Technical Note

14 February 2024

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on the basis of ILO Working Paper 96:

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

▶ Media-related Occupations in International ILO Statistics

The international common denominator for the occupational classifications is the International Standard Classification System (ICSO), summarized in Table 1. The overall structure of this hierarchical classification method relies on a system of digits, in which a 1-digit level consists of 10 principal occupational groups, while the most detailed, 4-digit level, comes with 436 occupations. At that level, the technical documentation of the ISCO-08 standard provides a range of typical tasks for each occupation and allows for comparisons of detailed statistical reporting across countries and over time.

Table 1. ISCO-08 Structure of occupations and tasks

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
0	Armed forces occupations	1	3	3	3	0
1	Managers	1	4	11	31	236
2	Professionals	1	6	27	92	751
3	Technicians and associate professionals	1	5	20	84	580
4	Clerical support workers	1	4	8	29	163
5	Service and sales workers	1	4	13	40	269
6	Skilled agricultural, forestry and fishery workers	1	3	9	18	141
7	Craft and related trades workers	1	5	14	66	503
8	Plant and machine operators, and assemblers	1	3	14	40	280
9	Elementary occupations	1	6	11	33	200
	Total	**10**	**43**	**130**	**436**	**3,123**

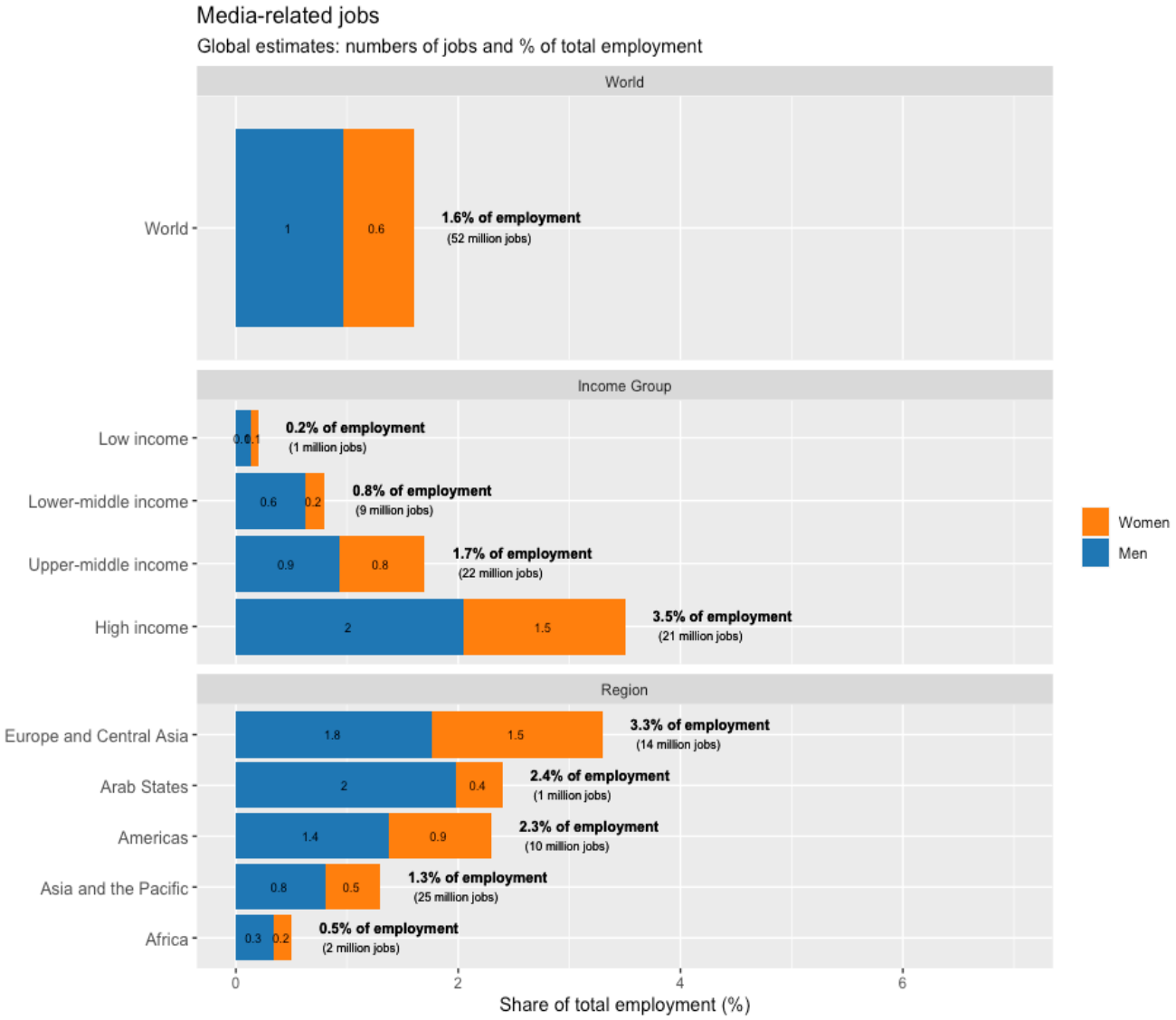
Media-related occupations can be isolated from the ISCO-08 system through a selection of individual 4-digit codes. As presented in Table 2, such occupations encompass a broad range of jobs, which fall into the categories of Technicians and Associate Professionals, Professionals and Managers at the highest, 1-digit level. This occupational selection forms the basis of further analysis presented in this brief.

Table 2. Media-related occupations in ISCO-08 classification

Title	ISCO-08, 4-digits
Sales and marketing managers	1221
Advertising and public relations managers	1222
Graphic and multimedia designers	2166
Advertising and marketing professionals	2431
Public relations professionals	2432
Web and multimedia developers	2513
Authors and related writers	2641
Journalists	2642
Translators, interpreters and other linguists	2643
Visual artists	2651
Musicians, singers and composers	2652
Dancers and choreographers	2653
Film, stage and related directors and producers	2654
Actors	2655
Announcers on radio, television and other media	2656
Creative and performing artists not elsewhere classified	2659
Photographers	3431
Other artistic and cultural associate professionals	3435
Broadcasting and audio-visual technicians	3521
Telecommunications engineering technicians	3522

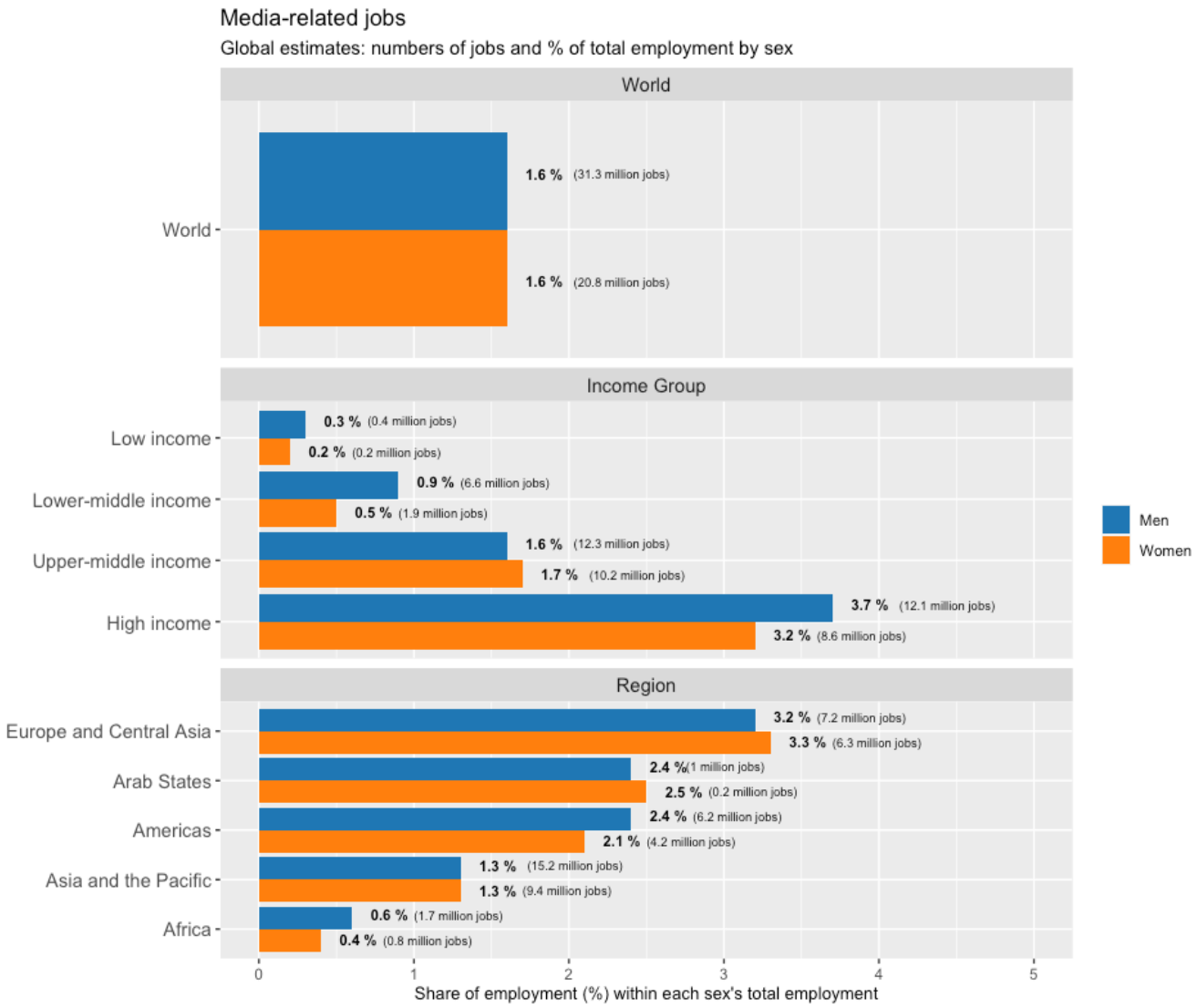
Figure 1 presents a global estimate of such media-related jobs as a share of total employment, broken down by income groups of countries and regions. Among all global employment, such jobs make 1.6 percent, which corresponds to 52 million jobs worldwide. The share of such occupations grows with countries' per capita income and reaches 3.5 per cent of total employment in high-income countries. This stands in stark contrast to only 0.2 of employment in the media and entertainment jobs in the low-income group.

Figure 1. Global estimates: media-related jobs, totals and as share of employment by income group and region



One of the characteristics of employment in this sector is a fairly well-balanced gender distribution. At the global level, the share of such jobs is 1.6 per cent of male and of female employment alike. While there are some differences across the regions and income groups, media-related jobs form a similar share of both male and female employment in most sub-groupings (Figure 2).

Figure 2. Global estimates: media-related jobs, totals and as share of employment by income group and region



▶ Occupational exposure to generative AI

In order to assess the potential exposure of GenAI on the selected media-related occupations presented in Table 2, we rely on the method developed in the ILO Working Paper 96. We rely on a combination of AI and human judgement to identify tasks within individual occupations that could potentially be affected by technologies with capabilities similar to GPT-4. Subsequently, we draw on the ILO repository of harmonized country-level microdata to estimate global, income-based and regional shares of employment that fall into the conceptual categories of automation potential (most tasks could be replaced by GenAI) and augmentation potential (only some tasks are automatable, leaving a clear need for a human role).

Table 3 presents, as an example, the international definition of the journalist occupation (ISCO code 2642), alongside the range of typical tasks that were assigned to this profession. These tasks form the basis of the prediction of potential automation scores, with the procedure repeated for each media-related occupation.

Table 3. Sample of tasks and definitions from ISCO and GPT-4

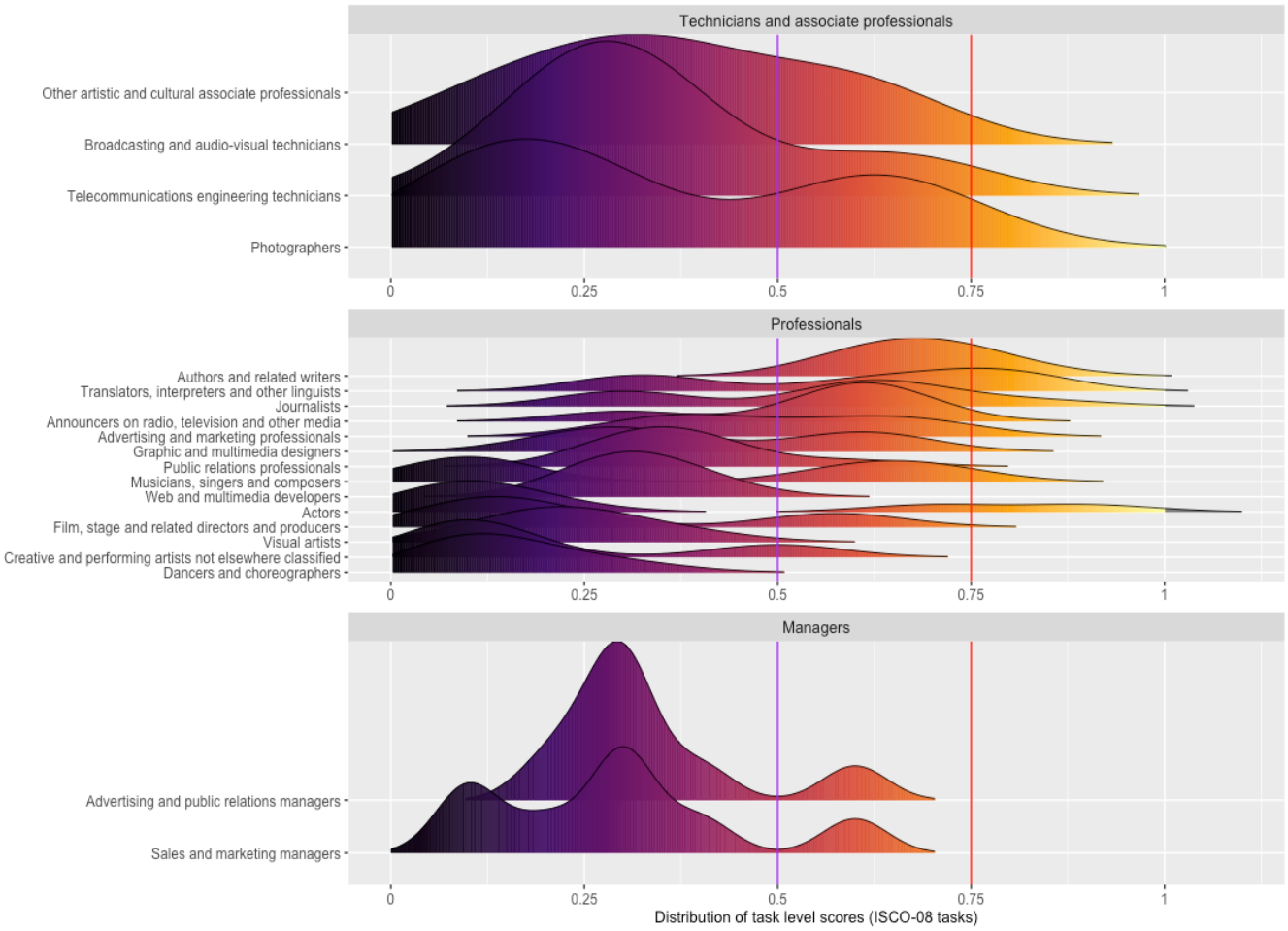
ISCO_08	Definition in ISCO-08
2642	Journalists research, investigate, interpret and communicate news and public affairs through newspapers, television, radio and other media.

ISCO-08	Tasks in ISCO-08	
2642	Collecting local, national and international news through interviews, investigation and observation, attending public events, seeking out records, reviewing written work, attending film and stage performances;	Writing editorials and commentaries on topics of current interest to stimulate public interest and express the views of a publication or broadcasting station;
	Collecting, reporting and commenting on news and current affairs for publication in newspapers and periodicals, or for broadcasting by radio, television or webcast media;	Writing critical reviews of literary, musical and other artistic works based on knowledge, judgement and experience for newspapers, television, radio and other media;
	Receiving, analysing and verifying news and other copy for accuracy;	Selecting material for publication, checking style, grammar, accuracy and legality of content and arranging for any necessary revisions;
	Interviewing politicians and other public figures at press conferences and on other occasions, including individual interviews recorded for radio, television or webcast media;	Liaising with production staff in checking final proof copies immediately prior to printing;
	Researching and reporting on developments in specialized fields such as medicine, science and technology;	Selecting, assembling and preparing publicity material about business or other organizations for issue through press, radio, television and other media.

Figure 2 presents the distribution of exposure scores assigned to individual task under each occupation, with low scores assigned to tasks that are very unlikely to be performed by AI, and high scores for those tasks where AI with abilities similar to GPT-4 could perform the task. On the horizontal scale of 0-1, we consider scores withing the range of 0.5-0.75 as medium exposure, and scores above 0.75 as high exposure. We stress that this represents the top threshold of the theoretical concept of exposure. In practice, the actual automation of tasks with high scores is likely to be significantly lower, due to constraints related with technical feasibility with the deployment of technology, the costs of deployment and other limiting factors.

For example, full automation of the journalist task of "*receiving, analysing and verifying news and other copy for accuracy*" would require major trust in the consistent reliability of such an automation process. While today's AI technology can greatly enhance such the elements of such verifications, the associated risks would likely discourage most media to full remove the human element from this process. In addition, GenAI also brings new challenges to content verification, due to the possible proliferation of fake information generated through different automated or semi-automated processes. Therefore, in reality, this technical area represents a bundle of smaller tasks, which evolve as the occupation comes into contact with the new technical capabilities of the AI systems. While some of these sub-tasks might become automatable over time, new sub-tasks are likely to emerge as the content verification process evolves and adjusts to new technological ability and challenges. Nevertheless, analysing the distribution of such theoretical exposure scores at the level of detailed occupations and their internationally agreed task bundles in the ISCO-08 system helps understand the general direction of possible changes induced in the media and entertainment industry through interaction of occupations with GenAI tools.

Figure 2. Task-level scores by ISCO 4d, sorted by mean at job level, grouped by ISCO 1d

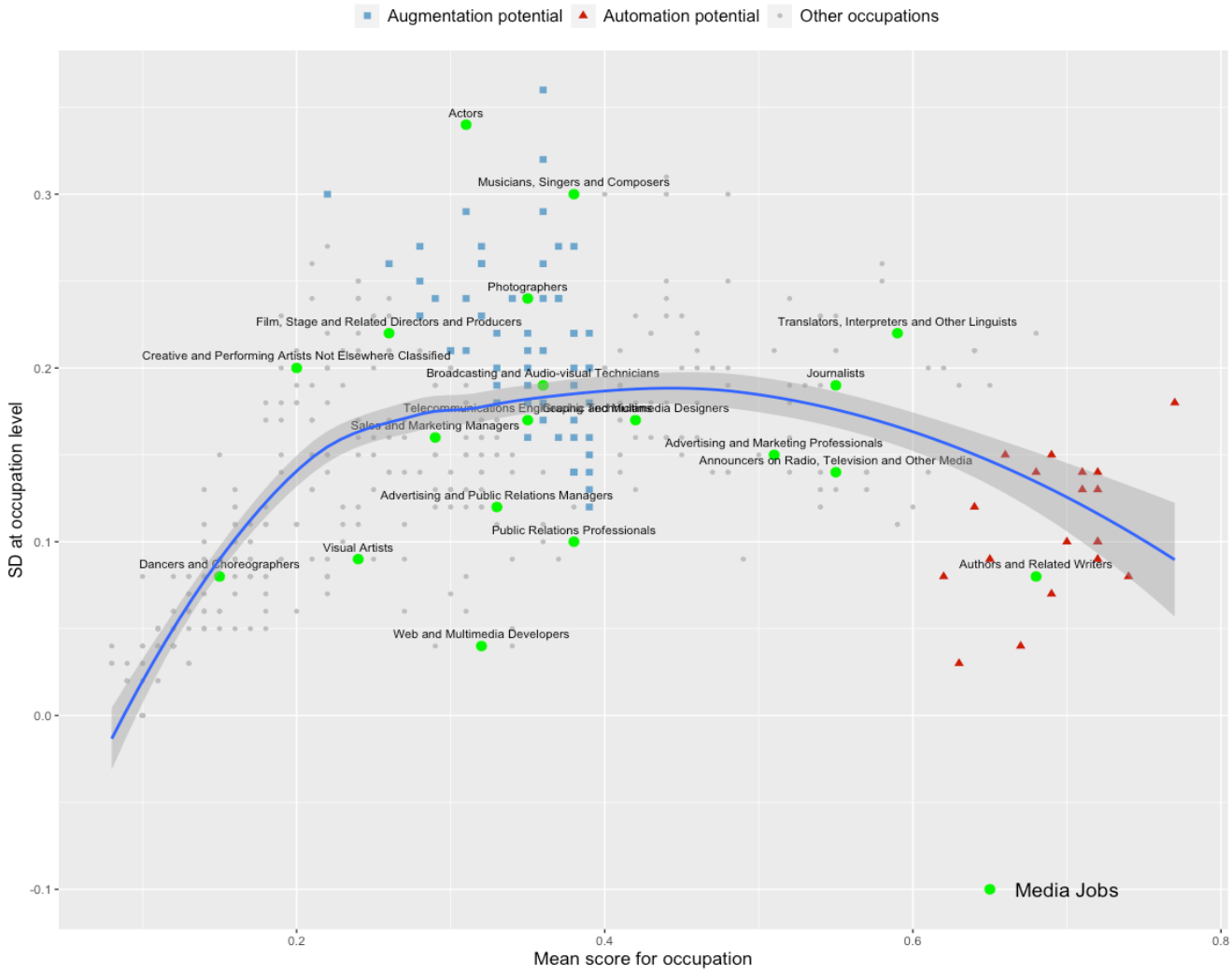


Note: Occupational categories at ISCO-08 1-digit level. Levels of exposure to potential automation by GenAI with capabilities similar to GPT-4 on 0-1 scale. "Medium exposure" for 0.5-0.75 scores and "high exposure" for scores greater than 0.75.

In addition to the distribution of tasks scores, we can also consider the overall occupational scores, calculated as the mean of individual tasks scores under each occupation. Figure 3 presents such occupational means of individual media-related jobs in the context of all 436 occupations in the ISCO-08 system, plotted against the standard deviation (SD) of task-level scores within each occupation. Jobs with a high mean score and a low standard deviation fall into the category of high automation potential (red triangles in the plot), as the majority of the occupation's tasks have high exposure scores. Jobs with a high augmentation potential (blue squares in the plot) are at the other extreme as they have a low occupation-level mean score, but a high standard deviation of the task scores. Media and entertainment jobs, as defined earlier in Table 2, have been marked with green dots.

Analysing Figures 2 and 3 jointly, we can observe that the level of exposure to GenAI varies greatly across this group of occupations. The lowest exposure concerns such occupations as dancers, choreographers and creative and performing artists, for whom the majority of task-level scores and the occupational mean scores are placed far to the left of the 0.5 threshold. Among the group of Managers, most individual tasks receive a low score (Figure 2), with only some going beyond the level of 0.5. In other words, while the human role remains very central to most tasks in these occupations, the new GenAI tools could be used to augment the job by taking over some of the tasks, either partially or entirely.

Figure 3. Media-related jobs: exposure to AI, relative to other occupations in ISCO-08



On the opposite scale of that spectrum are the occupations of authors and writers, translators, interpreters and linguists, as well as media announcers and journalists. The distribution of score-level tasks (Figure 2) and the occupations mean scores (Figure 3) suggest that many of the tasks defined for these jobs in the ISCO-08 documentation have a medium or high level of exposure to GenAI. The media and entertainment industry provides the right context to illustrate how the assessment of such theoretical feasibility of task automation needs to be considered in the broader context.

Potential AI exposure does not imply immediate AI deployment for full automation. In most of these highly exposed occupations, the human role remains crucial to the job. For example, while media messages can indeed be presented by a machine with a human voice, very few people would be willing to watch evening news read by a digital avatar. In theory, advanced chatbots could also be used to ask interview questions, however such a product would seem quite unlikely to match the interest generated by a skilled and renowned human journalist in that role, or to attract interesting guests. Similarly, in the category of Authors and Related Authors, creating written media content can indeed be supported by a machine in many ways, with benefits for speed and even creativity. However, trying to replace all writing with a bot trained on previous content would be far from a successful strategy in the media world. Therefore, the main objective of this analysis is to understand the direction of possible changes and provide insights to consultations and debates that are necessary to design fact-based transition policies and regulations, adjusted to national contexts.

▶ Policy Considerations and Recommendations

The use of generative AI in creative work requires a thoughtful and balanced approach, considering the potential benefits and the implications for consent and individual rights, as well as the impact on work quality and workers' rights. The ILO Working Paper 96 made the following policy recommendations, which should be made more sector-specific through tripartite dialogue mechanisms:

Automation:

- ⇒ Prioritize redeployment and training over job loss, focus on the most exposed sectors. Where possible, engage with workers' representatives and competent authorities to devise measures to avert or minimize terminations.
- ⇒ In cases of displacement, ensure coverage of social protection and access to retraining for affected workers.
- ⇒ Promote policy and regulatory frameworks on the limits of working time in the new digital environment, recognizing that the sector has unique working time practices;
- ⇒ Account for the strongly gendered dimension on the potential impact of generative AI on the current labour markets and design policies that address gender-specific needs in the transition process.
- ⇒ Invest in sectors that are under-funded and which have the potential to be a source of good quality jobs, such as in the care or green economy.

Augmentation:

- ⇒ The design and application of regulations is best crafted through tripartite systems, in which workers', employers' and governments representatives engage with equal voice.
- ⇒ Involve workers and their organizations in the design, implementation and use of technology at the workplace by building and strengthening mechanisms of workplace consultation.
- ⇒ Strive for transparency and clear rules. Address worker monitoring and data collection outside of work or in contexts where it poses risks to human dignity or the exercise of fundamental rights.
- ⇒ Consider other regulatory safeguards such as requiring human oversight in decisions on dismissal.
- ⇒ Ensure that workers have the digital skills to work with GenAI by investing in education and skills development.
- ⇒ Support, through development cooperation, technology transfer, debt restructuring and debt alleviation, efforts by lower-income countries to invest in needed infrastructure that can allow countries to benefit from the productivity-enhancing potential of generative AI.
- ⇒ Make new jobs part of policy discussions. Support efforts at the 2025-26 International Labour Conference to develop an international labour standard on «Decent work in the platform economy», as well as its eventual adoption into national legislation.