

▶ **Generative AI and jobs:**
A global analysis of potential
effects on job quantity and
quality

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Methodology

ISCO-08 Structure of occupations and tasks used in the study

ISCO-08 1-digit code	ISCO-08 1-digit full label	Nr of distinct 1-digit codes	Nr of distinct 2-digit codes	Nr of distinct 3-digit codes	Nr of distinct 4-digit codes	Total ISCO tasks	Total GPT tasks
0	Armed forces occupations	1	3	3	3	0	30
1	Managers	1	4	11	31	236	310
2	Professionals	1	6	27	92	751	920
3	Technicians and associate professionals	1	5	20	84	580	840
4	Clerical support workers	1	4	8	29	163	290
5	Service and sales workers	1	4	13	40	269	400
6	Skilled agricultural, forestry and fishery workers	1	3	9	18	141	180
7	Craft and related trades workers	1	5	14	66	503	660
8	Plant and machine operators, and assemblers	1	3	14	40	280	400
9	Elementary occupations	1	6	11	33	200	330
	Total	10	43	130	436	3,123	4,360

Task-level predictions

ISCO-08	Tasks ISCO	Tasks predicted by GPT4
2341	<p>Preparing daily and longer-term lesson plans in accordance with curriculum guidelines;</p> <p>Instructing children individually and in groups, using various teaching methods and materials (e.g. computers, books, games), adapting to children's varying needs;</p> <p>Maintaining discipline and good working habits in the classroom;</p> <p>Planning and conduct activities with the children such as sporting activities, concerts and excursions;</p> <p>Assigning and grading class work and homework;</p>	<p>Develop lesson plans and daily schedules for a variety of subjects at the primary education level;</p> <p>Teach basic skills such as reading, writing, and arithmetic to students using various teaching methods and tools;</p> <p>Establish and maintain classroom rules to create a positive and structured learning environment;</p> <p>Collaborate with other teachers and school staff to organize events, activities, and educational programs;</p> <p>Provide individualized attention and support to students who are struggling or require additional help;</p>

Task-level scoring

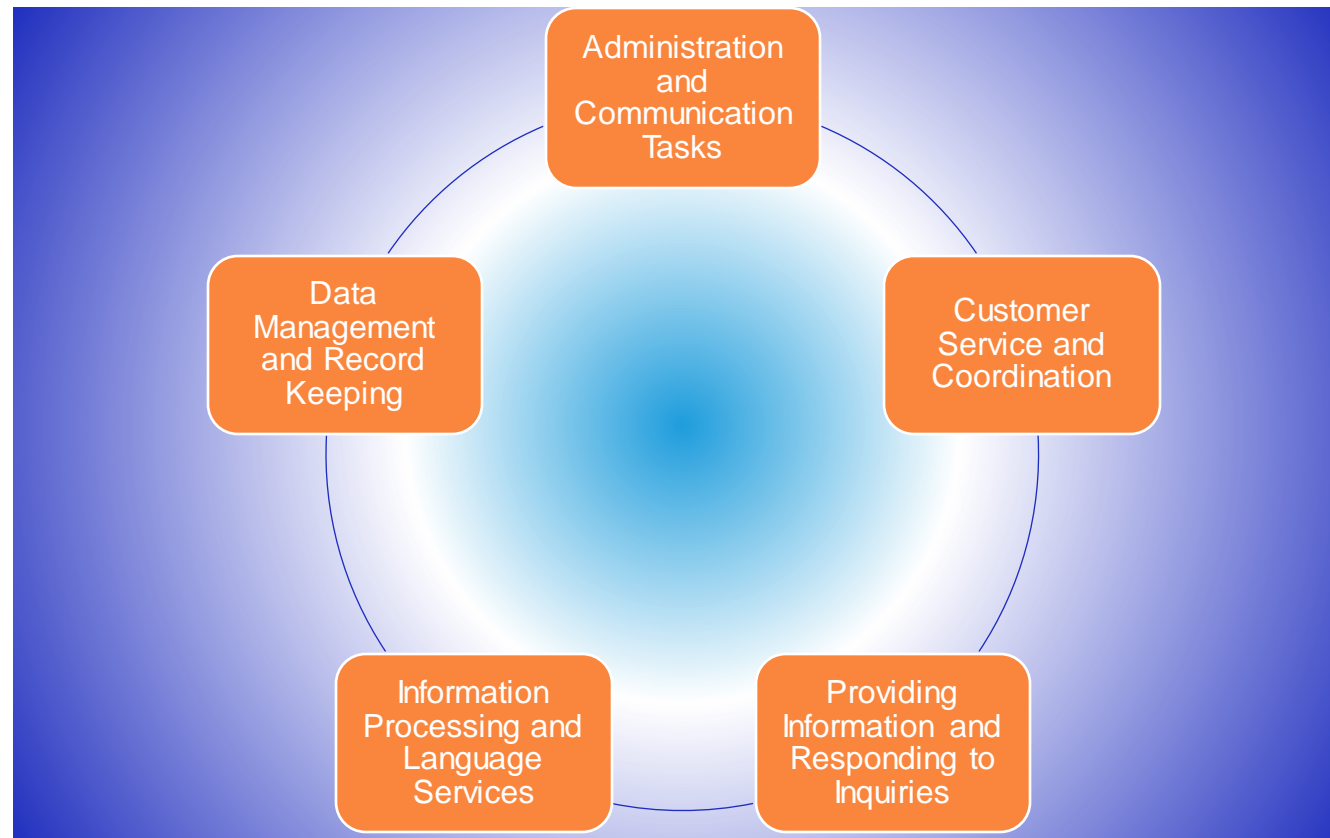
Python API request (GPT-4):

```
{“role”: “system”, “content”: “You are a skills and AI specialist. ” + “You will provide a score of potential automation with GPT technology for a given task. Follow instructions closely.”},
```

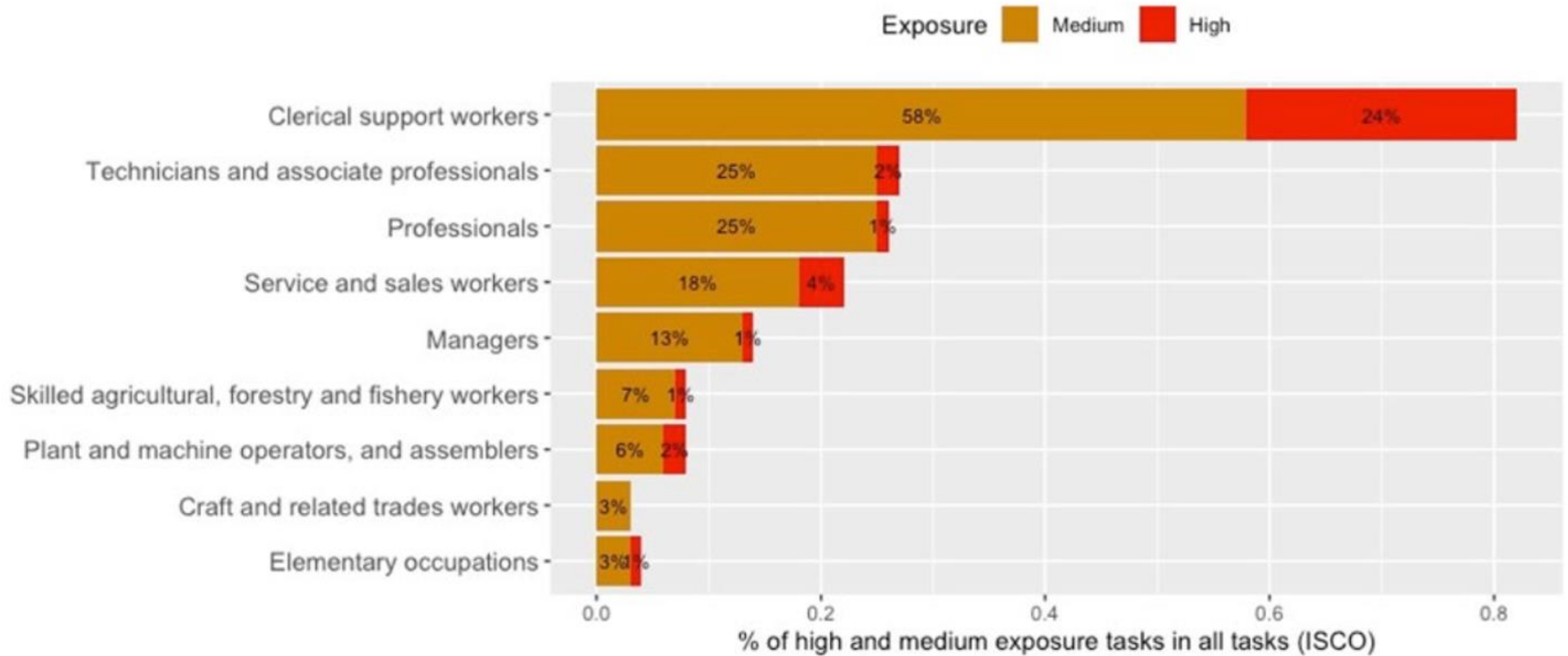
```
{“role”: “user”, “content”: “Look at this job task: ” + str(Tasks_GPT) + “It is related to ISCO code: ” + str(ISCO_08) + “Provide a score of potential automation of this task with GPT technology, given that the job is located in a high[low] income country: ” + “The score should range 0-1. Provide a score in one line, and a justification in next line. Do not provide any other commentary, only the score and justification. ” + “Do not give any ranges just one score for each task.”}
```

ISCO-08	ISCO Tasks		Justification by GPT
2341	Preparing daily and longer-term lesson plans in accordance with curriculum guidelines;	0.60	GPT technology can aid in the generation of lesson plans and offer suggestions based on curriculum guidelines, but a human teacher’s expertise and nuanced understanding of their students’ needs will still be important for crafting effective plans.
2341	Instructing children individually and in groups, using various teaching methods and materials (e.g. computers, books, games), adapting to children’s varying needs;	0.30	GPT technology can assist in providing instructional materials and adaptive learning approaches, but the physical presence, emotional connection, and real-time adaptability of a human teacher are essential for effectively teaching young children.
2341	Maintaining discipline and good working habits in the classroom;	0.15	GPT technology can assist in monitoring and providing feedback, but it cannot fully automate maintaining discipline and good working habits in the classroom because human interaction and physical presence are essential for effective discipline and enforcing rules.

► **Semantic ML-based clustering of tasks with high automation potential (score > 0.8)**

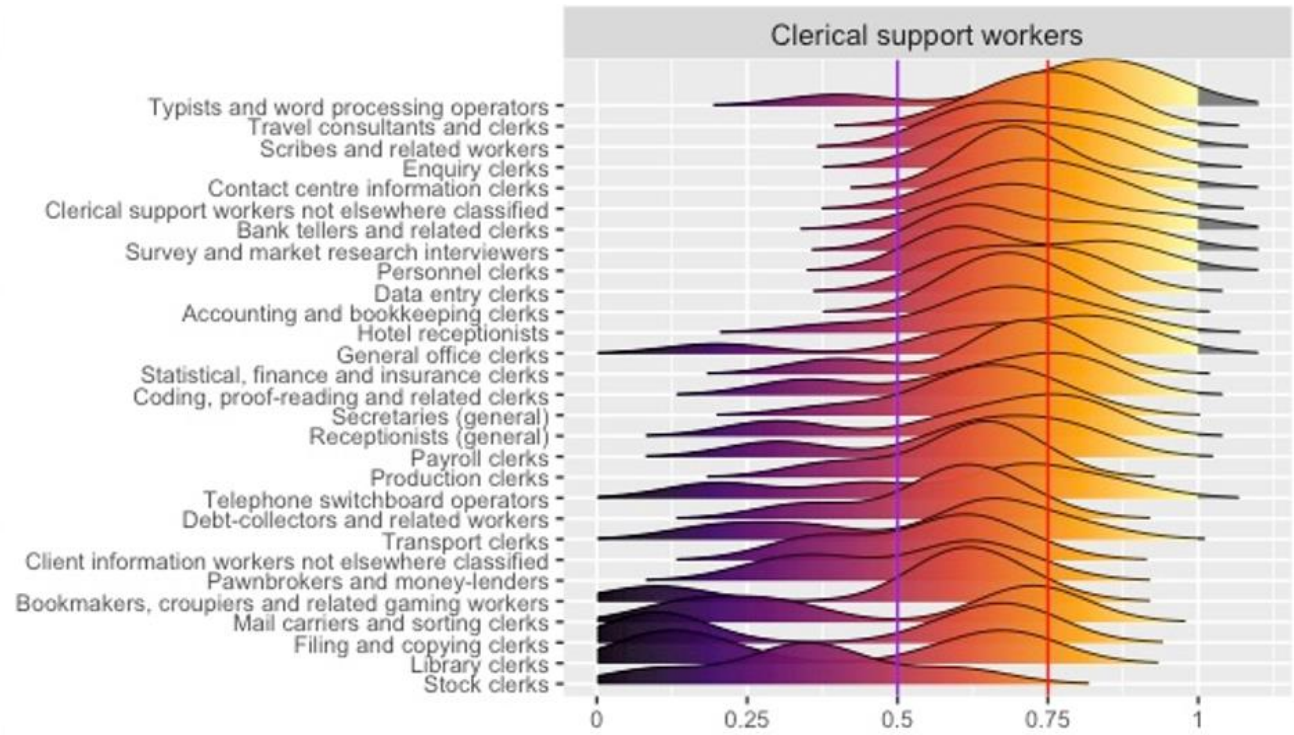
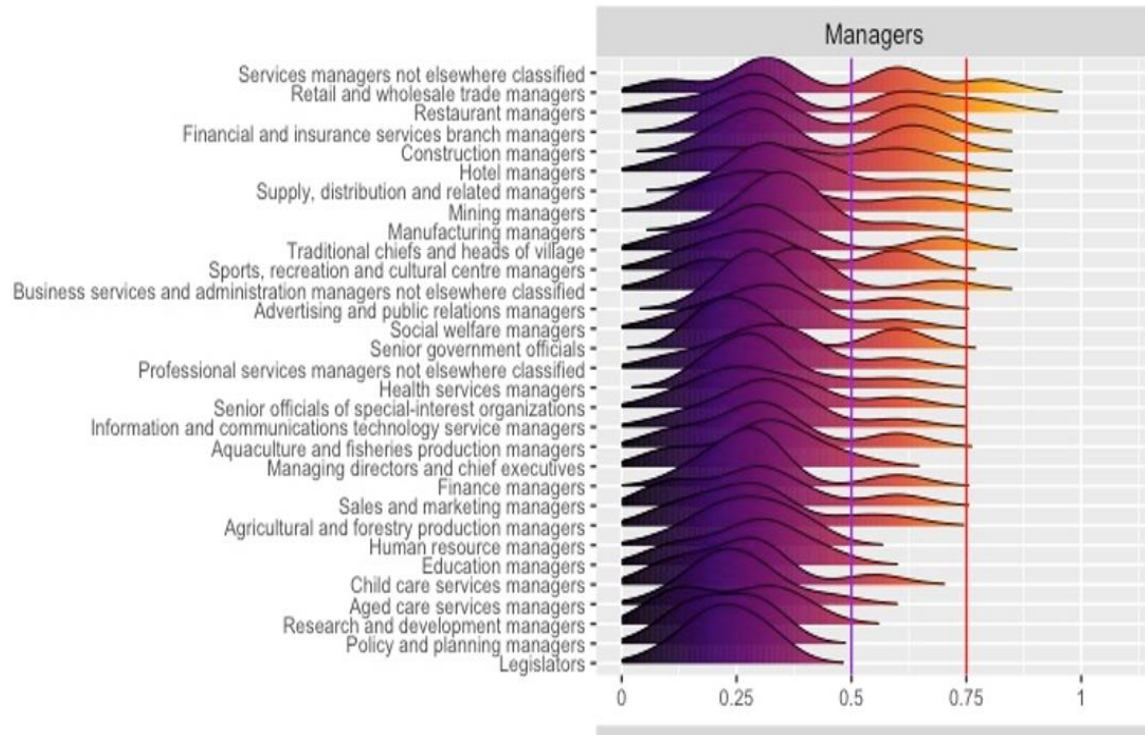


► **Figure 2. Tasks with medium and high GPT-exposure, by occupational category (ISCO 1-digit)**



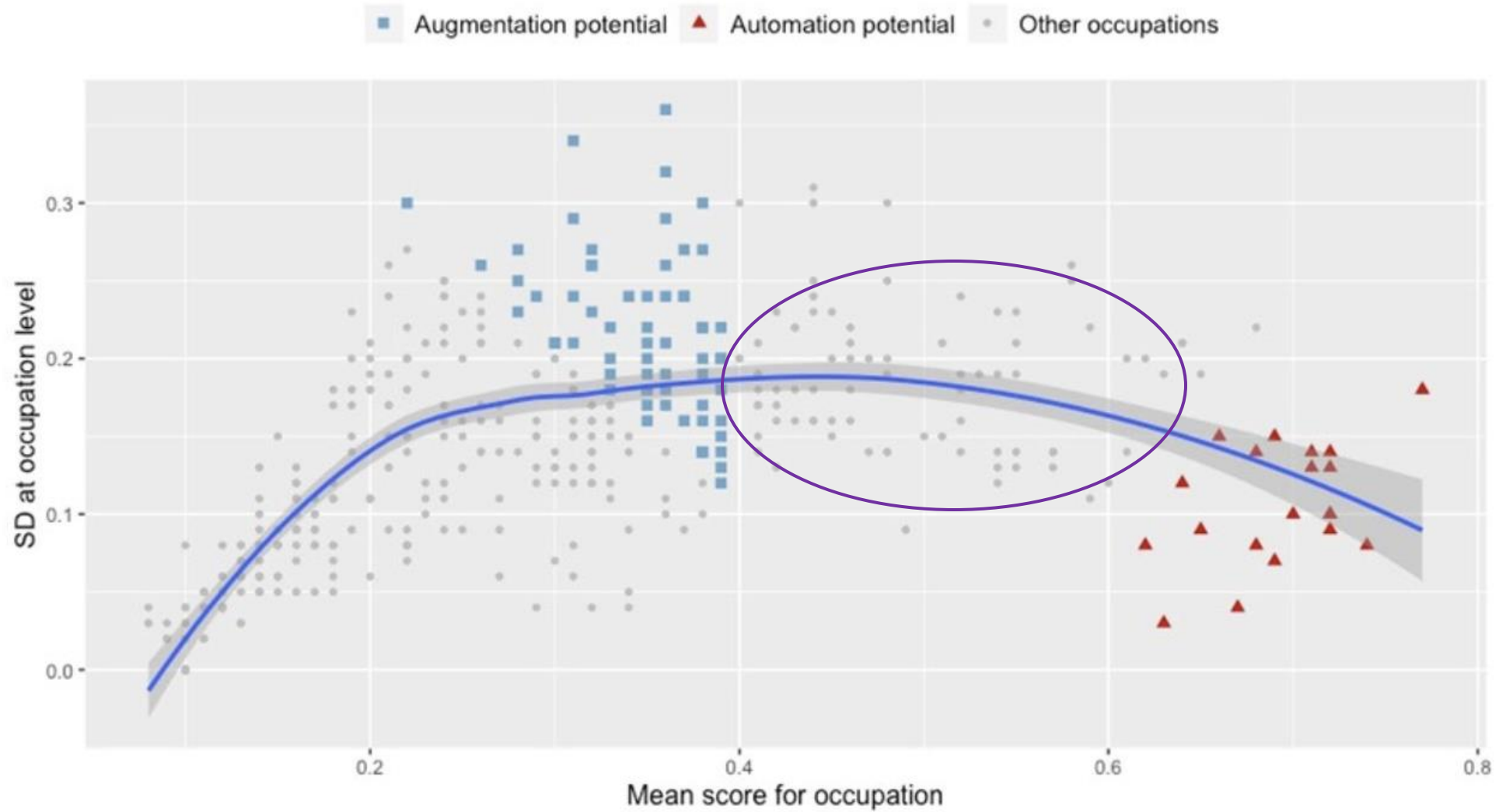
Source: Gmyrek et al., 2023.

Task-level exposure scores to GenAI technology by ISCO 4d -- managers and clerical support workers



Source: Gmyrek et al., 2023.

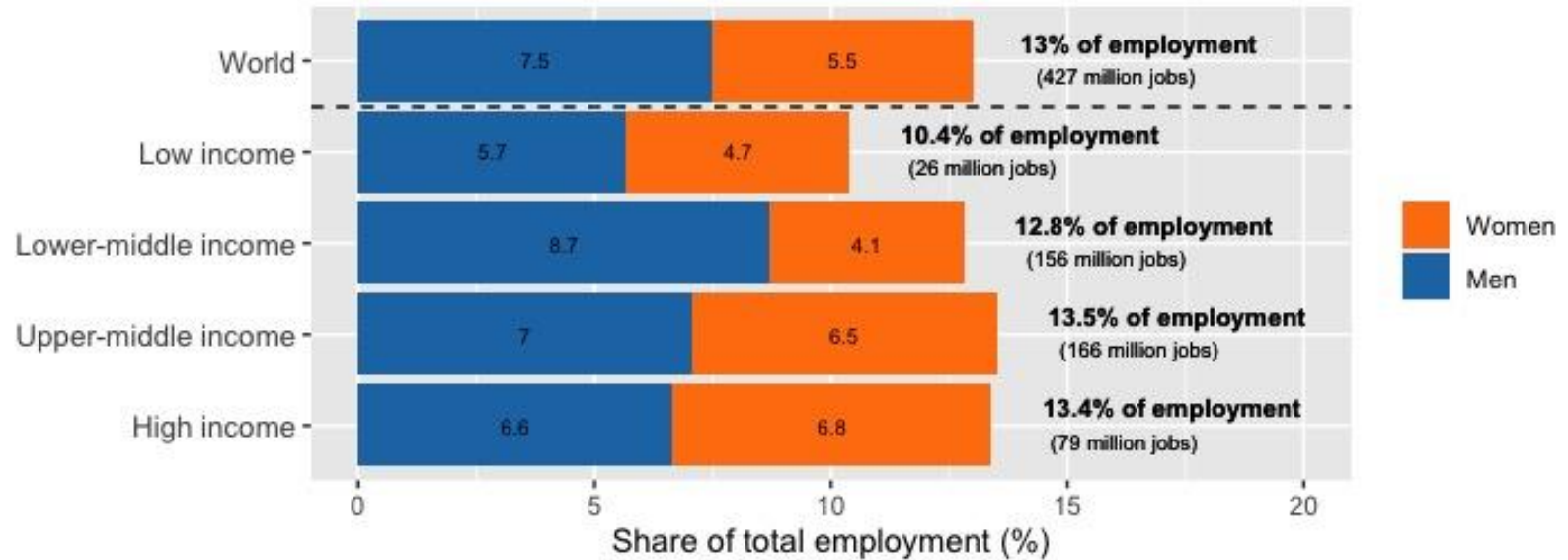
► **Figure 4. Augmentation vs automation potential at occupational level**



- ❖ Share of workforce **POTENTIALLY** affected (real impact will be much less)
- ❖ Does not account for new jobs that will be created!
- ❖ An additional 9,1% of employment (300 million jobs) at the junction of automation and augmentation

Augmentation Potential

Global estimates: shares and numbers of jobs



Automation Potential

Global estimates: shares and numbers of jobs

