LIFT

LABORATORY OF INNOVATION AND FUTURE TRANSFORMATIONS

POLICY PAPER 2026-06-EN · NOVEMBER 2026

Generative AI: office workers on the front line

Who are the employees in the most exposed occupations in France

Antonin Bergeaud
Antoine Bertheau
Simon Bunel
Oscar Degos
Marco Guido Palladino

KEY POINTS

— The occupations most exposed to generative AI process information on screen, in accounting, administration or secretarial work. The least exposed are in construction, care and personal assistance.

— In the most exposed fifth of employees, more than six in ten are women, compared with one in two overall, and apprentices are more than one and a half times as frequent there.

— In administration and banking, clerks and technicians are much more exposed than managers. This gap stems mainly from the expertise and human contact that managerial jobs require.

— The ranking of occupations by exposure is consistent with the observed uses of generative AI. French firms report using it primarily in their support functions, such as administration and accounting.

— The LIFT dashboard that accompanies this paper tracks hires by exposure group and age, to detect changes before they appear in employment levels.

Since November 2022, the month ChatGPT was released, hires of 21-29-year-olds on open-ended contracts have fallen by 28.3% in the occupations most exposed to generative AI, compared with 7.5% in the least exposed (Bergeaud et al., 2026).[1] This paper portrays these occupations in France, using an exposure index built on the repertoire of occupations of France Travail (France's public employment service), matched with a detailed description of occupations and with administrative data on employees.[2] The most exposed occupations are office occupations, whose tasks consist of processing information on screen. They are mostly clerical and technician jobs in accounting, administration and banking. What sets them apart from more skilled jobs of the same type is mainly the expertise and the degree that the latter require. They are also more often held by women and apprentices.

The most and least exposed occupations

Exposure is measured from the 16,740 skills described in the Répertoire opérationnel des métiers et des emplois (ROME, the French repertoire of occupations) of France Travail. For each skill, a language model assesses how far generative AI can perform it on its own, which we call AI capability. This assessment is then reduced according to the tacit expertise that the skill requires and the physical presence or human contact that it involves.[3] The exposure of a profession is expressed by its percentile among employees, from 0 for the least exposed to 100 for the most exposed.

The index measures what AI could do with the tasks of an occupation, given its capabilities in spring 2026. It measures neither the actual use of AI nor its effects on employment, which depend on adoption by firms, on reorganizations and on demand. An exposed occupation may see its employment grow if lower costs expand its markets.

Among professions with at least 100,000 employees, the eight most exposed all belong to office work (Figure 1). Accounting clerks and technicians are at the 99th percentile, ahead of administrative and commercial services clerks (97th) and secretaries (94th). At the other end, childminders (1st percentile), domestic workers, masons and home care aides are among the least exposed. The former process information on screen, the latter work with materials or with people.

The threshold of 100,000 employees excludes smaller and highly exposed professions, such as interpreters and translators or journalists (90th percentile). The list therefore differs from the examples given by Bergeaud et al. (2026), who counted each profession once, regardless of its size.[4]

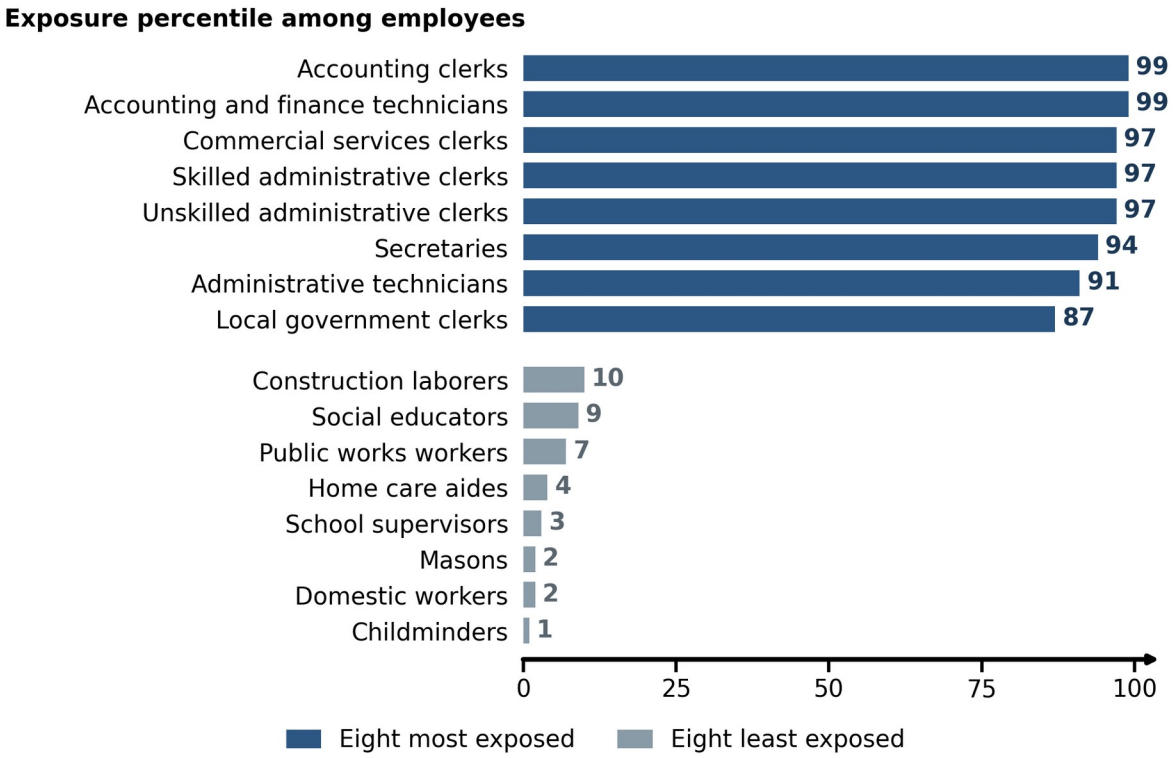
[1] This decline may also reflect the macroeconomic conditions of the period and the reorganization of work linked to remote work. Bergeaud et al. (2026) discuss these explanations.

[2] This work was carried out in collaboration with the Banque de France. The views expressed in this paper are those of the authors alone and not of the Banque de France. The data used are ROME 4.0 from France Travail, the O*NET 31.0 database, the 2022 Base tous salariés from Insee and Google's Atlas.

[3] Each skill in ROME 4.0 is scored from 0 to 5 by Claude Opus 4.7 agents, taking the capabilities of generative AI in April 2026 as the benchmark. The scores are averaged by occupational profile and by occupational family (FAP), a group of related professions defined by Dares (the labor ministry's statistics directorate). Each profession of the PCS-ESE receives the value of its family. Like the indices built for the United States (Felten, Raj and Seamans, 2021; Eloundou et al., 2024), the index covers what the technology can do with the tasks of an occupation, but it relies on a French repertoire. Its ranking is consistent with that of Bergeaud (2024). The method is detailed in Palladino et al. (2026).

[4] Professions are identified here in the PCS-ESE, the French classification of employees' occupations, rather than in the PCS (French occupational classification) used by Bergeaud et al. (2026).

Figure 1. **Exposure percentile of the most and least exposed large professions**

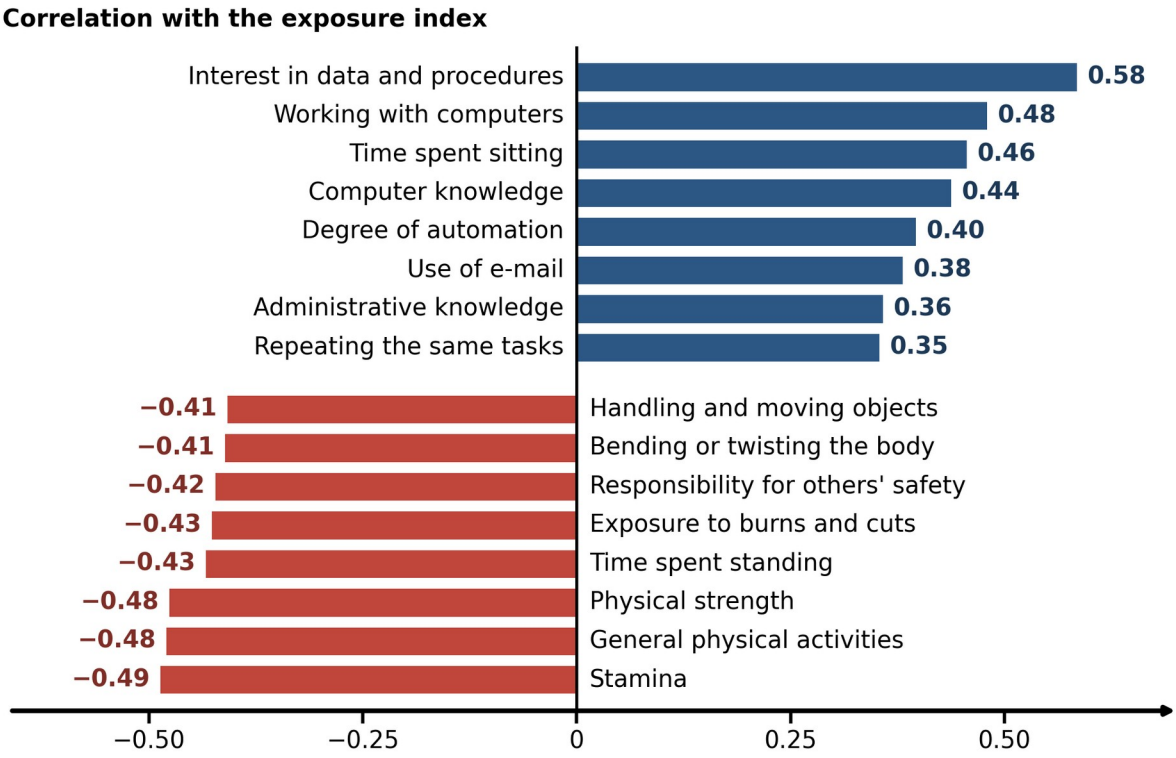


Notes: eight most exposed and eight least exposed professions among those with at least 100,000 employees. Percentile of the profession among employees, from 0 (least exposed) to 100 (most exposed). As the index is computed by occupational family, several professions share the same value. In eighth place, administrative agents of local authorities share the 87th percentile with administrative assistants of the central government and of local authorities. Shortened labels, which correspond in the PCS-ESE to skilled employees of accounting or financial services (543B), supervisors and technicians of financial or accounting services (461D), administrative agents of local authorities (524C), unskilled structural construction workers (681A), skilled public works workers of the central government and local authorities (621F), skilled masons (632A) and supervisors and teaching assistants of educational establishments (422E). Sources: France Travail, ROME 4.0; Insee, Base tous salariés 2022; authors' calculations.

To describe the content of these occupations, we match ROME profiles with the O*NET database of the US Department of Labor, which describes each occupation by several hundred characteristics.[5] The characteristics most associated with exposure are those of organized office work. Interest in data processing and in applying procedures (correlation of 0.58) and working with computers (0.48) come first (Figure 2). At the other end, physical stamina and strength are the most associated with low exposure. These relationships hold, somewhat weaker, among occupations of the same broad ROME domain (0.45 and 0.40).

[5] Comparisons with O*NET cover 1,368 ROME profiles matched to US occupations through crosswalks that go through the European ESCO classification. Each profile counts as one observation. ESCO associates skills with each occupation, without the importance, frequency and work-context scales that O*NET assigns to its characteristics. These correlations describe associations, without causal interpretation.

Figure 2. **Correlation between the exposure index and a selection of occupational characteristics**



Notes: correlation between the exposure index of ROME profiles and a selection of O*NET characteristics among the most positively and the most negatively associated (225 characteristics studied). Unweighted profiles. Sources: France Travail, ROME 4.0; O*NET 31.0; authors' calculations.

The most exposed occupations are often those that computerization has already transformed. The degree of automation already reached in a job is among the characteristics most associated with exposure (0.40). Generative AI also extends to cognitive tasks that traditional software did not handle, because they could not be codified into explicit rules, such as reading, writing or summarizing (Ide and Talamàs, 2025). The distinction between routine and non-routine tasks (Autor, Levy and Murnane, 2003), which explained much of the difference in exposure across occupations at the start of the digital revolution, is therefore not enough to describe this recent exposure. A repetitive task performed on screen, such as entering or checking data, is highly exposed, unlike a repetitive task on a production line or in a warehouse.[6]

The profile of employees in exposed occupations

To describe employees, we use the Base tous salariés of Insee (the national statistics institute), an exhaustive administrative source that covers all salaried jobs. We consider employees present on December 31, 2022, before generative AI spread, described by their main job. Employees are divided into five groups of equal size according to the exposure of their profession, each profession weighing according to its number of employees (Table 1).[7] Each group comprises about 4.5 million employees. This split differs from that of Bergeaud et al. (2026), where each quintile grouped the same number

[6] Among the third of profiles with the highest computer use, the average index rises from 0.50 for the quarter where repetitive motions are least frequent to 0.83 for the quarter where they are most frequent. Among the least computerized third, it goes from 0.32 to 0.28. Repetitive motions: O*NET variable "Spend Time Making Repetitive Motions", which includes data entry.

[7] Base tous salariés 2022 from Insee, employees present on December 31, public sector included (22.7 million), described by their main job. Apprentices are identified by job type, the public sector by the employer's legal category, size by the firm's headcount on December 31 and people born abroad by their place of birth.

of professions, regardless of their size. The most exposed groups therefore do not cover exactly the same occupations in the two papers.[8]

Table 1. Profile of the five groups of employees, from least exposed (Q1) to most exposed (Q5)

	Q1	Q2	Q3	Q4	Q5	All
Women (%)	52.4	47.4	45.3	39.8	62.7	49.5
Average age (years)	42.8	40.5	42.5	42.4	40.5	41.7
Under 30 (%)	18.3	24.7	18.1	16.8	23.3	20.3
Born abroad (%)	17.5	15.5	17.5	11.0	11.3	14.5
Net hourly wage (€)	13.9	15.1	16.3	21.6	16.2	16.7
Annual hours	1,519	1,522	1,554	1,642	1,564	1,560
Part-time (%)	15.7	15.5	15.1	8.6	11.6	13.2
Open-ended contracts (%)	50.9	58.5	69.1	88.8	76.4	68.8
Civil servants (%)	27.9	19.5	16.5	4.0	10.3	15.6
Fixed-term contracts (%)	10.7	13.3	10.1	5.3	10.9	10.1
Apprentices (%)	2.7	4.4	2.5	2.0	5.4	3.4
Public sector (%)	40.2	27.5	21.1	4.3	16.7	21.9
Firms with fewer than 10 employees (%)	21.9	15.6	17.8	11.8	15.2	16.4
Firms with 250 employees or more (%)	44.6	43.6	43.7	49.9	47.8	45.9

Notes: employees present on December 31, 2022, in their main job, public sector included, divided into five groups of equal size according to the exposure index of their profession. Each group comprises between 4.4 and 4.8 million employees, out of 22.7 million, as a profession is never split between two groups. Percentages are relative to the number of employees in the group, civil servants being counted separately from open-ended and fixed-term contracts. Net hourly wage: net wage divided by the number of hours. Size: firm headcount on December 31. How to read: in the most exposed fifth of employees, 62.7% are women, compared with 49.5% overall. Source: Insee, Base tous salariés 2022; authors' calculations.

The most exposed fifth of employees is 63% female, compared with 50% overall and less than 53% in each of the other groups. The International Labour Organization also highlights the high exposure of administrative jobs, which account for a large share of female employment (Gmyrek, Berg and Bescond, 2023). People under 30 make up 23% of employees in the most exposed group, compared with 20% overall. Their share is nevertheless higher in the second group, where it reaches 25%.

The net hourly wage rises with exposure up to the fourth group (€21.6), where managers are numerous, then falls in the fifth, dominated by office clerks, to €16.2, close to the average for all employees (€16.7). The most exposed employees are more often on open-ended contracts than the least exposed, at 76% compared with 51%.[9] Apprenticeship is also more frequent there, at 5.4% of employees, compared with 3.4% on average.

[8] The index before conversion into percentiles, from 0 to 5, has a mean of 0.46 and a maximum of 2.09 across the 1,584 profiles, which makes it hard to read. Comparisons between occupational profiles (Figures 2, 3 and 5) are unweighted.

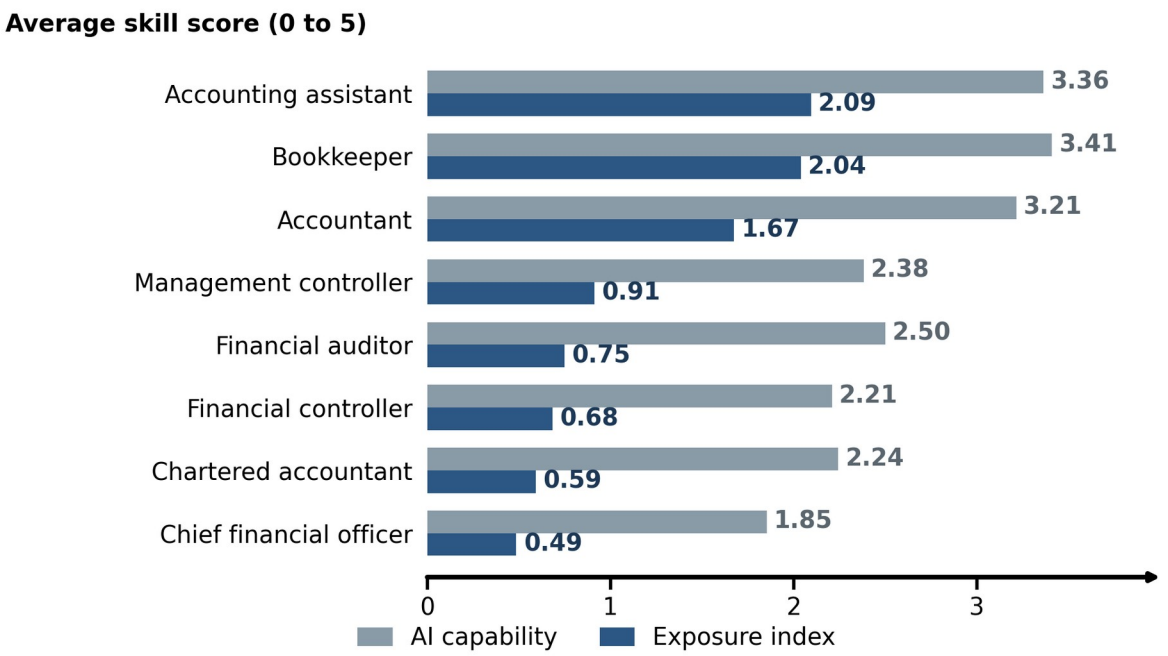
[9] Open-ended contracts and civil servants account for 84% of employees present on December 31, 2022 (Table 1). Insee's Labor Force Survey (enquête Emploi) gives 83% for the same year, relating the 72% of employed people on open-ended contracts or civil servants to the 87% who are employees (Insee, 2023).

Employees in exposed occupations are also more numerous in large employment areas, where firms' administrative, financial and IT functions are concentrated. When employees are divided into five groups according to the size of their employment zone, those in the smallest zones are on average 5.3 percentile points below the national average, and those in Paris and Lyon 7.6 points above.[10] These gaps remain small compared with those that separate occupations.

Exposure by skill level

Accounting occupations use computers with comparable intensity, but their exposure differs sharply (Figure 3). The index of the accounting assistant is about four times higher than that of the chief financial officer. Between the accounting assistant and the chartered accountant, about one third of the index gap comes from the capability of AI to perform their tasks on its own, and two thirds from the expertise and human contact required.[11] This split depends on the construction of the index, which reduces the exposure of tasks requiring expertise or human intervention.

Figure 3. AI capability and exposure index of accounting occupations



Notes: average score of the skills of each ROME profile. AI capability: score for the autonomy with which AI can perform each skill on its own, before any reduction. Exposure index: this score reduced according to the tacit expertise and the physical presence or contact that the skill requires. Computer use between 4.42 and 4.54 out of 5 for the eight profiles. Sources: France Travail, ROME 4.0; O*NET 31.0; authors' calculations.

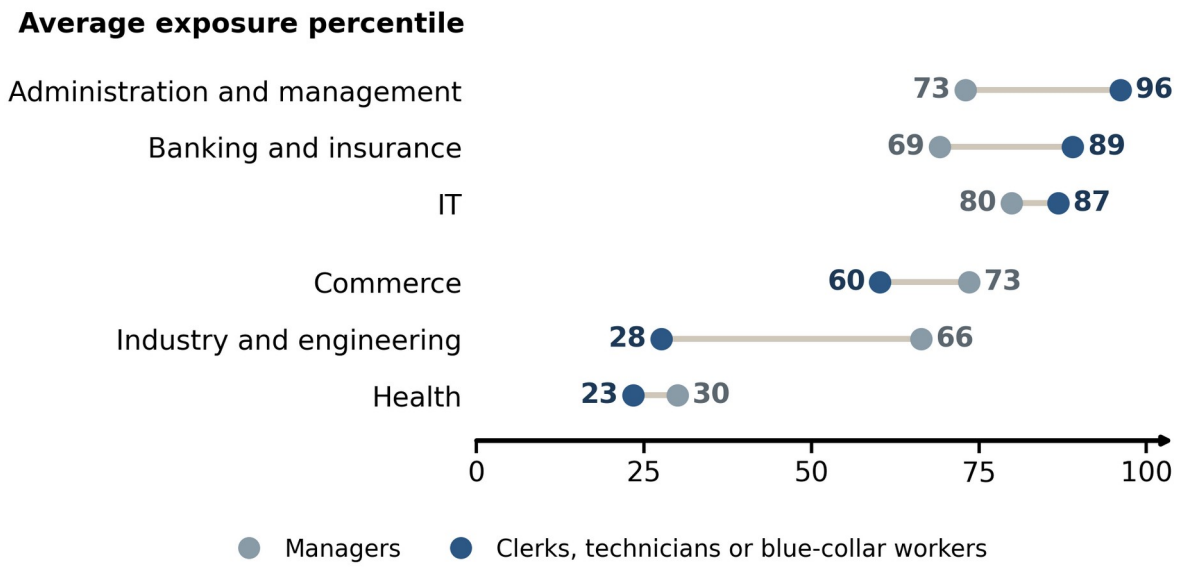
[10] Insee 2020 employment zones, by place of work. Zones are ranked by their number of employees and divided into five groups that each comprise about one fifth of employees. The correlation between the average percentile of a zone and the logarithm of its number of employees reaches 0.75.

[11] On a scale from 0 to 5, AI capability reaches 3.36 for the accounting assistant and 2.24 for the chartered accountant, and tacit expertise 1.8 and 3.6. The index ranges from 0.49 for the chief financial officer to 2.09 for the accounting assistant. Applied to all profiles, the same decomposition attributes nearly two thirds of the gaps between broad domains of the repertoire (the office versus the construction site) to AI capability, and slightly more than half of the gaps between occupations of the same subdomain to expertise and contact.

The same hierarchy is found in the other families of office occupations (Figure 4).[12] In business administration and management, clerks are on average at the 96th percentile and managers at the 73rd. The gap is of the same order in banking and insurance (89th and 69th), and smaller in IT (87th for technicians, 80th for engineers and managers).

Outside the office, the hierarchy is reversed. In commerce, clerks, who are in direct contact with customers, are less exposed than managers (60th and 73rd percentiles). In industry, blue-collar workers are much less exposed than engineers and technical managers (28th and 66th).

Figure 4. Exposure percentile of managers and of clerks, technicians or blue-collar workers, by occupational family



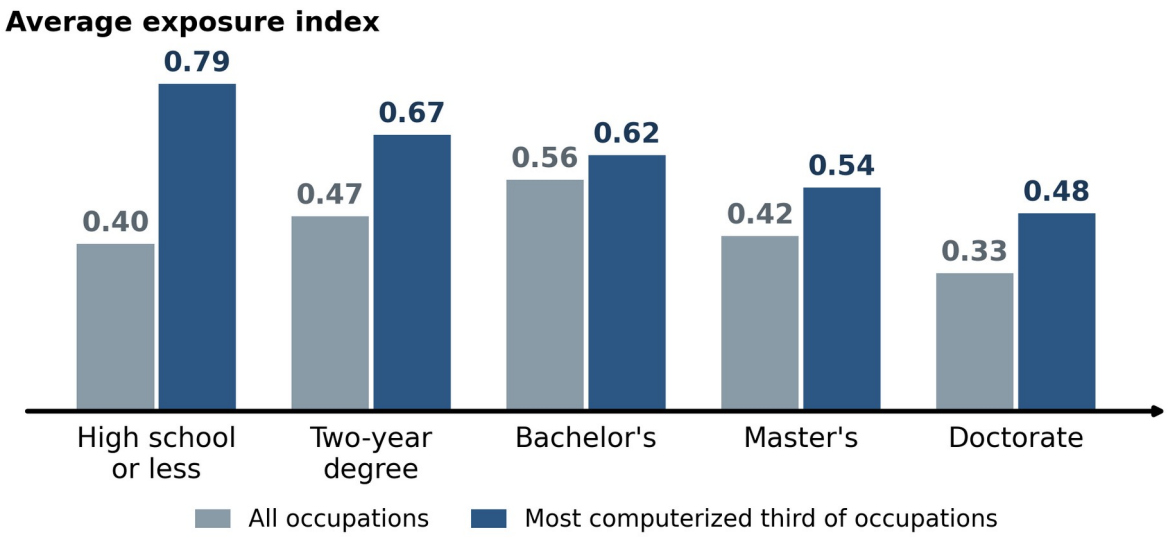
Notes: average exposure percentile, among employees, of the professions of each level, weighted by the number of employees. Clerks, technicians or blue-collar workers: clerks (administration, banking, commerce, health), technicians (IT) or blue-collar workers (industry). Other intermediate occupations are not shown. Sources: France Travail, ROME 4.0; Insee, Base tous salariés 2022; authors' calculations.

In office occupations, clerks are younger, more often women and less well paid than managers. In administration and management, they are 40 years old on average, compared with 44 for managers, 80% are women, compared with 56% of managers, and their net hourly wage is €13.1, compared with €29.7. IT is an exception, as only 18% of its technicians are women.

Among the most computerized occupations, those that require more education are less exposed (Figure 5). The average index of those requiring at most the baccalauréat (the French high school diploma) is about 1.7 times higher than that of occupations requiring a doctorate. This difference stems mainly from the expertise required, while AI capability varies little with the level of education. Across all occupations, the relationship is bell-shaped, because occupations requiring few qualifications are often manual.

[12] Levels defined from the PCS, from managers to clerks, technicians or blue-collar workers. Administration and management: 372 and 373, then 541 to 543. Banking and insurance: 376, then 545. IT: 388, then 478. Commerce: 374 and 375, then 551 to 556. Industry and engineering: 380 to 387, then blue-collar workers 62, 63, 67 and 68. Health: 311 and 344, then 526. Averages weighted by the number of employees.

Figure 5. **Average exposure index by required degree**



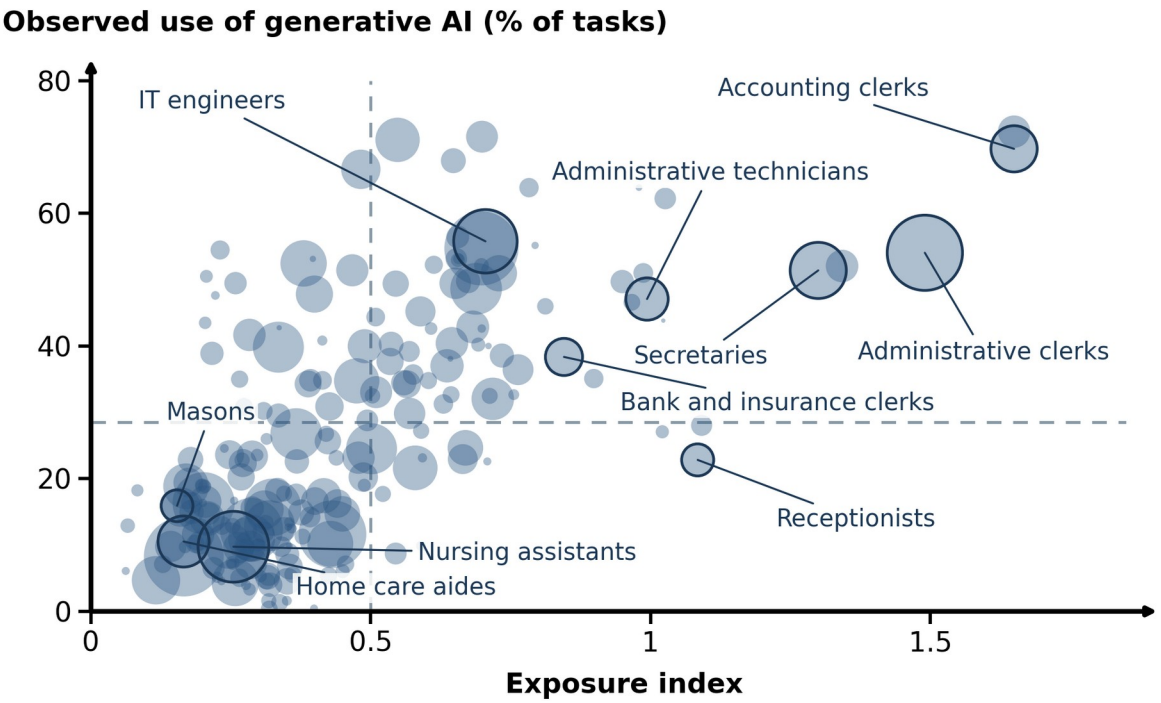
Notes: average exposure index of ROME profiles by the level of education most often required in the corresponding US occupations (O*NET, "Required Level of Education" scale, grouped into five levels). Doctorate: including long professional degrees, as in medicine or law. 1,077 profiles with data, including 364 in the third of profiles with the highest computer use. The level required in the United States may differ from the degree held by employees in France. Sources: France Travail, ROME 4.0; O*NET 31.0; authors' calculations.

Exposure and observed uses of AI

We compare the index with two data sources on AI use. The first is the Atlas published by Google, which links 14.6 million conversations with Gemini, collected worldwide in April 2026, to the tasks of US occupations (Iscenko et al., 2026).[13] Across occupational families, the correlation between the index and observed use reaches 0.71 when each family is weighted by its number of employees (Figure 6). It remains 0.68 without the five most exposed administrative families, which shows that the relationship does not rest only on a few highly exposed families. Accounting clerks and secretaries combine high exposure and high use, nursing assistants, home care aides and masons low exposure and low use.

[13] Google's Atlas (AI & Economy Atlas, version 1.0) measures saturation, that is, the share of an occupation's tasks for which at least 25 distinct users turned to Gemini. Each conversation is linked to a task of the US O*NET classification, regardless of the user's occupation. We convert these data to the PCS using a crosswalk between SOC 2018 and PCS 2003, then aggregate them by occupational family, weighting by employees. As users are spread across the world, the gaps between the two measures may also reflect differences between countries.

Figure 6. **Exposure index and observed use of generative AI, by occupational family**



Notes: each circle represents an occupational family, with an area proportional to its number of employees. Observed use: share of the occupation's tasks for which at least 25 distinct users turned to Gemini in April 2026, converted from the US classification to the PCS, then aggregated by family. Dashed lines show averages weighted by employees. Correlation of 0.64 across families, 0.71 when weighted by employees. Sources: France Travail, ROME 4.0; Google, AI & Economy Atlas; Insee, Base tous salariés 2022; authors' calculations.

The two measures diverge for some skilled occupations with a strong judgment component, such as managers of large firms, managers in social and educational work or employed pharmacists. The uses associated with their tasks are high, whereas the index ranks them as moderately or weakly exposed. The index indeed reduces the exposure of tasks that require expertise or human contact, whereas the Atlas records all uses of AI, including when it assists the worker. This gap is consistent with a complementary use of AI, but does not make it possible to distinguish assistance from substitution.

The second source covers French firms. According to the Banque de France survey of spring 2026, two thirds of firms with 20 or more employees use generative AI. Three quarters of adopting firms use it first in their support functions, such as administration, finance and accounting or marketing, compared with 14% in production (Genre and Parpais, 2026).[14] These are the functions where the occupations that the index ranks among the most exposed are concentrated.

Implications for training and for monitoring hiring

In office occupations, clerical and technician jobs notably make it possible to learn a trade through practice, and some of them lead to more skilled jobs. If AI takes over a growing share of their tasks, firms could reduce hiring at this level or rethink the training of employees at the start of their careers. A lasting decline in such hiring could eventually reduce the number of experienced employees, because part of the skills is acquired through practice alongside more senior colleagues (Garicano and Rayo, 2025; Ide, 2025).

[14] Survey conducted from February 25 to April 3, 2026 among some 7,000 firms. It covers manufacturing, construction and non-financial market services, excluding retail and wholesale trade, and therefore excludes banking and insurance, which include several of the most exposed occupations. By main area of use, sales and customer relations and administrative management each account for about 28% of adopting firms, and accounting and financial management for 13%.

Work-study programs are particularly present in the most exposed occupations. Monitoring hires at the end of these contracts would show whether they continue to offer lasting access to these occupations. For employees already in the job, training in the use of AI is another issue, because 69% of French workers receive from their employer neither encouragement, nor tools, nor training in AI, compared with 44% in the United States (Bick et al., 2026).

Monitoring hires can reveal changes that are not yet visible in employment levels. The dashboard that accompanies this paper presents, for each occupation and each employment zone, exposure and the profile of employees. It also tracks hires by exposure group and age (heclift.github.io/website/ai-trackers/metiers-exposes/). These indicators will make it possible to monitor access to exposed occupations, without being sufficient on their own to attribute the observed changes to AI.

References

Autor, D. H., F. Levy and R. J. Murnane (2003). "The Skill Content of Recent Technological Change: An Empirical Exploration". Quarterly Journal of Economics, 118(4), 1279-1333. https://doi.org/10.1162/003355303322552801

Bergeaud, A. (2024). « Exposition à l'intelligence artificielle générative et emploi : une application à la classification socio-professionnelle française ». LIFT Working Paper 2024-01. https://heclift.github.io/website/pubs/ai-exposure/

Bergeaud, A., A. Bertheau, S. Bunel, O. Degos and M. G. Palladino (2026). « IA générative : un gel des embauches de jeunes dans les métiers exposés ». LIFT Policy Paper 2026-02. https://heclift.github.io/website/pubs/emploi-jeunes/

Bick, A., A. Blandin, D. J. Deming, N. Fuchs-Schündeln and J. Jessen (2026). "Mind the Gap: AI Adoption in Europe and the U.S.". NBER Working Paper 34995. https://doi.org/10.3386/w34995

Eloundou, T., S. Manning, P. Mishkin and D. Rock (2024). "GPTs are GPTs: Labor market impact potential of LLMs". Science, 384(6702), 1306-1308. https://doi.org/10.1126/science.adj0998

Felten, E., M. Raj and R. Seamans (2021). "Occupational, industry, and geographic exposure to artificial intelligence: A novel dataset and its potential uses". Strategic Management Journal. https://doi.org/10.1002/smj.3286

Garicano, L. and L. Rayo (2025). "Training in the Age of AI: A Theory of Career Viability". CEPR Discussion Paper 20634. https://ideas.repec.org/p/cpr/ceprdp/20634.html

Genre, V. and L. Parpais (2026). « L'IA s'installe dans les entreprises françaises : une diffusion rapide, mais des gains de productivité encore limités ». Bulletin de la Banque de France, 266/1, September-October. https://www.banque-france.fr/system/files/2026-09/BDF266-1_IA-et-entreprises_web.pdf

Gmyrek, P., J. Berg and D. Bescond (2023). "Generative AI and jobs: A global analysis of potential effects on job quantity and quality". ILO Working Paper 96. https://doi.org/10.54394/FHEM8239

Ide, E. (2025). "Automation, AI, and the Intergenerational Transmission of Knowledge". arXiv:2507.16078. https://arxiv.org/abs/2507.16078

Ide, E. and E. Talamàs (2025). "Artificial Intelligence in the Knowledge Economy". Journal of Political Economy, 133(12), 3762-3800. https://doi.org/10.1086/737233

Insee (2023). « Statuts d'emploi ». Emploi, chômage, revenus du travail, Insee Références, 2023 edition, sheet 1.4. https://www.insee.fr/fr/statistiques/fichier/7456873/ECRT2023-F4.pdf

Iscenko, Z., S. Strand et al. (2026). "Google's AI & Economy ATLAS v1.0: Mapping Gemini Usage in the Economy". Google AI & Economy Research Program, July. https://ai.google/static/documents/GoogleATLASv1.pdf

Palladino, M. G., A. Bergeaud, A. Bertheau, S. Bunel and O. Degos (2026). « Exposition des métiers à l'IA générative, adoption par les entreprises et dynamiques du marché du travail en France ». LIFT Working Paper 2026-02. https://heclift.github.io/website/pubs/exposition-ia-emploi/

Data sources: France Travail, ROME 4.0; O*NET 31.0; Insee, Base tous salariés; Google, AI & Economy Atlas; Banque de France monthly business survey.

Authors

Antonin Bergeaud, HEC Paris, LIFT, CEP and CEPR.
Antoine Bertheau, Banque de France, RFBerlin and IZA@LISER.
Simon Bunel, INSEAD and École normale supérieure.
Oscar Degos, HEC Paris and LIFT.
Marco Guido Palladino, Banque de France and IZA@LISER.

About this translation

This document is a machine translation of LIFT Policy Paper 2026-06, « IA générative : les employés de bureau en première ligne », published in French in November 2026 and available at heclift.github.io/website. The translation was kept as close as possible to the original and reviewed by the authors. In case of discrepancy, the French version prevails.

About LIFT

The Laboratory of Innovation and Future Transformations (LIFT) is a research laboratory at HEC Paris that studies the impact of artificial intelligence on firms, employment, innovation and growth. It brings together academic researchers and practitioners across six research areas, produces original data and regularly publishes notes, studies and indicators for public and private decision-makers.

LIFT publications

Policy Papers present empirical results and their implications for public and private decision-making in a short format. Working Papers present research in progress. LIFT trackers provide regularly updated indicators on the diffusion of AI. The views expressed are those of the authors alone and do not necessarily reflect those of their employers and institutions or of the laboratory's partners.

How to cite

Bergeaud, A., A. Bertheau, S. Bunel, O. Degos and M. Palladino (2026), "Generative AI: office workers on the front line", LIFT Policy Paper 2026-06-EN, HEC Paris.

Contact

LIFT – HEC Paris, 1 rue de la Libération, 78351 Jouy-en-Josas
lift@hec.fr · heclift.github.io/website

Published under a Creative Commons CC BY 4.0 license. Reproduction is permitted with attribution.