English
8153	**Sewing machine operators**	**1**	**No formal education**	**2.5**	**64%**	**4%**	**0%**	**0%**
9321	Hand packers	2	Primary education (CFE)	4.2	60%	10%	0%	1%
7233	Agricultural and industrial machinery mechanics and repairers	6	BTP	2.9	51%	65%	0%	31%
5414	Security guards	3	Lower secondary education (DFEB)	1.0	100%	100%	0%	0%
9329	Manufacturing laborers n.e.c.	4	Upper secondary education (Baccalaureate)	3.5	64%	68%	0%	21%
3322	**Commercial sales representatives**	**6**	**BTP**	**2.6**	**61%**	**91%**	**1%**	**36%**
3434	**Chefs**	**5**	**CAP**	**3.1**	**33%**	**9%**	**0%**	**9%**
5131	**Waiters**	**1**	**No formal education**	**1.1**	**69%**	**82%**	**0%**	**27%**
7215	Riggers and cable splicers	3	Lower secondary education (DFEB)	0.0	57%	57%	0%	0%
7533	Sewing, embroidery, and related workers	1	No formal education	1.7	27%	21%	0%	0%
8183	Packing, bottling, and labelling machine operators	3	Lower secondary education (DFEB)	1.8	68%	38%	0%	0%
2411	**Accountants**	**9**	**Master's degree**	**2.4**	**51%**	**95%**	**0%**	**28%**
7212	**Welders and flame cutters**	**1**	**No formal education**	**1.3**	**42%**	**13%**	**0%**	**0%**
3139	Process control technicians n.e.c.	8	Bachelor's degree (License)	2.8	24%	93%	0%	43%
3122	Manufacturing supervisors	7	BTS	3.8	43%	100%	21%	45%
3112	Civil engineering technicians	8	Bachelor's degree (License)	1.4	80%	100%	0%	0%
9112	Cleaners and helpers in offices, hotels, and other establishments	1	No formal education	3.0	100%	0%	0%	0%
5222	Shop supervisors	4	Upper secondary education (Baccalaureate)	2.2	67%	69%	0%	19%
7223	**Metal working machine tool setters and operators**	**2**	**Primary education (CFE)**	**2.0**	**100%**	**8%**	**0%**	**0%**
9629	Elementary workers n.e.c.	1	No formal education	1.0	100%	17%	0%	0%
2341	**Primary school teachers**	**8**	**Bachelor's degree (License)**	**2.0**	**89%**	**79%**	**0%**	**60%**
7112	Bricklayers and related workers	1	No formal education	1.0	33%	0%	0%	0%
5151	Cleaning and housekeeping supervisors in offices, hotels, and other establishments	1	No formal education	1.5	78%	78%	0%	22%
2141	**Industrial and production engineers**	**9**	**Master's degree**	**3.0**	**36%**	**100%**	**0%**	**65%**

7534	Upholsterers and related workers	1	No formal education	1.5	100%	0%	0%	0%

Source: Based on data from the World Bank's Enterprise Survey on Job Vacancies and Skills.

Note: No formal education – No official schooling completed or required; CFE – Certificat de Fin d'Études de l'Enseignement de Base (Primary Education); DFEB – Diplôme de Fin d'Études de l'Enseignement de Base (Lower Secondary Education); Baccalaureate – Completion of Upper Secondary Education; CAP – Certificat d'Aptitude Professionnelle (Certificate of Professional Aptitude); BTP – Brevet de Technicien Professionnel (Professional Technician Certificate); BTS – Brevet de Technicien Supérieur (Higher Technician Certificate); License – Bachelor's degree; Master's Degree – Graduate-level university degree. n.e.c. = not elsewhere classified.

6. BEYOND REPORTED VACANCIES: IDENTIFYING CRITICAL OCCUPATIONS IN SHORTAGE THROUGH THE COL METHODOLOGY

6.1 Measuring Occupational Shortages

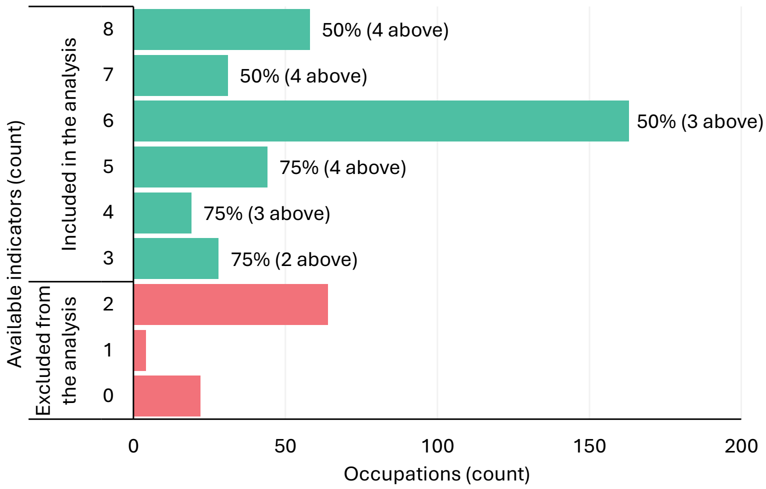
A list of the top 25 occupations with the highest incidence and absolute number of unfilled vacancies (based on the Enterprise Survey on Job Vacancies and Skills, presented in chapter 4, table 4.1) provides valuable insights into the extent and severity of occupational labor shortages, as well as their potential drivers, including skills gaps. However, these findings are inherently limited, as employers were asked to report only their top three critical occupations, meaning that some of the occupations in shortage may not be fully reflected in the survey results.

To address this limitation, the analysis uses the Critical Occupation List (COL) (see chapter 2, section 2.3). This approach extends the descriptive labor demand analysis by pursuing two objectives. First, it offers a rigorous, data-driven assessment of whether the top 25 occupations already identified also meet quantitative criteria that confirm the existence of more "structural" labor market shortages in the Tunisian labor market. Second, it broadens the scope of the analysis by identifying additional occupations in Tunisia that face shortages, even if they were not explicitly reported in the vacancy survey.

In total, 433 occupations at the 4-digit ISCO (International Standard Classification of Occupations) level were initially considered under the COL methodology. Occupations with fewer than three indicators were excluded, leaving a final sample of 343 occupations. Annex 2 lists the 90 excluded occupations, of which 64 had only two indicators available. In about 70 percent of these cases, no shortage was observed. Nonetheless, 19 occupations with two indicators did signal shortages, as both indicators exceeded the critical threshold. These were concentrated mainly among professionals (e.g., physicists and astronomers, veterinarians, dentists, dieticians and nutritionists, other health professionals, sociologists and anthropologists, translators and interpreters, and creative or performing artists n.e.c. [not elsewhere classified]), as well as some craft and related trades (e.g., handicraft workers n.e.c., pre-press technicians, printers, and print finishing and binding workers).

Among the 343 occupations included in the COL analysis, 91 occupations had between three and five available indicators, while 252 occupations had between six and eight (figure 6.1). The number of indicators available does not determine inclusion directly, but it defines the rule applied. For occupations with 3–5 indicators, at least 75 percent must exceed the threshold for the occupation to be classified as critical. For those with 6–8 indicators, inclusion requires that at least 50 percent of indicators surpass the threshold (see section 2.3 for details). This distinction is important because it ensures consistency and robustness in how shortages are identified. In this way, the methodology guarantees that the likelihood of inclusion is not biased by the number of indicators, but rather reflects the strength of evidence across available measures.

Figure 6.1 Distribution of Shortage Occupations by Number of Available Indicators and Rules for Inclusion in the Critical Occupation List



Source: Authors' calculations using data from multiple sources.

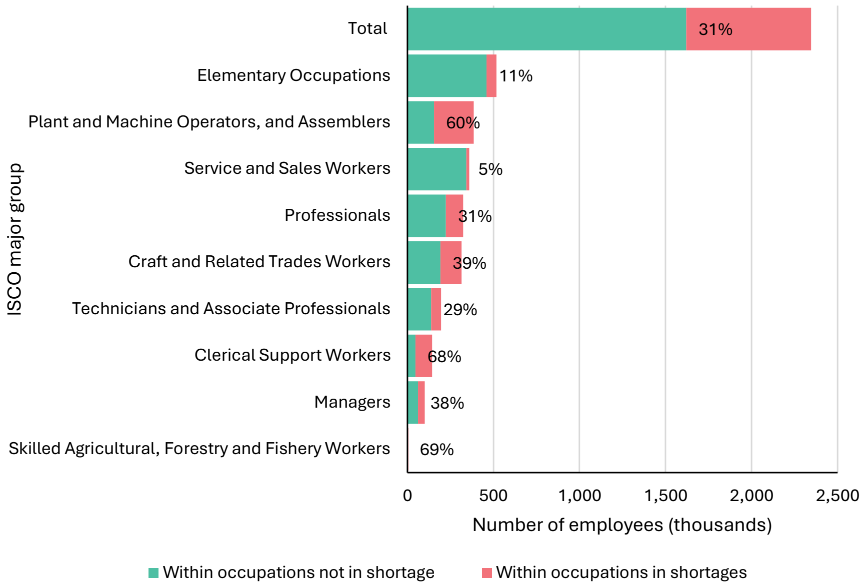
6.2 Evidence on Occupations in Shortage

Of the 343 occupations with sufficient indicators for the COL analysis, 119 exhibit clear signs of shortage. Together, these account for nearly one-third of total employees within the analyzed group—about 724,000 workers out of more than 2.3 million (figure 6.2).

The full results are presented in annex 3, where 4-digit critical occupations in shortages are ordered by ISCO major group. For each, the annex reports the: (1) status of the eight indicators relative to their thresholds, (2) number of indicators used, (3) number exceeding the threshold, and (4) employment size to show the relative importance of each occupation.

In absolute terms, the largest shortage occupations are concentrated in the plant and machine operators and assemblers group, which employs around 231,000 workers in total. Within this group, the most affected are sewing machine operators, followed by stationary plant and machine operators and assemblers n.e.c. (see figure 6.2).

Figure 6.2 Largest Shortage Occupations (by no. and share of workers)

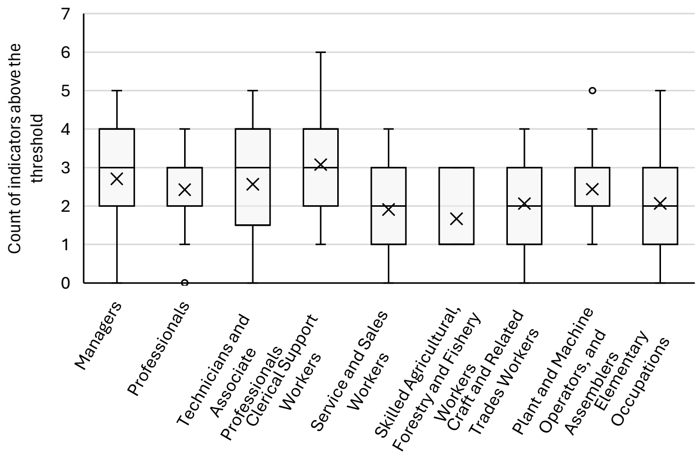


Source: Authors' calculations using data from multiple sources.

Figure 6.3 presents the distribution of shortage indicators across major occupational groups, summarizing the average and median number of indicators observed at the 4-digit occupation level. The results show that technicians and associate professionals (ISCO 3) and professionals (ISCO 2) display the strongest and most consistent signs of shortage, with median values around three indicators above threshold, pointing to structural recruitment challenges in technical and professional occupations. By contrast, clerical support (ISCO 4), service and sales workers (ISCO 5), and plant and machine operators and assemblers (ISCO 8) display wide variation: while some occupations within this group record acute shortages, others show few or no signs of pressure. In other groups, such as managers (ISCO 1), skilled agricultural workers (ISCO 6), and elementary occupations (ISCO 9), shortage signals are generally weaker and more homogeneous. Overall, the evidence suggests that labor shortages in Tunisia are concentrated in medium- to high-skill technical occupations, with pockets of acute shortages in service and machine operator jobs.

In absolute terms, the largest number of occupations in shortage is found among high-skilled groups, including 27 occupations in ISCO 3 (technicians and associate professionals) and 24 in ISCO 2 (professionals). These are followed by mid-skilled technical groups, with 15 occupations in ISCO 7 (craft and related trades workers) and 14 in ISCO 8 (plant and machine operators and assemblers).

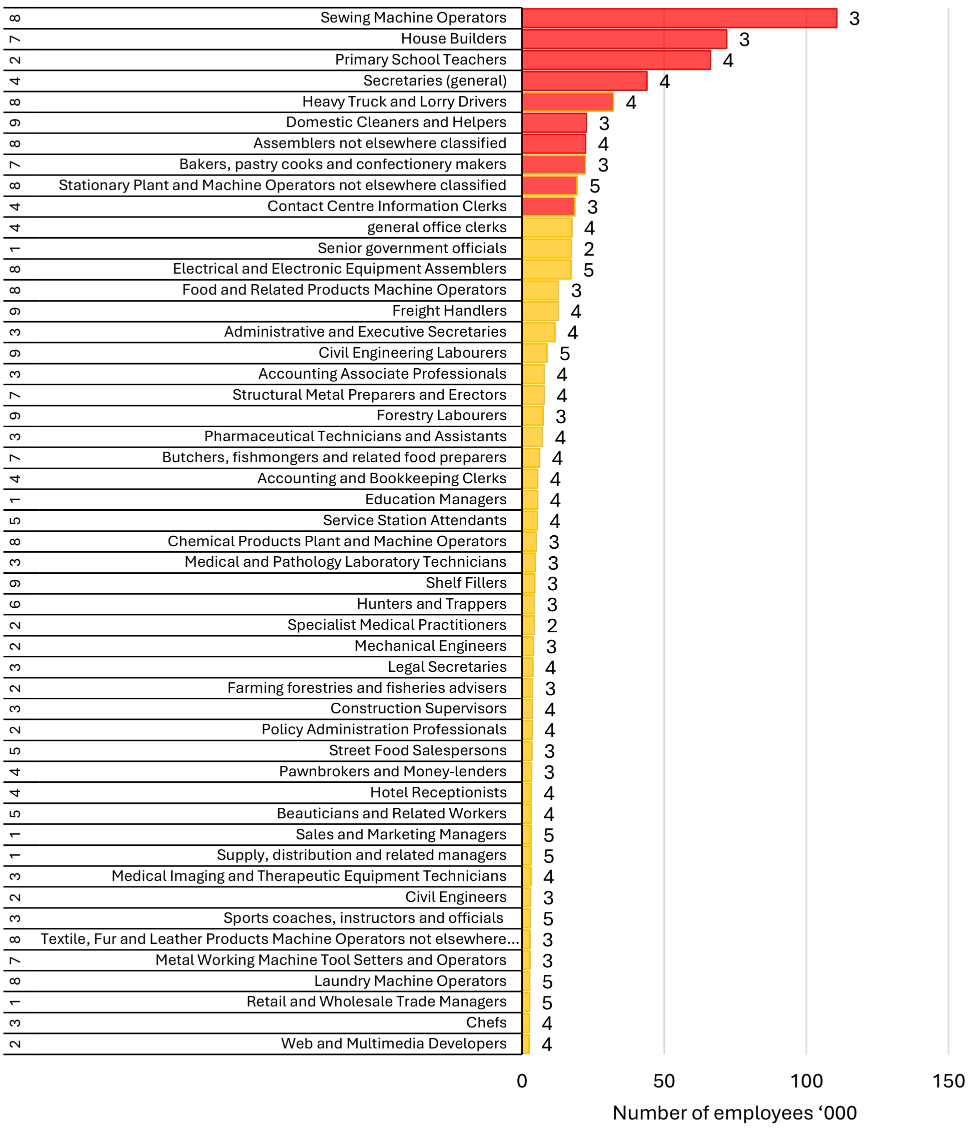
Figure 6.3 Severity of Labor Shortages Across Major Occupational Groups, Measured by Labor Market Indicators Above Critical Thresholds



Source: Authors' calculations using data from multiple sources.

Finally, figure 6.4 presents the 50 largest occupations flagged as being in shortage, ranked by employment size, with the number of indicators above the threshold shown next to each bar. The results confirm that shortages are not confined to small or niche occupations but also affect large workforce groups. At the top of the list are sewing machine operators (110,000 workers), house builders (72,000), primary school teachers (66,000), and secretaries (44,000)—all core occupations of Tunisia's labor market. Alongside these, a wide range of mid-sized occupations appear in shortage, spanning technical, professional, and service roles such as mechanical engineers, medical technicians, accountants, and freight handlers. Occupations linked to the agrifood system are also widely represented, including butchers, food and related products machine operators, and bakers, highlighting shortages in activities central to food production and processing.

Figure 6.4 Fifty Largest Occupations in Shortage, Ranked by Employment Size and Number of Indicators above Threshold



Source: **Authors' calculations using data from multiple sources.**

Note: The number shown next to each 4-digit occupation refers to the corresponding major ISCO code.

6.3 Comparing the Top 25 Critical Occupations with Vacancy Evidence and COL Shortage Indicators

The top 25 occupations were then cross-referenced with the highest reported vacancies (table 4.1) and the shortage signals identified through the COL. The aim was to assess whether the occupations most frequently cited by employers as "hard to fill" also correspond to structural labor market shortages, rather than temporary demand spikes.

Table 6.1 presents 25 selected occupations from the Survey on Job Vacancies and Skills. Columns 1–2 report the ISCO 4-digit code and occupation title. Columns 3–10 display the eight labor market indicators used in the COL analysis, coded as Above, Below, or NA to show whether each indicator exceeds the shortage threshold, falls below it, or lacks sufficient data. Columns 11–13 summarize the number of available indicators, shortage signals, and COL inclusion status. Finally, columns 14–15 report employment levels and vacancy counts, providing a measure of each occupation's scale and labor demand.

Occupations with fewer than three available indicators are excluded from the COL to avoid classifications based on insufficient evidence. In these cases, the COL status is left blank to reflect an inconclusive result.

Several of the most in-demand occupations are also confirmed as shortage occupations in the COL, based on statistically validated evidence. These occupations exceed the threshold in at least three indicators, suggesting persistent structural imbalances rather than short-term cyclical demand. From an economic perspective, such shortages reflect excess demand relative to labor supply, generating recruitment difficulties and potentially constraining productivity growth. For example, chefs meet shortage criteria through strong employment and hours growth, as well as high vacancy levels, reflecting sustained expansion in the hospitality sector. Waiters are also flagged, with indicators pointing to both higher wages to attract workers. In manufacturing, sewing machine operators exceed thresholds on both employment growth and vacancy postings, underscoring chronic recruitment challenges in export-oriented industries.

Importantly, inclusion in the COL signals more than high labor demand. It identifies a systemic mismatch between labor supply and employer needs. Such evidence highlights the need for targeted responses in training systems and workforce planning, to ensure that Tunisia's labor market can adapt to persistent skills gaps.

Table 6.1 Shortage Signals Across Tunisia's Top 25 Most In-Demand Occupations

ISCO 4-digit	Occupation	1-Year Emp. Growth	1-Year Growth in Median Hours Worked	1-Year Decrease in Education Level	1-Year Wage Growth (median)	3-Year Wage Growth (median)	1-Year Growth in Job Vacancy Postings	3-Year Growth in Job Vacancy Postings	1-Year Growth in Job Vacancy Rate	Number Indicators Above the Threshold	Available Indicators	Included in the COL	Employees	Number of Vacancies
8153	**Sewing machine operators**	**Above**	**Below**	**Below**	**NA**	**NA**	**Above**	**Above**	**Below**	**3**	**6**	**Yes**	**110,741**	**16,485**
9321	Hand packers	Below	Below	Below	NA	NA	Above	Below	Below	1	6	No	13,511	4,149
7233	Agricultural and industrial machinery mechanics and repairers	Above	Below	Below	Below	Below	Below	Below	Below	1	8	No	8,570	3,048
5414	Security guards	NA	NA	NA	NA	NA	Above	Below	NA	1	2			2,894
9329	Manufacturing laborers n.e.c.	Below	Below	Below	NA	NA	Below	Above	Above	2	6	No	44,363	2,627
3322	Commercial sales representatives	Above	Below	Below	Above	Below	Below	Above	Below	3	8	No	14,283	2,485
3434	**Chefs**	**Above**	**Above**	**Below**	**NA**	**NA**	**Above**	**Above**	**Below**	**4**	**6**	**Yes**	**2,627**	**2,289**
5131	**Waiters**	**NA**	**NA**	**NA**	**NA**	**Above**	**Above**	**Above**	**NA**	**3**	**3**	**Yes**		**1,626**
7215	Riggers and cable splicers	Above	Above	Below	NA	NA	Below	Below	Below	2	6	No	4,576	1,482
7533	Sewing, embroidery, and related workers	Below	Above	Below	NA	NA	Below	Below	Below	1	6	No	4,562	1,399
8183	Packing, bottling, and labelling machine operators	Below	Above	Below	NA	NA	Below	Below	Above	2	6	No	3,706	822
2411	Accountants	Below	Below	Below	Above	Below	Below	Above	Above	3	8	No	26,888	**817**
7212	**Welders and flame cutters**	**Below**	**Below**	**Above**	**NA**	**NA**	**Below**	**Above**	**Above**	**3**	**6**	**Yes**	**1,258**	**581**
3139	Process control technicians n.e.c.	Below	Above	Below	NA	NA	Below	Below	Above	2	6	No	44	568
3122	Manufacturing supervisors	Below	Above	Below	Above	Above	Below	Below	Below	3	8	No	16,386	559
3112	Civil engineering technicians	Above	Below	Below	Above	Below	Below	Above	Below	3	8	No	6,070	538
9112	Cleaners and helpers in offices, hotels, and other establishments	Above	Above	Below	NA	NA	Below	Below	Below	2	6	No	62,922	481
5222	Shop supervisors	Below	Below	Below	Below	Above	Below	Below	Above	2	8	No	9,687	475
7223	**Metal working machine tool setters and operators**	**Above**	**Below**	**Below**	**NA**	**NA**	**Below**	**Above**	**Above**	**3**	**6**	**Yes**	**2,769**	**474**
9629	Elementary workers n.e.c.	Below	Above	Below	NA	NA	Below	Above	Below	2	6	No	13,963	470
2341	**Primary school teachers**	**Above**	**Above**	**Below**	**NA**	**NA**	**Above**	**Above**	**Below**	**4**	**6**	**Yes**	**66,324**	**470**
7112	Bricklayers and related workers	Below	Below	Below	NA	NA	NA	NA	NA	0	3	No	5,013	469
5151	Cleaning and housekeeping supervisors in offices,	Below	Below	Below	NA	NA	Above	Below	Below	1	6	No	2,666	455

	hotels, and other establishments													
2141	**Industrial and production engineers**	**Above**	**Below**	**Below**	**NA**	**NA**	**Above**	**Above**	**Below**	**3**	**6**	**Yes**	**2,217**	**430**
7534	Upholsterers and related workers	Above	NA	Below	NA	NA	Below	Below	Below	1	5	No	925	401

Note: n.e.c. = not elsewhere classified.

Source: Authors' calculations using data from multiple sources.

7. STRATEGIC DIRECTIONS FOR A GSP WITH ITALY

7.1 Summary of Critical Occupations

Tunisia's labor market faces persistent structural challenges. Weak labor demand contrasts with a still-favorable demographic profile and a relatively well-educated youth population. The economy has not been able to generate sufficient employment opportunities for young people, resulting in underutilized human capital, high unemployment, and inactivity. This imbalance fuels "brain waste," undermining both individual potential and the country's long-term development prospects.

Private sector labor demand is weak and narrowly concentrated in technical and manual occupations, mainly in manufacturing, construction, and the agrifood system. Job creation is still anchored in production-based activities requiring low- to mid-skilled labor rather than innovation-driven sectors. Demand is particularly strong for mid-skilled technical occupations in ISCO major groups 7 and 8 (craft and related trades workers; plant and machine operators and assemblers), including sewing machine operators (8153), machinery mechanics and repairers (7233), riggers and cable splicers (7215), embroidery workers (7533), packing and bottling machine operators (8183), and welders and flame cutters (7212). These reflect the strength of export-oriented manufacturing—notably textiles, apparel, and leather—though emerging demand in transport equipment manufacturing points to a gradual shift toward higher value-added activities.

The agrifood system plays a central role in shaping labor demand, extending well beyond primary on-farm agriculture. While critical occupations remain in farm-based activities—such as forestry laborers (9215)—the bulk of emerging demand is concentrated in off-farm segments. Employment growth is particularly strong in food services and in food and beverage manufacturing. This has created rising demand for occupations such as chefs (3434); waiters (5131); street food salespersons (5212); food and related products machine operators (8160); fruit, vegetable, and related food preservers (7514); and packing, bottling, and labelling machine operators (8183). Critical occupations also extend to some typically found in the tourism sector, where demand is rising for hotel managers (1411); hotel receptionists (4224); cleaning and housekeeping supervisors in offices, hotels, and other establishments (5151); and cleaners and helpers in offices, hotels, and other establishments (9112).

Construction completes Tunisia's labor demand landscape. Continued rural-to-urban migration has generated strong demand for housing, transport, and infrastructure, fueling a wide range of occupations. Medium-skilled trades such as riggers and cable splicers (7215) and bricklayers (7112) remain central, while increasing technical complexity has raised demand for civil engineering technicians (3112), construction managers (1323), and construction supervisors (3123) to support planning, supervision, and quality assurance.

7.2 Strategic Directions for a GSP

Considering Tunisia's labor demand landscape and the composition of in-demand occupations, which occupations should be prioritized within a Global Skills Partnership (GSP)? The following analysis addresses this question by weighing 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 discussion is structured around key job-creating sectors, assessing the relevance of selected occupations and their potential to advance GSP objectives while supporting broader economic growth outcomes in both countries.

Manufacturing: Limited alignment. The manufacturing sector—particularly textiles, apparel, and leather—remains central to Tunisia's economy and a significant source of mid-skilled employment. Critical occupations such as sewing machine operators (8153) provide large-scale jobs domestically and have long supported Tunisia's export base. However, their strategic importance is far more limited in Italy, where manufacturing has been contracting, and labor demand from manufacturing firms has been declining outside a narrow set of niches, such as food and beverage processing. Prioritizing such occupations within a GSP would therefore carry a high risk of poor job placement outcomes: Tunisian workers trained in manufacturing-related occupations may face limited employment opportunities in Italy, undermining the effectiveness and sustainability of the partnership.

Construction: Partial but a risky fit. Construction offers a closer degree of alignment, with mediu,-skilled occupations in demand in both Tunisia and Italy. In Tunisia, demand is fueled by ongoing rural-to-urban migration and the associated need for housing, transport, and infrastructure. Yet, the sector also presents risks. Vacancy rates in Italy, while still notable, have been declining since early 2024 as public investment slowed. This raises questions about the medium-term sustainability of demand and potential risks of job instability or layoffs for migrant workers. Moreover, construction is often derivative of economic growth rather than a driver of structural transformation. For these reasons, while the sector could play a complementary role, it is less suited to serve as a GSP anchor compared to sectors with stronger modernization and diversification effects.

Agrifood: A promising sector for the GSP. By contrast, the agrifood system—and particularly its downstream segments in food processing, logistics and trading, and food services—emerges as the most promising anchor for a Tunisia-Italy GSP. Four considerations underpin this choice. First, shifting demand dynamics in Tunisia. As on-farm productivity rises through mechanization and improved agronomic practices, labor demand naturally shifts toward off-farm segments such as processing, packaging, cold-chain logistics, and retail (Christiaensen, Rutledge, and Taylor 2021; Nico and Christiaensen 2023). These occupations are typically more skill intensive and better remunerated than traditional farm work. Second, strategic importance for Italy. Food processing and hospitality are cornerstones of Italy's economy, supported by global demand for high-quality food products and a dynamic tourism industry. Persistent labor shortages in these occupations underscore the sector's relevance. Third, reduced placement risks. Because both Tunisia and Italy face ongoing shortages in these occupations, the likelihood of successful job matching is high. This also creates space for circular migration arrangements, particularly seasonal mobility during periods of increased labor demand. Fourth, training feasibility. The required skillsets are midlevel and training pathways relatively short, making it possible to prepare prospective migrants quickly for both the domestic and international tracks of a GSP.

To operationalize the agrifood system rationale, the final step of this labor market assessment is to translate the targeted occupations into a "where/what/how" matrix (table 7.1). This tool overlays the shortlisted critical occupations—identified either through the Survey on Job Vacancies and Skills or through the Critical Occupation List methodology—with geographic demand intensity and vacancy or job growth data. In doing so, it illustrates where labor shortages are most acute, what occupations are in demand, and how many opportunities exist in the Tunisian labor market. For geographic concentration, the analysis uses the district level when critical occupations can be observed in the Survey on Job Vacancies and Skills, and relies on clustered governorates when the occupation is identified from the Labor Force Survey.

Table 7.1 Where/What/How Matrix: Critical Agrifood Occupations in Tunisia

What		Where		How		Source
ISCO Code	**Occupation**	**Districts**	**Clusters of Governorates**	**Job Vacancies**	**Jobs Created ('000)**	
9215	Forestry laborers	NA	North West North East (excluding Grand Tunis)	NA	2.42	Enquête nationale sur la population et l'emploi

3434	Chefs	Bizerte; Mahdia; Nabeul; Sousse		2,3	0.53	Enterprise Survey on Job Vacancies and Skills
5131	Waiters	Monastir; Nabeul; Tunis		1,6	1.53	Enterprise Survey on Job Vacancies and Skills
5212	Food salespersons	NA	North East (excluding Grand Tunis) Central East; Central West	NA	1.53	Enquête nationale sur la population et l'emploi
8160	Food and related products machine operators	NA	Grand Tunis	NA	1.41	Enquête nationale sur la population et l'emploi
7514	Fruit, vegetable, and related food preservers	NA	South West; South East	NA	0.30	Enquête nationale sur la population et l'emploi
8183	Packing, bottling, and labelling machine operators	Tunis; Sousse; Sfax; Mahdia; Kairouan	NA	0.82	NA	Enterprise Survey on Job Vacancies and Skills

Source: Authors' calculations using data from multiple sources.

The analysis highlights a set of critical occupations across Tunisia's agrifood system, reflecting both regional specificities and diverse labor demand patterns. While certain occupations—such as forestry laborers and food machine operators—are more prominent in specific clusters, others, including chefs, waiters, and food salespersons, show broader demand across coastal and urban areas. Together, these findings provide a geographic and occupational map of where job creation potential is concentrated and where targeted training and employment initiatives could have the greatest impact.

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ANNEX 1. SECTORAL JOB VACANCIES AND HIRING DIFFICULTIES

	Labor demand			Skill shortages
	Unfilled Job Positions (Headcount)	Share of Total Labor Demand (%)	Net Job Creation Rate (%)	Firms Reporting Lack of Technical Skills Among Candidates (%)
1. Manufacture of textiles, wearing apparel, and leather products	21,845	12%	-3.5%	31.5%
2. Accommodation and food service activities	5,270	4%	6.1%	38.9%
3. Administrative and support service activities	3,783	7%	1.9%	24.3%
4. Manufacture of food, beverages, and tobacco products	3,139	4%	-0.2%	34.2%
5. Manufacture of other nonmetallic mineral products	2,761	9%	-4.9%	16.0%

6.	Manufacture of motor vehicles and other transport equipment	2,255	3%	24.2%	6.3%
7.	Construction	2,063	1%	-0.7%	26.2%
8.	Manufacture of computer, electronic and optical products, electrical equipment, and machinery	2,015	3%	-8.7%	39.6%
9.	Wholesale trade, except of motor vehicles and motorcycles	1,822	3%	9.0%	22.5%
10.	Retail trade, except of motor vehicles and motorcycles	1,750	1%	-6.5%	33.9%
11.	Manufacture of rubber and plastics products	1,678	16%	19.8%	17.9%
12.	Manufacture of basic metals, fabricated metal products, except machinery and equipment	1,353	4%	11.1%	27.7%
13.	Professional, scientific, and technical activities	1,249	4%	0.1%	41.5%
14.	Information and communication	1,189	3%	-3.5%	50.1%
15.	Education, human health, and social work activities	1,074	0%	-2.5%	12.9%
16.	Other manufacturing activities	867	2%	0.7%	33.6%
17.	Transportation and storage	580	1%	-0.8%	64.2%
18.	Mining and quarrying	565	3%	-4.7%	33.3%
19.	Manufacture of chemicals and chemical products, pharmaceuticals	518	2%	-1.9%	46.2%
20.	Arts, entertainment, recreation, other service activities, activities of households as employers	506	1%	-1.9%	27.3%
21.	Wholesale and retail trade and repair of motor vehicles and motorcycles	505	1%	-6.5%	17.2%
22.	Manufacture of paper and paper products, printing and reproduction of recorded media	400	3%	1.8%	41.3%
23.	Manufacture of leather and related products	387	1%	-5.5%	5.5%
24.	Repair and installation of machinery and equipment	220	5%	11.0%	13.1%
25.	Financial and insurance activities	159	1%	-4.8%	37.4%

ANNEX 2. LIST OF 4-DIGIT OCCUPATIONS EXCLUDED FROM THE COL METHODOLOGY

ISCO 4	Occupation	1-Year Emp. Growth	1-Year Growth in Median Hours Worked	1-Year Decrease in Education Level	1-Year Wage Growth (median)	3-Year Wage Growth (median)	1-Year Growth in Job Vacancy Postings	3-Year Growth in Job Vacancy Postings	1-Year Growth in Job Vacancy Rate	Available Indicators	Number of Indicators Above the Threshold
1111	Legislators	Below	NA	Above	NA	NA	NA	NA	NA	2	1
1114	Senior officials of special interest organizations	Below	NA	Below	NA	NA	NA	NA	NA	2	0
1312	Aquaculture and fisheries production managers	NA	NA	NA	NA	NA	NA	Above	NA	1	1
1343	Aged care services managers	NA	NA	NA	NA	NA	NA	Above	NA	1	1
2111	Physicists and astronomers	NA	NA	NA	NA	NA	Above	Above	NA	2	2
2112	Meteorologists	NA	NA	NA	NA	NA	Below	Below	NA	2	0
2162	Landscape architects	NA	NA	NA	NA	NA	Below	Above	NA	2	1
2222	Midwifery professionals	NA	NA	NA	NA	NA	Below	Below	NA	2	0
2230	Traditional and complementary medicine professionals	NA	NA	NA	NA	NA	Below	Below	NA	2	0
2240	Paramedical practitioners	NA	NA	NA	NA	NA	NA	NA	NA	0	0
2250	Veterinarians	NA	NA	NA	NA	NA	Above	Above	NA	2	2
2261	Dentists	NA	NA	NA	NA	NA	Above	Above	NA	2	2
2263	Environmental and occupational health and hygiene professionals	NA	NA	NA	NA	NA	Above	Below	NA	2	1
2264	Physiotherapists	NA	NA	NA	NA	NA	Below	Above	NA	2	1
2265	Dieticians and nutritionists	NA	NA	NA	NA	NA	Above	Above	NA	2	2
2266	Audiologists and speech therapists	NA	NA	NA	NA	NA	Below	Above	NA	2	1
2267	Optometrists and ophthalmic opticians	NA	NA	NA	NA	NA	Above	Below	NA	2	1
2269	Health professionals n.e.c.	NA	NA	NA	NA	NA	Above	Above	NA	2	2

2354	Other music teachers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
2519	Software and applications developers and analysts n.e.c.	NA	NA	NA	NA	NA	Below	Below	NA	2	0
2529	Database and network professionals n.e.c.	NA	NA	NA	NA	NA	Below	Below	NA	2	0
2632	Sociologists, anthropologists, and related professionals	NA	NA	NA	NA	NA	Above	Above	NA	2	2
2633	Philosophers, historians, and political scientists	NA	NA	NA	NA	NA	Below	Below	NA	2	0
2641	Authors and related writers	NA	NA	NA	NA	NA	Above	Below	NA	2	1
2643	Translators, interpreters, and linguistics	NA	NA	NA	NA	NA	Above	Above	NA	2	2
2651	Visual artists	NA	NA	NA	NA	NA	Above	Above	NA	2	2
2653	Dancers and choreographers	NA	NA	NA	NA	NA	Below	Above	NA	2	1
2659	Creative and performing artists n.e.c.	NA	NA	NA	NA	NA	Above	Above	NA	2	2
3135	Metal production process controllers	NA	NA	NA	NA	NA	Below	Below	NA	2	0
3143	Forestry technicians	NA	NA	NA	NA	NA	NA	NA	NA	0	0
3151	Ships' engineers	NA	NA	NA	NA	NA	Above	Below	NA	2	1
3152	Ships deck officers and pilot	NA	NA	NA	NA	NA	Below	Above	NA	2	1
3154	Air traffic controllers	NA	NA	NA	NA	NA	Below	Above	NA	2	1
3155	Air traffic safety electronics technicians	NA	NA	NA	NA	NA	NA	NA	NA	0	0
3254	Dispensing opticians	NA	NA	NA	NA	NA	Above	Above	NA	2	2
3255	Physiotherapy technicians and assistants	NA	NA	NA	NA	NA	Below	Above	NA	2	1
3256	Medical assistants	NA	NA	NA	NA	NA	Below	Below	NA	2	0
3257	Environmental and occupational health inspectors and associates	NA	NA	NA	NA	NA	Below	Above	NA	2	1
3332	Conference and event planners	NA	NA	NA	NA	NA	Below	Below	NA	2	0
3353	Government social benefits officials	NA	NA	NA	NA	NA	Above	Above	NA	2	2
3354	Government licensing officials	NA	NA	NA	NA	NA	Above	Above	NA	2	2
3355	Police inspectors and detectives	NA	NA	NA	NA	NA	Below	Below	NA	2	0
3413	Religious associate professionals	NA	NA	NA	NA	NA	NA	NA	NA	0	0
4411	Library clerks	Below	NA	Below	NA	NA	NA	NA	NA	2	0
4413	Coding, proofreading, and related clerks	NA	NA	NA	NA	NA	Below	Below	NA	2	0
4414	Scribes and related workers	NA	NA	NA	NA	NA	NA	NA	NA	0	0

5132	Bartenders	NA	NA	NA	NA	NA	Below	Below	NA	2	0
5162	Companions and valets	NA	NA	NA	NA	NA	Below	Below	NA	2	0
5163	Undertakers and embalmers	NA	NA	NA	NA	NA	Below	Below	NA	2	0
5164	Pet groomers and animal care workers	NA	NA	NA	NA	NA	Above	Above	NA	2	2
5241	Fashion and other models	NA	NA	NA	NA	NA	Above	Above	NA	2	2
5242	Sales demonstrators	NA	NA	NA	NA	NA	NA	NA	NA	0	0
5322	Home-based personal care workers	NA	NA	NA	NA	NA	Below	Below	NA	2	0
5414	Security guards	NA	NA	NA	NA	NA	Above	Below	NA	2	1
6112	Tree and shrub crop growers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6114	Mixed crop growers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6121	Livestock and dairy producers	Below	NA	Above	NA	NA	NA	NA	NA	2	1
6122	Poultry producers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6123	Apiarists and sericulturists	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6129	Animal producers n.e.c.	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6130	Mixed crop and animal producers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6210	Forestry and related workers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6221	Aquaculture workers	Below	NA	Below	NA	NA	NA	NA	NA	2	0
6222	Inland and coastal waters fishery workers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6223	Deep-sea fishery workers	Below	NA	Below	NA	NA	NA	NA	NA	2	0
6310	Subsistence crop farmers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6320	Subsistence livestock farmers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6330	Subsistence mixed crop and livestock farmers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
6340	Subsistence fishers, hunters, trappers, and gatherers	NA	NA	NA	NA	NA	NA	NA	NA	0	0
7114	Concrete placers, concrete finishers, and related workers	NA	NA	NA	NA	NA	Above	Below	NA	2	1
7115	Carpenters and joiners	NA	NA	NA	NA	NA	Below	Below	NA	2	0
7121	Roofers	NA	NA	NA	NA	NA	Below	Below	NA	2	0
7123	Plasterers	NA	NA	NA	NA	NA	Below	Below	NA	2	0
7125	Glaziers	NA	NA	NA	NA	NA	Above	Below	NA	2	1
7133	Building structure cleaners	NA	NA	NA	NA	NA	Below	Below	NA	2	0

7211	Metal moulders and coremakers	NA	NA	NA	NA	NA	Below	Below	NA	2	0
7224	Metal polishers, wheel grinders, and tool sharpeners	NA	NA	NA	NA	NA	NA	NA	NA	0	0
7312	Musical instrument makers and tuners	NA	NA	NA	NA	NA	Below	Above	NA	2	1
7315	Glass makers cutters grinders and finishers	NA	NA	NA	NA	NA	Below	Above	NA	2	1
7319	Handicraft workers n.e.c.	NA	NA	NA	NA	NA	Above	Above	NA	2	2
7321	Pre-press technicians	NA	NA	NA	NA	NA	Above	Above	NA	2	2
7322	Printers	NA	NA	NA	NA	NA	Above	Above	NA	2	2
7323	Print finishing and binding workers	NA	NA	NA	NA	NA	Above	Above	NA	2	2
7516	Tobacco preparers and tobacco products makers	NA	NA	NA	NA	NA	NA	Below	NA	1	0
7542	Shotfirers and blasters	NA	NA	NA	NA	NA	NA	NA	NA	0	0
7544	Fumigators and other pest and weed controllers	NA	NA	NA	NA	NA	NA	Above	NA	1	1
7549	Craft and related workers n.e.c.	Below	NA	Below	NA	NA	NA	NA	NA	2	0
8132	Photographic products machine operators	NA	NA	NA	NA	NA	Above	Above	NA	2	2
9123	Window cleaners	NA	NA	NA	NA	NA	Below	Below	NA	2	0
9624	Water and firewood collectors	NA	NA	NA	NA	NA	NA	NA	NA	0	0

Note: Occupations are excluded when insufficient data are available across the required shortage indicators to ensure a robust classification.

ANNEX 3. LIST OF 4-DIGIT OCCUPATIONS INCLUDED IN THE CRITICAL OCCUPATION LIST

Occupation	1-Year Emp. Growth	1-year Growth In Median Hours Worked	1-Year Decrease In Education Level	1-Year Wage Growth (median)	3-Year Wage Growth (median)	1-Year Growth In Job Vacancy Postings	3-Year Growth In Job Vacancy Postings	1-Year Growth In Job Vacancy Rate	Available Indicators	Number of Indicators Above The Threshold	Critical Occupation	Employees Size (2023)
Senior government officials	Above	Above	Below	NA	NA	NA	NA	Na	3	2	Yes	17,347
Policy and planning managers	Above	NA	Above	Below	Above	Below	Above	Below	7	4	Yes	280
Sales and marketing managers	Below	Below	Below	Above	Above	Above	Above	Above	8	5	Yes	3,243
Construction managers	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	1,055
Supply, distribution, and related managers	Below	Below	Below	Above	Above	Above	Above	Above	8	5	Yes	3,233
Childcare services managers	Below	Above	Below	NA	NA	Above	Above	Below	6	3	Yes	460
Education managers	Below	Above	Below	NA	Below	Above	Above	Above	7	4	Yes	5,460
Hotel managers	Above	Below	Below	NA	NA	Above	Above	Below	6	3	Yes	1,236
Retail and wholesale trade managers	Below	Above	Below	Above	Above	Below	Above	Above	8	5	Yes	2,644
Sports recreation and cultural center managers	Below	Above	Below	NA	NA	Above	Above	Below	6	3	Yes	1,176
Service managers n.e.c.	Below	Below	Above	Above	Below	Above	Above	Above	8	5	Yes	2,458
Farming, forestries, and fisheries advisers	Above	Below	Below	NA	NA	Above	Above	Below	6	3	Yes	3,737
Environmental protection professionals	Above	Above	Above	Below	Below	Below	Above	Below	8	4	Yes	302
Industrial and production engineers	Above	Below	Below	NA	NA	Above	Above	Below	6	3	Yes	2,217
Civil engineers	Above	Above	Below	NA	NA	Above	Below	Below	6	3	Yes	3,053
Mechanical engineers	Above	Above	Below	NA	NA	Below	Above	Below	6	3	Yes	4,056
Chemical engineers	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	836

Electrical engineers	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	1,249
Product and garment designers	Above	NA	Above	NA	NA	Above	Above	Below	5	4	Yes	963
Cartographers and surveyors	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	248
Graphic and multimedia designers	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	1,209
Specialist medical practitioners	Above	Above	Below	NA	NA	NA	NA	NA	3	2	Yes	4,378
Vocational education teachers	NA	NA	NA	NA	Above	Above	Above	NA	3	3	Yes	
Primary school teachers	Above	Above	Below	NA	NA	Above	Above	Below	6	4	Yes	66,324
Special needs teachers	Above	Above	Below	NA	NA	Above	Below	Below	6	3	Yes	1,422
Other arts teachers	Below	Above	Below	NA	NA	Above	Above	Below	6	3	Yes	692
Policy administration professionals	Below	Above	Below	Above	Above	Below	Above	Below	8	4	Yes	3,554
Training and staff development professionals	Above	NA	Above	NA	NA	Above	Above	Below	5	4	Yes	313
Advertising and marketing professionals	Above	Above	Below	Below	Below	Above	Above	Below	8	4	Yes	951
Technical and medical sales professionals (excluding information and communications technology)	Below	Above	Below	NA	NA	Below	Above	Above	6	3	Yes	470
Web and multimedia developers	Above	Above	Below	Above	Below	Above	Below	Below	8	4	Yes	2,480
Lawyers	Below	Above	Below	NA	NA	Above	Below	Above	6	3	Yes	123
Archivists and curators	Above	Below	Above	NA	NA	Below	Above	Above	6	4	Yes	202
Film stage and related directors and producers	Below	NA	Below	Above	NA	Below	Above	Above	6	3	Yes	182
Actors	Above	Above	Below	NA	NA	Above	Below	Below	6	3	Yes	665
Draughtspersons	Below	Above	Above	NA	NA	Above	Above	Above	6	5	Yes	253
Construction supervisors	Above	Above	Below	Above	Above	Below	Below	Below	8	4	Yes	3,618
Incinerator and water treatment plant operators	Above	Above	Above	NA	NA	Below	Below	Below	6	3	Yes	574
Chemical processing plant controllers	Below	Above	Above	Above	NA	Below	Above	Above	7	5	Yes	948
Petroleum and natural gas refining plant operators	Below	Above	Above	NA	NA	Below	Above	Above	6	4	Yes	110
Medical imaging and therapeutic equipment technicians	Above	Above	Below	Above	Above	Below	Below	Below	8	4	Yes	3,148
Medical and pathology laboratory technicians	Above	Above	Below	NA	NA	Above	Below	Below	6	3	Yes	4,711
Pharmaceutical technicians and assistants	Above	Above	Below	Above	Above	Below	Below	Below	8	4	Yes	7,241
Medical and dental prosthetic technicians	Below	Above	Above	NA	NA	Below	Below	Above	6	3	Yes	358
Traditional and complementary medicine associate professionals	Above	Above	Below	NA	NA	NA	Above	NA	4	3	Yes	40
Veterinary technicians and assistants	Above	Above	Above	NA	NA	Below	Below	Below	6	3	Yes	137
Securities and finance dealers and brokers	NA	NA	NA	Above	Above	Above	Above	NA	4	4	Yes	

Accounting associate professionals	Below	Below	Below	Above	Below	Above	Above	Above	8	4	Yes	7,842
Statistical, mathematical, and related associate professionals	Above	Above	Below	NA	NA	Above	Below	Below	6	3	Yes	318
Clearing and forwarding agents	Below	Below	Below	NA	Above	Above	Above	Above	7	4	Yes	1,731
Real estate agents and property managers	NA	NA	NA	Above	Above	Above	Above	NA	4	4	Yes	
Office supervisors	Below	Above	Above	NA	NA	Above	Below	Above	6	4	Yes	1,309
Legal secretaries	Below	Below	Above	NA	NA	Above	Above	Above	6	4	Yes	3,818
Administrative and executive secretaries	Below	Below	Below	Above	Above	Below	Above	Above	8	4	Yes	11,579
Customs and border inspectors	Below	Above	Above	NA	NA	Above	Above	Above	6	5	Yes	434
Government regulatory associate professionals n.e.c.	Below	Above	Above	NA	NA	Below	Below	Above	6	3	Yes	1,304
Sports coaches, instructors, and officials	Above	Below	Above	NA	Above	Above	Above	Below	7	5	Yes	2,966
Photographers	Below	Below	Above	NA	NA	Above	Below	Above	6	3	Yes	680
Chefs	Above	Above	Below	NA	NA	Above	Above	Below	6	4	Yes	2,627
Other artistic and cultural associate professionals	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	82
Information and communications technology user support technicians	Below	Above	Above	NA	NA	Below	Above	Above	6	4	Yes	72
Web technicians	Above	Above	Below	NA	NA	Above	Above	Below	6	4	Yes	491
General office clerks	Above	Below	Below	Below	Above	Above	Above	Below	8	4	Yes	17,504
Secretaries (general)	Above	Above	Above	NA	NA	Above	Below	Below	6	4	Yes	43,933
Pawnbrokers and money-lenders	Above	Above	Above	NA	NA	Below	Below	Below	6	3	Yes	3,329
Debt collectors and related workers	NA	NA	NA	Above	NA	Above	Above	NA	3	3	Yes	
Travel consultants and clerks	Above	Above	Above	NA	NA	Above	Above	Below	6	5	Yes	1,851
Contact center information clerks	Below	Above	Below	NA	NA	Below	Above	Above	6	3	Yes	18,582
Hotel receptionists	Above	Above	Below	Below	Below	Above	Above	Below	8	4	Yes	3,273
Inquiry clerks	Below	Above	Above	Above	Above	Below	Above	Above	8	6	Yes	1,488
Accounting and bookkeeping clerks	Below	Above	Below	Above	Below	Below	Above	Above	8	4	Yes	5,487
Payroll clerks	Below	NA	Above	Above	Above	Below	Above	Above	7	5	Yes	11
Mail carriers and sorting clerks	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	1,283
Personnel clerks	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	538
Travel attendants and travel stewards	Above	Above	Below	NA	NA	Below	Below	Above	6	3	Yes	1,140
Waiters	NA	NA	NA	NA	Above	Above	Above	NA	3	3	Yes	
Beauticians and related workers	Above	Above	Below	NA	NA	Above	Above	Below	6	4	Yes	3,260
Street food salespersons	Above	Above	Below	NA	NA	Above	Below	Below	6	3	Yes	3,441
Door-to-door salespersons	Below	Above	Above	NA	NA	Above	Below	Above	6	4	Yes	223

Service station attendants	Above	Above	Below	NA	NA	Above	Above	Below	6	4	Yes	5,343
Sales workers n.e.c.	Above	Below	Above	NA	NA	Below	Above	Below	6	3	Yes	1,211
Childcare workers	Below	Above	Below	NA	NA	Above	Below	Above	6	3	Yes	1,976
Hunters and trappers	Above	Above	Above	NA	NA	NA	NA	NA	3	3	Yes	4,383
House builders	Above	Above	Below	NA	NA	Above	NA	NA	4	3	Yes	72,013
Building frame and related trades workers n.e.c.	Below	Above	Above	NA	NA	Below	Below	Above	6	3	Yes	546
Plumbers and pipe fitters	Above	NA	Above	Below	NA	Below	Above	Below	6	3	Yes	195
Spray painters and varnishers	Above	NA	Above	NA	NA	Above	Above	Below	5	4	Yes	767
Welders and flame cutters	Below	Below	Above	NA	NA	Below	Above	Above	6	3	Yes	1,258
Structural metal preparers and erectors	Above	Above	Below	NA	NA	Below	Above	Above	6	4	Yes	7,818
Metal working machine tool setters and operators	Above	Below	Below	NA	NA	Below	Above	Above	6	3	Yes	2,769
Jewellery and precious metal workers	Above	Above	Below	NA	NA	Above	Above	Below	6	4	Yes	1,623
Potters and related workers	Above	NA	Above	NA	NA	Above	Above	Below	5	4	Yes	1,834
Electronics mechanics and servicers	Above	Above	Above	Above	NA	Below	Below	Below	7	4	Yes	2,017
Butchers, fishmongers, and related food preparers	Above	Above	Below	NA	NA	Below	Above	Above	6	4	Yes	6,189
Bakers, pastry cooks, and confectionery makers	Below	Above	Below	NA	NA	Above	Above	Below	6	3	Yes	22,333
Fruit, vegetable, and related food preservers	Above	Above	Below	NA	NA	NA	Above	NA	4	3	Yes	630
Garment and related pattern makers and cutters	Above	NA	Above	NA	NA	Above	Above	Below	5	4	Yes	316
Pelt dressers, tanners, and fellmongers	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	2,412
Cement, stone, and other mineral products machine operators	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	1,324
Chemical products plant and machine operators	Below	Above	Below	NA	NA	Below	Above	Above	6	3	Yes	5,061
Weaving and knitting machine operators	Above	Above	Below	NA	NA	Below	Above	Above	6	4	Yes	1,443
Sewing machine operators	Above	Below	Below	NA	NA	Above	Above	Below	6	3	Yes	110,741
Laundry machine operators	Above	Above	Above	NA	NA	Above	Above	Below	6	5	Yes	2,728
Textile, fur, and leather products machine operators n.e.c.	Below	Above	Above	NA	NA	Below	Below	Above	6	3	Yes	2,801
Food and related products machine operators	Above	Above	Above	NA	NA	Below	Below	Below	6	3	Yes	12,876
Glass and ceramics plant operators	Above	Above	Below	NA	NA	Below	Above	Above	6	4	Yes	1,908
Steam engine and boiler operators	Above	NA	Above	NA	NA	Above	Above	Below	5	4	Yes	343
Stationary plant and machine operators n.e.c.	Above	Above	Below	NA	NA	Above	Above	Above	6	5	Yes	19,387
Electrical and electronic equipment assemblers	Above	Below	Below	Above	Above	Below	Above	Above	8	5	Yes	17,209
Assemblers n.e.c.	Above	Above	Below	NA	NA	Below	Above	Above	6	4	Yes	22,359
Railway brake, signal, and switch operators	Below	Above	Below	NA	NA	Below	Above	Above	6	3	Yes	635

Heavy truck and lorry drivers	Above	Above	Below	Above	Above	Below	Below	Below	8	4	Yes	32,199
Domestic cleaners and helpers	Below	Above	Below	NA	NA	Above	Above	Below	6	3	Yes	22,676
Hand launderers and pressers	Below	Above	Below	NA	NA	Above	Above	Above	6	4	Yes	1,188
Forestry laborers	Above	Above	Below	NA	NA	NA	Above	NA	4	3	Yes	7,420
Mining and quarrying laborers	Below	Below	Above	NA	NA	Above	Below	Above	6	3	Yes	409
Civil engineering laborers	Below	Above	Below	Above	NA	Above	Above	Above	7	5	Yes	8,819
Freight handlers	Below	Above	Above	Below	Below	Below	Above	Above	8	4	Yes	12,778
Shelf fillers	Below	Above	Below	NA	NA	Below	Above	Above	6	3	Yes	4,508

Note: Occupations classified as critical shortages, meeting the minimum threshold of shortage signals under the COL methodology.

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

Occupation	1-Year Emp. Growth	1-Year Growth in Median Hours Worked	1-Year Decrease in Education Level	1-Year Wage Growth (median)	3-Year Wage Growth (median)	1-Year Growth in Job Vacancy Postings	3-Year Growth in Job Vacancy Postings	1-Year Growth in Job Vacancy Rate	Available Indicators	Number Indicators Above the Threshold	Critical Occupation	Employees size (2023)
Traditional chiefs and heads of villages	Below	Below	Above	NA	NA	NA	NA	NA	3	1	No	28,263
Managing directors and chief executives	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	2,076
Finance managers	Above	Below	Below	Below	Below	Below	Below	Below	8	1	No	4,970
Human resource managers	Above	Above	Below	Below	Below	Below	Below	Below	8	2	No	3,886
Business services and administration managers	Below	Above	Below	Above	Below	Below	Below	Above	8	3	No	1,383
Advertising and public relations managers	Above	Below	Below	Below	NA	Below	Above	Below	7	2	No	1,406
Research and development managers	Above	NA	Below	Below	Below	Below	Below	Below	7	1	No	325
Agricultural and forestry production managers	Above	Below	Above	NA	NA	NA	Below	NA	4	2	No	685
Manufacturing managers	Below	Above	Below	Below	Above	Below	Above	Below	8	3	No	3,946

Mining managers	Below	Below	Above	Below	NA	Below	Above	Above	7	3	No	135
Information and communications technology (ICT) services managers	Below	Above	Below	Below	Below	Below	Below	Below	8	1	No	1,765
Health services managers	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	1,600
Social welfare managers	Above	Above	Below	Below	NA	Above	Below	Below	7	3	No	883
Financial and insurance services branch managers	Below	Below	Below	Below	NA	Below	Below	Below	7	0	No	4,982
Professional services managers n.e.c.	Above	Below	Below	Below	Below	Above	Above	Below	8	3	No	3,740
Restaurant managers	Above	Below	Above	NA	NA	Below	Below	Below	6	2	No	2,416
Chemists	Above	NA	Below	NA	NA	Below	Below	Below	5	1	No	207
Geologists and geophysicists	Above	NA	Below	NA	NA	Above	Above	Below	5	3	No	111
Mathematicians, actuaries, and statisticians	Below	Above	Below	NA	NA	Above	Below	Below	6	2	No	859
Biologists, botanists, zoologists, and related professionals	Below	Above	Below	Below	Below	Below	Below	Above	8	2	No	158
Environmental engineers	Above	NA	Below	NA	NA	Above	Below	Below	5	2	No	131
Mining engineers, metallurgists, and related professionals	Above	Above	Below	NA	Below	Above	Below	Below	7	3	No	812
Engineering professionals n.e.c.	Below	Below	Below	Below	Below	Below	Below	Above	8	1	No	204
Electronics engineers	Below	Above	Below	NA	NA	Below	Below	Below	6	1	No	5,910
Telecommunications engineers	Above	Below	Below	NA	NA	Below	Below	Below	6	1	No	1,788
Building architects	Below	Above	Below	NA	NA	Above	Below	Below	6	2	No	4,653
Town and traffic planners	Below	Above	Below	Below	NA	Above	Below	Above	7	3	No	322
Generalist medical practitioners	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	3,691
Nursing professionals	NA	NA	NA	Below	Below	Below	Below	NA	4	0	No	
Pharmacists	NA	NA	NA	NA	Below	Below	Below	NA	3	0	No	
University and higher education teachers	Below	Above	Below	Below	Below	Above	Above	Below	8	3	No	13,920
Secondary education teachers	Below	Below	Below	NA	NA	Above	Below	Below	6	1	No	88,816
Early childhood educators	Below	Below	Below	NA	NA	Above	Above	Below	6	2	No	11,893
Education methods specialists	Below	Below	Below	NA	NA	Above	Below	Below	6	1	No	18,255
Other language teachers	Below	NA	Below	NA	NA	Above	Above	Above	5	3	No	79
Information technology trainers	Above	NA	Below	NA	NA	Above	Above	Below	5	3	No	909
Teaching professionals n.e.c.	Above	Below	Below	Above	Below	Above	Below	Below	8	3	No	1,320
Accountants	Below	Below	Below	Above	Below	Below	Above	Above	8	3	No	26,888
Financial and investment advisers	Above	Below	Below	Below	Below	Below	Below	Below	8	1	No	1,010

Financial analysts	Above	Below	Below	Above	Above	Below	Below	Below	8	3	No	260
Management and organization analysts	Above	Above	Below	Below	NA	Below	Above	Below	7	3	No	10,878
Personnel and careers professionals	Above	Below	Below	Above	Below	Below	Below	Below	8	2	No	3,158
Public relations professionals	Above	NA	Below	Below	NA	Below	Above	Below	6	2	No	182
Information and communications technology sales professionals	Above	NA	Below	NA	NA	Above	Below	Below	5	2	No	166
Systems analysts	Below	Above	Below	Below	Above	Above	Below	Below	8	3	No	5,346
Software developers	Below	Above	Below	Below	Below	Below	Below	Below	8	1	No	2,920
Applications programmers	Below	NA	Below	Above	Below	Below	Below	Above	7	2	No	403
Database designers and administrators	Above	NA	Below	Below	Below	Above	Below	Below	7	2	No	401
Systems administrators	NA	NA	NA	Below	Below	Below	Below	NA	4	0	No	
Computer network professionals	Above	Below	Below	NA	NA	Below	Below	Below	6	1	No	4,804
Judges	Above	Below	Below	NA	NA	NA	NA	NA	3	1	No	1,915
Legal professionals n.e.c.	Below	Below	Below	Above	NA	Below	Below	Above	7	2	No	1,551
Librarians and related information professionals	Above	NA	Below	NA	NA	Above	Above	Below	5	3	No	264
Economists	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	550
Psychologists	Above	NA	Below	NA	NA	Below	Above	Below	5	2	No	429
Social work and counselling professionals	Below	Below	Below	Above	Above	Below	Below	Below	8	2	No	448
Religious professionals	Below	Above	Below	NA	NA	NA	NA	NA	3	1	No	5,462
Journalists	Below	Below	Below	NA	NA	Above	Below	Above	6	2	No	815
Musicians singers and composers	Below	NA	Above	NA	NA	Below	Below	Above	5	2	No	889
Announcers on radio, television, and other media	Below	Above	Below	NA	NA	Below	Below	Above	6	2	No	849
Chemical and physical science technicians	Below	Above	Below	NA	NA	Below	Below	Above	6	2	No	430
Civil engineering technicians	Above	Below	Below	Above	Below	Below	Above	Below	8	3	No	6,070
Electrical engineering technicians	Above	Below	Below	NA	NA	Below	Above	Below	6	2	No	6,470
Electronics engineering technicians	Above	NA	Below	NA	NA	Below	Below	Below	5	1	No	978
Mechanical engineering technicians	Below	Below	Below	Above	Below	Below	Above	Above	8	3	No	8,888
Chemical engineering technicians	Above	NA	Below	NA	NA	Above	Above	Below	5	3	No	420
Mining and metallurgical technicians	Below	Below	Below	NA	NA	Below	Above	Above	6	2	No	317
Physical and engineering science technicians	Above	Above	Below	Below	Below	Below	Below	Below	8	2	No	1,083
Mining supervisors	Above	Below	Below	NA	NA	Below	Below	Below	6	1	No	1,318

Manufacturing supervisors	Below	Above	Below	Above	Above	Below	Below	Below	8	3	No	16,386
Power production plant operators	Above	Below	Below	NA	Above	Below	Above	Below	7	3	No	539
Process control technicians n.e.c.	Below	Above	Below	NA	NA	Below	Below	Above	6	2	No	44
Life science technicians (excluding medical)	Above	Below	Below	NA	NA	Below	Below	Below	6	1	No	1,714
Agricultural technicians	Below	Below	Below	NA	NA	Above	Below	Below	6	1	No	1,111
Aircraft pilots and related associate professionals	NA	NA	NA	Above	NA	Below	Below	NA	3	1	No	
Nursing associate professionals	Below	Below	Below	NA	NA	NA	NA	NA	3	0	No	29,850
Midwifery associate professionals	Below	Above	Below	NA	NA	NA	NA	Below	4	1	No	1,753
Dental assistants and therapists	Below	Below	Below	NA	NA	Below	Below	Below	6	0	No	330
Medical records and health information technicians	Below	Below	Below	Above	Above	Below	Below	Above	8	3	No	1,280
Community health workers	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	3,271
Ambulance workers	NA	NA	NA	NA	Below	Above	Below	NA	3	1	No	
Health associate professionals	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	5,132
Credit and loans officer	Below	Above	Below	Below	Above	Below	Below	Above	8	3	No	484
Valuers and loss assessors	NA	NA	NA	Below	NA	Below	Above	NA	3	1	No	
Insurance representatives	Above	NA	Below	NA	NA	Below	Below	Below	5	1	No	257
Commercial sales representatives	Above	Below	Below	Above	Below	Below	Above	Below	8	3	No	14,283
Buyers	Above	NA	Below	NA	NA	Below	Below	Below	5	1	No	988
Trade brokers	Above	NA	Above	NA	NA	Below	Below	Below	5	2	No	2,167
Employment agents and contractors	Below	Below	Below	NA	NA	Below	Below	Below	6	0	No	279
Business services agents n.e.c.	Above	NA	Below	NA	NA	Below	Below	Below	5	1	No	446
Medical secretaries	Above	Below	Below	Below	Below	Above	Below	Below	8	2	No	6,961
Government tax and excise officials	Below	NA	Below	NA	NA	NA	Below	NA	3	0	No	187
Legal and related associate professionals	Below	Below	Below	NA	NA	Above	Below	Above	6	2	No	748
Social work associate professionals	Above	Above	Below	Below	Below	Below	Below	Below	8	2	No	1,279
Athletes and sports players	Above	Above	Below	Below	NA	Below	Below	Below	7	2	No	2,175
Fitness and recreation instructors and program leaders	Above	Below	Below	Below	Above	Above	Below	Below	8	3	No	2,904
Interior designers and decorators	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	391
Gallery, museum, and library technicians	Below	NA	Below	NA	Above	Below	Below	Above	6	2	No	48
	Below	Below	Below	Below	NA	Below	Above	Above	7	2	No	8,531

Information and communications technology operations technicians												
Computer network and systems technicians	Below	Above	Below	NA	NA	Below	Below	Below	6	1	No	7,191
Broadcasting and audiovisual technicians	Below	Above	Below	Below	Below	Below	Above	Above	8	3	No	1,164
Telecommunications engineering technicians	Below	Below	Below	NA	NA	Above	Above	Below	6	2	No	602
Typists and word processing operators	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	751
Data entry clerks	Below	NA	Below	NA	NA	Above	Above	Above	5	3	No	346
Bank tellers and related clerks	Below	Below	Above	NA	NA	Below	Below	Above	6	2	No	11,802
Bookmakers, croupiers, and related gaming workers	Above	NA	Above	NA	NA	Above	Below	Below	5	3	No	243
Telephone switchboard operators	Above	Below	Below	Below	Below	Below	Below	Below	8	1	No	1,695
Receptionists (general)	Above	Below	Above	NA	NA	Below	Below	Below	6	2	No	6,033
Survey and market research interviewers	Above	NA	Below	NA	NA	Above	Above	Below	5	3	No	580
Client information workers n.e.c.	Below	Below	Below	NA	Below	Above	Above	Below	7	2	No	1,913
Statistical, finance, and insurance clerks	Above	Below	Below	Below	Below	Below	Above	Below	8	2	No	1,402
Stock clerks	Above	Below	Above	Below	NA	Below	Below	Below	7	2	No	12,913
Production clerks	Above	Below	Below	NA	NA	NA	NA	NA	3	1	No	3,114
Transport clerks	Below	NA	Below	Above	Below	Below	Above	Above	7	3	No	173
Filing and copying clerks	Below	Above	Below	NA	NA	Below	Below	Above	6	2	No	819
Clerical support workers n.e.c.	Below	Below	Below	Above	Above	Below	Below	Above	8	3	No	4,242
Transport conductors	Above	Below	Below	Below	NA	Below	Below	Below	7	1	No	2,165
Travel guides	Above	NA	Below	NA	NA	Above	Above	Below	5	3	No	916
Cooks	Above	Below	Below	NA	NA	Below	Below	Below	6	1	No	13,978
Hairdressers	Below	Above	Below	NA	NA	Below	Below	Below	6	1	No	18,266
Cleaning and housekeeping supervisors in offices, hotels, and other establishments	Below	Below	Below	NA	NA	Above	Below	Below	6	1	No	2,666
Domestic housekeepers	Below	NA	Below	NA	NA	Above	Above	Above	5	3	No	137
Building caretakers	Below	Below	Below	Above	Above	Below	Below	Above	8	3	No	928
Astrologers, fortune tellers, and related workers	Above	Below	Below	NA	NA	NA	NA	NA	3	1	No	1,666
Driving instructors	NA	NA	NA	Below	Below	Below	Below	NA	4	0	No	
Personal services workers n.e.c.	Above	NA	Below	NA	NA	Above	Below	Below	5	2	No	416

Stall and market salespersons	Below	Above	Below	NA	NA	Below	Below	Above	6	2	No	1,690
Shopkeepers	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	6,426
Shop supervisors	Below	Below	Below	Below	Above	Below	Below	Above	8	2	No	9,687
Shop sales assistants	Below	Below	Below	Above	Below	Below	Below	Below	8	1	No	78,339
Cashiers and ticket clerks	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	1,021
Contact center salespersons	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	2,036
Food service counter attendants	Below	NA	Above	Below	Below	Below	Below	Below	7	1	No	500
Teachers' aides	Above	NA	Below	NA	NA	Below	Below	Below	5	1	No	681
Health care assistants	Above	Below	Below	Above	Above	Below	Below	Below	8	3	No	5,950
Personal care workers in health services n.e.c.	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	2,205
Firefighters	Below	Below	Below	NA	NA	NA	NA	NA	3	0	No	1,048
Police officers	Above	Below	Below	NA	NA	NA	NA	NA	3	1	No	1,939
Prison guards	Above	Above	Below	NA	NA	NA	NA	Below	4	2	No	66,453
Protective services workers n.e.c.	Below	Below	Below	NA	NA	Below	Below	Below	6	0	No	123,192
Field crop and vegetable growers	Below	Below	Above	NA	NA	NA	NA	NA	3	1	No	1,134
Gardeners; horticultural and nursery growers	Below	Above	Below	NA	NA	NA	NA	NA	3	1	No	847
Bricklayers and related workers	Below	Below	Below	NA	NA	NA	NA	NA	3	0	No	5,013
Stonemasons, stone cutters, splitters, and carvers	Above	Below	Above	NA	NA	Below	Below	Below	6	2	No	4,458
Floor layers and tile setters	Below	Below	Below	NA	NA	NA	NA	Above	4	1	No	391
Insulation workers	Below	Above	Below	NA	NA	NA	NA	Above	4	2	No	8,889
Air conditioning and refrigeration mechanics	Below	Below	Below	NA	NA	NA	Below	NA	4	0	No	12,544
Painters and related workers	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	31,828
Sheet metal workers	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	5,431
Riggers and cable splicers	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	4,576
Blacksmiths, hammersmiths, and forging press workers	Below	Above	Below	NA	NA	Below	Below	Below	6	1	No	9,394
Toolmakers and related workers	Above	NA	Below	NA	NA	Above	Below	Below	5	2	No	60
Motor vehicle mechanics and repairers	Above	Above	Below	Below	Below	Below	Below	Below	8	2	No	30,447
Aircraft engine mechanics and repairers	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	354
Agricultural and industrial machinery mechanics and repairers	Above	Below	Below	Below	Below	Below	Below	Below	8	1	No	8,570
Bicycle and related repairers	Above	NA	Below	NA	NA	Above	Above	Below	5	3	No	1,120

Precision-instrument makers and repairers	Below	NA	Below	NA	NA	Below	Below	Below	5	0	No	971
Signwriters, decorative painters engravers, and etchers	Above	Below	Below	NA	NA	Above	Below	Below	6	2	No	4,720
Handicraft workers in wood, basketry, and related materials	Below	NA	Below	NA	NA	Above	Below	Below	5	1	No	685
Handicraft workers in textile, leather, and related materials	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	793
Building and related electricians	Above	Below	Below	NA	NA	Below	Below	Below	6	1	No	13,783
Electrical mechanics and fitters	Above	Below	Below	NA	NA	Below	Below	Below	6	1	No	4,007
Electrical line installers and repairers	Below	Below	Below	Below	NA	Above	Below	Below	7	1	No	1,954
Information and communications technology installers and servicers	Below	Below	Below	Above	NA	Above	Below	Below	7	2	No	2,820
Dairy products makers	Below	NA	Below	NA	NA	Below	Above	Above	5	2	No	51
Food and beverage tasters and graders	Below	NA	Below	NA	NA	Below	Below	Above	5	1	No	99
Wood treaters	Below	NA	Below	NA	NA	NA	NA	Above	3	1	No	209
Cabinet-makers and related workers	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	15,637
Woodworking machine tool setters and operators	Below	NA	Below	NA	NA	Above	Above	Above	5	3	No	510
Tailors, dressmakers, furriers, and hatters	Below	Below	Below	NA	NA	NA	NA	NA	3	0	No	4,584
Sewing, embroidery and related workers	Below	Above	Below	NA	NA	Below	Below	Below	6	1	No	4,562
Upholsterers and related workers	Above	NA	Below	NA	NA	Below	Below	Below	5	1	No	925
Shoemakers and related workers	Above	Below	Below	NA	NA	Below	Below	Below	6	1	No	138
Underwater divers	Above	NA	Above	NA	NA	Below	Below	Below	5	2	No	59
Product graders and testers (excluding foods and beverages)	Below	Below	Above	Below	NA	Below	Below	Above	7	2	No	11,811
Miners and quarriers	Above	Below	Below	NA	NA	NA	NA	Above	4	2	No	2,238
Mineral and stone processing plant operators	Below	Above	Below	NA	NA	NA	Below	NA	4	1	No	1,657
Well drillers and borers and related workers	Above	NA	Below	NA	NA	Below	Below	Below	5	1	No	2,071
Metal processing plant operators	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	1,745
Metal finishing, plating, and coating machine operators	Below	Above	Below	NA	NA	Below	Below	Above	6	2	No	1,817
Rubber products machine operators	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	7,144
Plastic products machine operators	Above	Below	Above	NA	NA	Below	Below	Below	6	2	No	5,756
Paper products machine operators	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	1,883
Fibre preparing, spinning, and winding machine operators	Above	NA	Below	NA	NA	Below	Below	Below	5	1	No	956
Bleaching, dyeing, and fabric cleaning machine operators	Above	Above	Below	NA	NA	NA	Below	NA	4	2	No	1,184
Fur and leather preparing machine operators	Below	Below	Below	NA	NA	NA	NA	NA	3	0	No	554

Shoemaking and related machine operators	Below	Below	Below	NA	NA	Below	Below	Below	6	0	No	11,702
Pulp and papermaking plant operators	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	1,151
Wood processing plant operators	Above	Below	Below	NA	NA	Below	Below	Below	6	1	No	597
Packing bottling and labelling machine operators	Below	Above	Below	NA	NA	Below	Below	Above	6	2	No	3,706
Mechanical machinery assemblers	Above	Below	Above	NA	NA	Below	Below	Below	6	2	No	7,376
Locomotive engine drivers	Below	Below	Above	NA	NA	NA	NA	NA	3	1	No	682
Motorcycle drivers	Below	NA	Below	NA	NA	Above	Above	Above	5	3	No	43
Car, taxi, and cab drivers	Below	Below	Below	Above	Above	Below	Below	Below	8	2	No	78,591
Bus and tram drivers	Above	Below	Below	NA	NA	NA	NA	NA	3	1	No	10,313
Mobile farm and forestry plant operators	Below	Above	Below	Above	NA	Below	Below	Above	7	3	No	6,228
Earthmoving and related plant operators	Below	Above	Below	NA	NA	Below	Above	Below	6	2	No	2,645
Crane, hoist, and related plant operators	Above	Below	Above	NA	NA	Below	Below	Below	6	2	No	2,320
Lifting truck operators	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	2,117
Ships' deck crews and related workers	Below	NA	Above	NA	NA	Below	Below	Above	5	2	No	191
Cleaners and helpers in offices, hotels, and other establishments	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	62,922
Vehicle cleaners	Above	Below	Above	NA	NA	Below	Below	Below	6	2	No	3,651
Other cleaning workers	Below	Above	Below	NA	NA	Below	Below	Above	6	2	No	1,090
Crop farm laborers	Above	Below	Below	NA	NA	Below	Below	Below	6	1	No	47,953
Livestock farm laborers	Above	Below	Below	NA	NA	Above	Below	Below	6	2	No	756
Mixed crop and livestock farm laborers	Above	Below	Below	NA	NA	Above	Below	Below	6	2	No	1,838
Garden and horticultural laborers	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	7,664
Fishery and aquaculture laborers	Below	NA	Below	NA	NA	Below	Below	Below	5	0	No	467
Building construction laborers	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	213,461
Hand packers	Below	Below	Below	NA	NA	Above	Below	Below	6	1	No	13,511
Manufacturing laborers n.e.c.	Below	Below	Below	NA	NA	Below	Above	Above	6	2	No	44,363
Hand and pedal vehicle drivers	Below	Above	Below	NA	NA	Above	NA	NA	4	2	No	450
Drivers of animal-drawn vehicles and machinery	Above	NA	Above	NA	NA	Below	Above	Below	5	3	No	699
Fast food preparers	Above	Above	Below	NA	NA	Below	Below	Below	6	2	No	1,974
Kitchen helpers	Below	Below	Above	NA	NA	Below	Below	Above	6	2	No	3,396
Street and related services workers	Above	NA	Below	NA	NA	Above	Above	Below	5	3	No	991

Street vendors (excluding food)	Below	Above	Below	NA	NA	Below	Below	Below	6	1	No	1,284
Garbage and recycling collectors	Below	Below	Below	NA	NA	Below	Below	Above	6	1	No	1,920
Refuse sorters	Below	Below	Below	NA	NA	Below	Below	Below	6	0	No	635
Sweepers and related laborers	Above	Below	Below	NA	NA	NA	NA	NA	3	1	No	10,508
Messengers, package deliverers, and luggage porters	Below	Below	Below	NA	NA	Below	Above	Above	6	2	No	10,961
Odd-job persons	Below	Above	Below	NA	NA	Below	Below	Below	6	1	No	12,486
Meter readers and vending-machine collectors	Above	Below	Below	NA	NA	Above	Below	Below	6	2	No	3,325
Elementary workers n.e.c.	Below	Above	Below	NA	NA	Below	Above	Below	6	2	No	13,963