



Women in High-Tech

2022

Status Report



The Innovation Authority

The Israel Innovation Authority is a Statutory public entity responsible for Israel's innovation policy. The Authority promotes innovation as leverage for inclusive and sustainable growth, based on of the understanding that innovation is the most significant growth engine of Israel's economy. The Authority strives to strengthen the infrastructure on which the Israeli knowledge based sector is built while continuously examining the obstacles and opportunities present in the Israeli innovation ecosystem. It offers entrepreneurs and innovation-oriented companies in Israel a variety of financing and other tools to help them contend with the changing needs of the competitive world of innovation.



Woman in Tech

An initiative to promote gender equality in high-tech that is aimed at increasing the number of women employed in the industry and at creating a gender-equal work environment. The initiative focuses on the creation of a professional knowledge base and on enabling access and sharing it with the high-tech community via a range of channels, while recognizing the importance of raising awareness and issuing a call to action on the part of organizations' executive and recruiting divisions. The knowledge infrastructure is based on gathering and analyzing information from the field and learning from the Best Practices of high-tech companies and relevant studies from around the world.

Written and Edited By:

The Economics and Research Division – Israel Innovation Authority

Startup Division – Israel Innovation Authority

Inbal Orpaz – Founder of #WomanInTech

Linguistics and Graphic Design: Calltext



The Israeli high-tech industry is at the forefront of Israeli innovation and its achievements set new records every year. Nevertheless, as far as gender equality is concerned, Israeli high-tech has significant room for improvement. Women comprise only one third of Israeli high-tech employees, a figure that has remained constant over time. At each stage of the path to the high-tech industry and subsequently, within the industry itself, women are a distinct minority. The higher up one examines the ladder of seniority, the lower the ratio of women startup founders, or partners in venture capital funds – portraying a discouraging reality. Global comparisons with other international centers of innovation show that Israel lags behind other countries with low levels of women entrepreneurs and funding of their companies. Initial encouraging signs have been witnessed in recent years with increased numbers of women signing up for academic studies in high-tech professions, an increase in the number of female high-school students graduating with matriculation certificates in computer studies, and in other indices, but progress is slow. Processes must be accelerated to reduce the gender disparity while increasing joint efforts of government and the high-tech industry itself at each stage.

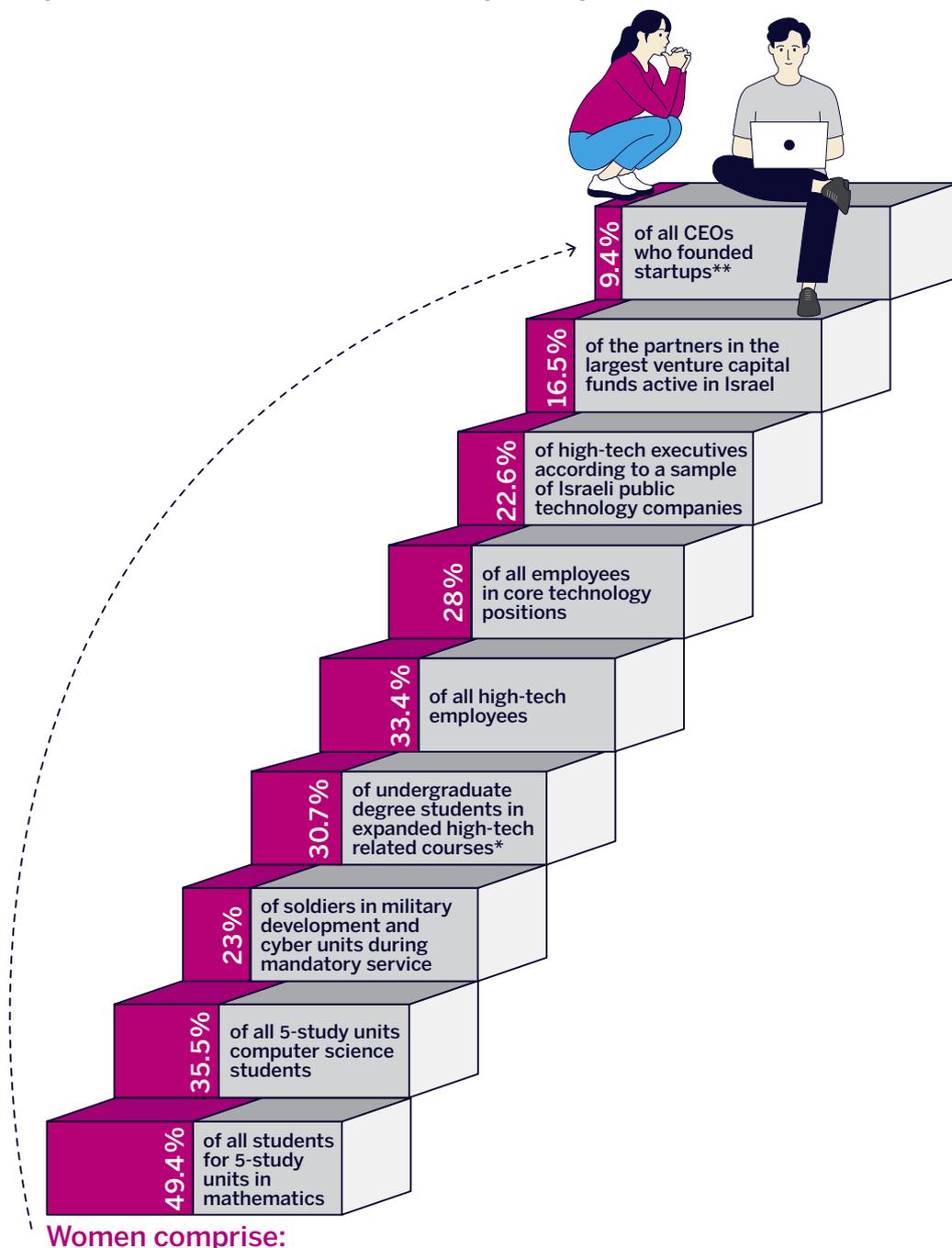
This report, being published for the first time, aims to lay the foundations of a knowledge infrastructure that is based on facts and figures in order to gain a deep understanding of the reality for women in Israeli high-tech and in the paths leading to it. Furthermore, considering the important role of technological innovation within the Israeli innovation ecosystem, this report places special emphasis on analyzing the gender aspects of the Israeli startup arenas, including reference to the ratio of women entrepreneurs, the sectors in which they choose to establish companies, and their ratio in funding rounds. It is specifically in light of the impressive flourishing of Israeli high-tech and the significant levels of capital it has attracted in recent years, that it is important to highlight this weaker angle of Israeli high-tech.

What is the Path that Leads Women to High-Tech?

Women's path to the high-tech sector begins at an early stage. Choices made by high school students have a significant influence on their later professional career and on their chances of being accepted to the field. For women to become entrepreneurs, to serve in senior corporate roles, or to progress to investment roles in venture capital funds, they must first acquire relevant education and training and advance within the industry. To increase the representation of women in the industry it is therefore important to increase their relative presence at each stage on the path that leads to high-tech.

The beginning of this path – the 5-study unit matriculation exams in mathematics – is characterized by a state of near gender equality. The gender gap begins to widen however during the following years of military service in the development and cyber units that pave the way of those serving in them to the Israeli innovation sector. Women comprise 23% of the soldiers serving in these units. The situation is slightly better in academic high-tech studies where, although the number of female students increased by 64% within the last decade, their relative share of total students in these subjects has increased only slightly and women still comprise less than one third of the total number of students. Subsequently, and as the level of seniority rises, the ratio of women in high-tech industry steadily declines.

Ratio of women in Israeli high-tech starting from high-school up to the foundation of startup companies



Source: Innovation Authority adaptation of CBS, IDF, and IVC data, and the websites of the companies and VC funds

** The data relates to 2021 figures or the last available figure

* Between the years 2010-2021

The worst situation in the high-tech sector from a gender perspective is that of startup entrepreneurs who constitute the spearhead of Israeli innovation. The present startup generation – that develop groundbreaking solutions, quickly forge their way forward, and compete in the global arena – determine the future of Israeli high-tech. Some of them become large mature companies employing large numbers of workers, some will be bought by multinational corporations that will use them to establish R&D centers in Israel, and some will close, but the technological, professional, business, and managerial knowledge they accumulate will filter down to other places in the Israeli innovation ecosystem.

The human makeup of the people leading these startups who will influence the direction of Israeli high-tech is thus of great importance. In this report, we focus on the gender aspects of Israeli technological entrepreneurship out of an understanding that women entrepreneurs who establish startups recruit more female employees to their companies and promote more women to senior executive positions.¹ Studies even show that founding teams with greater gender diversity are more innovative and raise more funding.² Increasing the number of women entrepreneurs will therefore have a positive influence in improving the gender inequality that currently characterizes Israeli high-tech.

The bottom line is a somber one: the ratio of Israeli women entrepreneurs in no way corresponds to their percentage of the general population. Women are CEOs of only 9.4% of all startups founded in Israel over the past decade. When examining the total capital invested in Israeli startups, the ratio of women is even lower: only 4.4% of total investments. Of the partners in Israeli venture capital funds, only 16% are women and of these, an even lower percentage serve in investment roles. Women take almost no part in leading the generation of Israeli companies that has grown locally. A sample of Israeli technology companies that executed IPOs during 2020-2021 as well as veteran Israeli public technology companies that employ over 1,000 workers, showed that women occupy only 22.6% of the managerial positions.

The goal of this report is to shed light on the state of women in Israeli entrepreneurship using up-to-date data that has been analyzed and published by the Innovation Authority for the first time. The insights arising from the data will ultimately enable the formulation of programs pertaining to the private and government sectors, however Israeli high-tech companies and investment funds can already take immediate short-term measures to improve their own situation in this regard.

Improving the level of gender equality in Israeli technology entrepreneurial activity will lead to greater diversity in Israeli high-tech through the input of new ideas, varied styles of management, and a broader entrepreneurial viewpoint. In a reality whereby the Israeli high-tech market suffers from a chronic shortage of workers and where women are a minority of all Israeli high-tech employees and of the students in the relevant academic study courses, the cultivation of new role models of women CEOs and entrepreneurs to lead these companies is important, both for their influence on the environment and for encouraging more women to enter this field. Furthermore, founding teams made up of more women generally create companies around them with more diverse human capital. In the long-term, this may also exert a positive influence on reducing the general economic-social gender inequality in Israel.

1 See a study conducted by the [Kauffman Foundation](#) according to which more women entrepreneurs lead to more women in executive roles and more opportunities for women. The study showed for example that in 50% of the consumer services companies that have a woman founder, there was a woman in an executive role, compared to only 10% of the companies in which all the founders were men. According to the Kauffman Federation, teams with at least at least one woman founder employ 2.5 times the number of female employees.

2 [Data Show that Gender-Inclusive Founding Teams Have Greater Success in Fundraising and Innovation, Kauffman Fellows](#)

Situation Report: On the Way to High-Tech and Startups – Where are the Women?

1. High-School: Only 35% of those taking 5-study units computer science matriculation exams are women

The picture at the beginning of the road to high-tech seems encouraging: In 2020, almost half (49.4%) of all the students taking the 5-study unit matriculation exam in mathematics were women – approximately 9,000 female students. The disparity between the ratios of male and female students taking the exam narrowed from a situation where 6,100 of all students taking this matriculation exam in 2016 were women (47.6%). In the Arab sector, the ratio of female students taking the 5-study unit mathematics exam is significantly higher – 64.3% of all the students taking the exam. In general, between 2016-2020, the ratio of students taking the 5-study unit mathematics matriculation exam out of the total number of students (Jews and Arabs) during that period rose from 13% to 16.9% i.e., the number of female students taking the exam increased by 1.5 (time and a half) during this period.

The subjects chosen by students at this stage of their lives influence the fields they will study later in life. According to the Central Bureau of Statistics (CBS),³ 30% of the female students who are eligible for a matriculation certificate in science-oriented subjects (primarily mathematics and the sciences)⁴ continue to an academic degree in a STEM study course.⁵ The parallel figure for male students stands at 48%. The chance that a female student who did not graduate with a science-oriented matriculation certificate will choose to study for a STEM subject academic degree is only 5% (compared to 13% for male students).

In other words, the tendency of female students who graduate with a matriculation certificate in math- and science-oriented subjects to continue to undergraduate academic studies in STEM subjects is six times higher than female students graduating with a matriculation certificate in other subjects (among male students, this tendency is 3.7 times higher). The significance of this is that female students' choice of study subjects at high school has a much more critical influence on their subsequent career choices than those of male students. Female students choosing not to study mathematics or science in high school will probably also not go on to study them later. Data shows that even when female students do choose to study these subjects at high school level, the chance that they will later study high-tech subjects is lower than that of male students. The chance of a male student who studied for a math- and science-oriented high school matriculation certificate to go on to study STEM subjects at university is 60% higher than that of a female student in the same study course.

Female students' choice consequently impacts the gender balance of the potential future high-tech workforce. An examination of the ratio of female high school students taking 5-study unit matriculation exams in computer science reveals a significant disparity in comparison with the ratio of male students choosing this subject: only 35.5% of those taking the exam are women (approx. 3,500 students). This ratio has increased from 31.7% in 2016. Further examination of the data shows that 14.8% of the male students in the Jewish education system in 2020 took the 5-study unit exam in computer science compared to only 6.1% of the female students.

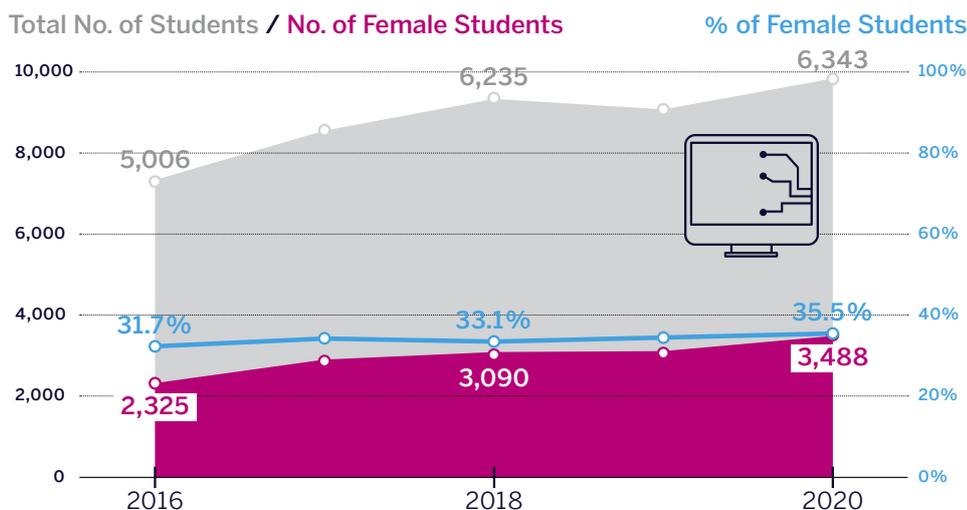
3 [Undergraduate students in STEM courses \(science and technology\) 1995/6-2019/20 \(Heb.\)](#)

4 Mathematics at 4- or 5- study unit level and at least one of the other science and technologies subjects (physics, chemistry, biology, computer science, electronics, and electronic systems).

5 Science, technology, engineering, and mathematics.

1 The Number and Ratio of Female Students Taking Computer Science Matriculation Exam Are Growing – But Slowly

The total number of students taking the 5-study unit matriculation exam in computer science, according to gender and female students' ratio



Source: Innovation Authority adaptations of CBS data

2. Military Service: Female Soldiers Fill Only 13% of the Military's Cyber Roles

Military service in a technology unit is a springboard for the sought-after entry into the high-tech industry. These units grant those serving in them professional training, experience, and a network of contacts with other graduates of the unit. The importance of service in the military's technology units cannot be underestimated and a recent survey conducted by the Aaron Institute for Economic Policy at Reichman University found that 47% of the employees in developmental positions in growth companies have a technology background acquired during their military service.⁶

Nevertheless, the ratio of women serving in technology positions has remained low and almost unchanged. 31% of those serving in the military's computer and software roles in 2019 were women.⁷ However, the ratio of women in mandatory military service serving in core technology roles – development and cyber – was only 23% of all those serving in these roles. In practice, therefore, the ratio of female soldiers in the military's core technology roles is lower than their ratio in the high-tech industry. IDF figures show that the ratio of women soldiers serving in cyber roles in 2019 was just 13%.⁸

Among those serving in the Academic Reserve (Atuda) programs, the picture is a bleak one: only 15% of all the students in the engineering and exact sciences courses (that comprise 75% of all those serving in the IDF Academic Reserve) are women.⁹

6 "What are the professional skills needed from high-tech employees?", Niron Hashai, Sergei Sumkin, and Ronen Nir, round table held at the Aaron Institute, March 2022

7 [The IDF too pride in the fact that women fill 50% of the technology roles](#)

8 The IDF did not provide updated data for this report, despite a request from the Innovation Authority.

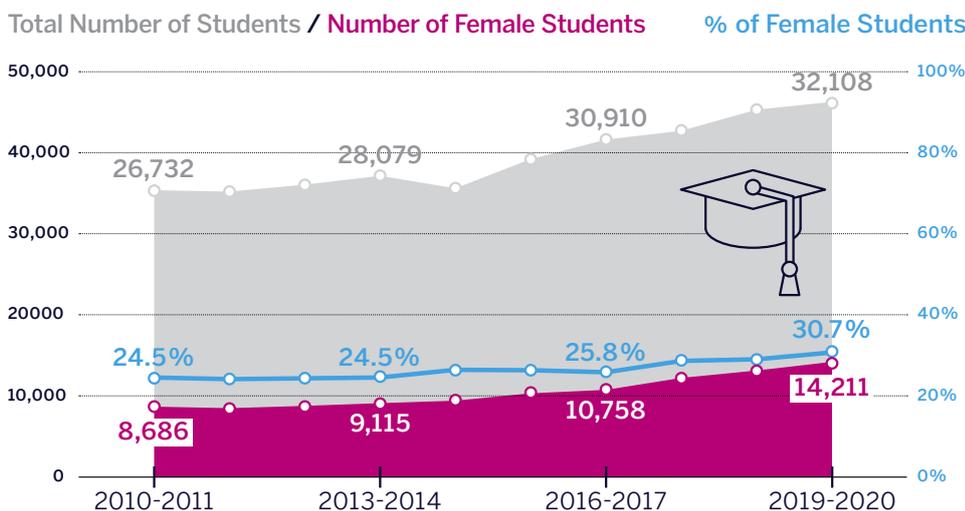
9 Data presented to the Human Capital for High-Tech Committee, December 2012.

3. Academia: The Number of Female Students in High-Tech Subjects Has Increased by 64% in a Decade – But They Still Comprise Less Than One Third of All Students

The universities and academic colleges are important stations on women's path to high-tech. The encouraging trend of the past decade is that, according to the CBS, the number of women students studying for an undergraduate degree in expanded high-tech related courses at universities and academic colleges rose by 64% - from 8,686 in the 2010-2011 academic year to 14,211 in the 2019-2020 academic year. Undergraduates are a significant cadre of potential (as far as their number is concerned) for integrating into the high-tech industry upon completion of their academic studies. The growth in the number of male students in expanded high-tech related courses is slower – and the number of male students rose by 1.2% during the same period. Despite the encouraging trend, female students comprised only 7.3% of all students in undergraduate degrees in expanded high-tech related courses. The number of male students during the same academic year stood at 32,108.

2 The Number of Female Students Increased by 150% in a Decade - But Comprise Only 30% of All Students

Number of students at universities and academic colleges in expanded high-tech related courses, according to gender and ratio of female students

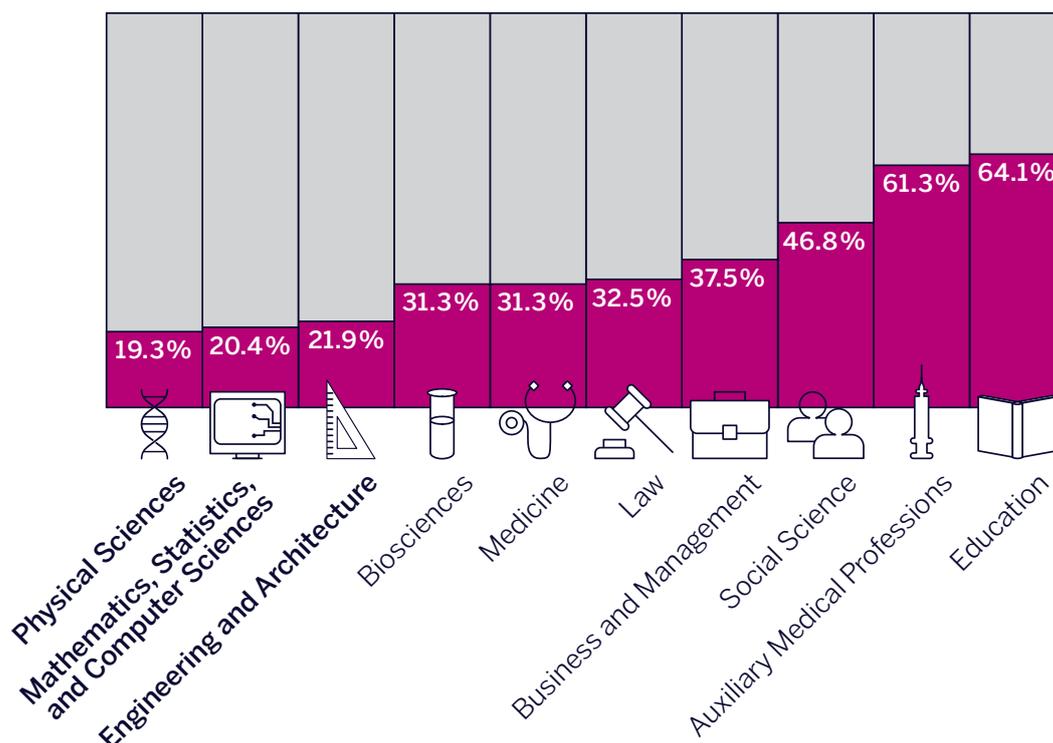


Source: Innovation Authority adaptations of CBS data

When examining the senior academic staff – those training the future generation of high-tech professionals and serving as their role model – at faculties and schools for the relevant subjects, the reality is no more positive. In the 2018-2019 academic year, the ratio of senior female staff members stood at 19.3% in the field of physical sciences, and at 20.4% in the fields of mathematics, statistics, and computer science.¹⁰ In engineering and architecture courses, the ratio of senior female staff members was 21.9%. The representation of women on the senior staff of departments, the graduates of which generally integrate into the high-tech industry, is significantly lower than that of other departments where the rate of women's employment is higher. For example, in medicine, the ratio stands at 31.3%, social sciences 46.8%, medical auxiliary professions 61.3%, and education 64.1%.

3 Women Comprise 64% of the Senior Education Staff – But Only 20.4% in Computer Science and Statistics

The ratio of senior female staff members in selected professions at universities and academic colleges during the academic year (2018-2019)



Source: Innovation Authority adaptations of CBS data

¹⁰ For the most recent data, see in the [link](#)

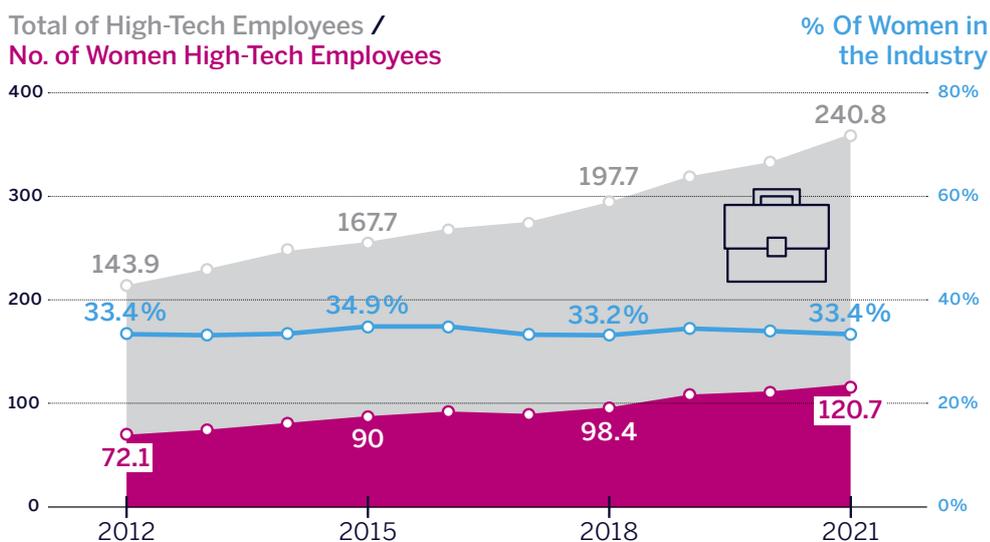
4. The High-Tech Industry: One Third of the Employees are Women – Only 22.6% of Senior Executives are Women

According to CBS data, the total number of 361,500 high-tech employees in 2021 consisted of 120,700 women and 240,800 men.¹¹ The ratio of women employed in high-tech has remained almost unchanged at about one third of the salaried high-tech employees for at least the last three decades. In 2021, the ratio of women in the industry, including core technology and other roles (such as marketing, sales, human resources etc.), stood at 33.4% - a ratio that reflects a decline of 0.6% compared to 2020.

The growth rate in the number of men employed in high-tech in 2021 was 50% higher than that of women – the number of women in the industry grew by 6% compared to an increase of 9% in the number of men. In 2020 too, the year in which the Covid pandemic broke out with numerous lockdowns and disrupted activity of the education system that primarily affected working women, there was a disparity of 80% in the rate of men joining the high-tech industry compared to that of women (5% and 2.8%, respectively). Analysis of the multi-year average of the period between 2013-2021 shows that the average yearly growth rate in the number of women and men in the high-tech industry is almost identical and stands at 6%. Nevertheless, when comparing the growth in the number of women and men in high-tech in 2021 to that of the other sectors of the economy, the growth in high-tech is significantly higher. The economy's general growth rate in 2021 was 1.1% among men and 2.4 among women.

4 The Number of Female High-Tech Professionals is Growing – But Their Ratio Remains Steady

The number of salaried employees in high-tech, according to gender (in thousands) and the ratio of women high-tech employees



Source: Innovation Authority adaptations of CBS data

¹¹ [Salaried High-Tech Employees, according to economic sector \(2011 classification\) and gender](#)

The ratio of women employed in core technology jobs fluctuates slightly more but also maintains a level of 26%-28% of total employees in these positions between 2012-2019 (according to the last available figure from the CBS). The ratio of women employees in technology roles is largely influenced by the rate of women graduates from the military's technology units and high-tech subjects in academia. Until these ratios increase significantly, it is reasonable to assume that there will be no fundamental change in the gender makeup of technology jobs in high-tech.

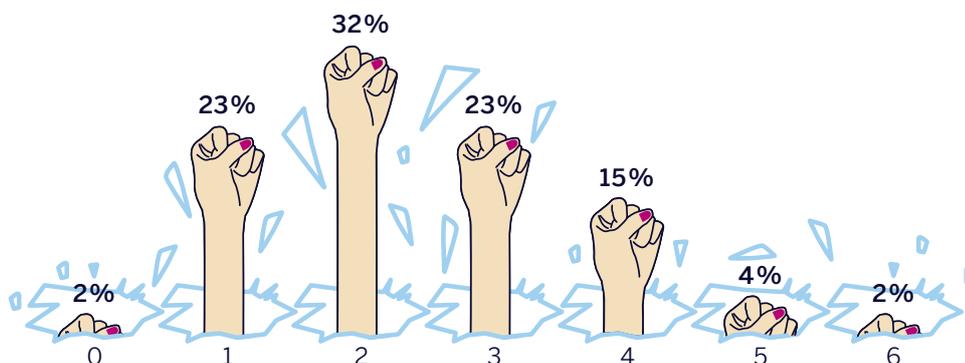
One of the most significant indices in measuring gender equality in high-tech is the ratio of women that occupy senior executive positions. The number of senior women executives influences women's potential to progress to technology entrepreneurship and to other key positions and influential roles in the Israeli innovation ecosystem. To assess the state of Israeli high-tech, we conducted an examination of the number of women in senior executive roles in a sample of mature Israeli technology companies that includes companies that conducted IPOs relatively recently and veteran Israeli public technology companies. Later in the report, we discuss in-depth the state of women in startup entrepreneurship while the state of executives in this sample group relates to the state of women in advanced-stage companies.

Unsurprisingly, the executive teams of mature Israeli technology companies in no way reflect gender equality. Although only one company out of those sampled had no women on its executive team, 23% of the companies had only one woman in an executive role. In 79% of the companies there are no more than three women on the senior executive staff. In total, of the 575 senior executives in the technology companies examined, only 130 (22.6%) are women.

There is great importance to the types of roles filled by the senior women executives. The figures show that 28.5% of the female executives in the sample work in human resource management i.e., compared to other roles, the lion's share of senior women figures in Israeli high-tech work in this field. In one third of the companies with only one female senior executive, this woman works in human resource management. In other words, beyond the fact that women are under-represented in high-tech, and especially in senior executive roles, when they do occupy such positions, these are generally the less well-paid jobs.¹²

5 Over Half of the Companies Have No More Than Two Women Executives

Distribution of selected Israeli public technology companies, according to the number of women on their senior executive team



Source: Innovation Authority adaptations of data from management page on the companies' websites

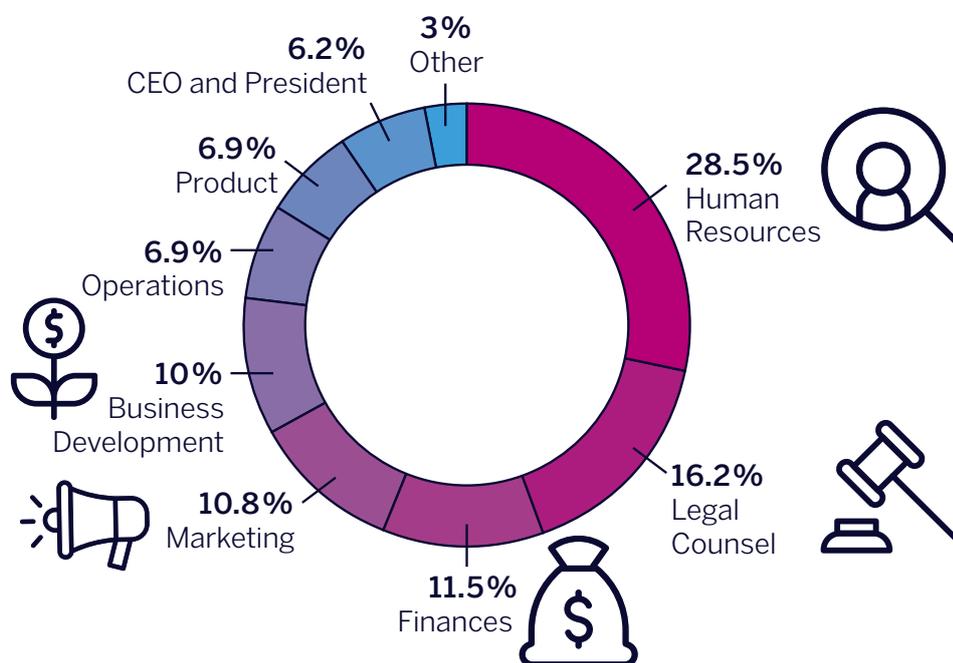
¹² For example, according to these salary tables from Ethosia [website](#)

The next most common areas for women executives in the sample are legal counsel (16.2% of the senior women executives) and finances (11.5%). Other relatively common areas among senior women executives are marketing, business development, and operations. 6.9% of the senior women executives occupy a product manager role which falls under the field of technological development but among the companies sampled there was not even one woman designated as CTO or VP R&D. 6.2% of the senior women executives are CEOs or company presidents.

The survey was conducted in February 2022 and included 53 mature Israeli technology companies. Of these, 24 are public Israeli technology companies that employ more than one thousand workers and 29 are relatively young public technology companies that held an IPO in the last two years. The survey measured the number of senior men and women who appear on the companies' websites.¹³

6 The Most Common Role for Senior Women Executives in High-Tech: Human Resource Management

Distribution of senior women executives in selected Israeli public technology companies, according to role



Source: Innovation Authority adaptations of CBS data

¹³ For example, on the Management Team, Leadership, Executive Management pages etc.



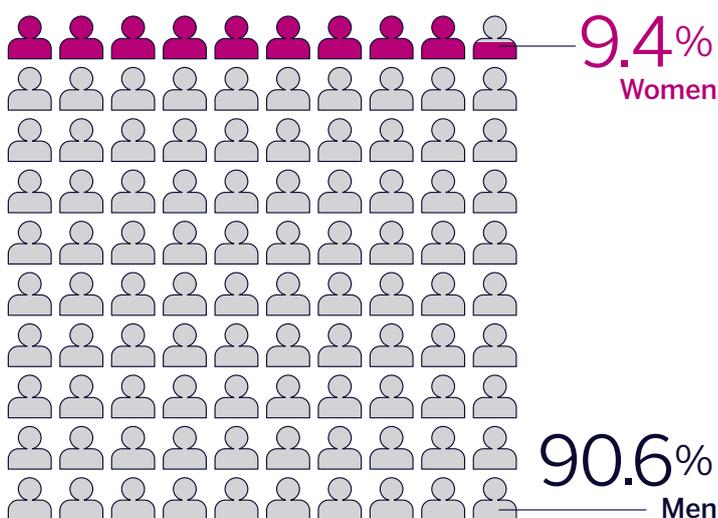
Less Than One Tenth: Women Technology Entrepreneurs in Israel

Less Than One Tenth: Women Technology Entrepreneurs in Israel

To clarify the gender situation of technology entrepreneurship in Israel, we analyzed data relating to 8,668 startups founded between 2010-2021 in which the CEO's gender was known. An Israel Innovation Authority adaptation of the data retrieved from the IVC database reveals that the ratio of women founding and managing startups stood at 9.4%, representing 819 female CEOs who founded startups.¹⁴ When examining startups founded during this period that are still active, (i.e., have not been closed) where the CEO's gender is known, the ratio of female CEOs increases to 10% - 626 women CEOs out of 6,269 startups founded during the period under discussion.

7 Women Lead Less than 10% of the Startups Founded in the Previous Decade

Distribution of private technology companies founded in Israel between 2020-2021, according to the CEO's gender



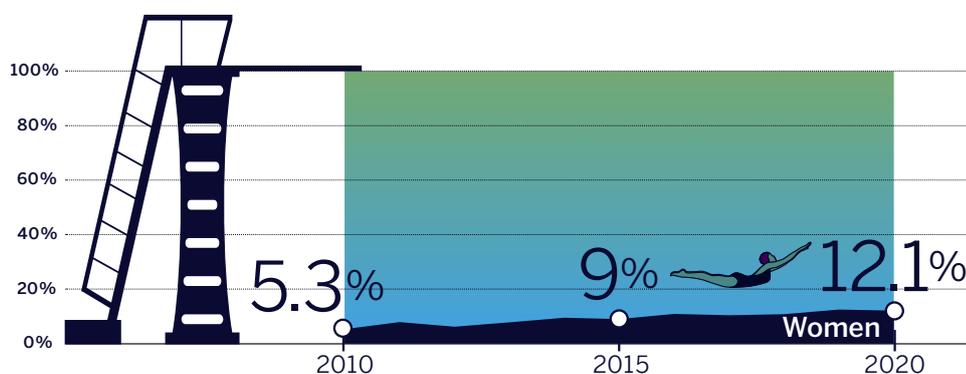
Source: Israel Innovation Authority adaptations of IVC data

¹⁴ In this document, we will relate to the number of women CEOs as a figure that represents women's entrepreneurial activity.

An examination of this trend over the course of a decade reveals a slightly more encouraging picture: the ratio of women who founded and managed new startups increased each year. In 2010, women comprised only 5.3% of all the CEOs of new startups founded that year – a total of only 27. In 2015, this figure had already risen to 9% of the new companies founded that year with 87 women CEOs leading new startups. Analysis of the data available for 2020 reveals that women serve as the CEO of 12.1% of the startups founded that year (of the companies where the CEO's gender is known).¹⁵

8 > Less Than 100 Startups Founded by Women Each Year: The Ratio of Women Founding and Managing New Startups is Slowly Increasing

Ratio of women CEOs of new technology companies founded each year, where the CEO's gender is known



Source: Israel Innovation Authority adaptations of IVC data

Despite the growth in the ratio of women entrepreneurs serving as CEOs of new startups, the number remains extremely low – less than 100 women CEOs of new companies per year. For example, an examination of the 2019 data reveals that 696 men served as CEOs of new startups founded that year compared to only 99 women CEOs. The partial figures for 2020 indicate 67 women CEOs of new startups founded that year compared to 485 male CEOs.

In which sectors do women found and manage startups?

The main sector in which Israeli women founded startups during the previous decade was the content and media sector. Of more than 800 startups founded and managed by women in the years 2010-2021, 186 (comprising 27.6% of all the female founders) were in the content and media sector.¹⁶ The next most prominent field in which women founded startups is life sciences sector which attracted 146 women (21.7% of the women CEOs who founded and managed startups during this period). The next most popular sector is organizational software and infrastructures (119 women – representing 17.7% of the CEOs). Two thirds of all women who founded and managed startups, manage companies in one of these three sectors (compared to 45% of the male CEOs who manage startups in one of these sectors). Female-led entrepreneurship is therefore focused in a narrow range of sectors compared to startups founded and managed by men, which is characterized by a more extensive sectorial distribution.

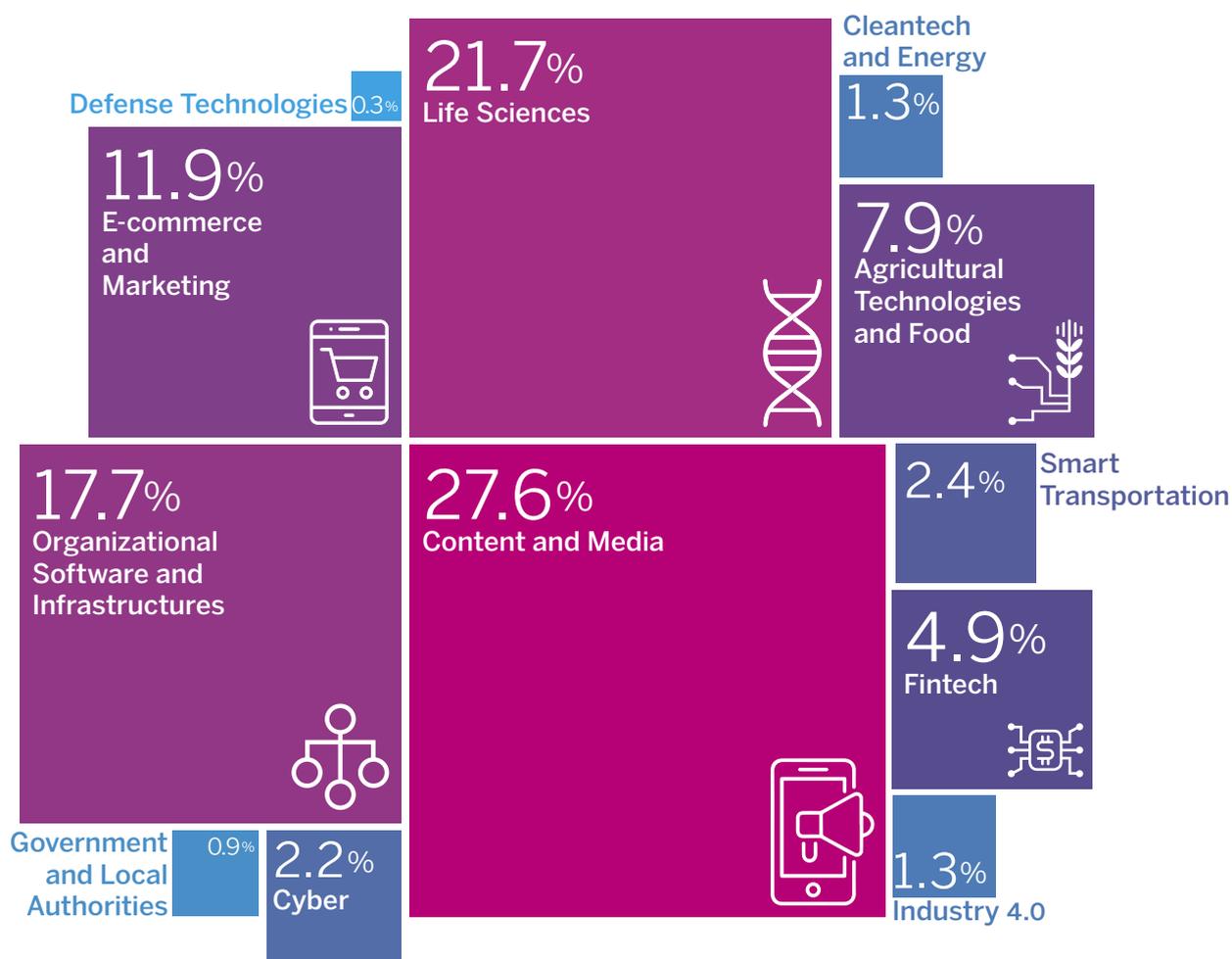
¹⁵ IVC data on the number of companies opened each year continues to be updated and the known number of companies founded in 2020 is therefore still partial.

¹⁶ Information regarding the company's area of activity is available for 81% of all the companies founded between 2010-2021 in which the CEO's gender was known.

The ratio and number of women choosing to found startups in popular sectors in Israeli high-tech such as cyber and fintech is relatively negligible compared to men. For example, between 2010-2021 women founded and managed less than 50 technology companies in the cyber and fintech sectors, compared to more than 800 companies founded and managed by men.

9 The Primary Sectors in Which Women Manage Startups are Content and Media and Life Sciences

Distribution of women CEOs, according to the company's area of activity

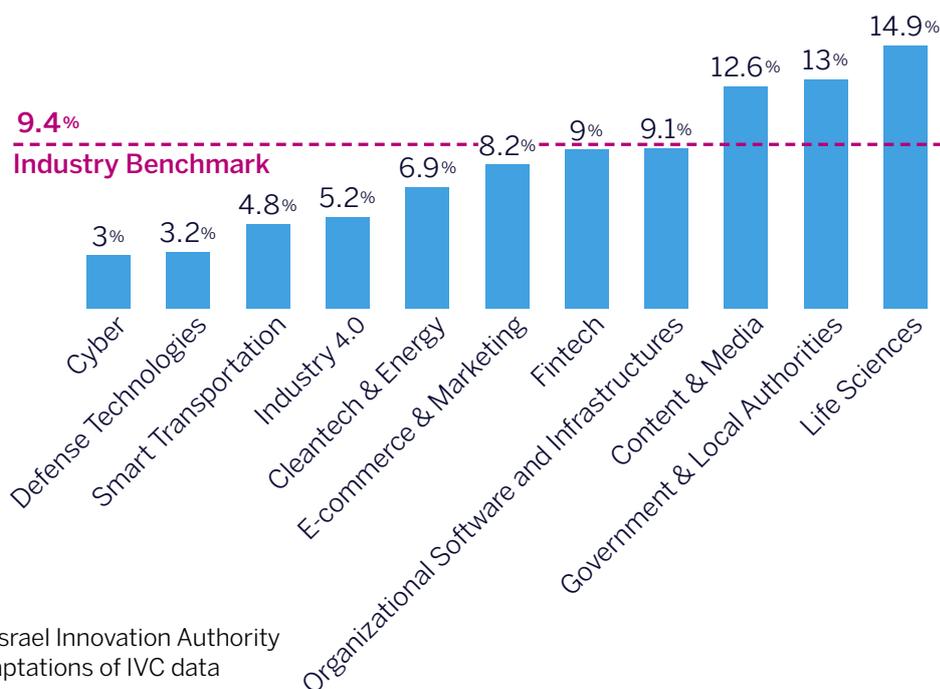


Source: Israel Innovation Authority adaptations of IVC data

We also examined the gender distribution of the different technology sectors, checking which sectors had a higher or lower ratio than the industry average of women founders and CEOs which stood, as mentioned above, at 9.4%. The sectors in which the ratio of women managing companies that they founded was higher than the industry average and include life sciences (14.9% of the companies), companies developing technologies for government and local authorities (13%), and content and media companies (12.6% of the companies). In the Agritech and food sector, the ratio of women CEOs is 10.2%. In the remaining sectors, the ratio of women CEOs is less than the industry average: organizational software and infrastructures (9.1% of the companies), fintech (9%), E-commerce and marketing (8.2%), cleantech (6.9%), industry 4.0 (5.2%), smart transportation (4.8%), defense technology (3.2%), and cyber (3%).

10 Startup Sectors with the Lowest Representation of Women: Industry 4.0, Cyber, Smart Transportation, and Defense Technologies

Ratio of women CEOs, of the total CEO's in the sector whose gender is known



Source: Israel Innovation Authority adaptations of IVC data

Less than 5%: Women Raise Less Money – Primarily During Early Stages

Raising capital enables startups to make their next quantum leaps – to recruit employees, develop new technologies and products, enter new markets, and to acquire other companies as part of their growth process. The relative share of the “industry’s fuel” that reaches startups led by women is therefore very important and enables their continued development.

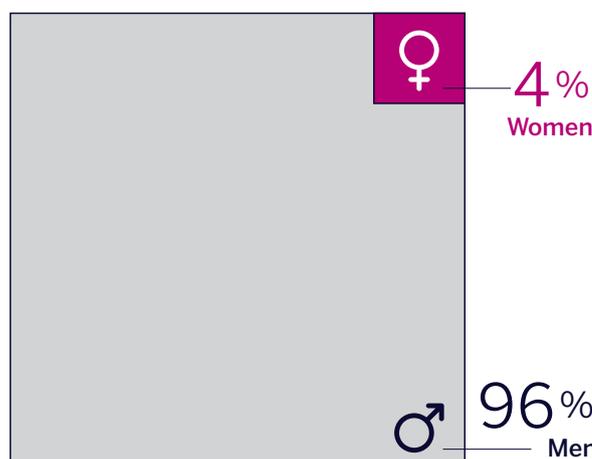
Examination of funding trends reveals a grim reality: out of 3,636 rounds of investment in Israeli startups between 2018-2021 where the gender of the company CEO was known, only 281 investment rounds (7.7% of the total number) were in startups led by women CEOs,¹⁷ according to Innovation Authority adaptations of IVC data. In other words, the ratio of investment in startups led by women (7.7%) is lower than the total ratio of startups founded between 2020-2021 that are led by a woman CEO (9.4%).

¹⁷ In which the CEO's gender is known. In the period examined here, the CEO's gender can be identified in 80% of the investment rounds.

An examination of the total capital raised by women reveals a worrisome picture: of the funding rounds where the CEO's gender and the sum raised are known,¹⁸ startups led by women raised 4% of the total investments while those led by men raised 96%. A further expression of the disparity in funding between men and women can be seen in the average and median size of a woman-led startup's funding round compared to those led by men. The average size of funding rounds conducted by startups led by women between 2018-2021 was 8.7 million dollars compared to an average size of 17.6 million dollars for startups led by male CEOs. The median size of the funding rounds drops dramatically: The average median funding round between 2018-2021 for a startup led by a woman CEO was 1.17 million dollars compared to 3 million dollars for a startup led by a male CEO – a difference of more than 250%.

11 Only 4% of the Total Capital is Invested in Startups Led by Women

Distribution of investments, according to the CEO's gender (2018-2021)



Source: Israel Innovation Authority adaptations of IVC data

It is important to note that during this period, the average size of funding rounds conducted by startups led by women CEOs increased nearly four-fold from 4.8 million dollars in 2018 to 18.85 million dollars in 2021.¹⁹ When examining the change between 2018-2020, women were in a relatively worse situation as the increase in the size of the average funding round stood at only 40% for women compared to 80% for men. There was a similar increase (of approx. 420%) in the scope of the average funding round in startups led by male CEOs, from an average funding round of 8.7 million dollars in 2018 to 36.4 million dollars in 2021. The median size of funding rounds revealed a similar picture. In other words, there is an increase in the funding rounds of startups led by women CEOs but not one that is closing the disparity in relation to the average and median size of funding rounds in male-led companies.

One of the explanations for the significant disparity is that most of the funding rounds conducted by startups led by women are in early-stage companies – seed investment and Round A funding – and that the ratio of startups led by women decreases as the funding rounds progress. Nevertheless, even in the early funding rounds, the size of the average and median funding in startups managed by women is lower than that in companies managed by men. For example, in the seed round, the size of the average funding round in startups led by women CEOs is 1.7 million dollars compared to 2.3 million dollars in those led by male CEOs.

¹⁸ Data on the size of funding is available for approx. 70% of the funding rounds. This figure does not vary based on the CEO's gender.

¹⁹ It should be noted that the data for 2021 is expected to update during 2022 and that this figure may therefore change.

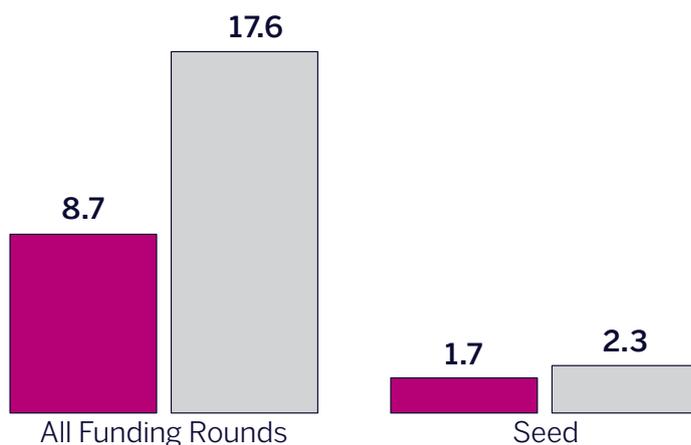
Out of the total seed funding rounds in companies where the CEO's gender was known between 2018-2020, an average of 8.2% of the investment transactions each year were in startups led by a woman CEO. However, already in the next funding stage (Round A), this ratio declined to approximately 7%. From Round B onwards, the average yearly ratio of investment transactions in companies managed by women was 6.2% of the total transactions at this stage. In advanced funding rounds (Round D onwards), only a few companies managed by women successfully completed investment rounds.

12 The Median Funding Round of Startups Led By Male CEOs is 2.5 Times Larger Than That of Women CEOs

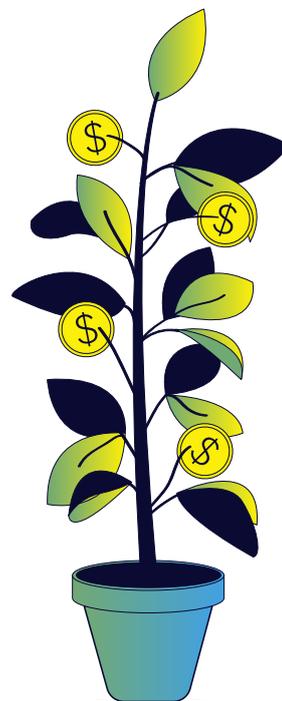
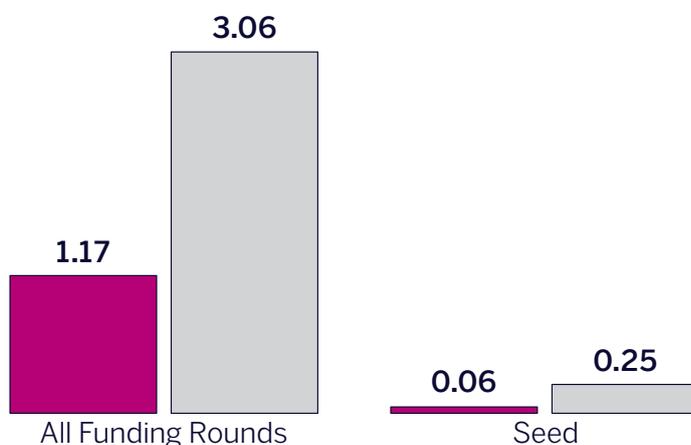
Size of average and median investment rounds, according to gender, in millions of dollars (2018-2021)

Women Men

Size of Average Funding Round



Size of Median Funding Round

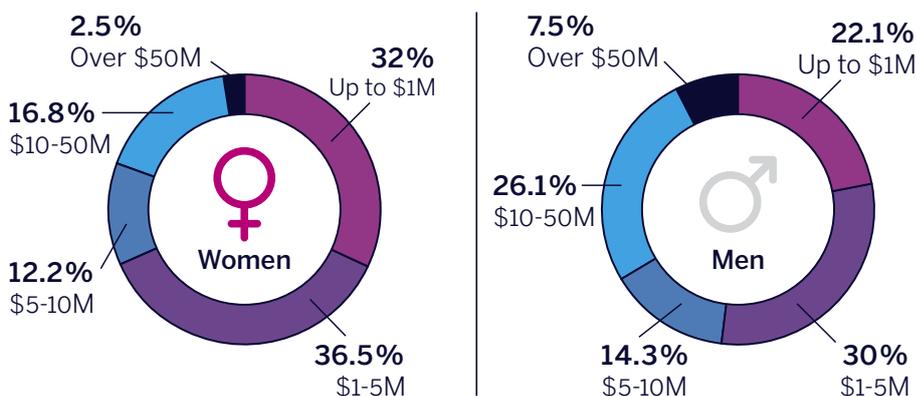


Source: Israel Innovation Authority adaptations of IVC data

An examination of the distribution of all investment rounds in startups led by women CEOs reveals that 80% of the transactions between 2018-2021 were of 10 million dollars or less. Among male CEOs, 66% of the transactions were of this size. The investment transactions in male-led startups are therefore distributed over a wider range of transaction sizes while the transactions in which investment was made in women-led startups are concentrated primarily in the lower range of investment round sums. For example, during this period, five investment transactions over 50 million dollars were identified in startups managed by women compared to 180 such transactions in startups led by men.

13 > Approx. 80% of Investment Rounds In Startups Led By Women CEOs Are Of 10 Million Dollars Or Less

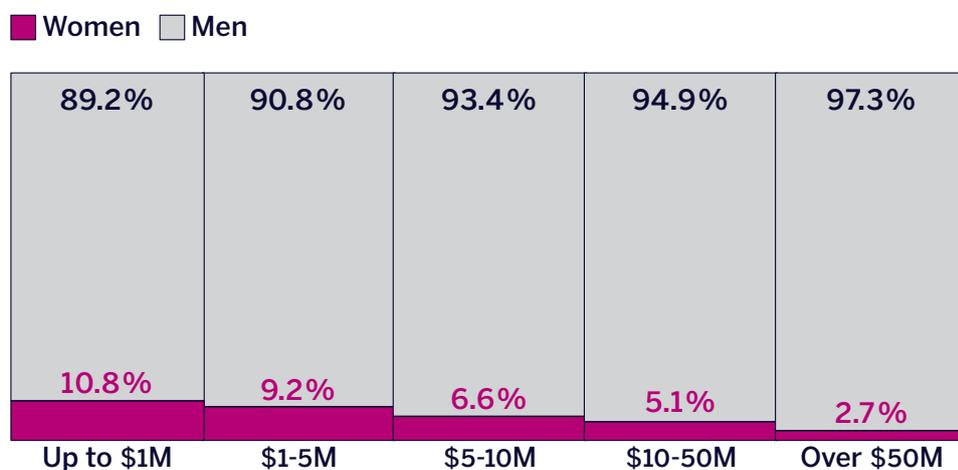
Distribution according to investment size and gender, in million of dollars (2018-2020)



Source: Israel Innovation Authority adaptations of IVC data

14 > As Funding Rounds Increase - Women's Share Decreases

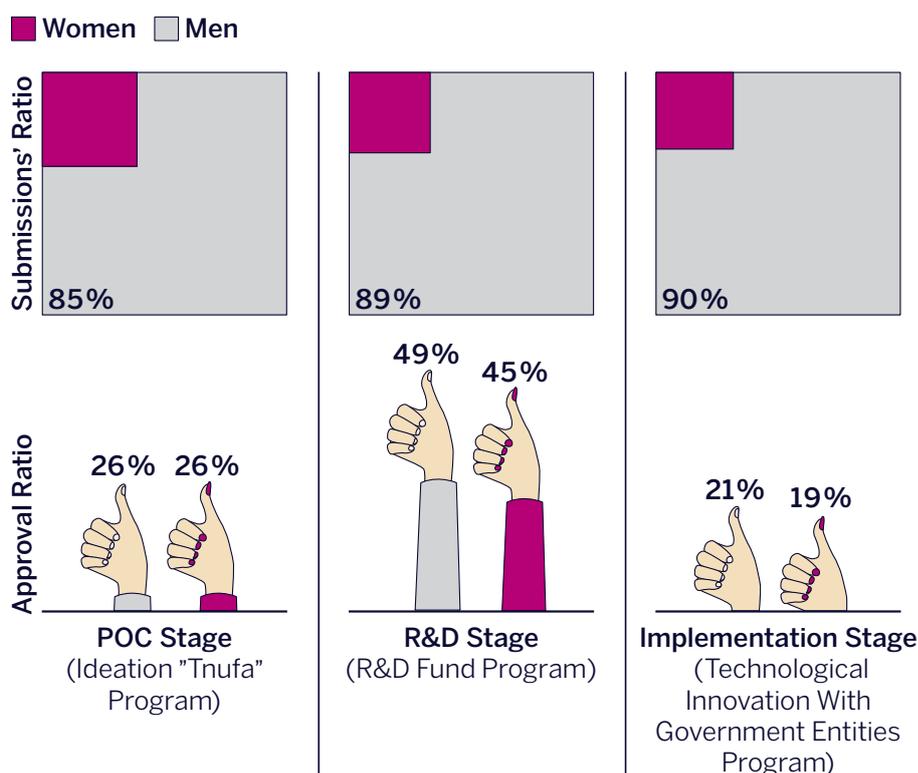
Distribution of investment rounds, according to size and gender (2018-2021)



Source: Israel Innovation Authority adaptations of IVC data

15 > Fewer Women Entrepreneurs Request Grants but the Rate of Approval is Similar for Men and Women

Distribution of requests and approvals of Innovation Authority grants, according to gender (2021-2022)



Source: Israel Innovation Authority

Israel Innovation Authority Grants: Less Women Apply but Those That Do Receive Similar Support to Men

An examination of the requests submitted by women for grants from the various Innovation Authority incentive programs reveals that the ratio of women submitting such requests is similar to their ratio in the general entrepreneurial field in Israel. For example, in 2020-2021, requests submitted by women comprised 15% of all grant requests submitted to the Ideation ("Tnufa") Program – a dedicated program for early-stage startups that need to make the transition from idea to 'Proof of Concept' (POC). In the incentive programs for startups in more advanced stages, the ratio of requests submitted by women is even lower and reflects a trend similar to that in funding raised by women in more advanced funding stages (also presented in this report). The ratio of female entrepreneurs who apply for a R&D grant aimed at encouraging innovation and developing new technologies in seed stage companies stands at 10% of all grants, while for the grant for financing application of technologies (the Pilots Program), this figure stands at 11% of total requests submitted.

Furthermore, our examination reveals a similar ratio of requests submitted by men and women that are approved and receive Authority support. In other words, no disparity can be identified in the quality of the requests for support considered by the Innovation Authority. In the Ideation ("Tnufa") Program, the ratio of requests approved out of total requests submitted was 26% for both women and men. In the other programs examined there were

small disparities in request approvals: in grants for startups at the R&D stage, 44.5% of the requests submitted by women entrepreneurs were approved compared to 49.3% of the requests submitted by men, and in the Pilots Program for application of technologies, 19% of the requests submitted by women entrepreneurs were approved compared to 21% of requests submitted by men.

In 2019, the Israel Innovation Authority began offering a benefit designated specifically for women entrepreneurs, as part of the R&D Fund (that constitutes the Authority's primary investment tool and budget activity). This benefit aimed at assisting women raise funding, encouraging women entrepreneurs to submit requests for grants, and help them raise supplementary funding from additional entities. According to the terms of this benefit, women entrepreneurs in R&D stages will be eligible for support of 70%-75% of the approved development budget, compared to 30%-50% for male entrepreneurs who receive the grant. Moreover, the Authority offers women preferential conditions in other areas such as the Support for Seed Companies Program in which women entrepreneurs can receive a grant of up to 50% of the submitted budget compared to 40% for male entrepreneurs, and in the Authority's various training programs where a higher financial incentive is awarded for placing women.

Between Paris and Zurich: Israel is Lagging Behind Other Countries in Women's Entrepreneurship

Unsurprisingly, women also fare poorly in other focal points of global entrepreneurship. Nevertheless, when comparing Israel to the international entrepreneurial hubs, the data shows that Israel lags behind both in the ratio of women entrepreneurs and in the level of capital that women raise for startups in their early stages. In practice, of the leading entrepreneurial ecosystems in Europe and the US, only in Paris and Amsterdam the ratio of women entrepreneurs is lower than that in Israel (where it stands at 9.4%). In New York, Silicon Valley, Dublin, Barcelona, London, Stockholm, Boston, Madrid, Helsinki, Berlin and Zurich, the ratio of women startup entrepreneurs is higher than in Israel.

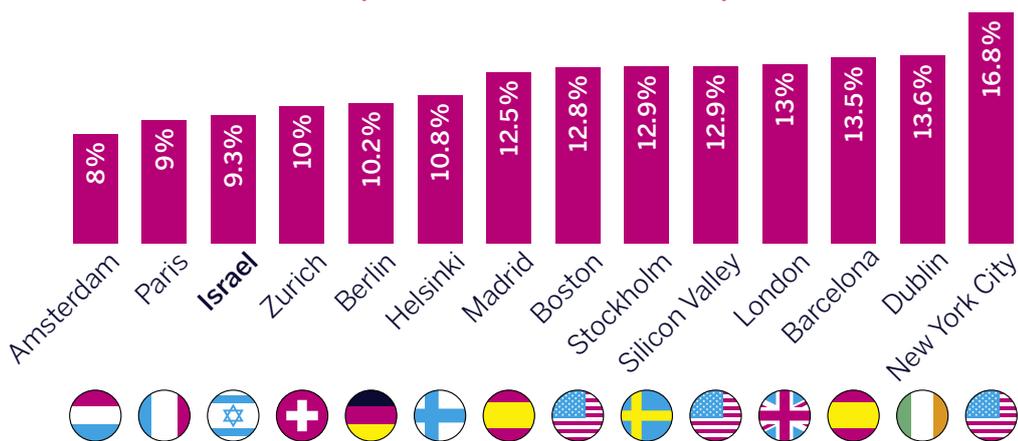
In the prominent US entrepreneurial ecosystems – to which Israeli innovation aspires – the ratio of women entrepreneurs is higher than in Israel. According to data published by Startup Genome and produced for the Innovation Authority, in Silicon Valley, this figure stands at 12.9%, in Boston 12.8%, and in New York the ratio is even higher, standing at 16.8% of all entrepreneurs. These figures relate to companies founded from 2010 and are based on data retrieved from CrunchBase database. The figures include those defined as company Founders or Co-founders, or CEOs.

According to Startup Genome, in the growing European startups scene, women comprise 10.8% of all startup entrepreneurs. The ratio of women entrepreneurs in some of the cities considered leaders of European entrepreneurship are as follows: London (13%), Paris (9%), Berlin (10.2%), and Stockholm (12.9%). Despite the gradual increase in the ratio of women entrepreneurs in European startups over the last decade, it still stands at less than 15% each year. The ratio of women entrepreneurs in Europe is similar to the ratio of funding raised by startups founded by women: 10% of the total funding for startups in Europe over the past three years. This ratio remained steady since 2018. Comparisons show that in European cities, the ratio of investment in early-stage startups founded by women is higher than in Israel. For example, in London, Stockholm, and Zurich, the ratio of investment in early-stage startups founded by women is 18%. Even in countries with a lower ratio of women entrepreneurs, the ratio of investment in their startups is higher than in Israel – in Madrid the rate stands at 19%, in Berlin 15%, and in Paris 12%.

16 > New York, Dublin and Barcelona Have the Highest Ratio of Women Entrepreneurs

The ratio of women entrepreneurs and investment in early-stage startups founded by women, in selected cities

Ratio of Female Startup Founders Out of All Startups



Ratio Of Investments in Early-Stage Startups Founded By Women



Source: Startup Genome



Investing in Venture Capital: Only 16% of the firms' Partners are Women

Another of the entrepreneurial ecosystem's significant and influential elements is that of venture capital investors. As those controlling the "flow" of investment, these investors decide which startups will receive funding and therefore contribute significantly to shaping the Israeli startup arena. To a large degree, the funding they provide to startups frequently decides which startups will survive and which will be forced to close or change direction. Furthermore, even after making the investment, venture capital investors still have an influence over the companies' decision-making processes because, following their investment, main investors will receive a place on the startups' board thereby influencing their future course.

These reasons and others mean that venture capital funds bear significant responsibility for improving the state of gender equality in Israeli high-tech. The makeup of the funds' human capital and, specifically, the gender of their partners, impact their decisions which, in turn, influence the gender makeup altogether. An examination conducted in the US by Kauffman Fellows Research Center (KFRC) that related to the years 2000-2018,²⁰ revealed that in early-stage investments (seed and A-rounds), women venture capital investors lead twice as many investment rounds in startups that have a gender-diverse team of founders (i.e., that includes a woman entrepreneur) compared to men who lead VC rounds of investment. These investment patterns and the tendency of female investors to invest more in women entrepreneurs are consistent and manifested in all the examined startup sectors. The report's authors therefore emphasized that it is specifically in the early stages of startups that women investors dramatically increase the chance of women entrepreneurs to raise funding from them and thereby gain an opportunity to build successful market-leading companies. The report's authors estimate that the women investors' personal experience helps them identify problems and needs, and to understand the size of their potential market.

An examination conducted by Crunchbase assessed the influence of the gender of the venture capital funds' founding investors and found that in venture capital funds with a woman founding partner, 28% of the investment rounds between 2016-October 2021 were in startups with at least one female entrepreneur.²¹ In contrast, in venture capital funds where the founding team consisted solely of men, the ratio of investment in startups with at least one female entrepreneur dropped to 22%.

²⁰ [Women VCs Invest in Up to 2x More Female Founders - Kauffman Fellows](#)

²¹ [Female-Founded US Venture Firms On Track To Raise Over \\$7B In 2021](#)

57% of the large large venture capital funds active in Israel have no female partner

The Israeli venture capital industry is predominantly controlled by male investors who occupy most of the partner roles – making the decisions about new investments. According to an Innovation Authority assessment conducted with the report's publication, approximately 57% of the large large venture capital funds active in Israel in recent years failed to appoint a single woman partner. In 31% of the funds, there is at least one female partner.

The findings further indicate that only 16.5% of the partners in the funds active in Israel are women – 38 women out of a total of 230 partners in 58 funds examined. It is important to note that these women are partners in all kinds of roles in the fund and do not serve solely as investor partners (i.e., the number includes female partners responsible for managing human resources, legal consultation etc.).²²

The assessment was conducted in January 2022 and included a sample of 58 funds. Details of the partners' gender were retrieved from the funds' websites. The funds included in the sample were graded in the IVC lists of active funds from 2018-2020 as the funds with the largest investment portfolios as of December 2021 – out of an understanding that these funds have the widest influence on Israeli entrepreneurship. The list includes both Israeli and foreign funds that have local offices in Israel or that have partners responsible for investments in Israel, out of an understanding that the gender of these partners impacts the status of gender equality in the Israeli startup industry.

The influence of the funds' lack of gender diversity is also evident in the portfolio of companies in which they invested. In 39.5% of the funds examined,²³ the investment portfolio lacks even a single startup company with a woman CEO. In another 13.2% of the funds, the investment portfolio contains one startup led by a woman. In other words, more than half the large active venture capital funds in Israel have investment portfolios that contain either no startups led by women or only a single such company. Moreover, 97.4% of the funds have an investment portfolio in which the ratio of women CEOs is less than 15% of the portfolio's CEOs.

An examination conducted by 'Power in Diversity' that was published in January 2022 revealed similar results according to which 14.8% of the venture capital fund partners in Israel are women – 29 women out of 195 partners examined, following an increase of 3% in the number of women partners in 2021.²⁴ When analyzing the data further, the organization found that only 9% of the partners in investment roles in the sample (that included 70 funds in Israel) are women – a ratio that has remained almost unchanged despite the growth in investment activity.

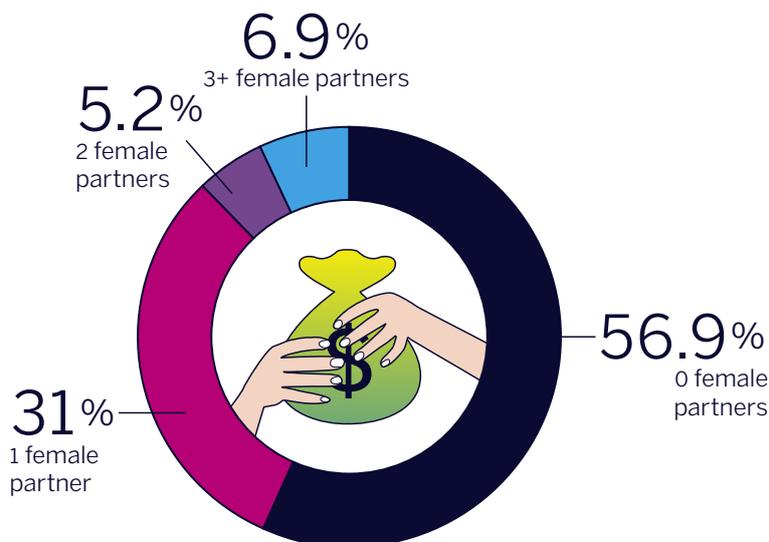
²² Venture Partners were not sampled or included in this calculation.

²³ Full data on the gender of CEOs in funds' investment portfolios exists for 66% of the funds sampled.

²⁴ [Women in Startups Report, Power in Diversity, 2021](#)

17 > Only 7% of the VC Funds Have More Than Two Female Partners

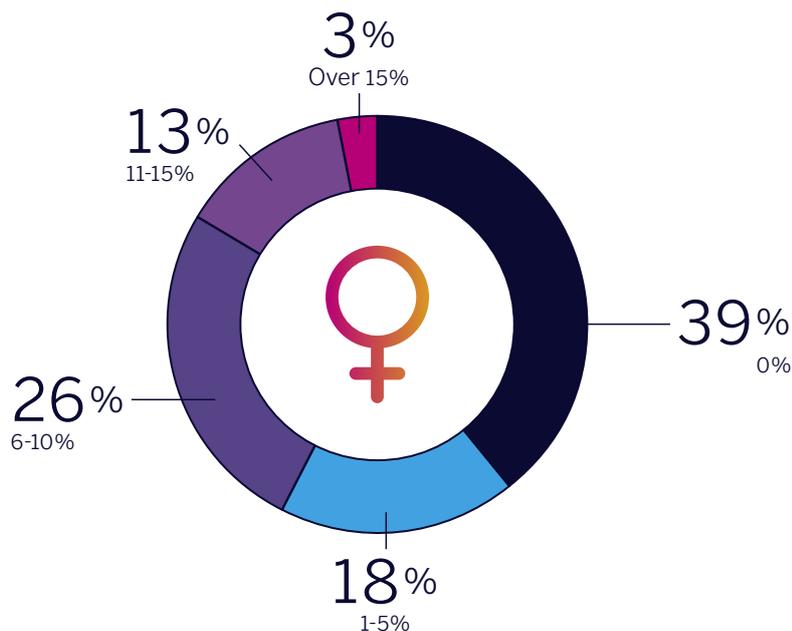
Distribution of the large VC funds active in Israel, according to the no. of female partners



Source: Israel Innovation Authority adaptation of data from VC Funds' websites

18 > Approx. 40% Of VC Funds Didn't Invest In Even 1 Female CEO

Distribution of the large VC funds active in Israel, according to the ratio of women CEOs in their portfolio



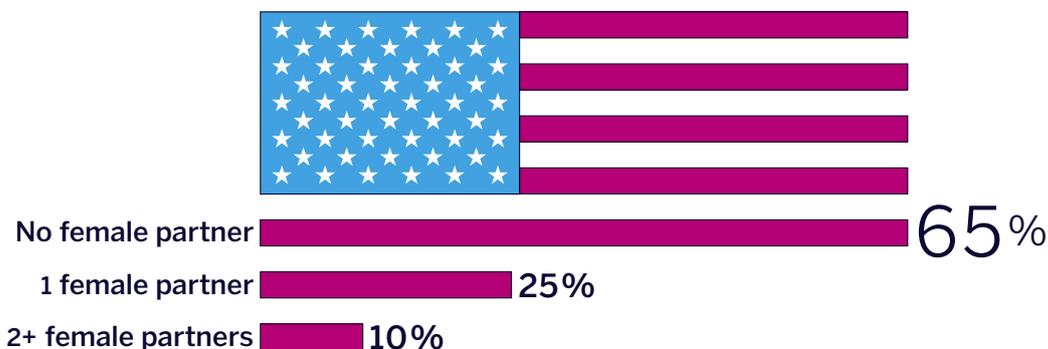
Source: Israel Innovation Authority adaptation of data from VC Funds' websites

65% of American VC Funds Have No Female Investor Partner

According to the VC Human Capital Survey conducted by Deloitte, the National Venture Capital Association (NVCA), and 'Venture Forward', 16% of the investor partners in the US in 2020 were women.²⁵ The ratio of female investor partners in the US has slowly increased in recent years: from 11% in 2016, to 14% in 2018, and 16% in the last survey. The 2021 'All In' Report showed similar results.²⁶ Nevertheless, alongside the slow improvement, according to VC Human Capital Survey, 65% of American VC funds still have no female investor partner. In 2018, this figure stood at 68%. In 75% of the investment entities that reported having female investor partners, there is only one such partner. It is important to note that women comprise 45% of the VC funds' human capital however most of these serve in administrative roles (965 of the employees in these roles are women) and in auxiliary investment roles such as investor relations and public relations. Among all those in investment roles (not just partners), 23% were women. In funds specializing in investment in startups in growth stages, the ratio of women in investment roles is especially low.

19 Only 10% of American VC Funds Have at Least Two Female Partners

Distribution of American VC funds, according to the no. of their female partners (2020)



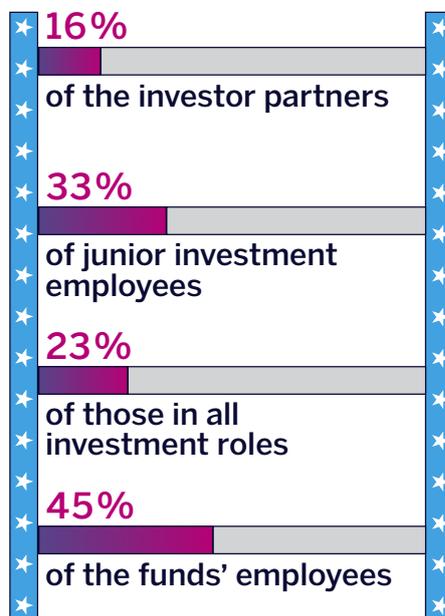
Source: VC Human Capital Survey, powered by NVCA, Venture Forward, and Deloitte

²⁵ [VC Human Capital Survey, powered by NVCA, Venture Forward, and Deloitte](#)

²⁶ [All In: Female Founders in the US VC Ecosystem, 2021. Pitchbook, Beyond the Million, J.P.Morgan](#)

An encouraging sign noted by the report's authors was that women comprised 33% of those in junior investment roles, a ratio that is gradually increasing. This would suggest that, in the future, more women with relevant experience will be able to progress to partner positions. Another encouraging process over the past decade is related to the increase in activity of private female angels investing in early-stage startups. According to the 2021 'All In' Report, the number of female angels in the US rose from less than 100 in 2010 to nearly 1,000 today (895 according to 2021 data). The report's authors attribute the growth in the number of female angels since 2018 to the #MeToo Movement which they claim also increased the female angels' tendency to invest in women entrepreneurs. In 2021, nearly 30% of the female angels' investments were designated for startups founded by women – a continuation of an upward trend that began in 2017 (when this figure stood at 20%). There is no official information in Israel about female angels' investments in startups, among others because these are private investments by individuals under no obligation to reveal information about their investment activity, but their number is estimated to be relatively small.

20 In the US, 45% of VC Fund Employees Are Women - But Only 16% Of The Partners



Source: VC Human Capital Survey, powered by NVCA, Venture Forward, and Deloitte



Summary and Recommendations

What Can Be Done to Improve Gender Equality in Israeli High-Tech?

In this report, we have presented an up-to-date situation report describing the representation of women at different stages pertaining to their employment in the Israeli innovation ecosystem. A wide range of reasons leads to a low number of women in high-tech, from social paving young women not to choose these subjects in academic studies, the difficulty of women high-tech professions to build a career alongside a family, and a lack of role models.²⁷ In the field of entrepreneurship, where we saw that less than 10% of startups' CEOs are women, the problems only intensify. Women report disparities related to the male work environment and bias of male investors, a lack of women in decision making positions, and a networking gap that negatively impacts women.²⁸

Nevertheless what can be done

To improve the level of gender equality in Israeli high-tech, effort must be made at each of the stages surveyed in this report (and in other areas that, for lack of space, were not included). An interdepartmental government team is presently formulating recommendations for addressing the problem of human resources in the high-tech industry and to increase its number of employees. This team is addressing a significant portion of the issues presented in this report and will submit its conclusions and recommendations later this year.

Below are some preliminary directions of action that stem from the conclusions and insights presented in this report:

- Encouraging young women to choose mathematics, technology, and science studies in high school.
- Increasing the number of women serving in core technology roles in the military, including development and cyber.
- Increasing the number of women in academic study courses relevant for integrating into the high-tech industry.
- Focusing government attention on employing women in high-tech training programs.
- Increasing the number of senior women staff members in academic departments relevant to high-tech professions.
- Operating programs to reduce unconscious gender bias in the variety of entities involved in the field and in the designated training programs.
- Promoting supportive regulation in the labor market that will ease the integration of women, especially mothers, into high-tech.
- Promoting women to executive positions – from junior management.
- Maximizing women's entrepreneurial potential for those interested in this direction.
- Expanding the Innovation Authority's efforts to encourage women to apply for the various investment avenues.
- Appointing women to partner roles in venture capital funds.

²⁷ Women in Tech Survey 2020: [Challenges and Opportunities for Increasing Women's High-Tech Employment](#), Woman in High-Tech and Scale Up Velocity

²⁸ [Women in Scientific and Technological Entrepreneurship](#), Samuel Neaman Institute, September 2019.

