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Israel Innovation Authority

The Impact of Generative AI on Employment and Occupations in the High-Tech Industry

November 2025

Acknowledgments

Research conducted by

Myers-JDC-Brookdale Institute

Editing

National Artificial Intelligence Program Leader – Israeli Innovation Authority

Key Findings

1

The high-tech industry has adopted GenAI tools both broadly and deeply.

95% of respondents use GenAI tools daily or weekly.

Among daily users,
82% use GenAI for **three or more types of tasks,** and
25% use it for **six or more task types.**

2

The widespread use of GenAI tools crosses genders, job types, seniority levels, company types, and geographic locations, though there are subtle differences between subgroups.

3

Respondent distribution was compared to the overall high-tech sector workforce (Central Bureau of Statistics and Innovation Authority data) and found to be representative.

Respondents were slightly older than the general population, so a statistical adjustment was applied.

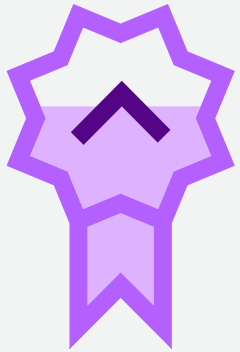
4

High-tech employees use a wide variety of GenAI tools, including general-purpose applications and R&D AI tools.

5

Respondents report significant improvements in both the outputs quality and work efficiency.

About 70% of employees reported significant improvement in quality

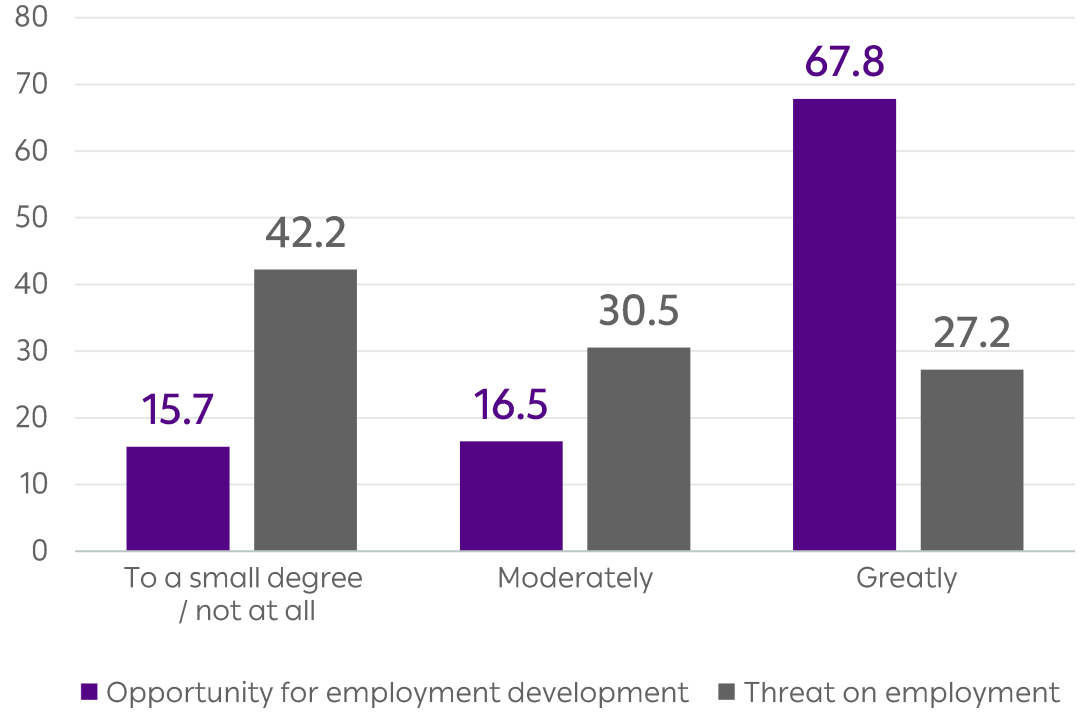


and about 50% reported work time reduction - up to half the time.

6

High-tech employees report significant improvements in both output quality and work efficiency.

Perception of GenAI tools as an opportunity or threat to employment (%, N=376)



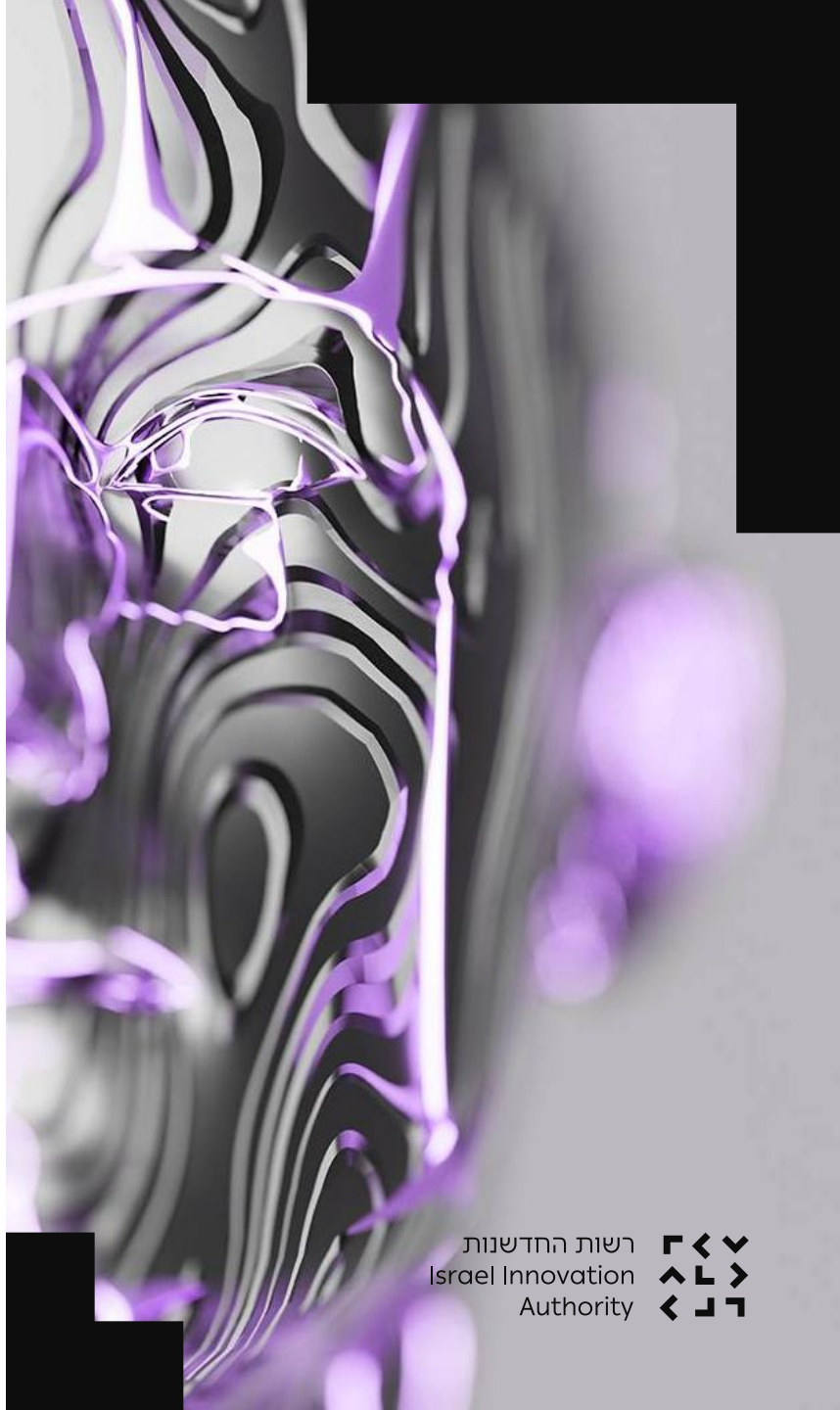
Research Objectives

The aim of the research is to examine the penetration of generative AI (GenAI) tools in Israeli high-tech companies and their perceived impact on employees in various professions and levels.

The key research questions are:

- **To what extent have GenAI tools been adopted by Israeli high-tech companies?**
- **What are the use patterns of GenAI tools in the workplace?**

The research distinguishes between technological professions (i.e. software development) and non-technological professions (such as marketing, human resources, and product management).



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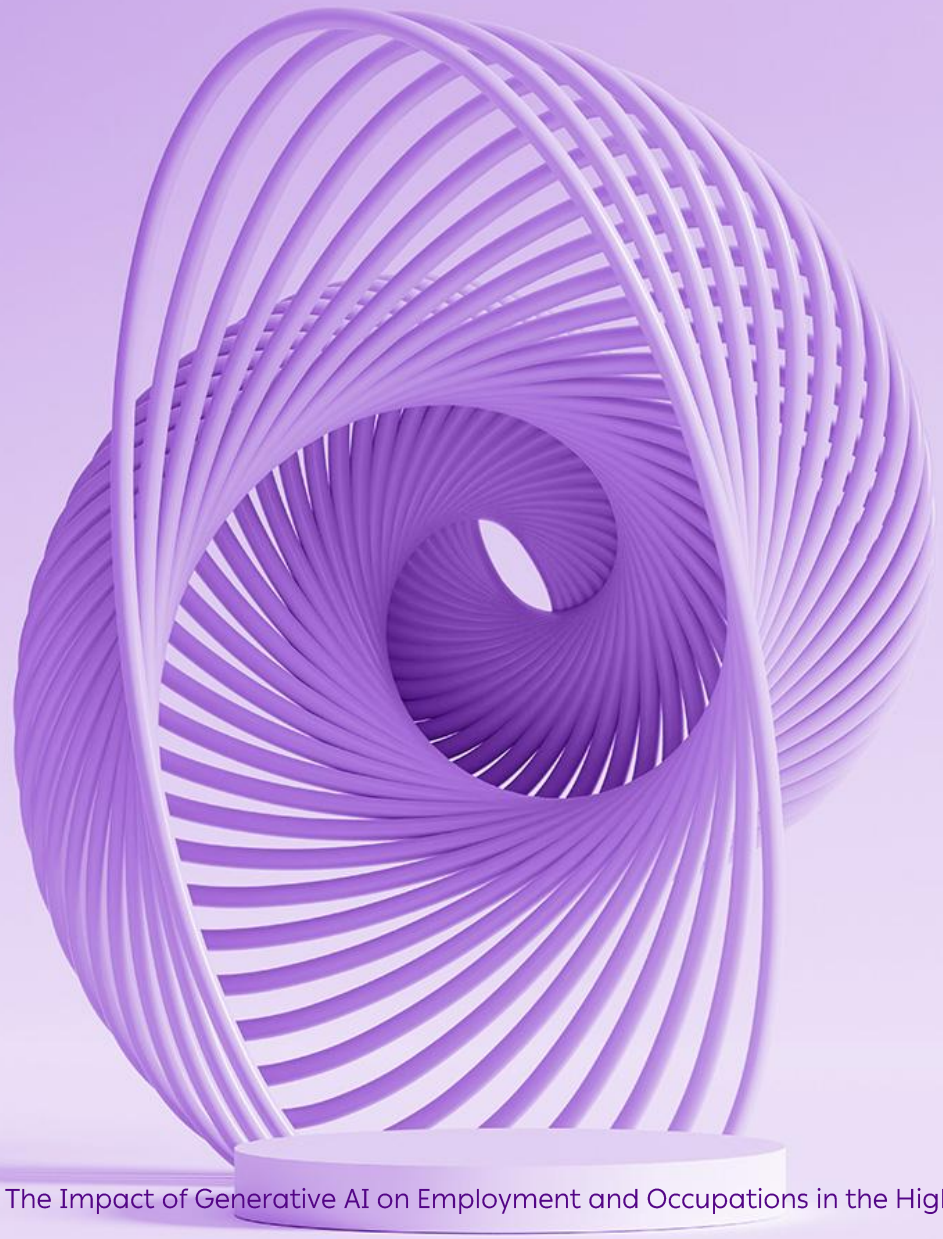

Report Outline

Methodology

Sample Description

Main Analysis Axes

Findings

Summary and Insights

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Methodology

Methodology: Online Survey Among High-Tech Employees

Survey chapters:

A. Occupational characteristics
B. Patterns of Gen-AI tools use at work
C. Perceptions and attitudes toward GenAI tools and the future of high-tech employment
D. Sociodemographic characteristics

Questionnaires adjusted to target populations:

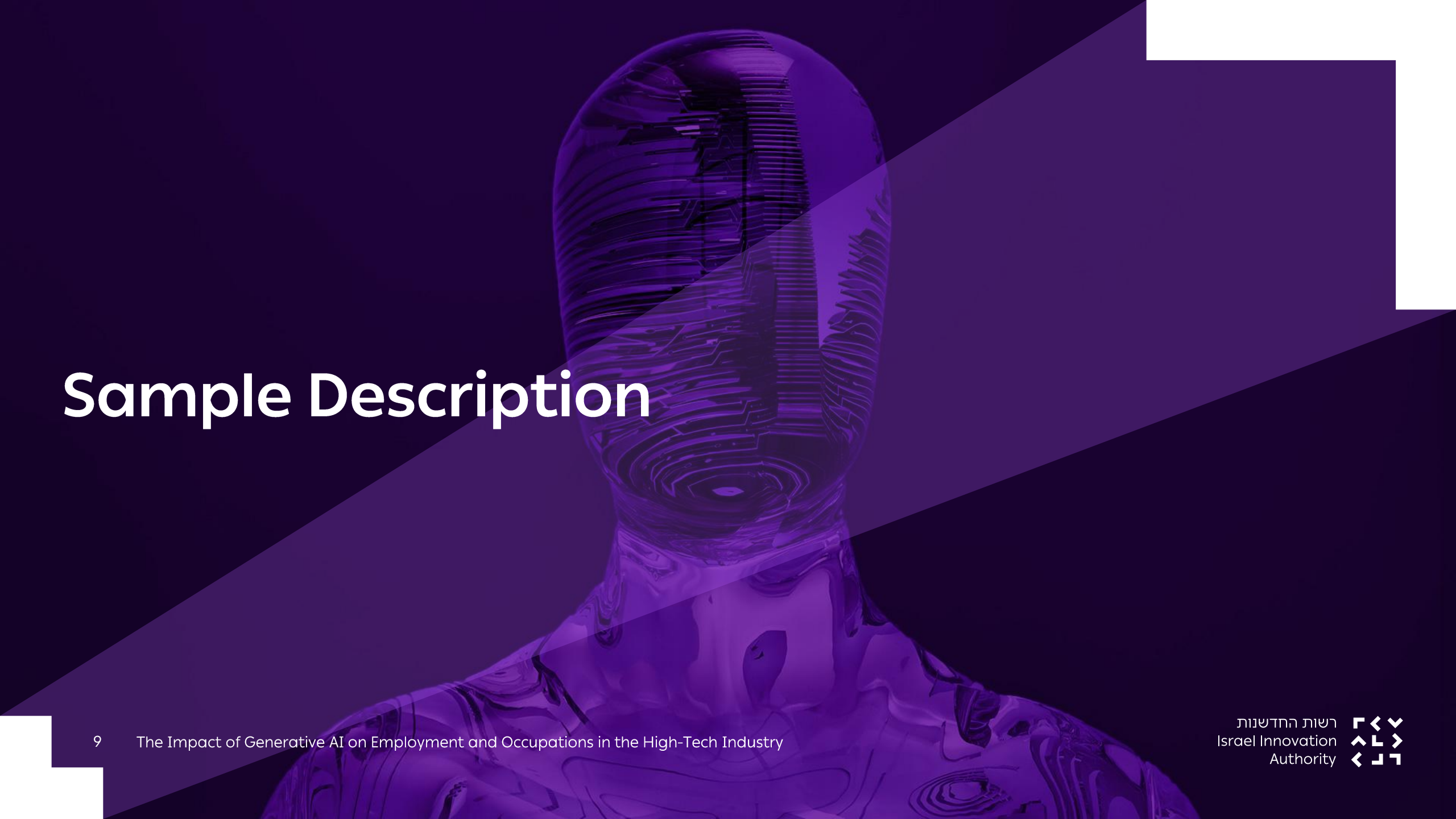
- Employees in High-Tech Companies (technological / non-technological workers)
- Technological Professionals employed in Non–High-Tech Companies
- Former High-Tech Employees who are not currently employed

Survey distribution conducted via formal Israel Innovation Authority channels (Email, LinkedIn, Facebook)

The analysis weighted by gender, age, and job role.

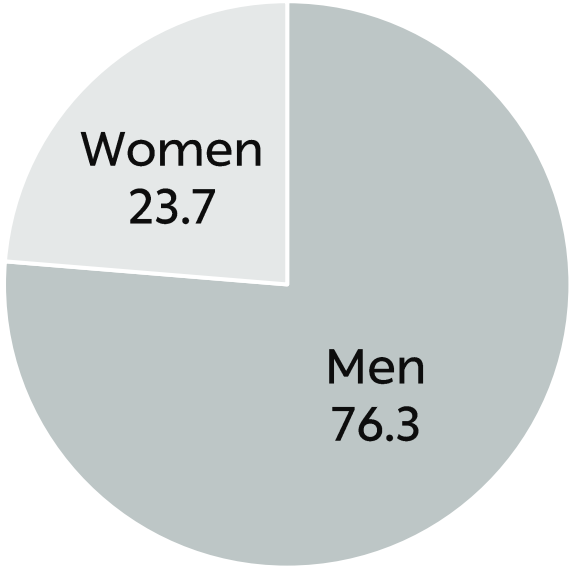
Sample size (N=523)

Sample Description

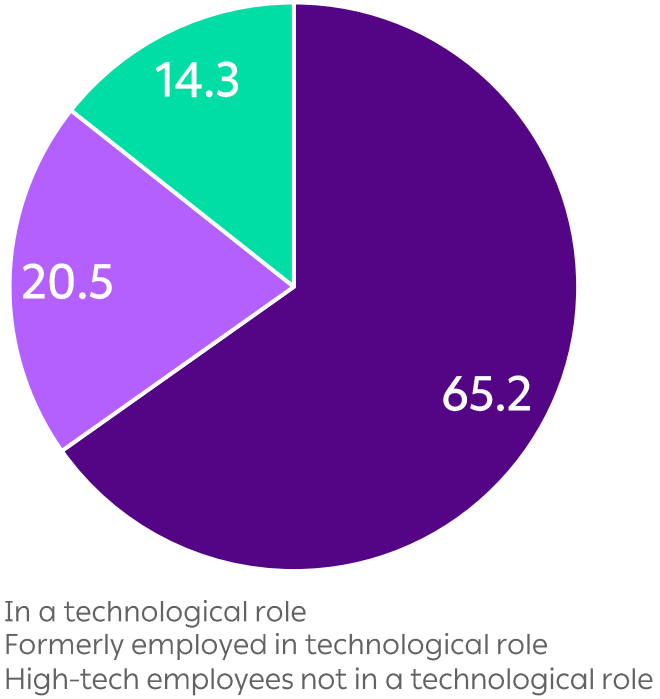


Survey Sample Characteristics

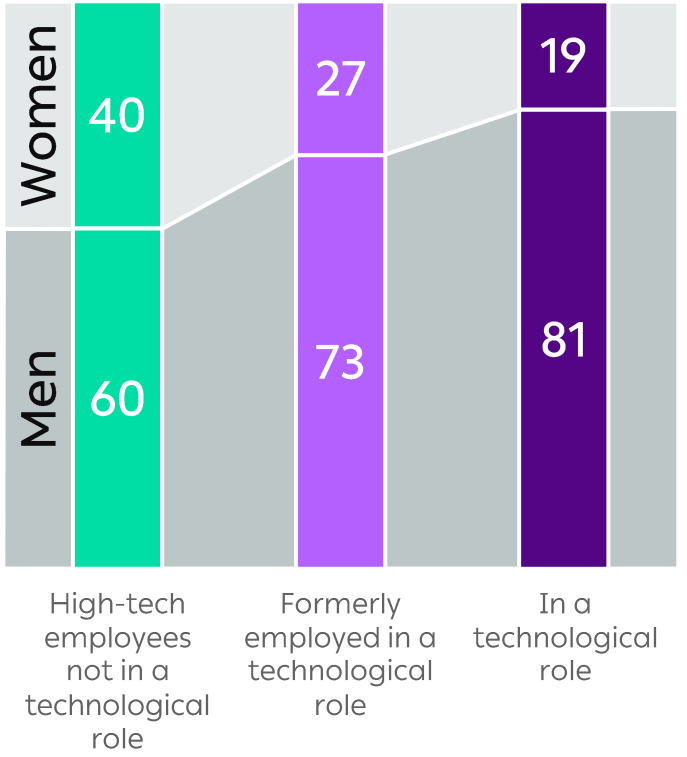
Distribution of survey respondents by gender (%, N=523)



Distribution of survey respondents by role (%, N=523)

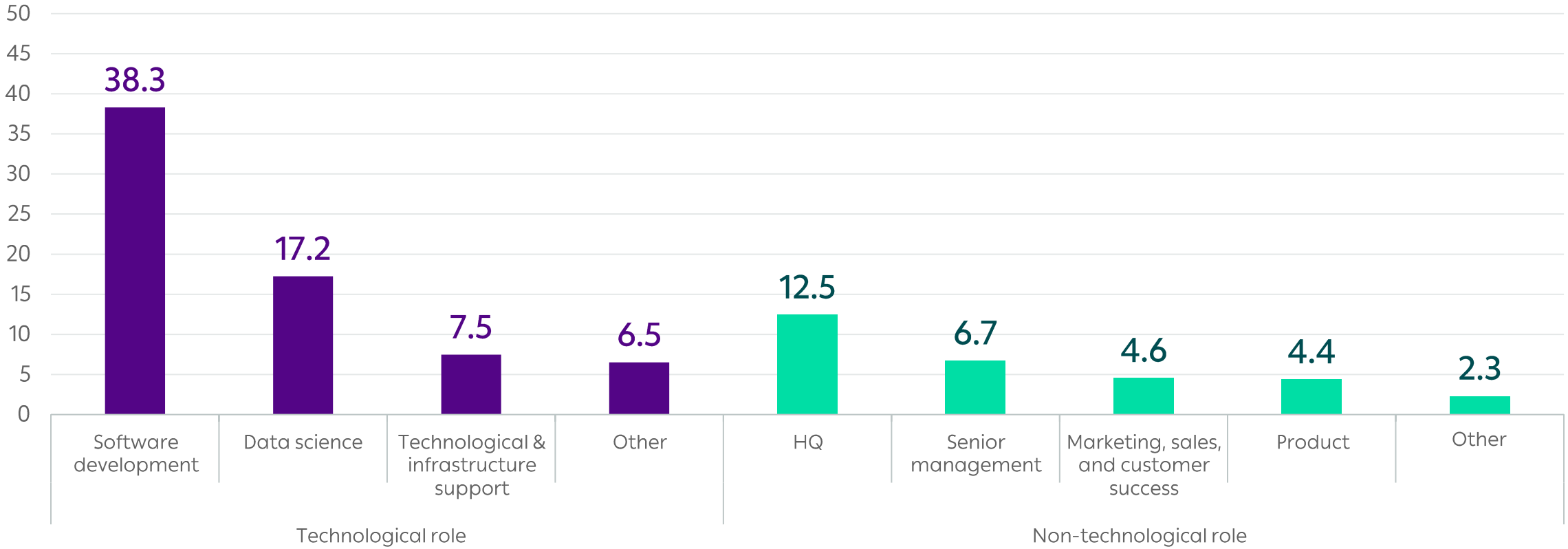


Distribution of survey respondents by role and gender (%, N=523)



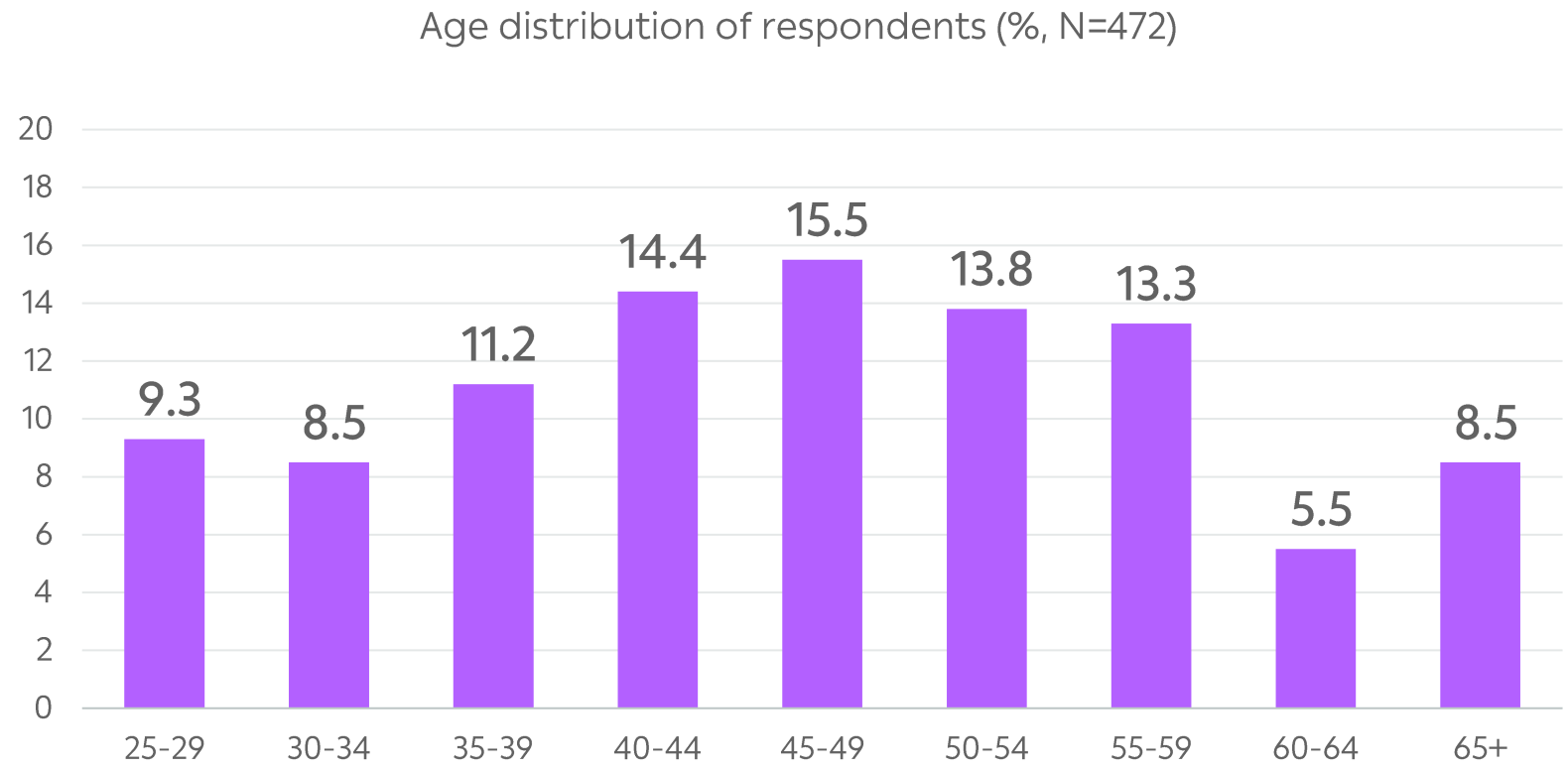
Background Characteristics of Survey Respondents

Distribution of respondents based on role (technological or non-technological) and occupation (%, N=522)



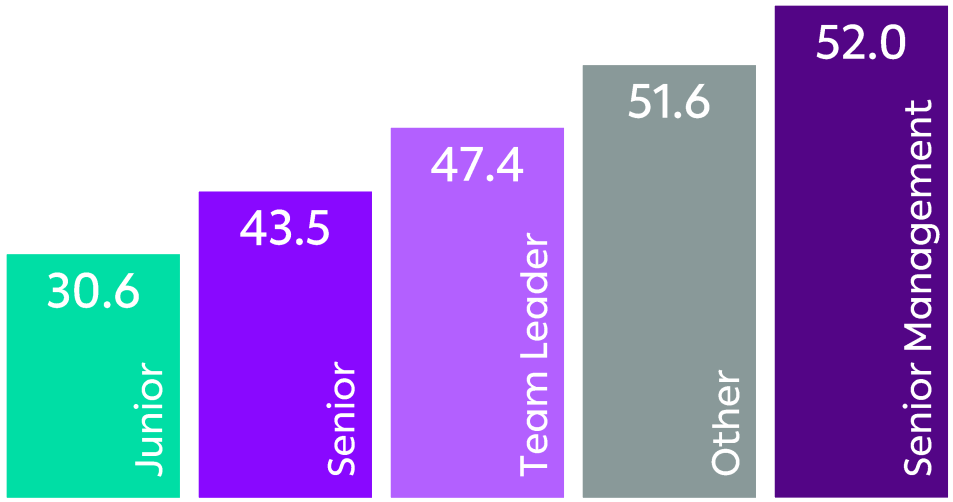
Age of Survey Respondents

Average age: 46.2
Standard Deviation: 11.5

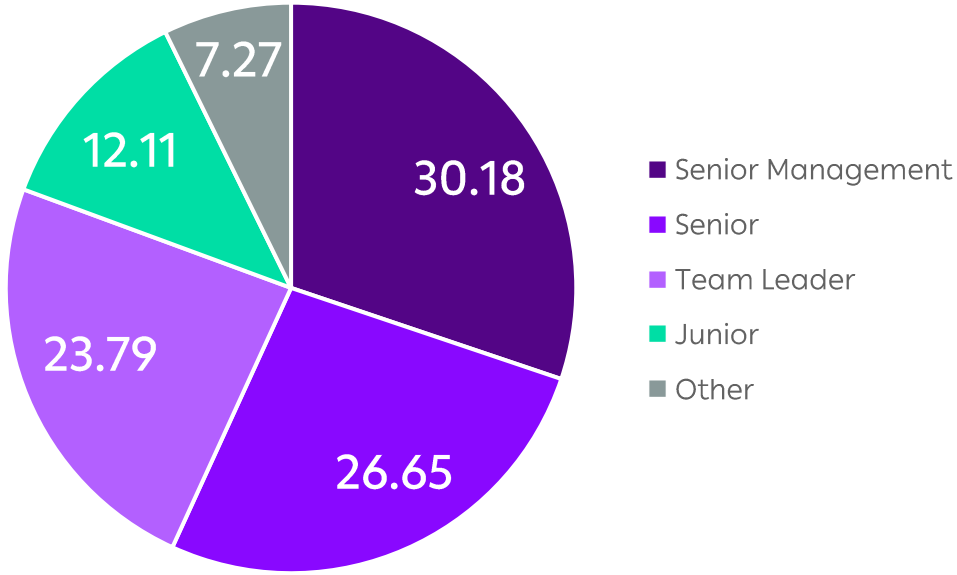


Organizational Rank of Survey Respondents

Average age by organizational rank (N=405)



Distribution by organizational rank (%, N=454)

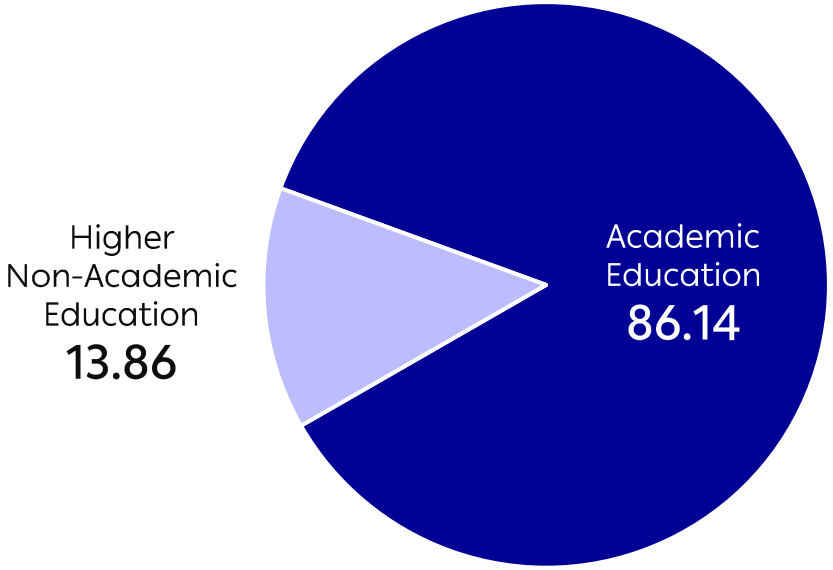


Junior – Early career employee
Senior – Experienced employee
Team Leader – Manages a team
Senior Management – Decision makers at CEO, VP levels
Other – Investor, external consultant, etc.

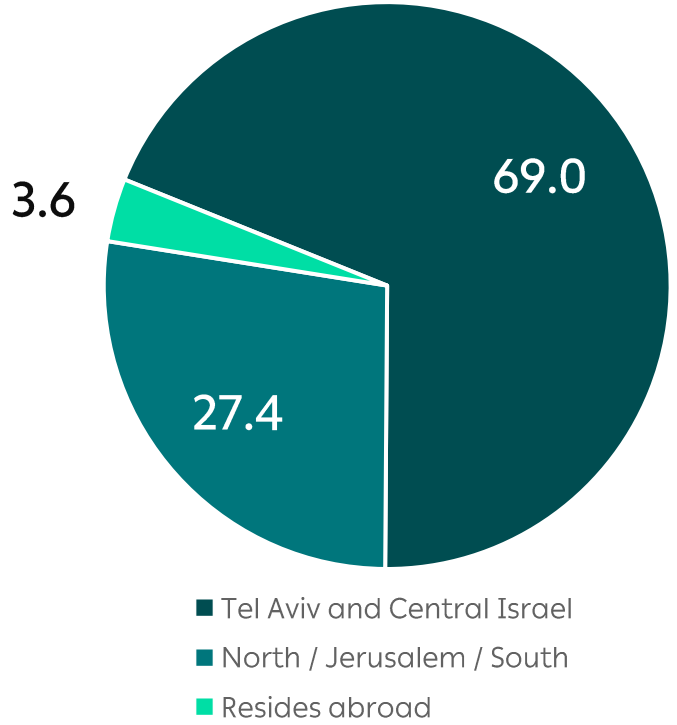
Most Survey Respondents Are Secular Jews, Educated, and Live in Central Israel

- 98% of respondents are Jewish
- Of those, 4% are ultra-Orthodox, 7% of the women and 3% of the men

Distribution by education type
(%, N=492)

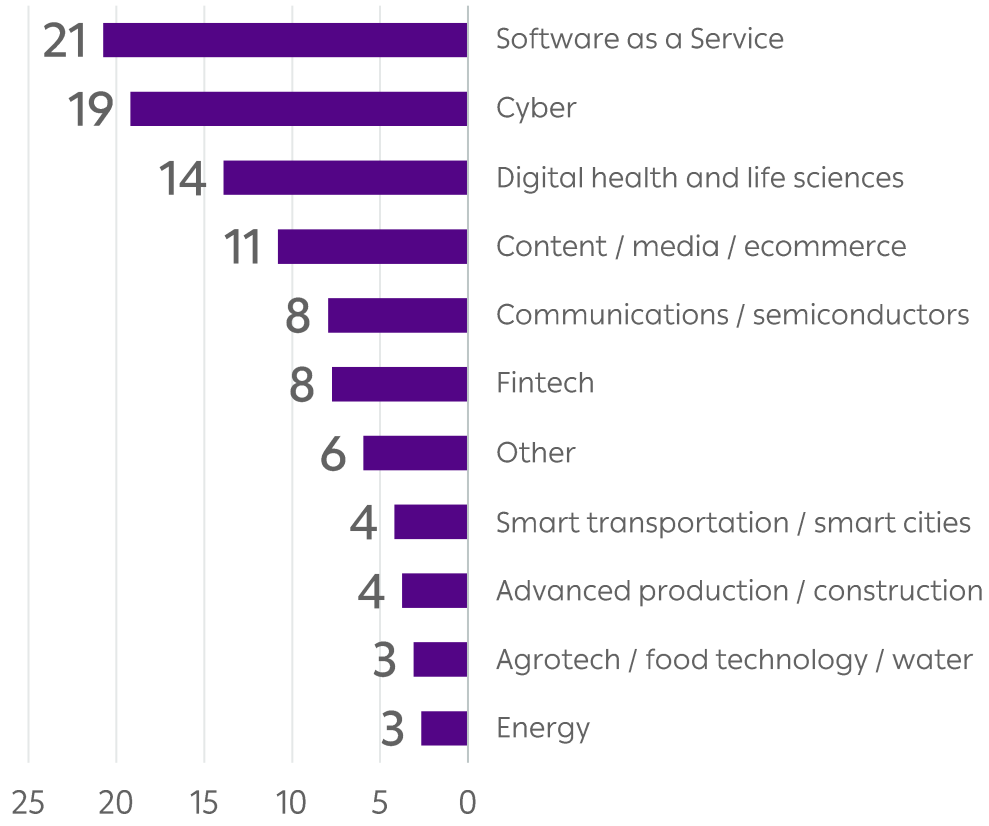


Distribution by residence region
(%, N=497)

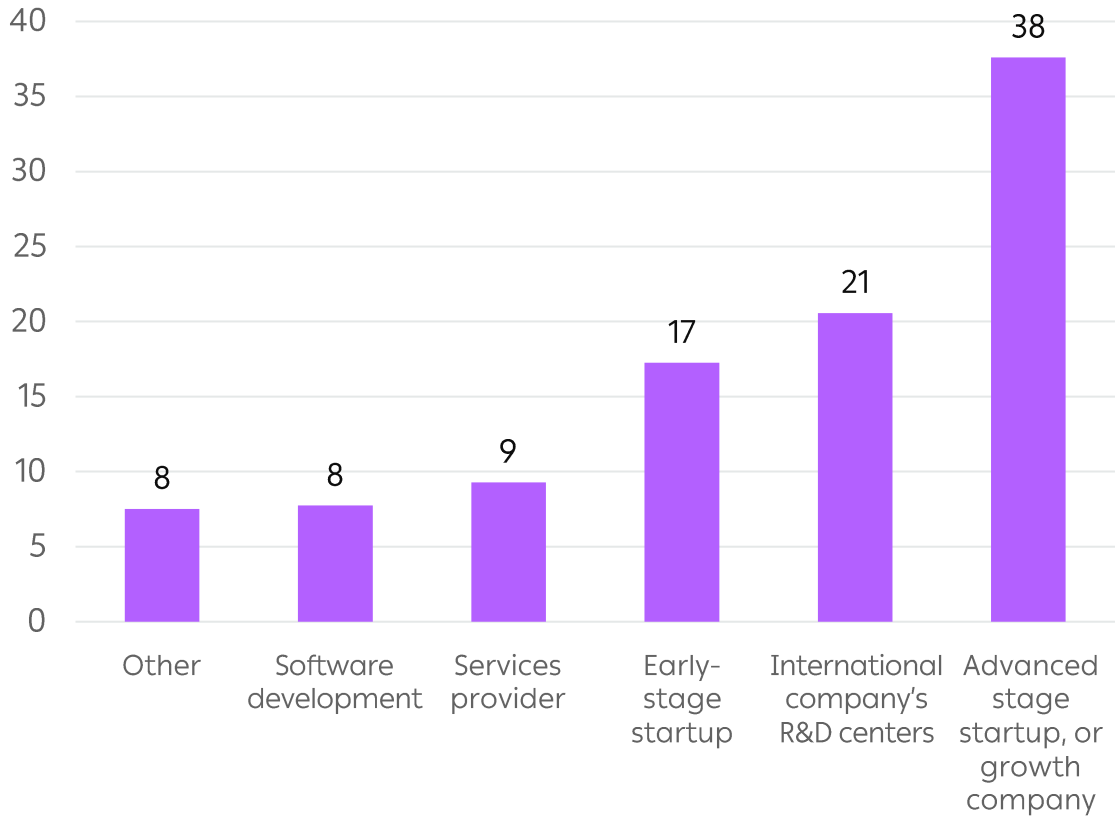


Company Characteristics of Respondents

Distribution of respondents by economic sub-sector (%, N=452)

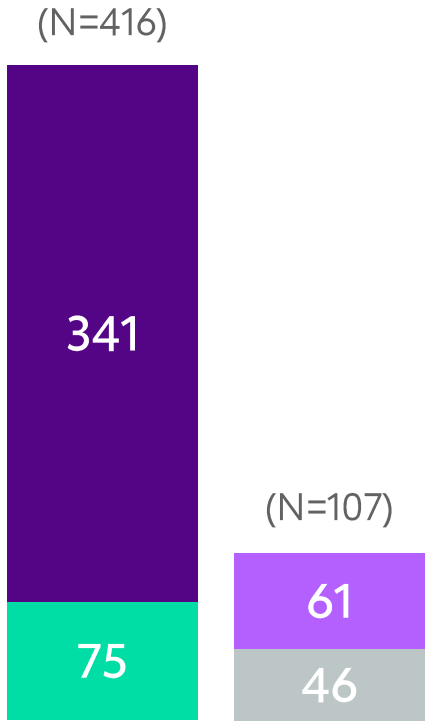


Distribution of respondents by company type (%, N=452)



Population Included in the Analysis

- The analysis included 416 respondents who currently work in the high-tech industry:
  - 341 employees in technological roles, some working in a high-tech company and some in a company that is not defined as high-tech
  - 75 employees in high-tech companies in non-technological roles
- Not included in the analysis of 107 former high-tech employees



Currently working in technological roles (N=341)

High-tech employees who are not in a technological role (N=75)

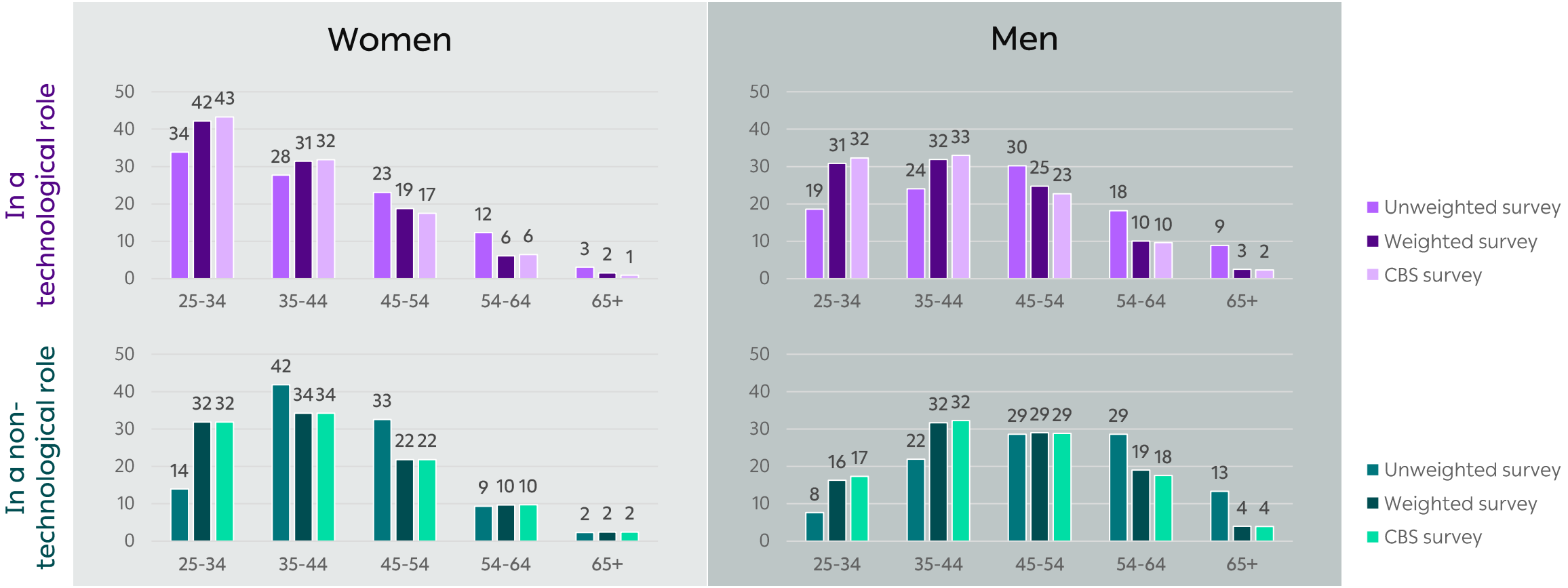
Employees who transitioned from a technological role to a non-tech role outside high-tech sector (N=61)

Former high-tech employees who are not currently employed (N=46)

To ensure survey results closely represent the high-tech workforce, weighting coefficients were calculated for the respondents' observations. These coefficients assign each respondent a representative weight corresponding to their segment of the population (weighting factors). The adjustment was based on relevant population data from the Central Bureau of Statistics' Labor Force Survey, using control variables: age, gender, and job role.

Sample Characteristics Compared to the Population – Distribution Before and After Weighting

Distribution by age group, gender and role (technological and non-technological) in the survey and the CBS Labor Force Survey, before and after weighting (%)



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Findings

Analysis Axes

Frequency of Use of GenAI Tools at Work

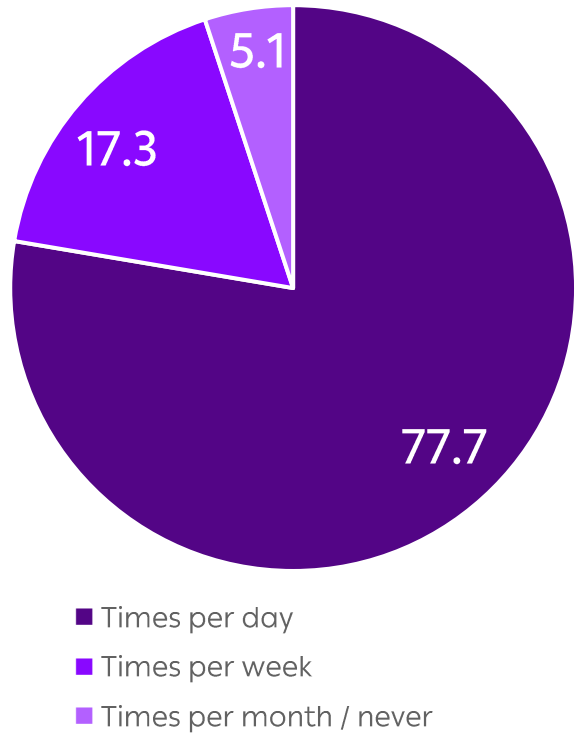
Types of Tasks and GenAI Tools Used at Work

Perceptions of the Future of High-Tech Employment: GenAI as a Threat or an Opportunity

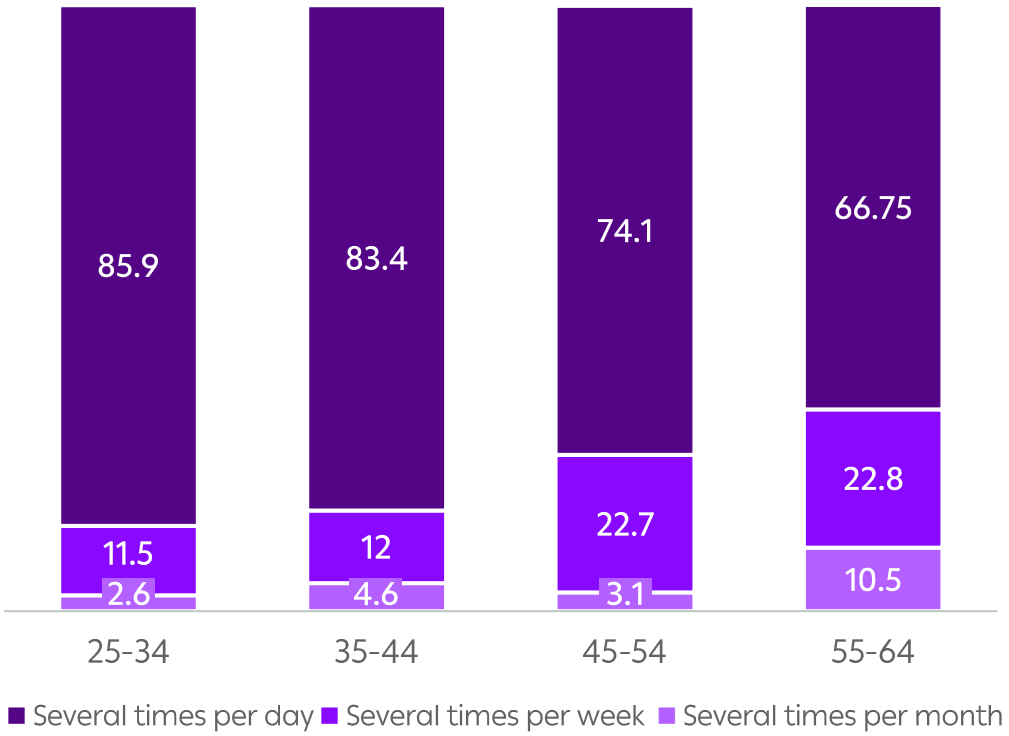
Frequency of GenAI Use Tools at Work

GenAI Tool Use Is Widespread and Common Among All Employees

Frequency of GenAI tool use at work
(%, N=384)



Frequency of GenAI tool use at work by age group
(%, N=384)*



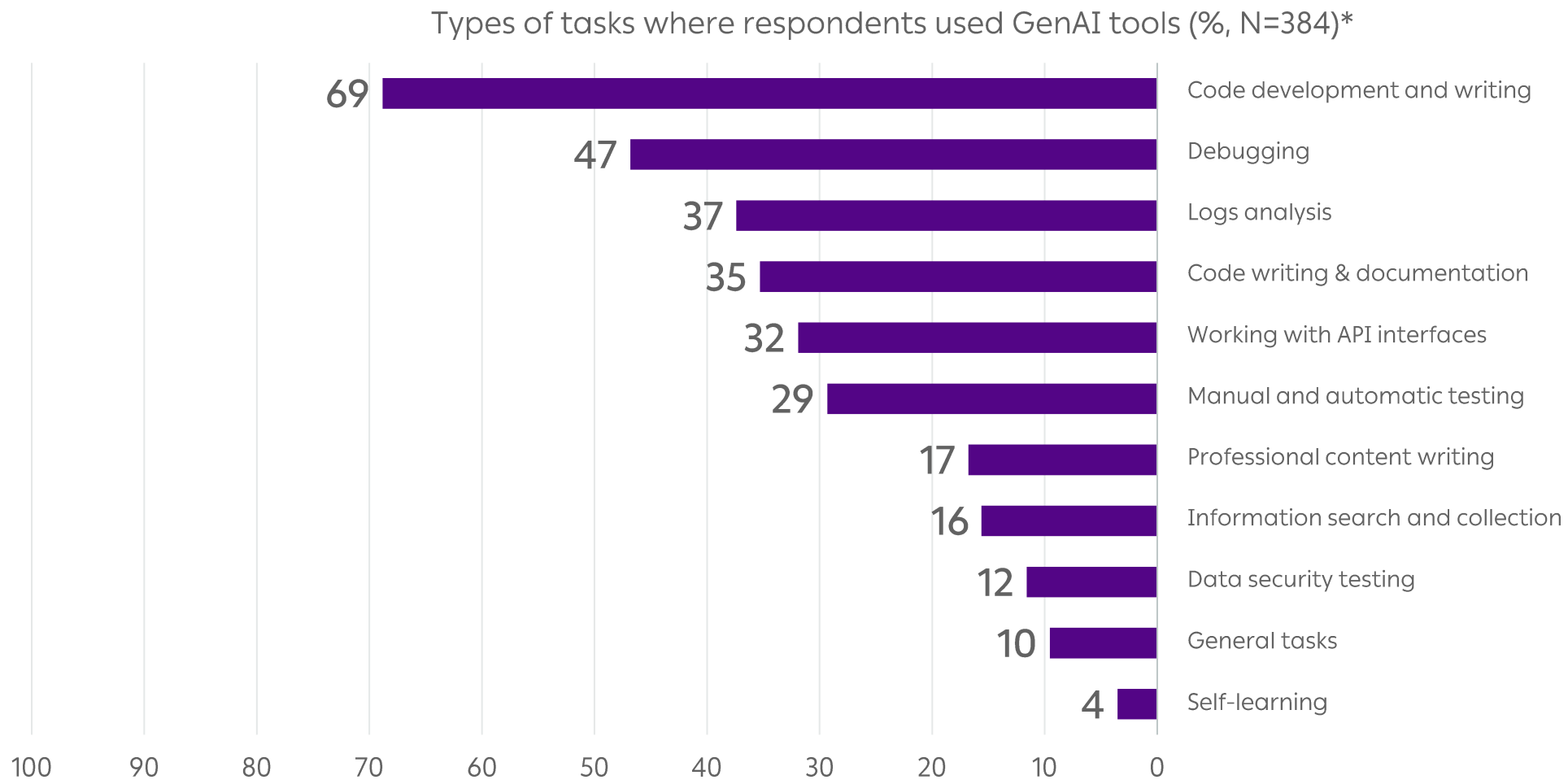
*(p < .05)

95% of respondents use GenAI tools at work either daily or weekly, of whom 78% report daily use

Most young employees (25-34) report daily use (86%), while among older age groups, daily use decreases (p>0.05)

Except for age, no correlation was found between usage frequency of use and gender, region of residence, seniority, or company type.

Types of Tasks Where GenAI Tools Are Used at Work



*Multiple choice. Percentages do not total 100%

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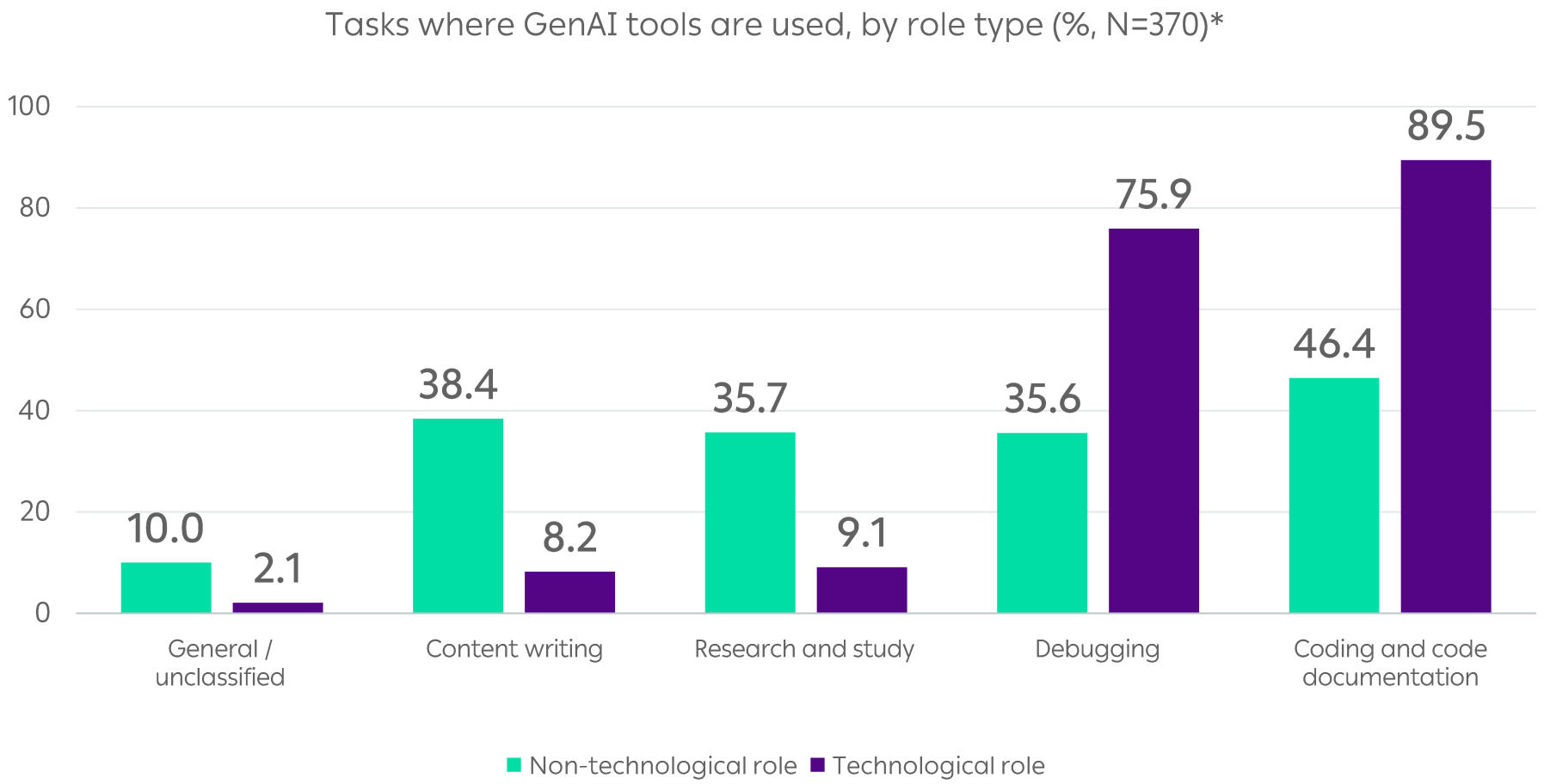
Types of Tasks Where GenAI Tools Are Used – By Role



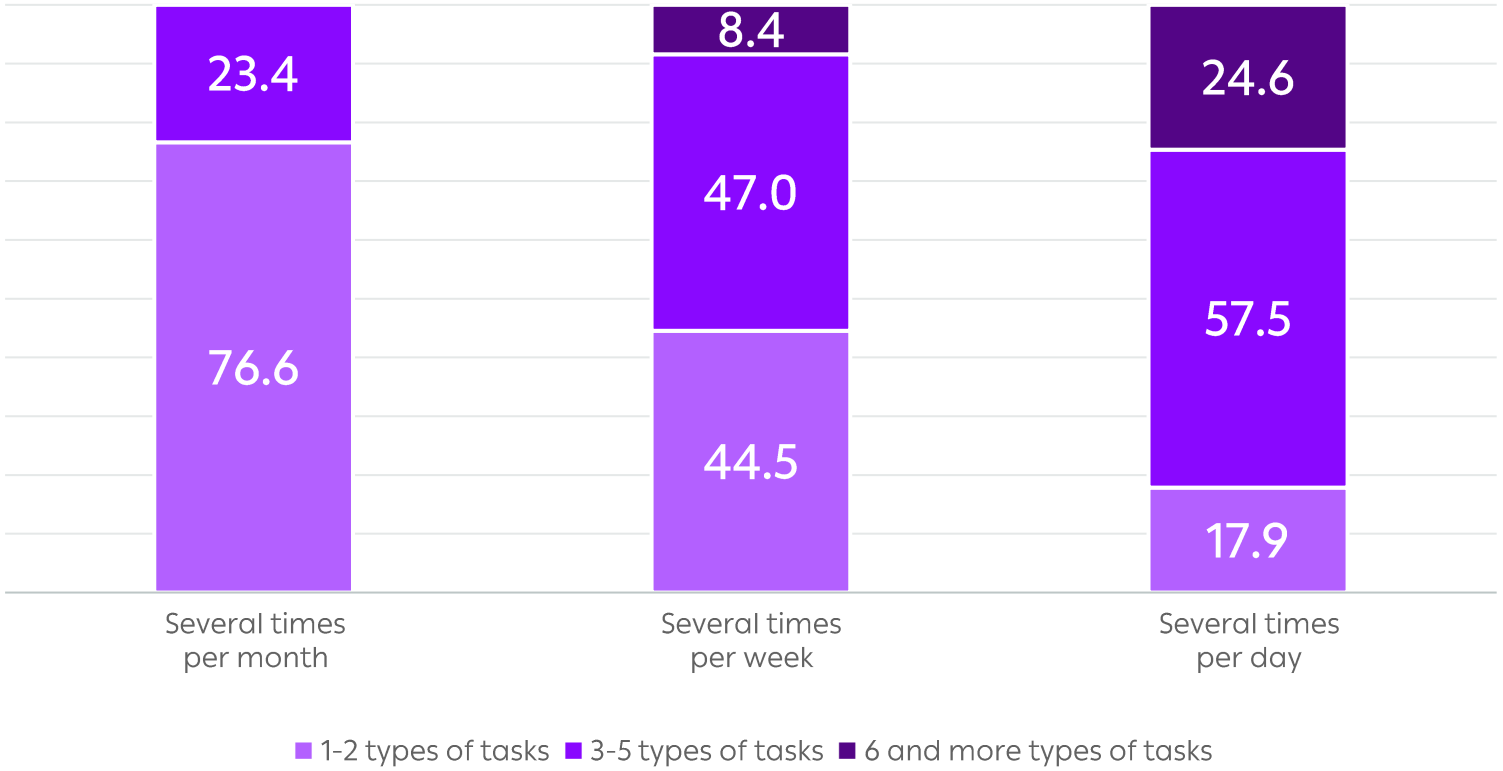
In technological roles – Main use of GenAI tools focuses on coding tasks (90%) and debugging/ troubleshooting (76%)

In non-technological roles – 46% use for coding and documentation, 38% for content writing and 36% for research and self-learning.

*Multiple choice. Percentages do not total 100%

High Frequency of GenAI Tool Use Is Associated With Increased Diversity of Use Cases

Number of types of tasks at work by frequency of use of GenAI tools (%, N=378)*



*(p < .05)

A significant correlation was found between the frequency of use of GenAI tools at work and the diversity of tasks for which employees use the tools {2} (05.> p):

- 82% of daily GenAI users use them for three or more types of tasks.
- Of these, 25% use them for more than 6 types of tasks

Technological Employees Use GenAI Tools for Wider Range of Tasks Compared to Non-Technological Employees

Technological employees report wider range of tasks for which they use GenAI tools compared to non-tech workers (05.>p)

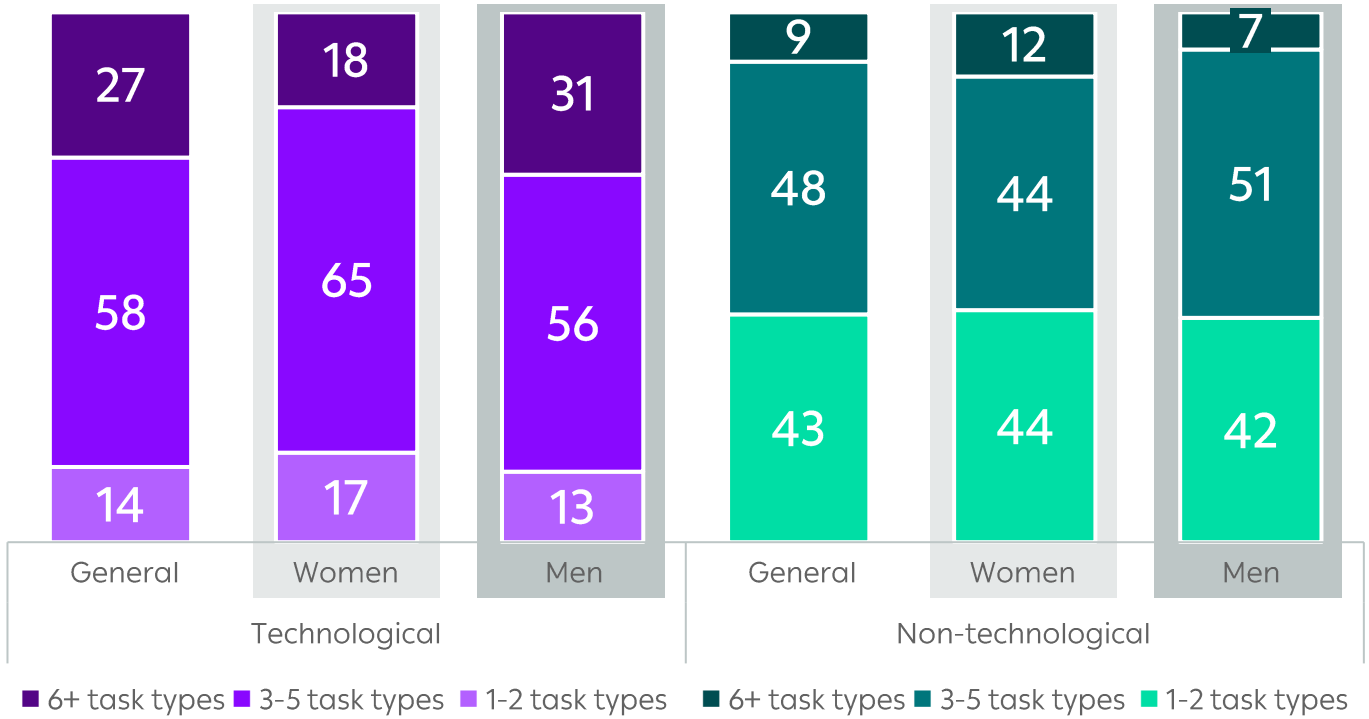
- 85% of technological employees report three or more types of tasks, compared to 57% among non-technological employees

Among technological employees, **more men report use in six or more tasks than women** (31% vs. 18%)

By contrast, among non-technological employees, more women report use in six or more tasks than men (12% vs. 7%)

No significant differences by seniority or company type

Number of types of work tasks for which GenAI tools are used by role type (technological and non-technological) and gender (%, N=378)*



*(p < .05)

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Number of Task Types Where GenAI Tools Are Used Is Higher Among Juniors and Young Seniors

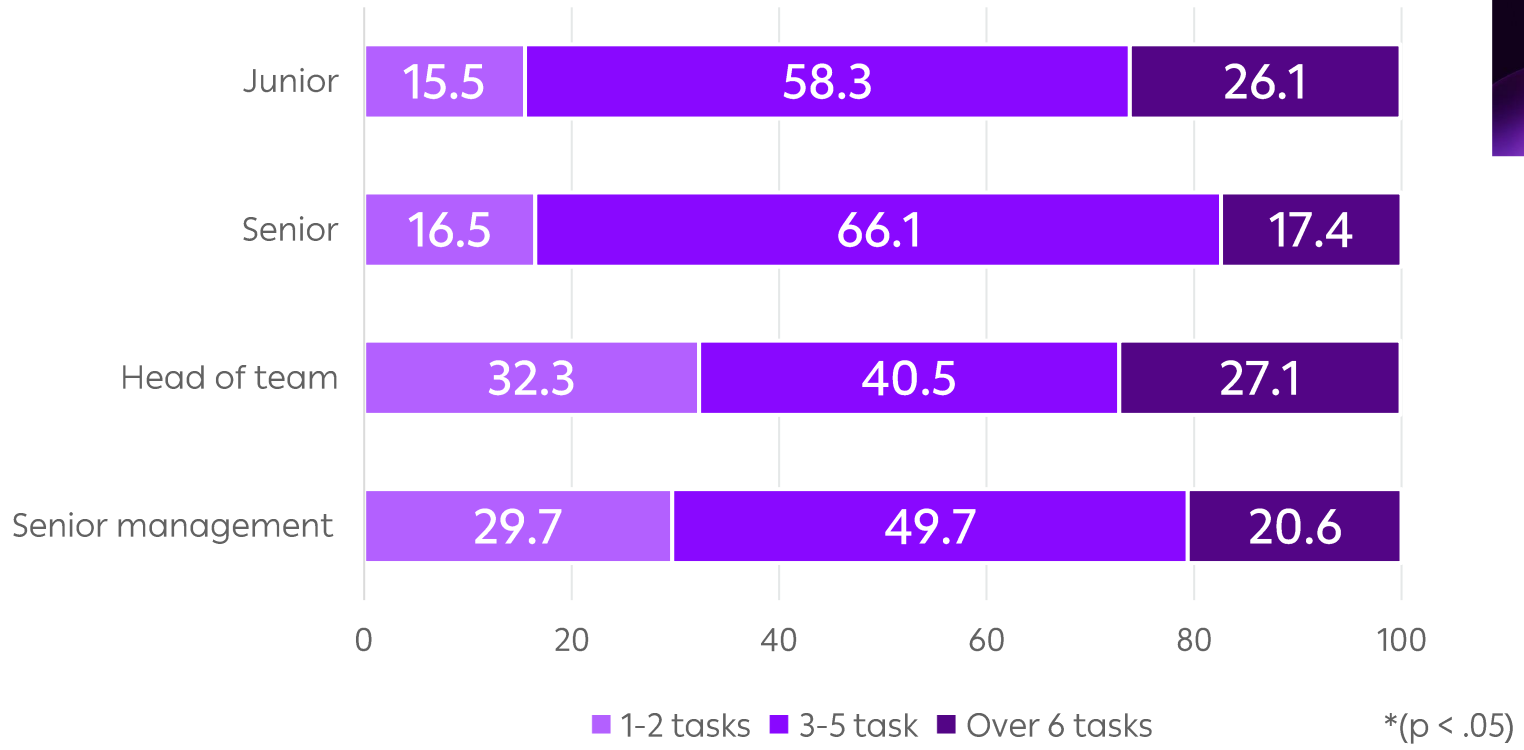
A significant correlation was found between organizational level and the number of task types used by GenAI tools at work (05.>p)

- 84% of juniors and seniors report using GenAI tools for 3 or more types of tasks
- 70% of team leaders and senior management report 3 or types of tasks

Findings of the overall study show that the correlation between level and the pattern of use of GenAI tools is mediated by age (see below)

No significant differences were found in the number of task types by gender, education, region of residence, or type of company.

The number of task types for which GenAI tools at work, by level, (%, N=311)*



*(p < .05)

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Young and Technological Employees Tend to Use GenAI Tools for More Types of Tasks

The probability of using GenAI tools for three or more task types decreases with age:

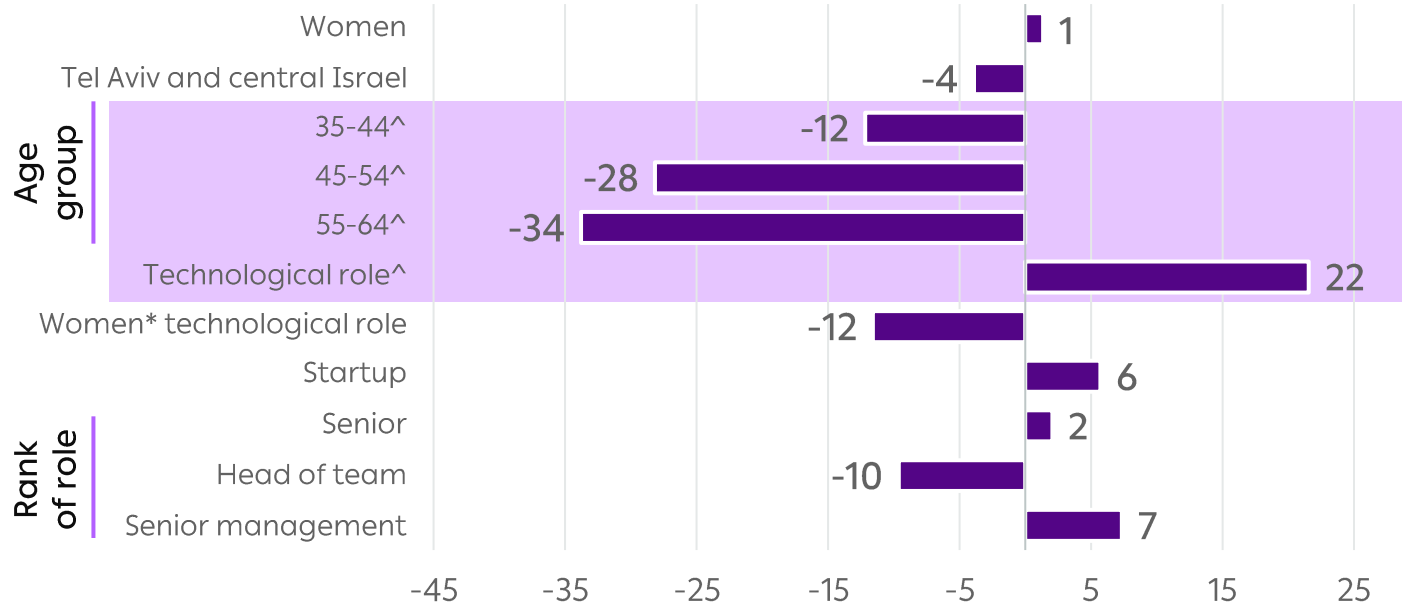
- Compared to 25–34 year olds, the probability of 35–44 year olds using GenAI tools in three or more task types is approximately 12% lower, of 45–54 year olds is approximately 28% lower, and of 55–64 year olds is approximately 34% lower (p>0.05)

Technological employees are 22% more likely to use GenAI tools for three or more types of tasks than non-technological employees (p<0.05)

No significant differences was found between women and men for the probability of using GenAI tools. Although the probability of women in technology roles to use GenAI tools in three or more types of tasks is lower than that for men in technology roles, the difference is not significant

No additional differences were observed by region of residence, company type, or seniority.

Factors contributing to **GenAI tool use in three or more task types**, Marginal effect based on regression analysis (%, N=376)



Dependent variable: Reported use of GenAI tool in three or more tasks (0/1)
Reference categories: Male (gender), Rest of the country (residential area), Age 25–34 (age group), Non-technological role (role type), Non-startup company (company type), and junior (role level).
The interaction variable **Women × Technology role** was tested in relation to men in technology roles.
^p<.05
Probit regression

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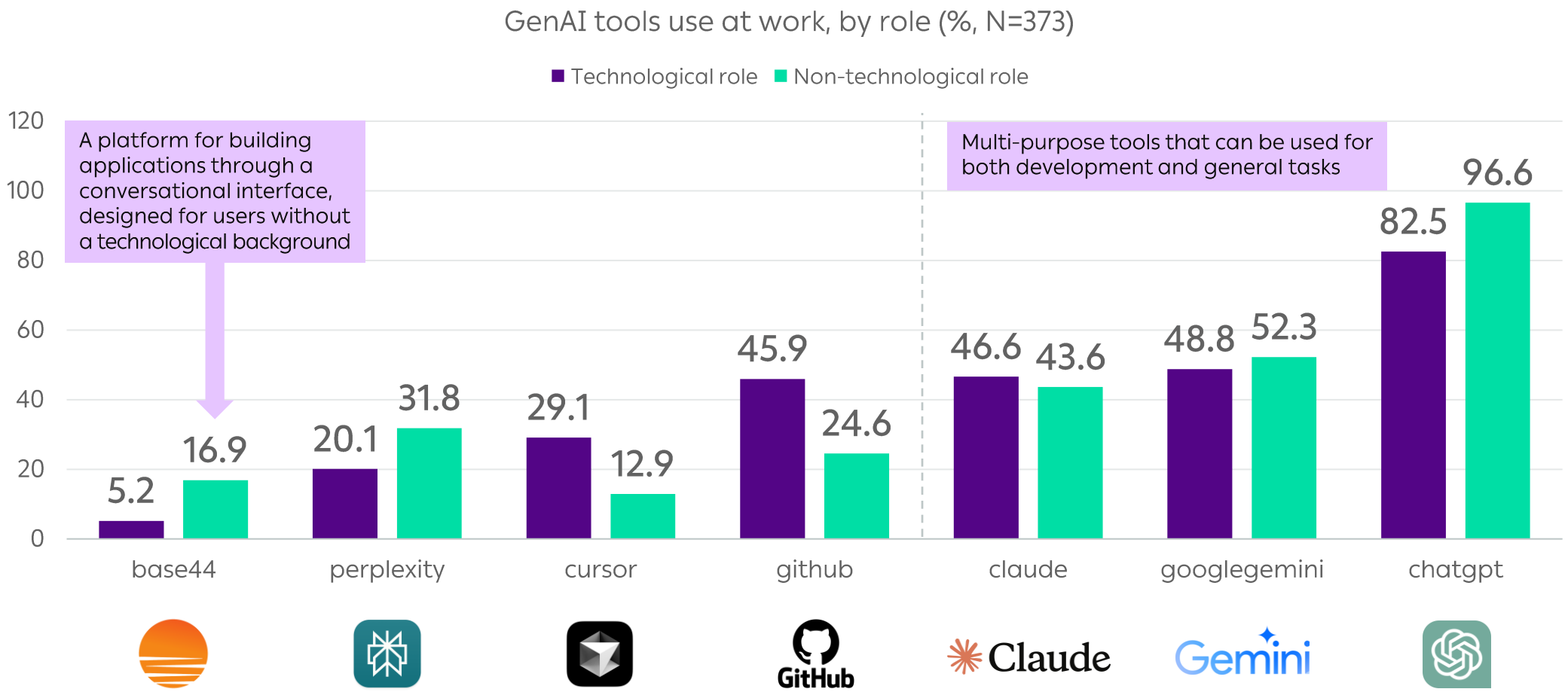
Types of GenAI Tools In Use

Types of GenAI Tools Used By Job Role



*Multiple choice. Percentages do not total 100%

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Classification of GenAI Tools: Multi-Purpose Vs. Code-Specific

Multi-purpose tools

For text writing, summarization, analysis, research productivity, and content

- ChatGPT
- Claude
- Gemini
- Perplexity
- Manus
- NotebookLM
- Grok
- Copilot365

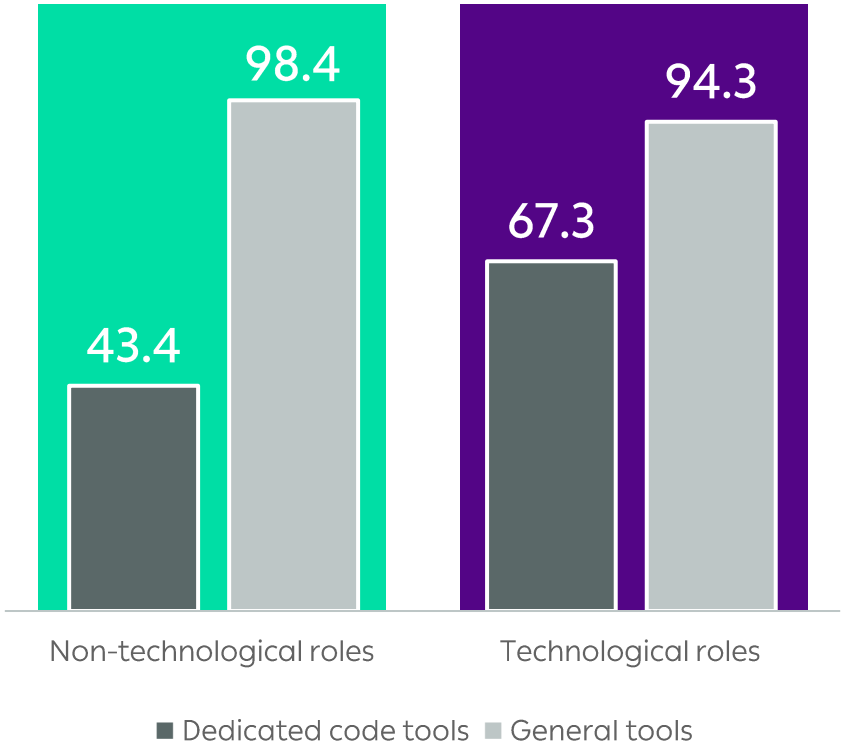
Code-specific tools

For software development, optimization, and coding

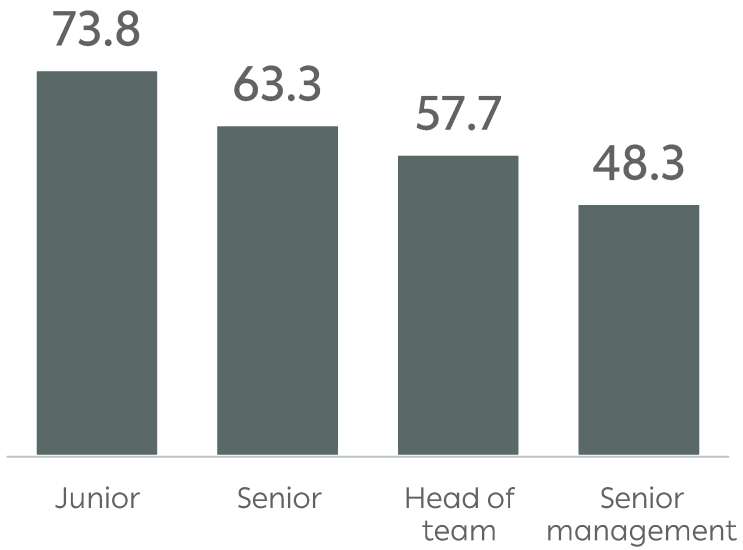
- GitHub Copilot
- TabNine
- Cursor
- Base44
- CodeWP
- Amazon CodeWhisperer

Higher Rate of Code-Specific GenAI Tools Users Among Juniors

Rate of multipurpose tool and code-specific tool users, by role type (%, N=373)*



Rate of code-specific tools users, by rank (%, N=335)*



Most employees use multi-purpose tools at work (98% of non-technological roles, 94% of technological roles)

Code-specific tools are mainly used by technological employees (67%), but also by non-technological employees (43%)

Most juniors use code-specific tools at work (74%)

As seniority increases, the rate of reported use of code-specific tools decreases{2}(05.>p)

*(p < .05)

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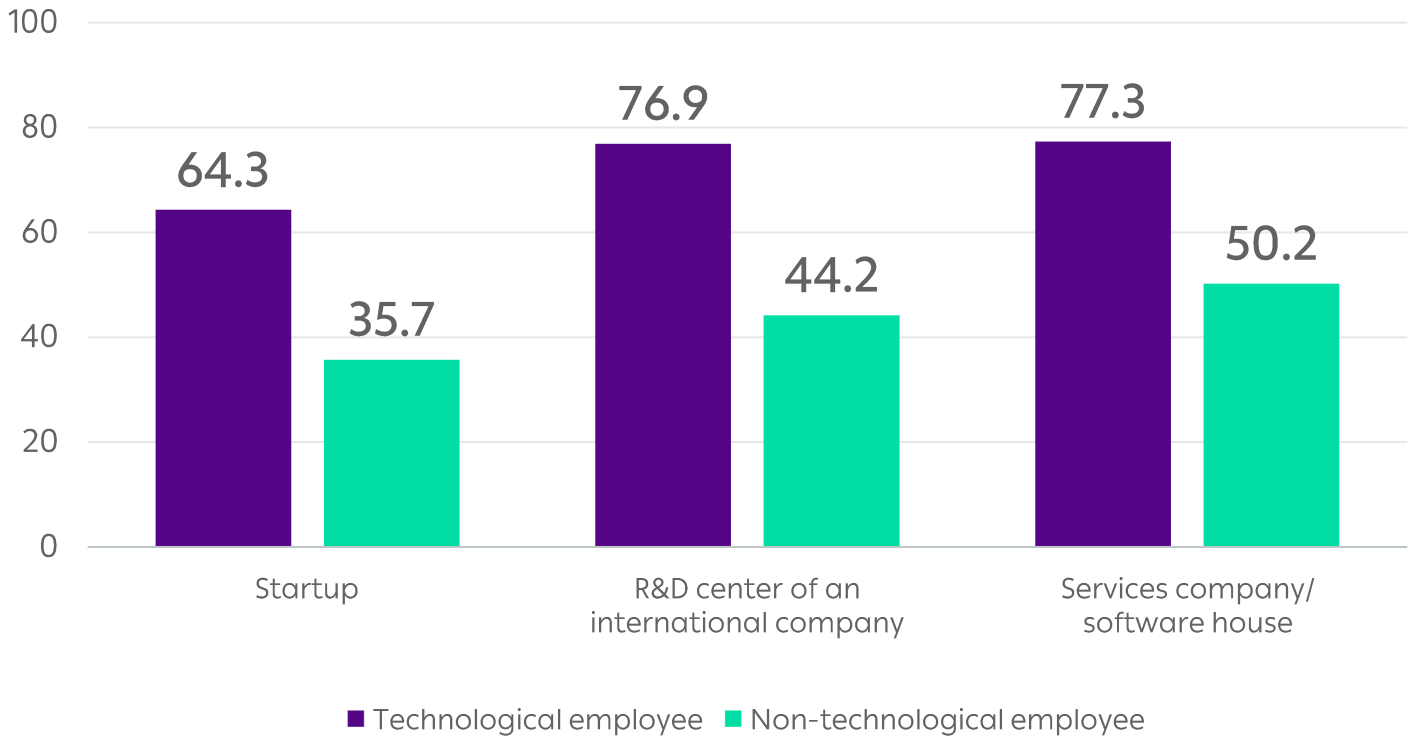
Lower Rate of Code-Specific GenAI Tools Users in Startups

Rate of GenAI dedicated coding tools users by company type and role (%, N=336)

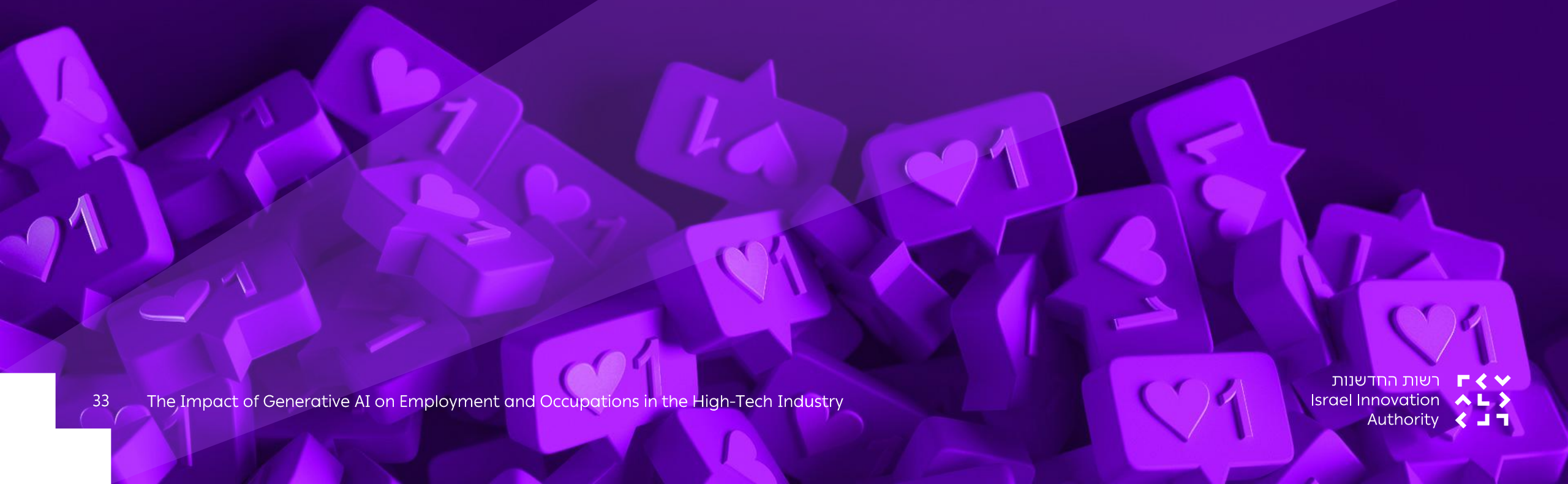


Among technological employees, who are the main users of dedicated coding tools, **the percentage of users in startups (64%) is lower than the percentage of users among technological employees in international R&D centers and in service companies/software houses** (77% in both)

50% of non-technological employees in a service/software companies use code-specific tools, higher rate compared to non-technological employees in startups and international R&D centers (36% and 44%, respectively)

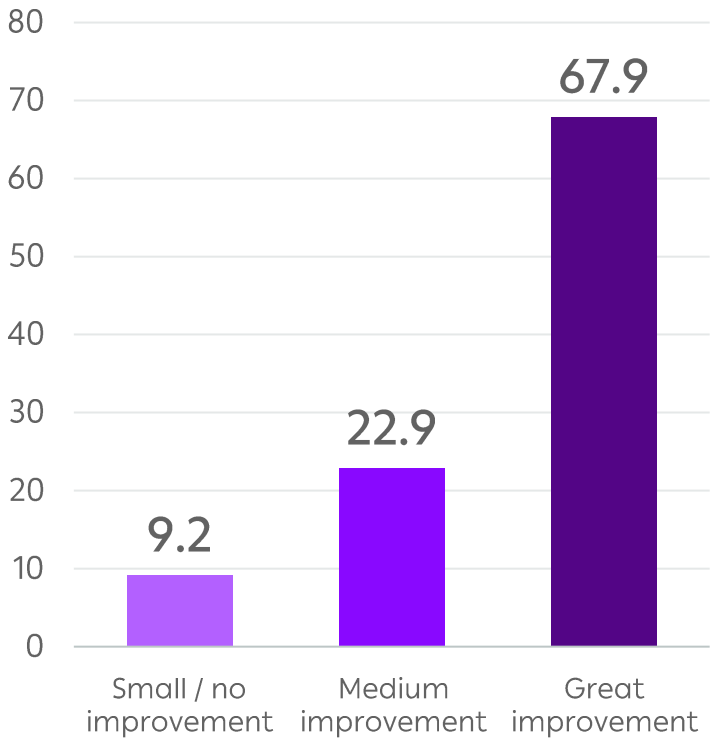
No differences were found in the extent of use of code-specific tools based on the demographics

Perceived Impact on Output Quality and Work Time Optimization

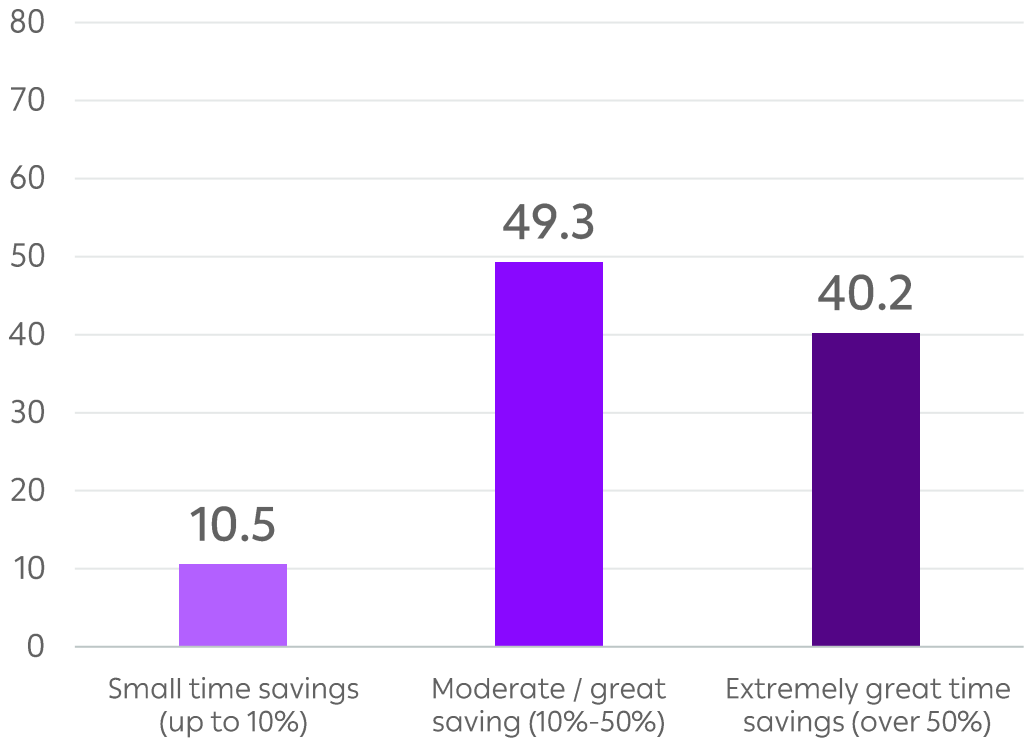


Respondents Report Significant Improvement in Output Quality and Work Time Optimization

Perceived impact of using GenAI tools on **outputs quality** (%, N=371)



Perceived impact of using GenAI tools on **work time optimization*** (%, N=371)



68% reported significant improvement output quality

49% reported moderate to large reduction in work time (10%–50%*)

40% reported a very large reduction in work time (over 50%*)

No significant differences were found by gender, age, rank or company type

*Compared to the time required without the tools

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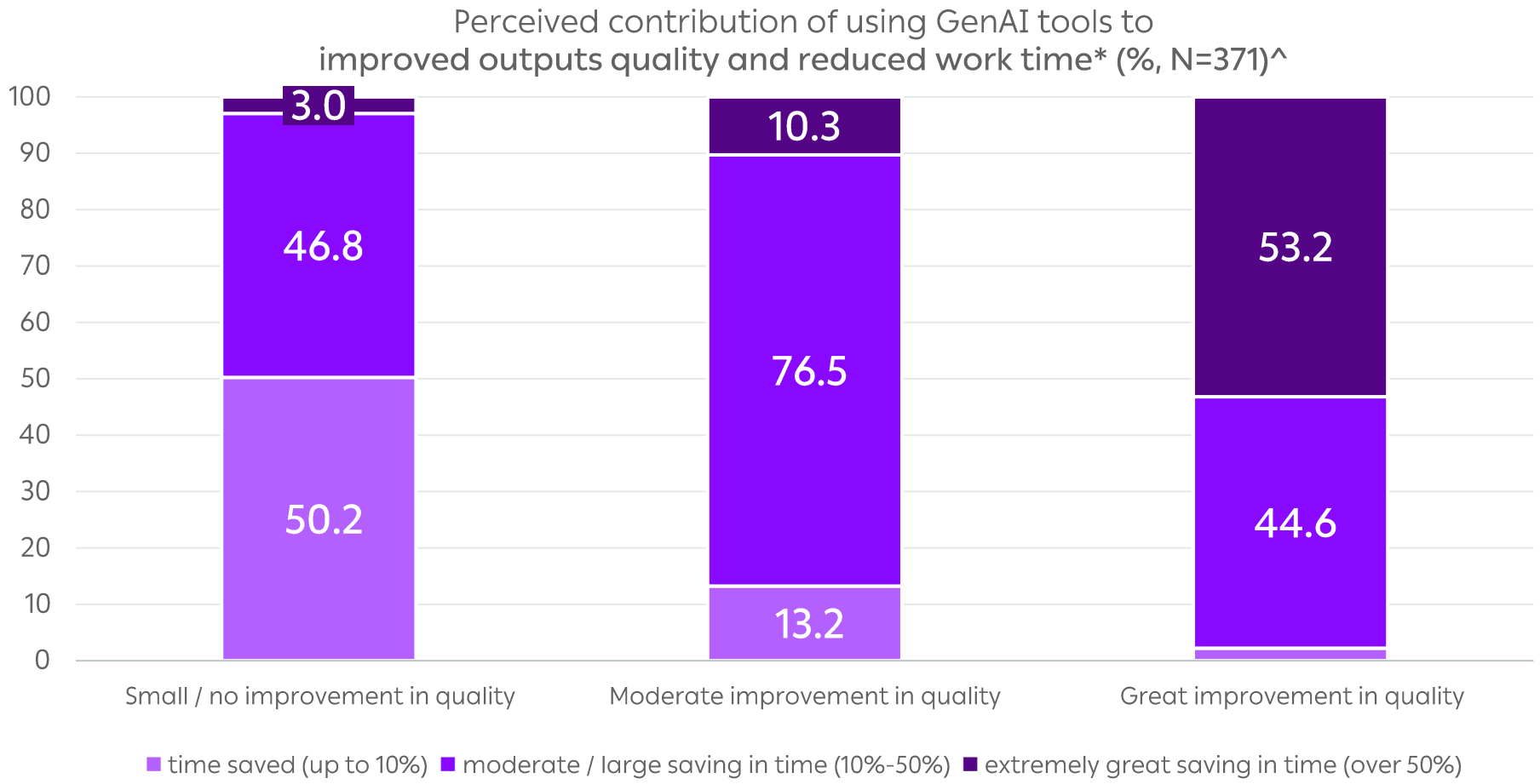
Relationship Between Perceived Contribution of GenAI Tools to Work Quality and Time Saving



About half (53%) of those who reported a significant improvement in outputs quality also reported a very large time saving (p<.05)

Even among those who reported **little/no improvement in outputs quality**, about half (47%) reported **moderate to large time saving (p<.05)**

^ p < .05

*Compared to the time required without the tools

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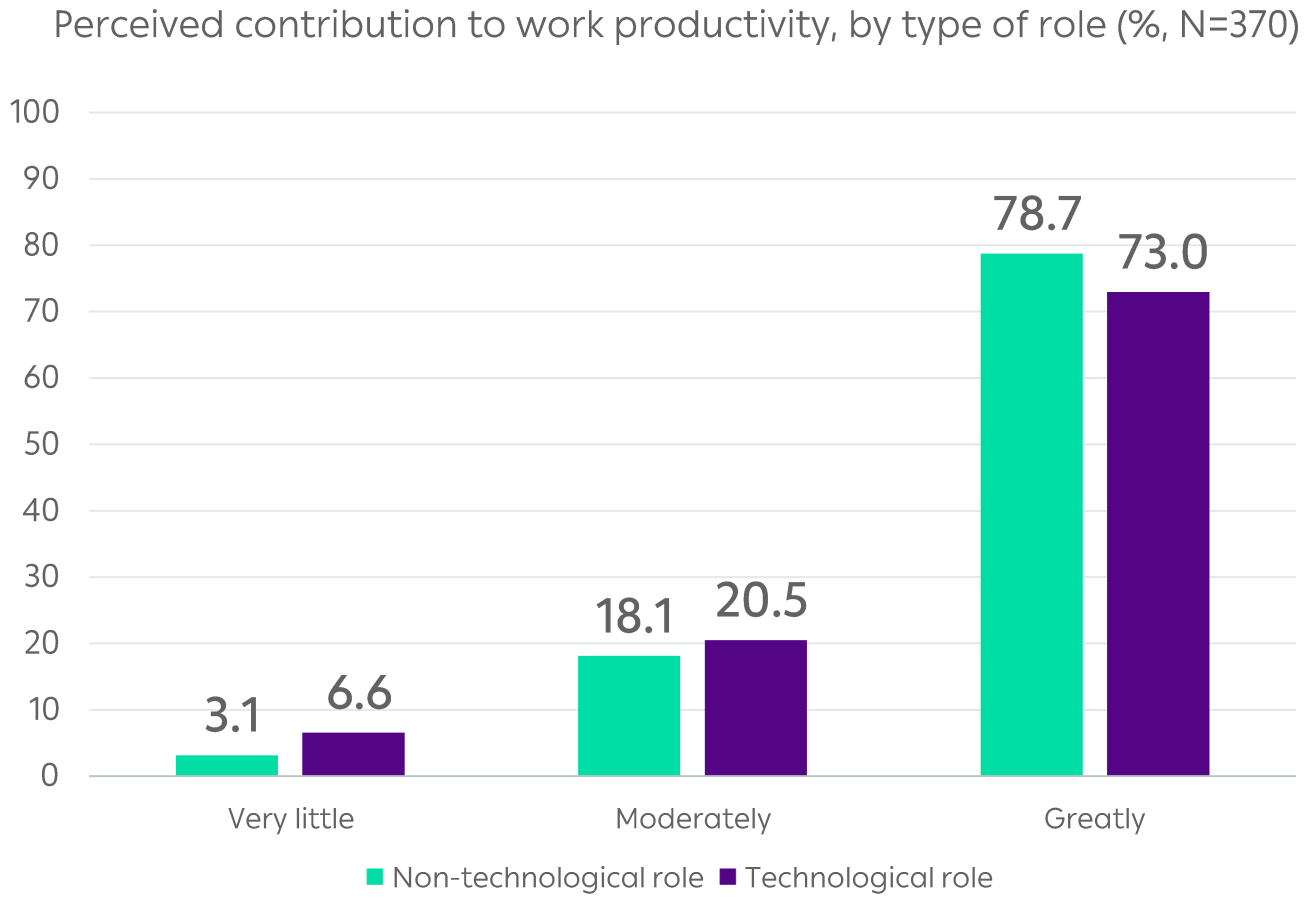
“Perceived Contribution to Work Productivity” Index

The “Perceived contribution to work productivity” index was created by averaging the following variables:

- Reduced time needed to implement tasks at work
- Improved outputs quality at work
- Cronbach’s α = **0.75** (high reliability for the index)

Most technological employees (73%) and non-technological employees (79%) report high perceived contribution to productivity.

No significant differences were found by gender, age, organizational level, or company type.



Interim Conclusions – Scope and Pattern of GenAI Tools Usage at Work

Extensive adoption of GenAI tools in daily work and task types

- Most employees report daily use of GenAI tools for at least three types of tasks
- **Technological and younger employees (25–34) tend to use GenAI tools for a wider range of tasks.** However, among technological employees, women reported more focused and less diverse use of GenAI tools compared to men

How GenAI tools are applied

- In technological roles, use is mainly for **core tasks such as coding debugging**
- In non-technological roles, use is for a variety of tasks, including coding, writing professional content, searching and collecting information, and self-learning

Types of GenAI tools in use

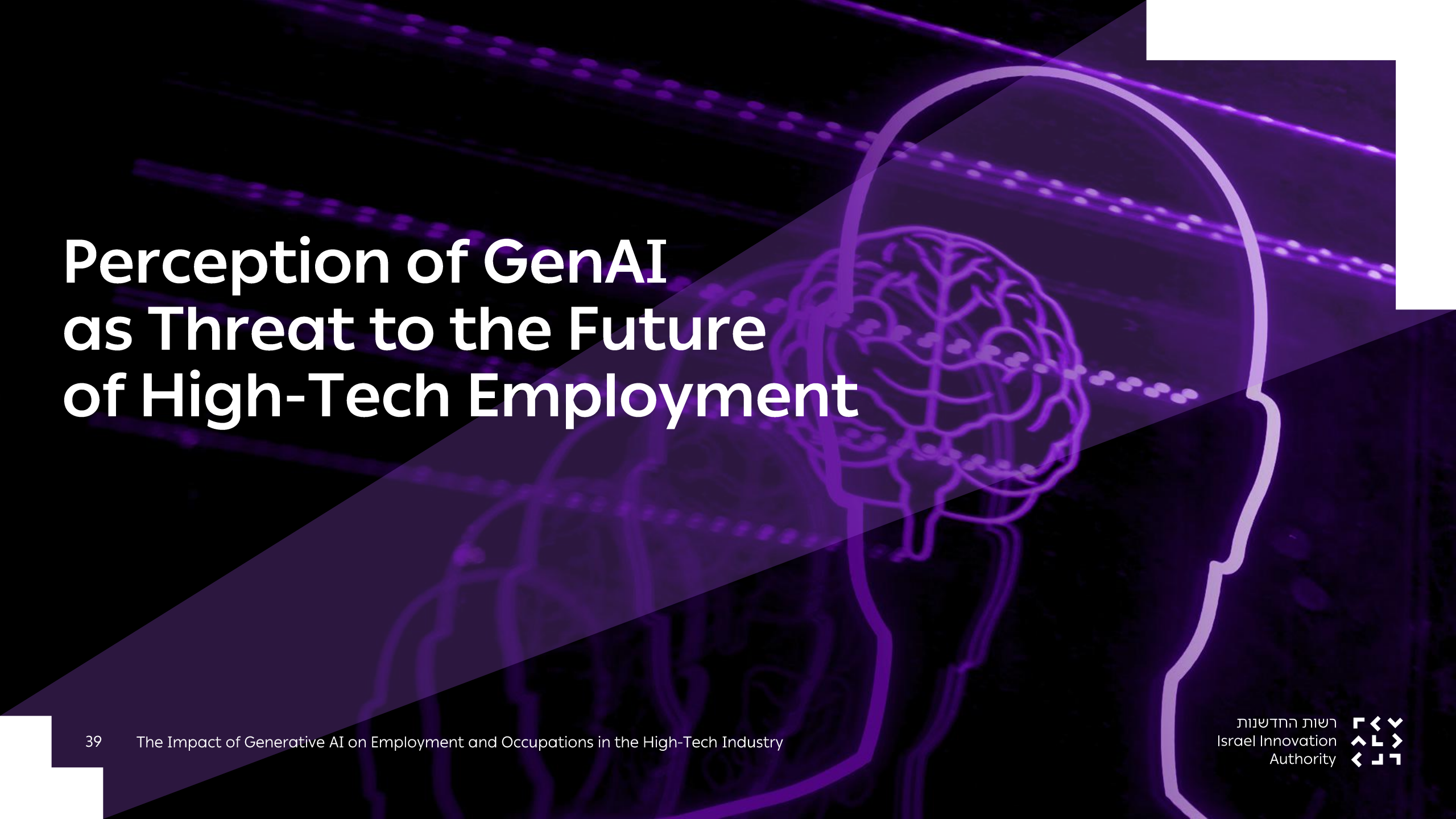
- **Multipurpose tools (such as Gemini, ChatGPT) are widely adopted among employees in general**
- Code-specific tools (such as GitHub Copilot, Cursor) are mainly used by juniors in technological roles, but non-tech workers as well
- Lower rate of code-specific tool users in startup compared to other companies

Interim Conclusions – Perceived Contribution of the Tool's Outputs Quality and Time Optimization

- **Most employees report significant improvement in output quality when assisted by GenAI tools**
- Significant correlation between perceived contribution to work quality and time savings.

- In a combined index of quality improvement and time reduction, **most employees report a high perceived contribution to productivity**
- No significant differences were found between employees groups

Perception of GenAI as Threat to the Future of High-Tech Employment



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Technological Employees Express Greater Concern About Potential Harm to Their Employment

Technological employees are more likely to perceive GenAI as a high threat to the future of employment (31%) compared to workers in non-technological roles (14%) (05.>p)

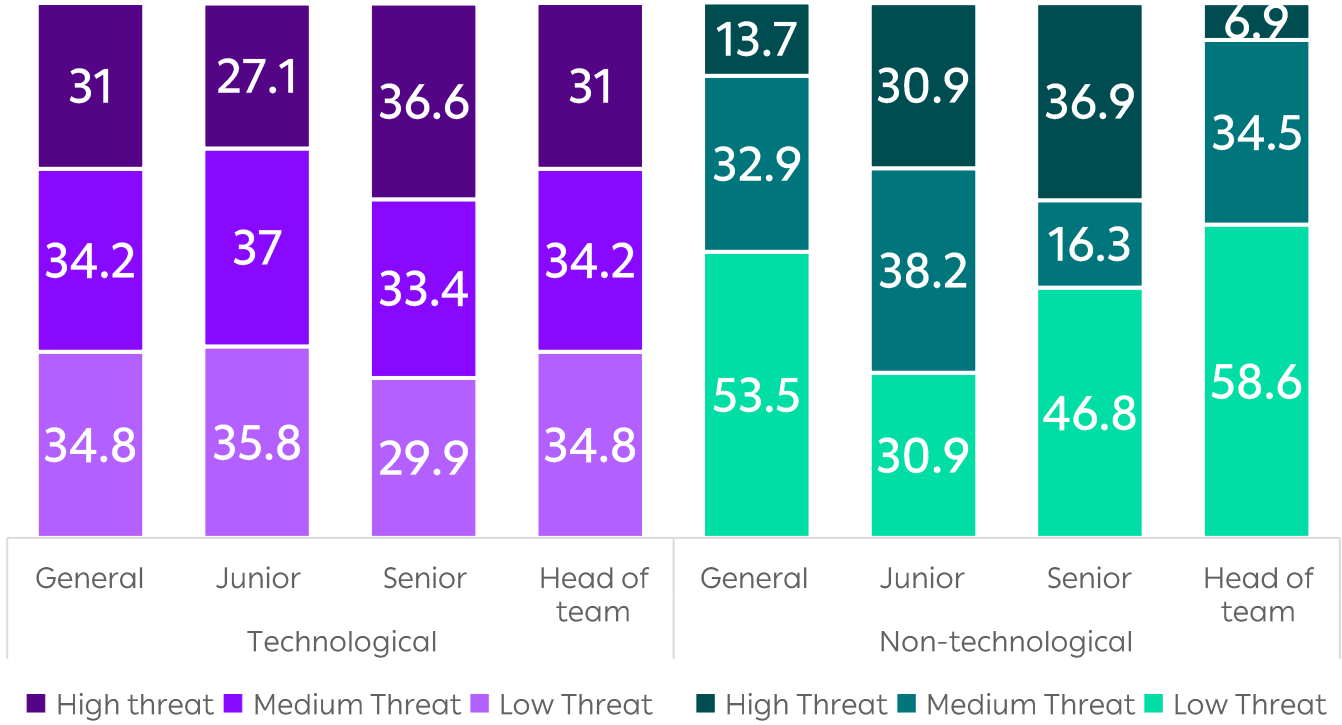
Juniors in non-technological roles report higher threat (31%) than juniors in technological roles (27%)

Seniors report higher threat than other levels (37%)

Team leaders in technological roles report a higher threat (31%) than their non-technological counterparts (7%)

Survey question: *"To what extent, in your opinion, could generative AI pose a threat to your job in the future?"*

Perception of GenAI as a threat to the future of employment, based on role and organizational level^ (%, N=304)*

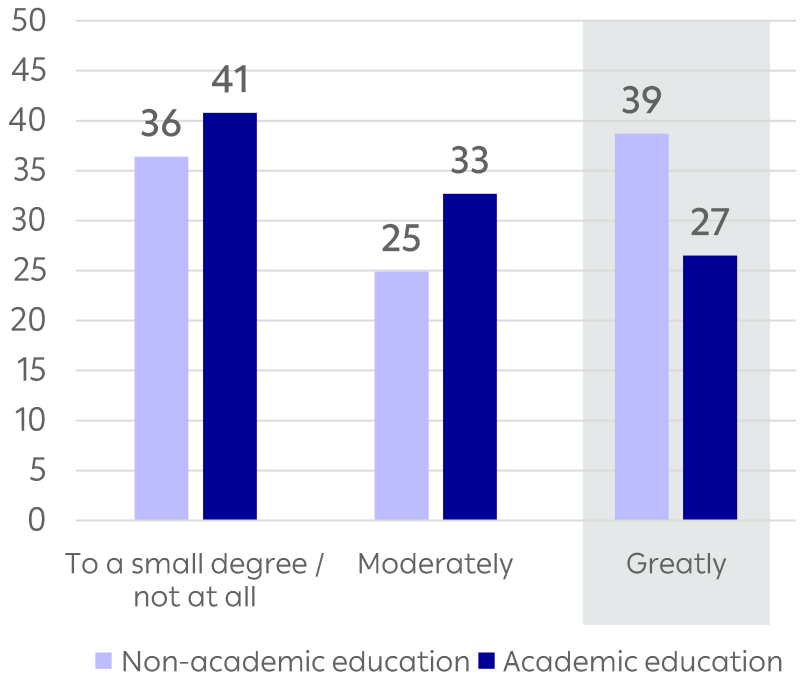


^ Does not include senior management and "other"

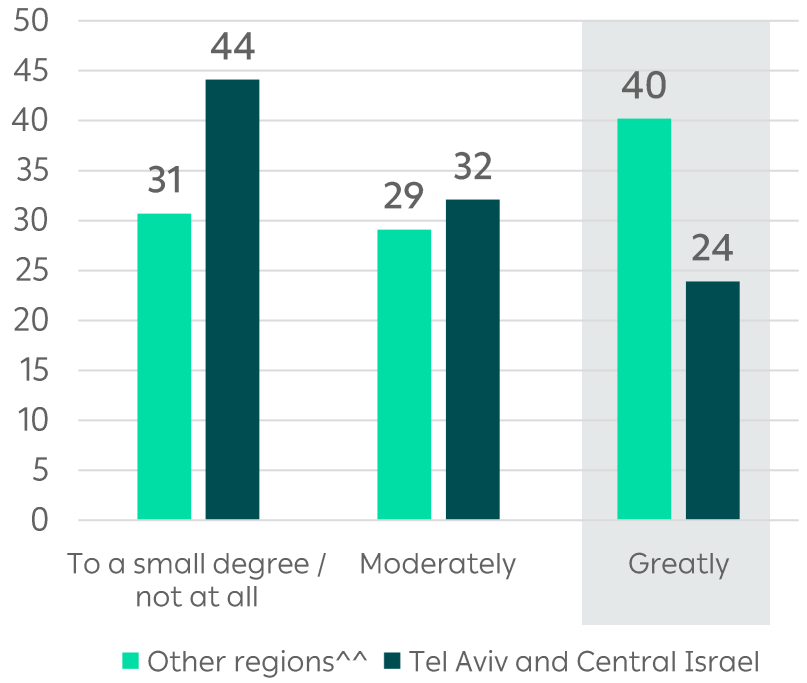
*(p < .05)

Education Level and Region of Residence Correlation to the Perceived Threat to Employment

Perception of GenAI as a threat to employment, by level of education^ (%, N=375)*



Perception of GenAI tools as a threat to employment, by region of residence, in (%, N=375)*



Academically educated employees feel less threatened than non-academic employees (39% reported feeling very threatened vs. 27%, respectively, 05.>p)

Employees in Tel Aviv and the center of Israel feel less of a threatened those in other regions (24% reported feeling very threatened vs. 40%, respectively, 05.>p)

No differences by gender

^Academic education includes bachelor's, master's, and doctoral degrees; non-academic education includes matriculation, non-academic post-secondary studies, professional certificates, or no certificate.
^^ Jerusalem, Haifa, northern Israel, southern Israel, and residing abroad

* $p < .05$

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Education Level and Region of Residence Are Correlated With the Perceived Level of Threat to Employment

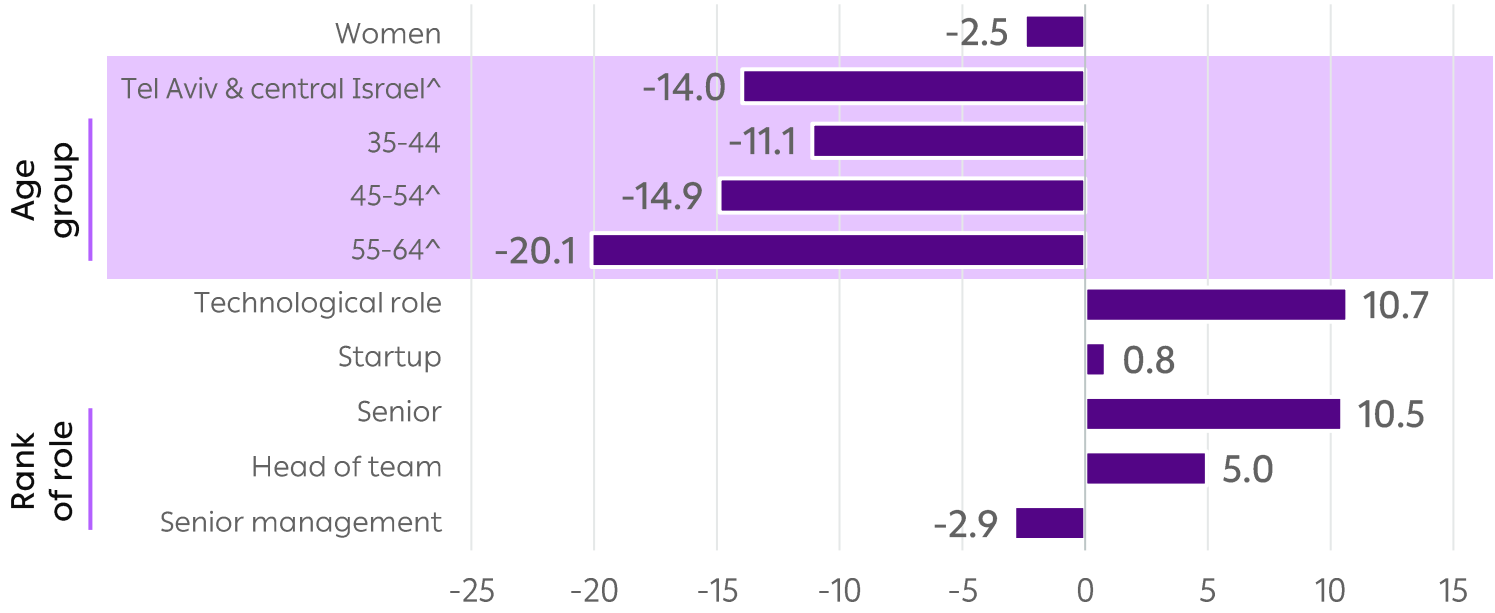
Younger employees are more likely to see GenAI as a major threat

- Employees aged 45-54 are 15% less likely to report a threat to their employment than those aged 25-34, and those aged 55-64 are 20% less likely to report a threat to their employment than those aged 25-34 (05.>p)

Employees in Tel Aviv and central Israel are less likely to feel threatened (14% lower than workers residing in the rest of the country) (05.>p)

Technological employees feel far more threatened than non-technological employees, although the differences are not significant

Factors contributing to the perception of GenAI as a strong threat to the future of employment' marginal effect on regression analysis (%, N=335)



Dependent variable: Reporting a high/very high threat to employment due to GenAI penetration.
Reference categories: Male (gender), rest of the country (residential area), 25–34 years (age group), non-tech role (role type), non-startup company (company type), and junior (rank).
^p<.05
Probit regression

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Perceptions of GenAI as an Opportunity for Career Development in High-Tech

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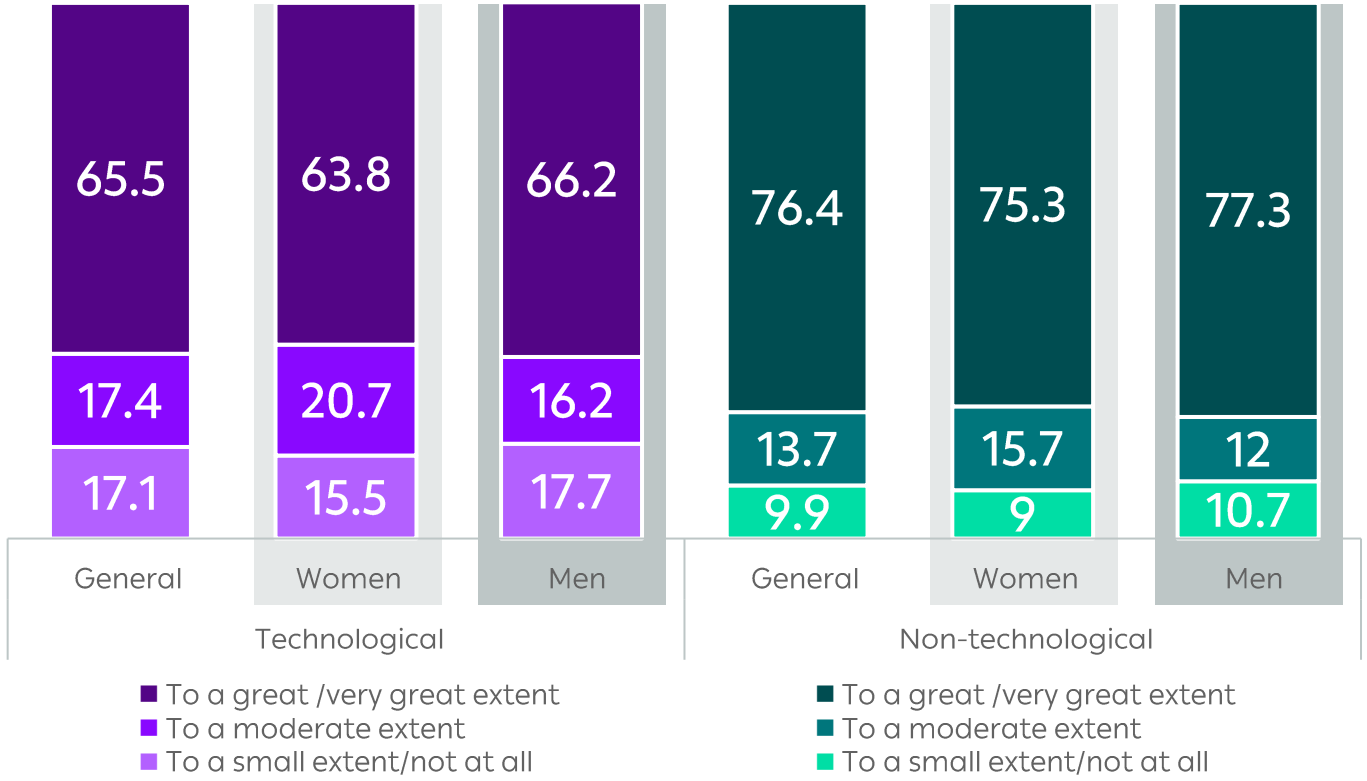
Perception of GenAI as an Opportunity for Career Development

A higher percentage of non-technological employees see GenAI as a major opportunity for professional development to a great, compared to technological workers (76% vs. 65%, respectively)

No differences were found by gender, region of residence, role type, seniority, and company type

Survey question: *"To what extent, in your opinion, could generative AI be an opportunity for the development of your work in the future?"*

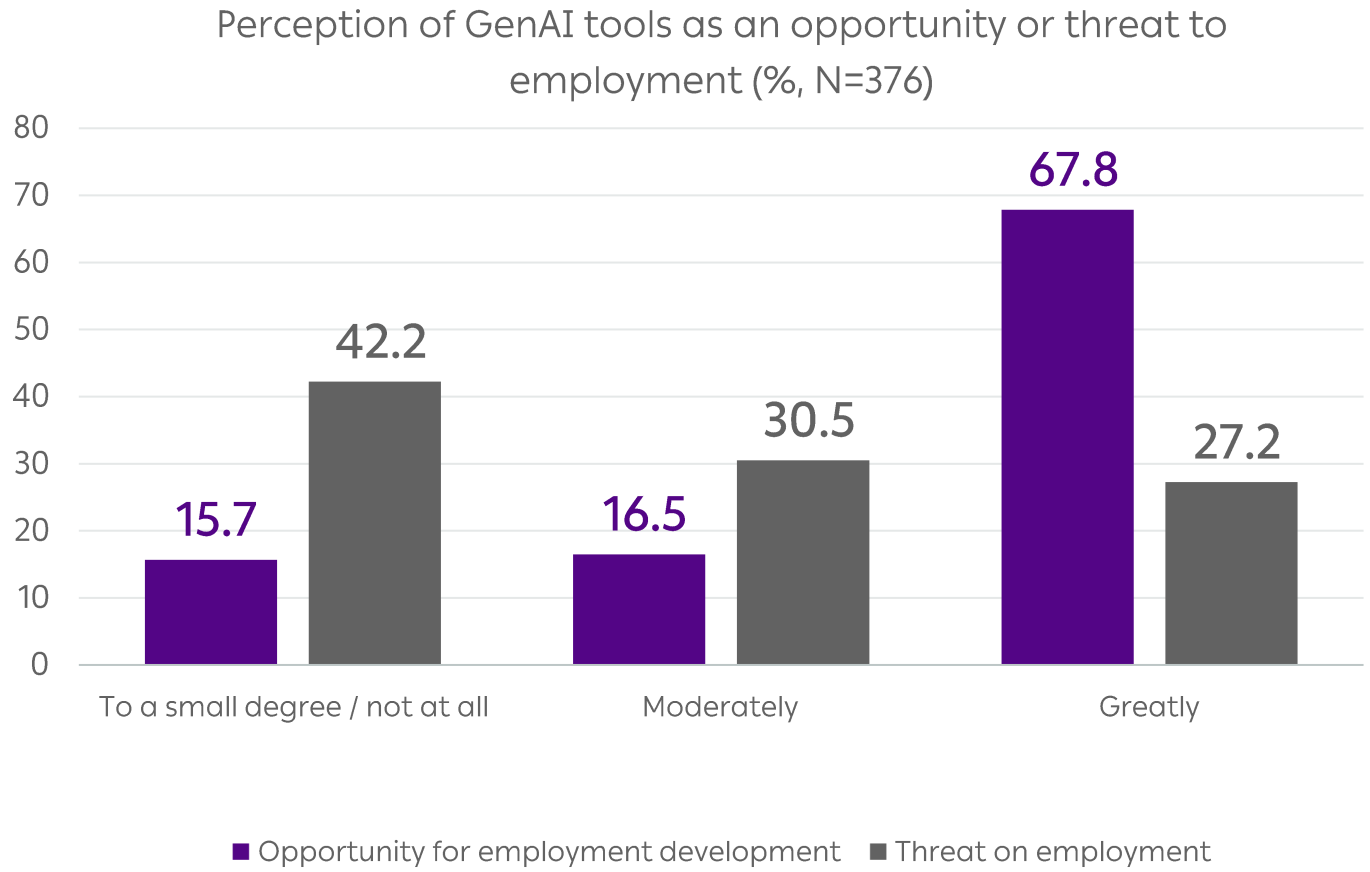
Perception of GenAI as an opportunity for career development, by role and gender (%, N=378)



The Penetration of GenAI Tools Perceived More as an Opportunity and Less as a Threat to Employment

68% see GenAI as major opportunity for career development

27% see GenAI as a major threat to employment



Survey questions:

1. **Opportunity for employment development:** To what extent, in your estimation, might generative AI constitute an opportunity for your employment development in the future?"
2. **Threat on employment:** "To what extent, in your estimation, might generative AI constitute a threat to your future employment?"

Interim Conclusions: Threat or Opportunity

- **Non-technological employees tend to see GenAI as an opportunity, while Technological employees feel more vulnerable**
  - **Among juniors, non-technological employees express a higher sense of threat** than juniors in technological roles
  - By contrast, the perception of threat among team leaders in technological roles is higher compared to their counterparts in non-technological roles
  - **Seniors in both roles report higher threat than other levels**

- **Younger employees (24-34) see GenAI as a greater threat than older employees**
- **Employees outside Tel Aviv and central Israel report higher threat**
- **Non-academic employees feel more threatened than academic employees**
- **No significant differences were observed by gender**

Summary and Insights

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Summary and Insights

- **The high-tech sector has widely adopted GenAI tools, which have become part of daily work and are driving cross-role and cross-responsibility changes:**
  - Most employees, both technological and non-technological use GenAI tools frequently and for a variety of tasks
  - Most perceive GenAI tools as improving output quality and saving time
  - With age, GenAI tool use decreases, but aside from age, there are no differences by demographic or employment characteristics
- **Non-technological employees also use code-specific GenAI tools**
  - **This may indicate blurred boundaries between the types of tools, and their contribution to non-technological employees performing tasks which require technological skills**
- **Contrary to expectations, the rate of code-specific tool users is lower in startups compared to mature and multinational companies**
- **High-tech employees are optimistic about the employment opportunities which GenAI tools bring**
  - Most view the tools as opportunities for professional improvement, streamlining and development
  - Nonetheless, junior employees, employees with academic education and residing in the geographical peripheries, perceive GenAI tools as possible threats to their future employment
- **Given the significant penetration of GenAI tools in high-tech, it is important to conduct in-depth, long-term studies to determine if GenAI tools are displacing employees and, if so, what characterizes them**
- **It is recommended to examine the adoption and assimilation processes of GenAI tools in high-tech companies, and the factors that facilitate or hinder these processes**

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