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Employment in the High-Tech Sector and Technology Occupations: Present and Future Challenges

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Employment in the High-Tech Sector and Technology Occupations: Present and Future Challenges

Michael Debowy, Gil S. Epstein, and Avi Weiss

Introduction

For several years, high-tech industries have been the most productive sector in Israel, providing the bulk of the country's value added in international trade (Bental & Shami, 2022). In 2023, high-tech exports accounted for about 53% of Israel's total exports, and its share of GDP stood at 19.7% (Israel Innovation Authority, 2024). After some slowdown in 2023, both established companies and startups have recently continued to raise capital and hire employees despite the unprecedented challenges facing the country (Dor, 2024; Shulman, 2025). Foreign technology giants continue to acquire Israeli service companies (Gilad, 2024) and to invest heavily in Israel's technology sector (Kabir, 2023; Shulman, 2025).

The growth of high-tech over the past decade has been reflected, among other things, in a steady rise in employment and wages, leading to an overall increase in the average wage in the economy.[1] Between 2014 and 2023, the number of

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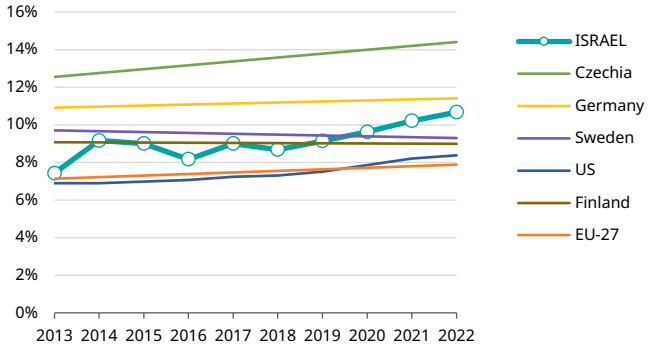
1 In addition to the direct contribution of high-tech to the average wage in the economy through the wages of those employed in the sector, there is also evidence that the high wage levels in high-tech affect other industries due to competition for workers in the labor market. This competition leads to efficiency gains in those industries and to wage increases that correspond to rising wages in high-tech (Debowy et al., 2022).

high-tech employees grew by about 60% (some 150,000 men and women). Most of the growth was in high-productivity, high-wage research and development occupations (Israel Innovation Authority, 2024). During the COVID-19 crisis, the share of employees in the high-tech industries rose steadily, reaching more than one-tenth of all workers in the economy at the peak of the post-pandemic recovery in 2022. Since then, however, their share in total employment has stalled. Nevertheless, compared to other developed countries, the share of workers in high-tech industries in Israel remains relatively high, and in the past decade has already surpassed their share in countries such as Sweden and Finland (Figure 1).

Figure 1. Share of workers in high-tech manufacturing and services out of all workers, Israel and selected countries



Notes: Data for European countries are available only for the years 2009 and 2022. The values for years prior to 2022 for these countries are based on the assumption of constant exponential growth between 2009 and 2022. The EU-27 average is an unweighted average of the countries in the group.[2]

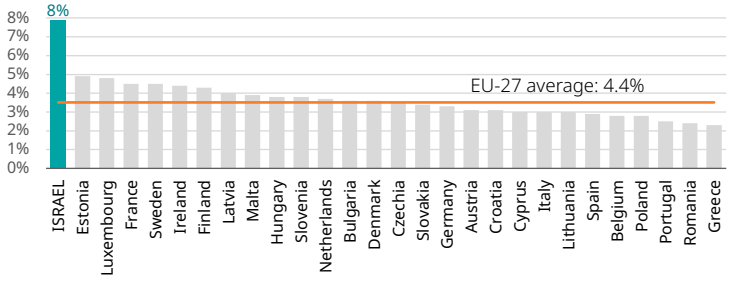
Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS; CEDEFOP; National Science Foundation

2 EU-27 countries are Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.

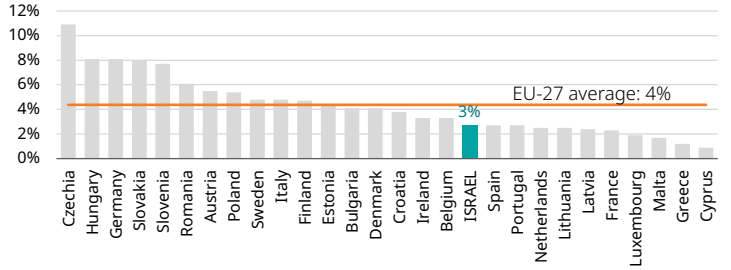
A more detailed breakdown of employment data shows that the share of workers in high-tech services in Israel is exceptional by global standards (Figure 2).[3] In 2022, the share of employees in high-tech services in Israel was about 7.9% — more than twice the average share in the EU-27 countries and more than one and a half times that of the leading country in this group (Estonia). By contrast, the share of employees in high-tech manufacturing in Israel was about 2.8% — lower than the EU-27 average (4.4%) and lower than in most of the countries in the group. This finding is consistent with the broader trend of a shrinking share of employees in Israeli industry in general, and in high-tech manufacturing in particular (see below), over the past decade.

Figure 2. Share of workers in high-tech out of all workers, Israel and selected countries, 2022

a. High-tech service workers



b. High-tech manufacturing workers



Note: The EU-27 average is the unweighted average of all of the countries in the group.

Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS; CEDEFOP

3 High-tech services include computer programming, advisory services in the area of computers, and additional services; telecommunications services; information services; research and development centers; research and development in engineering and the natural sciences.

This paper aims to review the Israeli high-tech sector through the lens of employment and to examine the situation of workers in high-tech industries as well as of those in technology occupations in the rest of the economy. The paper is organized into three main sections. The first section defines and reviews employment rates in high-tech and wages in its various occupations and industries, alongside recent changes in these areas; the second section discusses unemployment and job search; and the third section addresses the geographic distribution of employment in high-tech and technology occupations, and the local changes that occurred during the war. Finally, we discuss the future of employment in high-tech and technology occupations in light of various challenges, such as the war, structural changes in the labor market, and the artificial intelligence revolution.

Definitions and nationwide findings

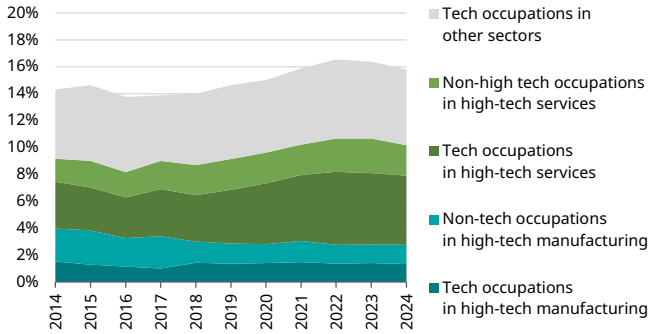
In accordance with the definitions of the OECD and Eurostat, the Central Bureau of Statistics classifies several branches of the Israeli economy as high-tech industries. High-tech manufacturing ("high-technology industry") includes the production of computers, electronic and optical equipment; the production of pharmaceuticals; and the production of aircraft, spacecraft, and related equipment. High-tech services ("knowledge-intensive high-tech services") include computer programming, computer consultancy and related services; telecommunications; information services; research and development centers; and research and development in engineering and the natural sciences.

An alternative definition is based not on the industry of employment or the employer's identity, but rather on the worker's role and occupation. The European Centre for the Development of Vocational Training (CEDEFOP) defines technology occupations as academic or associate occupations in the following fields: science, engineering, and information and communications. These occupations include science and engineering professionals, science and engineering associate professionals, information and communications technology (ICT) professionals, and ICT technicians and associate professionals.

Figure 3 presents the share of employees in high-tech industries and in technology occupations over the past decade. The share of employees in high-tech industries rose from 9% in 2014 to 10% in 2024 — an increase of about 11%. This growth was driven mainly by high-tech services, where the

share of employees rose by 43% during these nine years (49% in technology occupations and 32% in supporting occupations), reaching more than 7% of all employees in the economy. By contrast, the share of employees in high-tech manufacturing declined over the period, from 4% to 2.8%. At the same time, the share of employees in technology occupations outside of the high-tech industries grew by about 10%, reaching about 5.6% of total employees in 2024. It should be emphasized that the share of employees in high-tech services and in technology occupations outside of high-tech industries peaked before the war and has since declined; combined with the long-term decrease in employment in high-tech manufacturing, this means that at the time of writing, the peak of Israeli employment in high-tech and technology occupations up to this point is already in the past.

Figure 3. Share of workers in the high-tech sector and technology occupations out of all workers, ages 25–65



Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

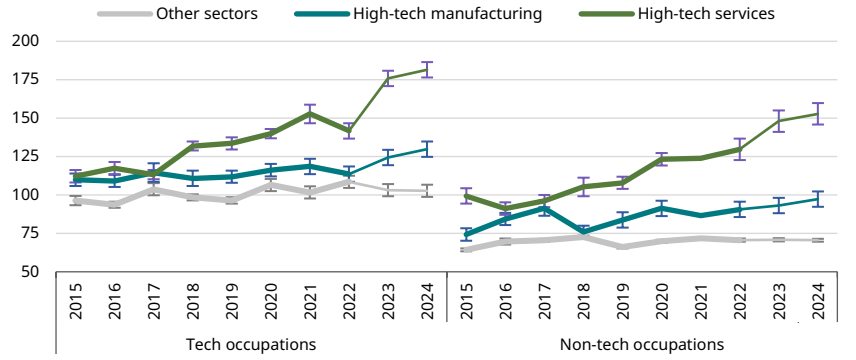
Figure 4 presents the development of average real gross hourly wages from 2015 to 2024 by occupation and industry. Several interesting observations emerge from the figure. First, the wages of technology workers and of supporting workers in high-tech services are higher than wages in other industries, and even in high-tech manufacturing their wages are somewhat higher than those of their counterparts employed in non-high-tech industries. Second, the average wage of technology workers is higher than that of supporting workers

in each of the industry groups: the largest gap was measured in high-tech manufacturing (an average of 48% more in 2022–2024), and the smallest in high-tech services (16%).

This difference is largely the result of the occupational distribution of supporting workers in high-tech (see Appendix Table 1). In 2024, managers and academic professionals accounted for 62% of supporting workers in high-tech services (compared to about one-quarter in high-tech manufacturing), while craft workers and machine operators accounted for 35% of supporting workers in high-tech manufacturing (compared to only a few percent in high-tech services). It is likely that this difference in occupational distribution stems both from the nature of the activity of firms in high-tech services (which require relatively few production workers) and from the greater dispersion of activity across a larger number of firms in high-tech services compared to high-tech manufacturing. Since each firm requires a fixed layer of supporting staff — management, operations, and business development — the aggregate size of this layer is larger than it would be if the activity were concentrated in a smaller number of larger firms.[4]

4 On average between 2012 and 2022, about 50% of the wage gaps between high-tech manufacturing and high-tech services were due to differences in occupations (56% in 2021–2022). About 41% of the wage gaps are not explained by observable characteristics (39% in 2021–2022), and the remainder are explained by differences in worker characteristics (age, education, gender, and population group). These findings are based on a Blinder-Oaxaca decomposition (Oaxaca, 1973) that we conducted using wage data for about 5,930 employees in high-tech over the given decade (1,257 in 2021–2022).

Figure 4. Average hourly wage by occupational sector
NIS, 2024 prices

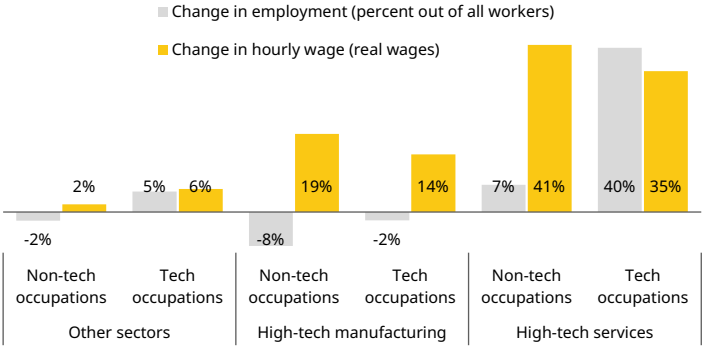


Note: The circles represent the average gross hourly wage in the sample, and the vertical lines crossing them represent a 95% confidence interval for the population mean. The estimates for 2023–2024 are based on industry-level monthly wage data for employees, data on employee working hours by industry and occupation, and the correlation between these and the hourly wage estimates as derived from the CBS Household Expenditure Survey for the years 2015–2022.

Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

The relatively high average wages of supporting workers in high-tech services are also evident in the gap between them and the wages of supporting workers in high-tech manufacturing. This gap grew from 30%–40% before and during the COVID-19 pandemic to about 60% in 2023–2024. Even more noteworthy is that the wages of supporting workers in high-tech services surpassed those of technology workers in high-tech manufacturing already during the pandemic, and the gap between them has since widened to 18% in 2023–2024.

Figure 5. Change in average hourly wage (gross) and in the employment rate out of all workers, 2023–2024 versus 2018–2019



Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

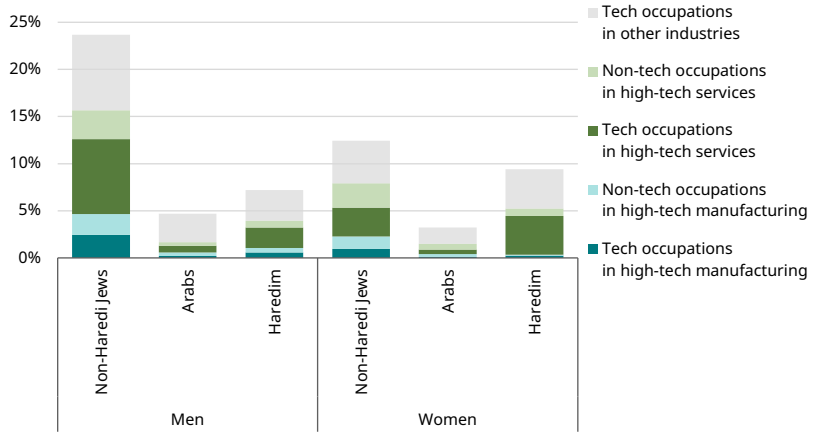
Figure 5 summarizes the trends in employment and wages from the period before the COVID-19 pandemic to the wartime period. Most of the employment growth came from high-tech services, particularly in technology occupations, where real wages grew significantly. An even larger increase in wages was observed, as already noted, among supporting occupations in high-tech services, where the share of employees grew much more moderately. At the same time, the number of technology workers in high-tech manufacturing remained relatively stable in relation to the labor force, and their average wages rose slightly in real terms; in parallel, the number of supporting workers in high-tech manufacturing declined, though the wages of those who remained also increased.

Another topic of employment significance is self-employment (Appendix Figure 1). The share of self-employed among workers in high-tech industries stood at an average of 3%, compared to 13% in the rest of the economy. However, in other industries, the share of self-employed in technology occupations was somewhat higher than in other occupations — 15% compared to 13%. Among the self-employed in high-tech industries, 78% held technology occupations in high-tech services, and 19% held non-technology occupations in high-tech services (with only a negligible share working in high-tech manufacturing). It is therefore evident that while technology occupations are not exclusive to

salaried employees, self-employment is rarer in high-tech industries in general and in high-tech manufacturing in particular. A somewhat similar pattern is observed among students, whose share among high-tech employees is slightly lower than their share in other industries.[5]

Another aspect of employment in high-tech is the demographic distribution of workers (Figure 6). Looking at gender and population sector, the employment gaps in high-tech are particularly pronounced. While nearly one-quarter of non-Haredi Jewish men and Others are employed in high-tech and technology occupations, only about 12% of non-Haredi Jewish women and Others are employed in these fields. Among Haredi workers, fewer than 10% are employed in high-tech and technology occupations, and among Arab workers — fewer than 5%. Within the high-tech industries themselves (excluding technology workers in other industries), the share of Arab employees (men and women) is negligible, and the share of Haredi employees is also very small — except for Haredi women employed in technology occupations in high-tech services, whose employment is similar to that of non-Haredi Jewish women.

Figure 6. Employment rate in high-tech by gender and sector, ages 25–65, 2014–2018



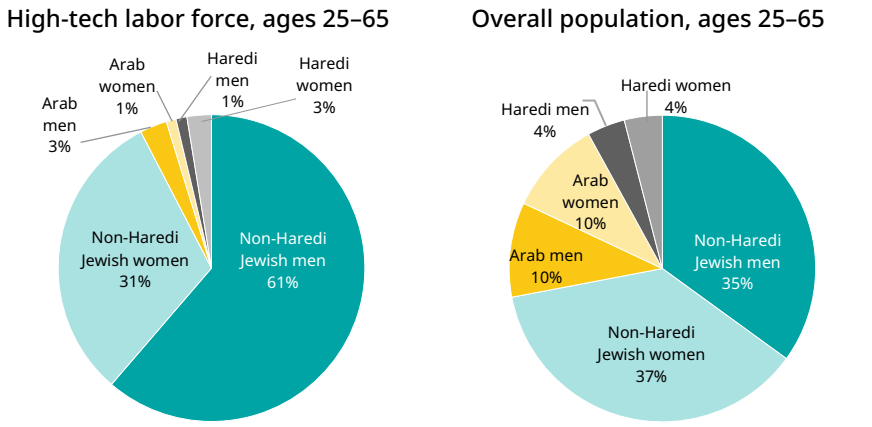
Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

5 In the high-tech industries, students make up 7% of employees (compared to 9% in other industries). High-tech employees account for 13% of working students, most of whom are employed in technology occupations. Seventeen percent of individuals in high-tech occupations who are not employed (either because they cannot find work or are not looking) are enrolled in studies.

Gender and population sector gaps become even more evident when examining the employment rates of different groups in high-tech relative to their share of the working-age population (Figure 7). Non-Haredi Jewish men and Others account for nearly two-thirds of employees in high-tech industries and a similar share of technology workers outside of high-tech, even though their share of the total sample is about 35%.[6] Non-Haredi Jewish women make up the overwhelming majority of the remaining one-third of high-tech employees (most concentrated in high-tech services) and of technology workers in other industries. The share of Arab men and Haredi men among employees in high-tech industries and technology occupations is less than one-third of their share in the population, and the (negligible) share of Arab women in these occupations is about one-tenth of their share in the population. The situation is somewhat more encouraging for Haredi women, whose share in the high-tech and technology occupations work force is about two-thirds of their share in the working-age population. A breakdown of Jewish workers by origin (Appendix Figure 2) also suggests differences between the representation of origin groups in high-tech and their share in the total population. For example, while the share of Jewish men of Asian/African origin in high-tech and technology occupations is similar to their share in the general population, the share of Jewish men of European/American origin in high-tech and technology occupations is 52% higher than their share in the general population. Similarly, while the share of Jewish women of Asian/African origin in high-tech is 57% lower than their share in the general population, the share of Jewish women of European/American origin is only 16% lower.

6 The overrepresentation of men among high-tech employees is a global phenomenon. See, for example, CompTIA, 2024; McCarthy, 2023; NSF, 2024.

Figure 7. High-tech and technology occupations labor force

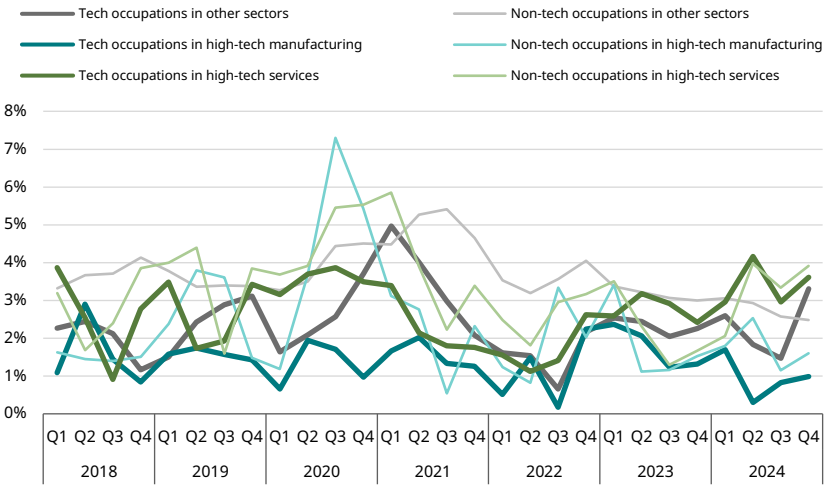


Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

Unemployment and job search

Figure 8 presents quarterly average unemployment rates by industry and occupation for the years 2018–2024. It is evident that the employment rate in high-tech manufacturing was more stable than in high-tech services (on average), both for technology occupations and for other occupations, although this advantage was not consistent throughout the entire period. However, since the outbreak of the war, unemployment rates among high-tech services employees have risen above the economy-wide average. During 2024, the unemployment rate in this group averaged about 3.4%, compared to about 1.4% in high-tech manufacturing and less than 3% in other industries. This finding is consistent with reports of the sharp decline in job openings for inexperienced workers (the "junior talent tech crisis") that occurred in the sector over the past year (Weisberg, 2025).

Figure 8. Unemployment rate by occupational sector and occupation



Note: Employees on unpaid leave are counted as employed. The occupation and industry of an unemployed person are determined according to their most recent job (if they worked within the past two years).

Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

In addition to the lower unemployment rate in high-tech compared to the rest of the economy, the difference in job search duration in high-tech is also notable. The sample suggests that the most recent job search among high-tech employees may have lasted longer than the average in other sectors (a little over half a year, both among those in technology occupations and those in other occupations). However, the wide variation in this figure among high-tech employees in the sample does not allow for a definitive conclusion. Past studies suggest that job searches by laid-off high-tech employees seeking new positions lasted up to three months, with most finding a new high-tech job within that period (Patir & Mekonen, 2024).[7] At the same time, recent reports

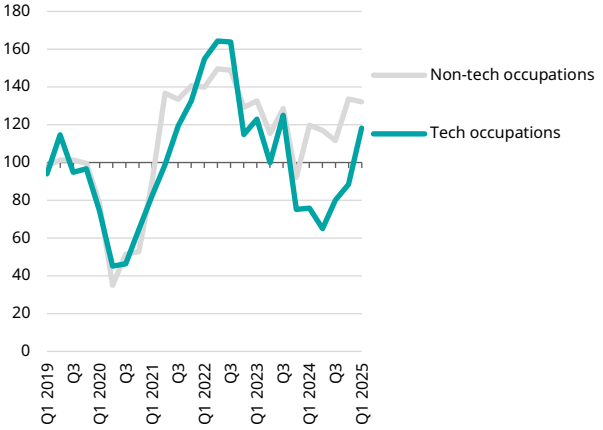
7 A study by the RISE Israel Institute, which focused on about 33,000 employees who lost their jobs in waves of layoffs in high-tech between March 2022 and May 2023, found that more than a quarter of those laid off began a new job in the same month they were dismissed, more than half started a new job within three months, and within a year over 90% had found employment (Patir & Mekonen, 2024). The study also found that about 84% of all those laid off (and more than 90% of those laid off from technology positions) who found new jobs remained in high-tech, and that age and experience were correlated with a somewhat longer job search.

indicate that among employees with less than two years of experience, job search duration surged to nearly a year between 2023 and 2024 (Weisberg, 2025).

The rise in unemployment rates and the lengthening of job searches are consistent with findings from the Central Bureau of Statistics' job vacancy surveys in recent periods. Figure 9 presents the number of job vacancies (relative to their average number in 2019) in technology occupations and in other occupations. It can be seen that the number of vacancies developed similarly in 2019–2023, but in 2024 the number of vacancies in technology occupations dropped compared to other occupations. However, data from early 2025 show that the gap narrowed at the beginning of the year, and the number of vacancies in technology occupations returned to being higher than in 2019. In any case, it is possible that various factors — such as structural changes in the high-tech market and the adoption of generative AI tools (see below) — have begun to affect the employment capacity of the high-tech sectors and may lead to erosion in their ability to absorb workers in the future.

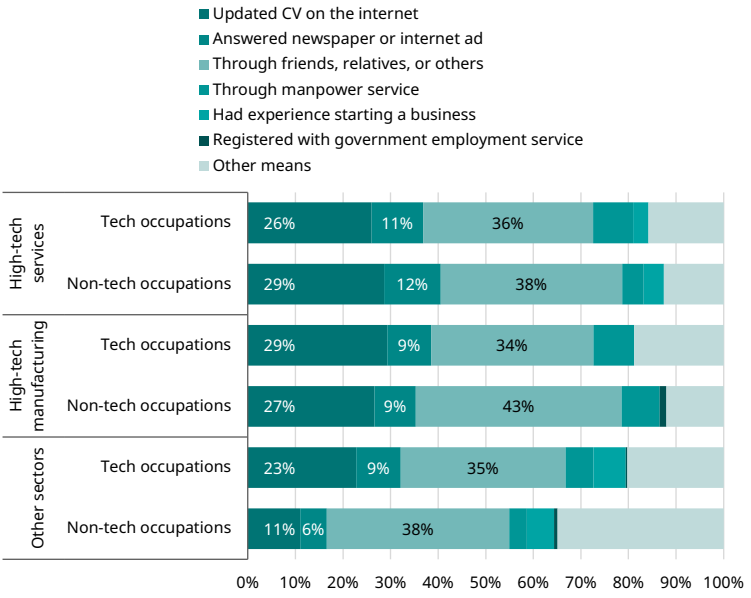
Figure 9. Vacant positions by occupation

Average number of vacant positions in 2019 = 100



Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

Figure 10. ***How did you find your job?***
2018–2024



Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

The differences between high-tech employees and other workers are not limited to job search duration; even greater differences are found in the channels used to find employment (Figure 10). Thirty-six percent of employees in high-tech industries or in technology occupations in other industries found their current job through updating their résumé online or responding to a job advertisement, compared to only 17% of employees in other industries who found work through these two channels. This finding is consistent with the belief that platforms such as LinkedIn are a central tool for job search in the high-tech world, but not in other sectors of the economy. It was also found that about 7% of employees in high-tech industries (6% among technology workers outside of high-tech) found their current job through a manpower agency, compared to 4% of other workers. Conversely — and in line with the self-employment rates presented earlier — the share of employees in high-tech industries who found their work by establishing their own business is half the corresponding share in other industries.

High-tech employment: A look at the geography

The data presented so far refer to the national average and do not provide a reliable picture of high-tech employment across different regions of the country. When broken down by districts and regions, it is clear that the Tel Aviv area leads in high-tech employment, both in terms of the share of high-tech and technology occupations in all jobs in the area (25%), and in terms of the share of high-tech and technology employees among all employed residents (20%).[8, 9] Petah Tikva, Haifa, and Rehovot also stand out in these respects, with the share of high-tech jobs in total jobs standing at 23%, 17%, and 16%, respectively (and the share of high-tech employees among employed residents at 17%, 17%, and 16%, respectively). At the other end of the scale are the Kinneret and Golan districts, where only about 4%–5% of jobs are in high-tech, and about 4%–5% of employed residents work in high-tech.

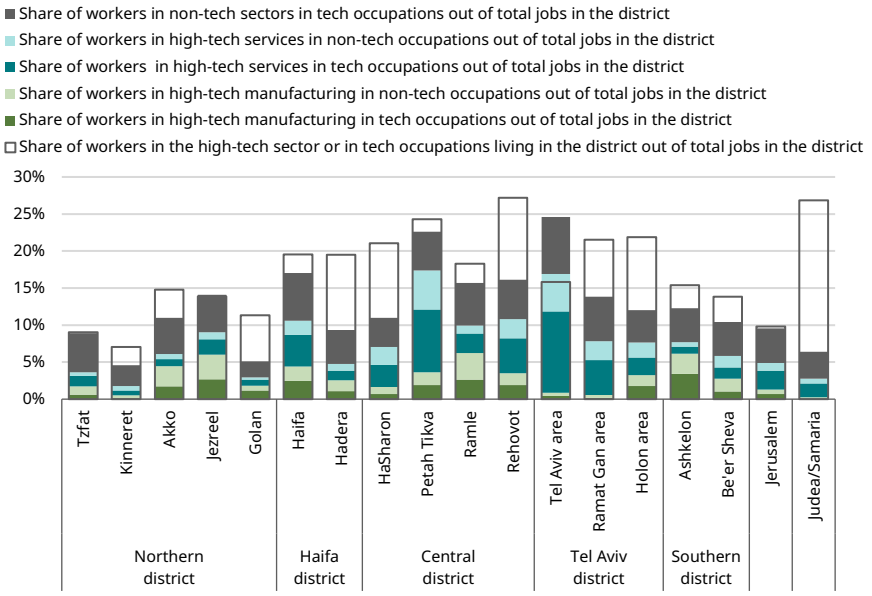
The data also point to significant regional variation in both the industries and the occupations of high-tech and technology employees (Appendix Figure 3). For example, in most peripheral districts — such as Ashkelon, Akko, and Jezreel — the majority of high-tech employees work in high-tech manufacturing. By contrast, among high-tech employees residing in the Ramat Gan and Tel Aviv areas, fewer than 10% are employed in high-tech manufacturing (less than 4% of all employed residents in those areas). The relative share of technology occupations outside of the high-tech industries is also notable, being especially high in the Jerusalem, Tzfat, Kinneret, and Golan districts, and particularly low in the Central districts as well as in the Tel Aviv and Ramat Gan areas.

8 The data include both the place of residence and the place of employment of each worker, but the sample size allows us to reliably estimate high-tech employment only at the district level; the exception is the Tel Aviv district, where the density of high-tech employment enables us to analyze statistical areas below the district level. The areas within the Tel Aviv district include the "Tel Aviv area" (Tel Aviv-Yafo, Ramat Hasharon, Herzliya, Glil Yam, and Kfar Shmaryahu), the "Ramat Gan area" (Ramat Gan, Givatayim, Bnei Brak, Or Yehuda, and Kiryat Ono), and the "Holon area" (Holon, Bat Yam, and Azor).

9 By "jobs" we do not mean salaried positions but rather the number of workers whose place of employment is in the district (salaried and self-employed), which we interpret as the number of jobs in the district.

These differences indicate that different regions of the country serve as centers for different types of high-tech activity. The employees working in these centers are not necessarily residents of the area, and conversely, residents employed in high-tech are not necessarily working in the area where they live. Figure 11 presents the share of high-tech employees (across industries and occupations) out of all employees in each geographic region, averaged over the years of our sample. In addition, each column in the figure includes a black outline, the height of which is calculated by dividing the number of high-tech and technology employees residing in the district by the total number of jobs in that district. The ratio of the outline to the colored column represents the relationship between the number of high-tech and technology employees residing in the geographic area and the number of high-tech and technology jobs in that area. When the outline is taller than the colored column, it means that the number of high-tech employees living in the area is greater than the number of jobs in the field in that area, as seen, for example, in the Hadera and Rehovot districts and in the Holon area. When the outline is shorter than the column, it means that the number of high-tech employees living in the area would not be sufficient to fill the available jobs even if every employee were suited for them, as is the case in the Tel Aviv area.

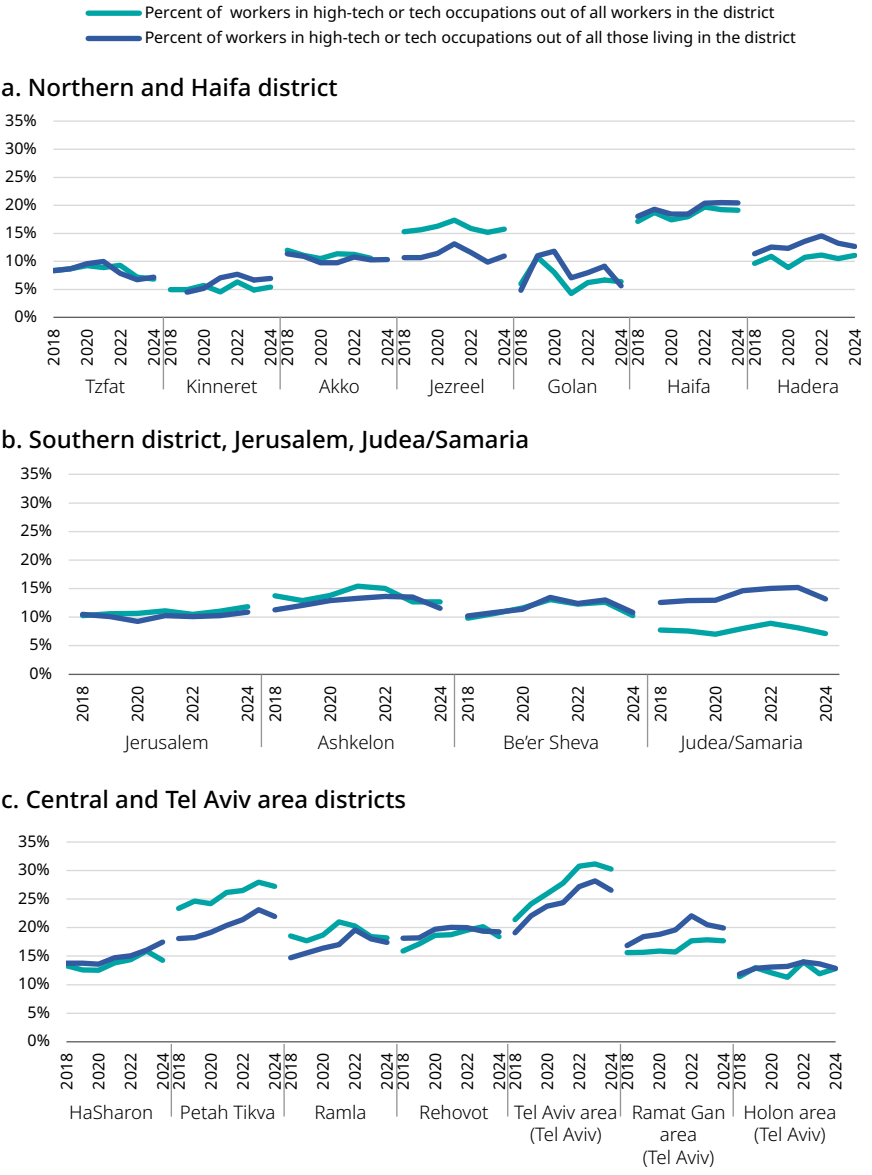
Figure 11. Employment in the high-tech sector and technology occupations, by district, 2018–2024



Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

The nationwide decline in the share of employees in high-tech industries and technology occupations in 2023–2024 was reflected in most districts and regions of the country (Figure 12). The sharpest declines were recorded in the northern districts (especially Kinneret and Tzfat), although in several of them the drop in the share of high-tech employees had already begun before the war, during the COVID-19 pandemic and even earlier. A similar but smaller-scale phenomenon is also evident in Judea and Samaria, in the Ramla district, and in the Holon area, where the decline in the share of high-tech employees during the war continued a downward trend that had begun earlier. In other places the impact of the war is more pronounced. In the Be'er Sheva district, for example, the share of high-tech employees was stable at around 13% in 2021–2023, but fell to 10% in 2024. Likewise, in the Tel Aviv area there was a slight decline between 2023 and 2024, not particularly significant relative to the overall share of high-tech employees in the area, but meaningful in absolute numbers (nearly 2,000 workers).

Figure 12. Employment in the high-tech sector and technology occupations, by district, 2018–2024



Note: The data refer to the percent of employees out of all employees ages 25–65.

Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

At the same time, in several regions of the country employment in high-tech and technology occupations remained stable. In this respect, the Haifa district, the Akko district, and the Ramat Gan area stand out. In the Jerusalem and Jezreel districts there was even a slight increase in the share of employees in high-tech and technology occupations between 2023 and 2024. In some regions the picture was mixed. In the Ashkelon district, for example, the share of high-tech and technology employees residing in the district declined slightly during the war, while the share of jobs in these fields located in the district remained unchanged. In the Sharon district, the opposite occurred: the share of high-tech and technology employees residing in the district continued to rise during the war, while the share of jobs in these fields located in the district declined slightly.

Another issue related to the geographic dimension is working from home. Nationally, about one-third of employees in high-tech services usually worked from home in recent years, compared to about one-tenth of employees in high-tech manufacturing, about one-fifth of technology workers in other industries, and about 7% of non-technology workers in other industries. A quarter of technology workers in the economy as a whole usually worked from home, as did supporting workers in high-tech services. Supporting workers in high-tech manufacturing — many of whom, as noted, are craft workers and machine operators — worked from home at a relatively low rate of 6%. By geographic breakdown (Appendix Table 2), there is considerable variation in working from home. In fact, the Tel Aviv and Central districts stand out with higher rates of employees working from home — both in high-tech and in other industries. By contrast, in all southern and northern districts the share of employees working from home is lower than the national average, and in most of them the work-from-home rates of employees in high-tech industries and technology occupations are also lower than the national average. It is therefore evident that working from home has not yet served as a catalyst for promoting high-tech employment in the periphery.

Current and future challenges

The war that broke out on October 7 had a dramatic impact on Israel's economy and on Israeli high-tech. The business activity of many companies was harmed by the war, either directly (in evacuated areas) or indirectly (due to reduced demand). For other companies, however — such as those in defense manufacturing and cybersecurity — new opportunities emerged. With respect to employment in high-tech, a survey conducted by the Israel Innovation Authority among senior managers in high-tech industries during March and April 2024 indicates that, overall, the supply of candidates increased and it became easier to recruit personnel. For example, 76% of companies were able to fill technology positions in less than three months, and 87% of companies filled non-technology positions within three months. Nonetheless, respondents noted that these changes were not necessarily connected to the war (Israel Innovation Authority, 2024, p. 25).

The survey also found that, against the backdrop of uncertainty stemming from the security situation, employees tend to prefer job stability and, in some cases, are even willing to moderate their salary expectations as a result. However, as noted above, it is possible that these changes do not derive solely from the war, but rather reflect a maturation of the high-tech industries and the exhaustion of their growth potential — developments that have cooled recruitment intensity and reduced workers' bargaining power. If this is the case, the war may have accelerated a process already underway, and its end will not necessarily restore the previous situation.

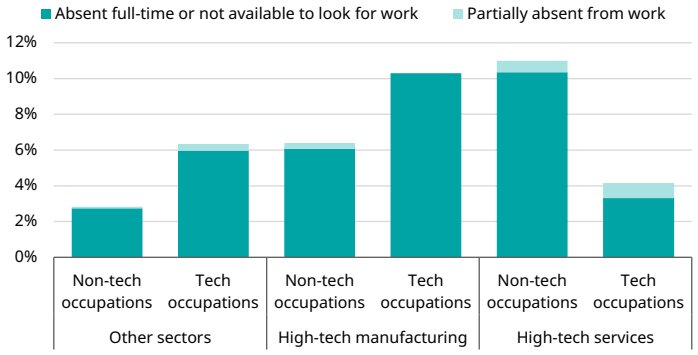
Another area in which the impact of the war on high-tech employees is evident is reserve duty. Figure 13 presents the share of employees called up for reserve duty by occupation across different industries in the last quarter of 2023.[10] The share of employees mobilized for reserve duty at the beginning of the war was particularly high in high-tech manufacturing, amounting to about one-tenth of employees.[11] In the rest of the economy, about 6% of technology workers and

10 Due to the scale of reserve duty mobilization during this period, the number of respondents in the Central Bureau of Statistics' Labor Force Surveys who reported reserve duty was sufficient to allow estimation of the distribution by industry and occupation.

11 It should be noted that the rate of reserve duty mobilization in high-tech industries was among the highest across economic sectors, but this finding is largely the result of the sector's demographic profile: male, Jewish, young. Taking these characteristics into account, the mobilization rate was actually lower than expected. For further discussion, see Debowy et al. (2024).

about 3% of all other employees were mobilized. Across the labor force, the share of those called up for reserve duty among technology workers was about 7%, compared to 3% among workers in other occupations. Partial absence from the workplace due to reserve duty was not widespread across the labor force, but it was particularly prominent in high-tech: employees in high-tech industries accounted for more than one-third of those partially absent due to reserve duty — much higher than their share of the labor force. As the war progressed, however, the share of those absent due to reserve duty fell sharply across all occupations and industries. In the second half of 2024, the share of employees called up for reserve duty stood at less than 2% of workers in each of the high-tech fields (and just under 1% among the rest of the employed population).

Figure 13. Impact of reserve duty on high-tech employment, October–December 2023



Note: The numbers shown represent the share of the total labor force (including employed, temporarily absent, and unemployed) up to age 50.

Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

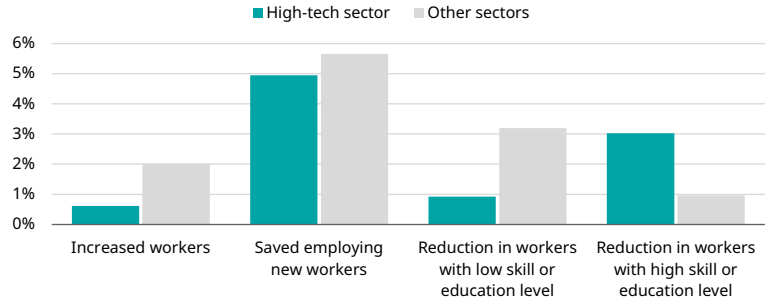
In addition to the impact of the ongoing war and its direct consequences on the economy and employment, the high-tech sector and technological professions are affected by another dramatic development — the rise of artificial intelligence and its integration into the market place. Workers in technological professions are increasingly exposed to competition from generative AI tools,

which were capable of performing many of their typical tasks by mid-2024.12 This exposure is characteristic of both workers in high-tech industries and those in support roles (it should be noted that other sectors, such as finance, real estate, professional, scientific, and technical services, are even more exposed). Moreover, the high-tech sector exhibits similar rates of workers who are expected to be replaced by AI tools and workers for whom AI is expected to assist, making it difficult to predict the overall impact of the AI revolution on the market as a whole (for a more detailed discussion on this topic, see Debowy et al., 2025).

As for the actual impact of artificial intelligence, preliminary findings from the CBS business and commerce trends survey suggest that businesses in the high-tech sector (particularly in high-tech services) are leading the economy in adopting and integrating AI technologies. These businesses are also using AI to reduce the need for hiring new workers and to replace highly skilled or educated employees (CBS, 2025). Figure 14 shows the share of employees whose employers reported various impacts of AI adoption on the total number of employees in the business, broken down by high-tech and other sectors. It can be seen that the proportion of workers in companies reporting savings in recruitment is slightly higher in high-tech than in other sectors, while in high-tech, the proportion of employees in companies reporting increased hiring is one-third that of other sectors. Additionally, in high-tech, the proportion of employees in companies that reported reducing the number of highly skilled or educated workers is three times higher than in other sectors (and conversely for workers with lower education or skills).

12 For example, according to the artificial intelligence exposure index developed by Eloundou et al. (2024), tools like GPT-4 can independently perform 16% of the typical tasks of the median technological worker in Israel (compared to 14% of the tasks of the median non-technological worker). With the aid of assistive tools, artificial intelligence can perform 70% of the tasks of the median technological worker (compared to 49% of those of the median non-technological worker). See Appendix Figure 4.

Figure 14. ***How has the use of artificial intelligence impacted the overall number of workers in business?*** **Businesses that used artificial intelligence, 2025**



Note: Businesses are weighted by their share of employees. The responses are based only on businesses that reported adopting artificial intelligence technology (in high-tech, these businesses employ about two-thirds of workers, while in the rest of the economy they employ about one-quarter).

Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

The data do not allow for a quantitative estimate of the scope of layoffs (or of avoiding new hires), but only of the number of employers who reported such phenomena. In any case, it should be emphasized that at the time of writing the extent of these phenomena is small even in high-tech services, and the overwhelming majority of employers reported that the adoption of artificial intelligence has had no effect at all on the number of employees. However, it is possible that the extent of the impact will grow as the technology develops and becomes more widely implemented. If this proves to be the case, the sector that has been responsible for most of the growth in employment and wages of high-tech and technology workers over the past decade will undergo a structural contraction in labor demand. Combined with the long-term trend of automation in high-tech manufacturing, this may lead to a significant decline in high-tech employment in Israel over time.

In conclusion, despite continued growth in foreign investment and in the output of high-tech and technology workers, the war and the artificial intelligence revolution have left employment in high-tech and technology occupations in a weaker position than before. Particularly concerning are the rise in unemployment in high-tech and technology occupations (alongside the decline in job vacancies in technology occupations); the drop in high-tech and technology employment in the South and North; and the adoption of artificial intelligence to replace workers in high-tech services. Policy must be developed to leverage the artificial intelligence revolution to promote quality employment and to minimize the harms of automation, while at the same time making the promotion of quality employment a central objective in the rehabilitation plans for war-affected peripheral regions.

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Appendix

Appendix Table 1. Distribution of occupations in high-tech sector, average for 2018–2024 and 2024

Occupation	High-tech manufacturing	High-tech services
Managers	13% (12%)	30% (29%)
Academic profession	14% (20%)	30% (33%)
Engineers, technicians, agents,, and associated occupations	11% (10%)	12% (11%)
Clerks, office personnel	9% (9%)	11% (11%)
Sales and service workers	3% (2%)	5% (3%)
Skilled workers in manufacturing, construction, and related occupations	15% (14%)	6% (7%)
Machine operators and product construction; hunting and fishing	22% (21%)	0.5% (0.5%)
Unskilled workers	3% (2%)	1% (1%)
Unknown	9% (9%)	4% (5%)

Note: Share of employed persons working at least 10 weekly hours in high-tech industries but not in technological occupations. The number outside the parentheses is the average for 2018–2024; the number in parentheses is for 2024 only.

Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

Appendix Table 2. Share of positive responses to the question: ***Do you generally work from home?***

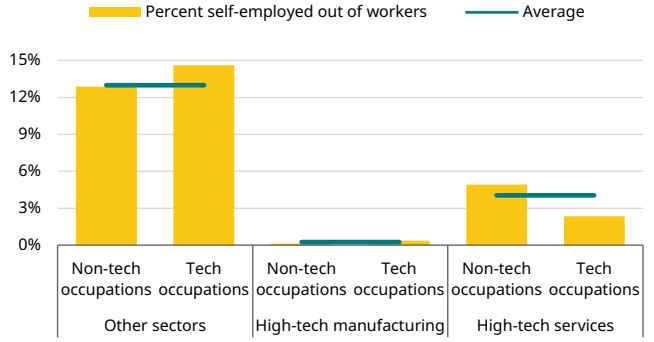
By district, occupation, and industry sector, ages 25–64, 2018–2024

	Tech occupations in other sectors	Support occupations in high-tech services	Tech occupations in high-tech services	Support occupations in high-tech manufacturing	Tech occupations in high-tech manufacturing	Non-high tech	Total
Jerusalem	19%	22%	38%	10%	18%	7%	9%
Tzfat	25%	11%	44%	5%		5%	6%
Kinneret	11%	4%	39%			5%	6%
Akko	12%	20%	33%	1%	13%	4%	5%
Jezreel	12%	16%	34%	4%	10%	4%	5%
Golan	12%	0%	17%	0%		6%	6%
Haifa	18%	20%	32%	5%	12%	6%	9%
Hadera	16%	34%	40%	5%	22%	7%	9%
HaSharon	19%	27%	41%	19%	23%	8%	11%
Petah Tikva	22%	29%	35%	4%	15%	10%	13%
Ramle	20%	27%	35%	6%	11%	8%	11%
Rehovot	21%	25%	34%	8%	14%	8%	11%
Tel Aviv area (Tel Aviv)	27%	28%	35%	16%	21%	13%	18%
Ramat Gan area (Tel Aviv)	20%	21%	37%	18%	25%	10%	13%
Holon area (Tel Aviv)	16%	24%	36%	7%	15%	5%	8%
Ashkelon	11%	17%	37%	3%	8%	6%	7%
Be'er Sheva	14%	18%	35%	2%	5%	5%	6%
Judea/ Samaria	23%	22%	39%	8%	15%	9%	12%
Total	19%	25%	36%	6%	13%	7%	10%

Note: Empty cells represent sub-samples without insufficient responses to made an estimate for the population.

Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

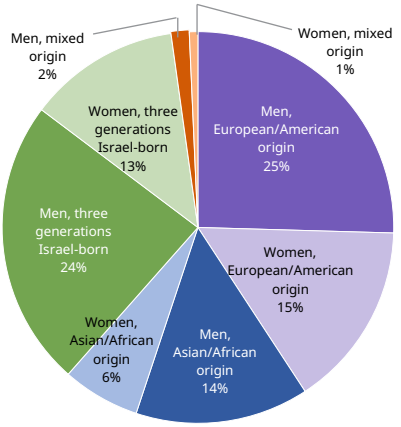
Appendix Figure 1. Share of self-employed out of all employees, ages 25–65, 2018–2024



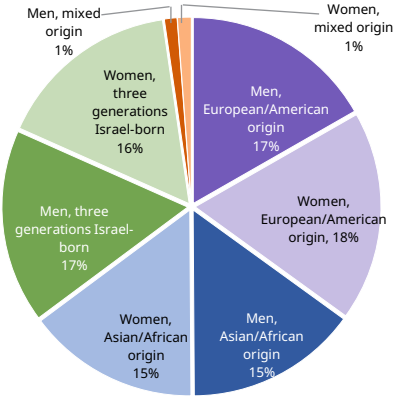
Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

Appendix Figure 2. The Jewish population in high-tech and technology occupations, by origin and gender

High-tech labor force, ages 25–65



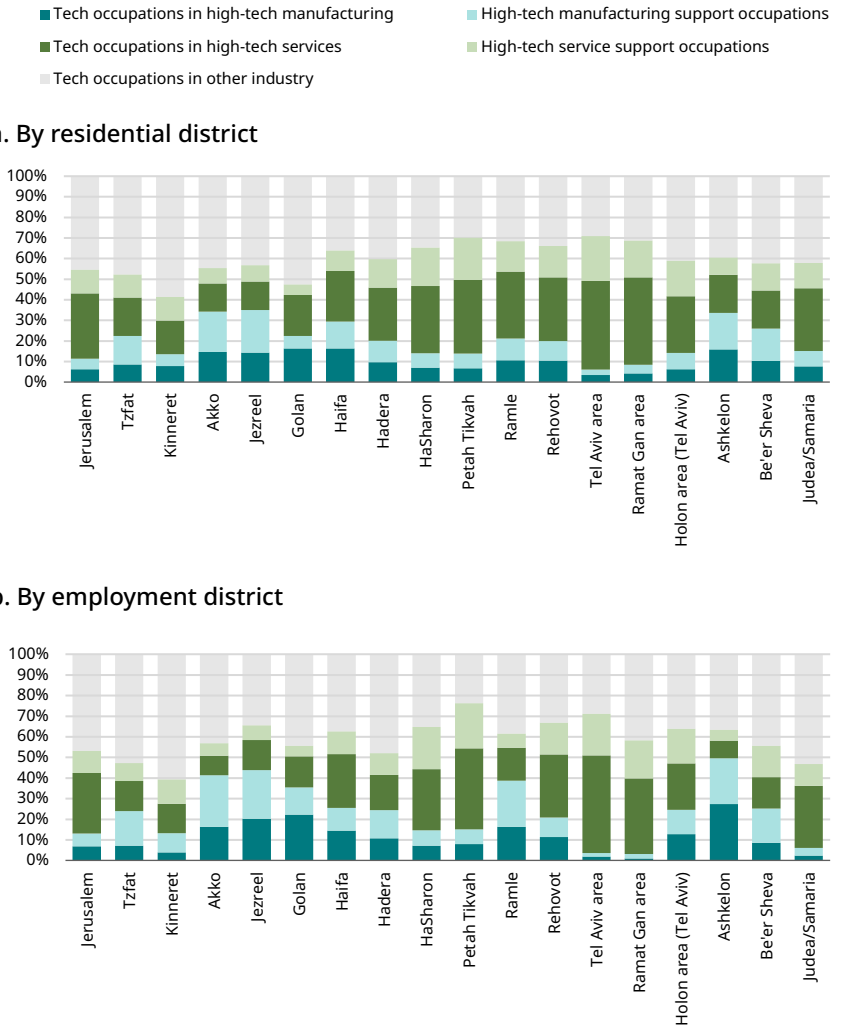
Overall population, ages 25–65



Note: Individuals were classified as of European/American or Asian/African origin if they met one of the following conditions: the individual was born in a country belonging to that origin group; the individual was born in Israel and both parents were born in countries belonging to that origin group; or the individual was born in Israel, with one parent born in a country belonging to that origin group and the other parent born in Israel or with birthplace unknown.

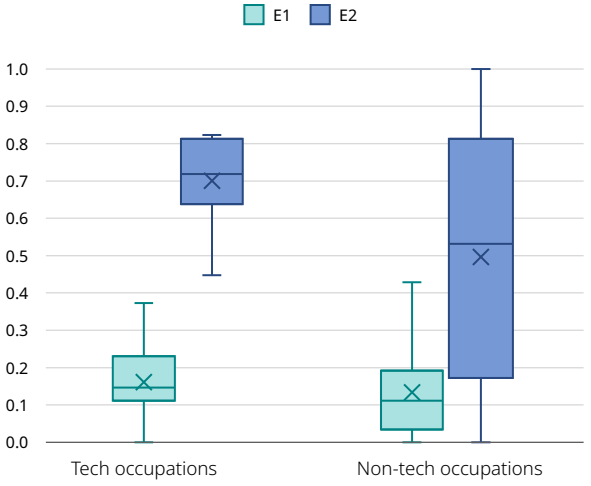
Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

Appendix Figure 3. Distribution of employees in the high-tech sector and technology occupations, ages 25–65, 2018–2024



Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS

Appendix Figure 4. Distribution of exposure to AI by occupation, ages 25–65, 2018–2024



Note: The figure presents a box-and-whiskers chart illustrating the distribution of estimated exposure to artificial intelligence across occupations in two occupational groups. The 'X' marks the mean, and the horizontal line marks the median. Index E1 refers to the share of typical tasks in an occupation that a large language model such as GPT-4 can perform independently at superhuman speed and at least human-level quality. Index E2 refers to the share of typical tasks a large language model can perform with the assistance of tools such as an image recognition system. For further details, see Debowy et al. (2025).

Source: Michael Debowy, Gil S. Epstein, and Avi Weiss, Taub Center | Data: CBS