What are the Skills Ne eded to work in High-Tech?

An abstract based on research by the Aaron Institute for Economic Policy

A research team, led by Zvi Eckstein, Niron Hashai, Ronen Nir, and Sergei Sumkin surveyed the characteristics of high-tech workers in Israel through the analysis of a comprehensive dataset of the Central Bureau of Statistics. In-depth survey of 600 high-tech workers in Israel complemented the quantitative data. The goal of the study was to point out to the current competencies and skills needed for various positions in the Israeli high-tech industry.

Main findings

1. During the last four years (2017 to 2021), there was a dramatic increase in the number of Israeli high-tech workers (from 285,000 to 390,000). The significant growth is mostly in R&D positions and among young people (under age 34).

2. Parallel to high-tech companies, there is significant growth in the number of people with digital skills in workplaces where they use their technological capacity to help optimize work processes (in banks, insurance companies, etc.).

3. The majority of those who work in R&D positions majored the "high-tech matriculation" package in high school. This package is a combination of study majors that includes five units each in mathematics, English, and physics and/or computer sciences.

4. Among high-tech workers, and likewise among university engineering students and "high-tech matriculation" high school graduates, the is an over-representation of Jewish males from affluent backgrounds. The researchers recommend that the education system act to increase and diversify "high-tech matriculation" graduates.

5. The research study also identified skills required by high-tech workers, such as: the ability to resolve complex problems in conditions of uncertainty, capacity for independent learning, and teamwork skills. The researchers recommend that the education system incorporate these skills into the curriculum.

6. The research identified a positive correlation between students in the "high-tech matriculation" track and participation in non-formal education frameworks, such as enrichment in science, sports, and youth movements. Additionally, the importance of the ability to communicate, present and debate in English, was identified.

Workers with a high school "high-tech matriculation" certificate which includes a combination of five units each in mathematics, English, and physics and/or computer sciences — 9% of students taking the matriculation examinations:

• 19% of Jewish (non-Haredi) boys and 12% of Jewish (non-Haredi) girls
• 12% of the Jewish boys and 7% of the Jewish girls who live in the periphery
• 6% of the Arab boys and girls
• 0.4% of the girls and boys in Haredi Schools