

AI, WORK AND CREATIVE INDUSTRIES: EVIDENCE FROM THE AUDIOVISUAL AND MUSIC SECTOR

FERRI V., BONANNI M.

LXII Riunione Scientifica SIEDS

Catania, 27-29 Maggio 2026

INTRODUCTION



Artificial Intelligence and the Transformation of the Audiovisual Sector

- AI is reshaping the entire audiovisual production chain: content creation, information analysis, enhancement, post-production and data compression.
- Its main potential currently lies in supporting and augmenting human creativity, rather than fully replacing it (Anantrasirichai & Bull, 2022).
- Actors' work is also changing: photographs, scans and digital materials can supplement, alter or replace physical presence and live performance.
- Digital replicas raise critical issues of consent, control, image rights, voice, gestures and identity (Yamazaki, 2024).
- Ethical and contractual debates increasingly concern deepfakes, unauthorized use of performances, AI-generated material and writers' rights (Writers Guild of America, 2023; SAG-AFTRA; Yamazaki, 2024).
- AI and virtual production can reduce costs, speed up workflows and support real-time digital environments, but may also increase risks of job displacement and standardized content.
- New hybrid professional roles are emerging, combining creative, technical and analytical skills: AI specialists, machine learning engineers, data analysts and virtual production specialists.
- The future of the sector depends on transparent governance, updated contractual frameworks and the preservation of human creativity as the core of cultural production.



We use the 2023 edition of the Survey on Professions (ICP) to characterize occupations by their required abilities and the 2024 Continuous Labour Force Survey (ISTAT) to quantify the importance and frequency of these abilities within occupations.

With regard to AI-related abilities, which are not country-specific, we follow Felten et al. and consider the same set of ten AI applications used in the Amazon Mechanical Turk (mTurk) Gig Workers Survey as the starting point for our analysis:

- Abstract Strategy Games
- Real-Time Video Games
- Image Recognition
- Visual Question Answering
- Generating Images
- Reading Comprehension
- Language Modeling
- Translation
- Speech Recognition
- Instrumental Track Recognition



For each of these applications, the mTurk survey includes questions that enable the calculation of application–ability relatedness scores, indicating the extent to which a given AI application performs well in a specific ability. We then compute an “Ability Level AI Exposure” as follows:

$$A_j = \sum_{i=1}^{10} X_{ij} \quad (6)$$

Here, (i) represents the AI application, (j) denotes the occupational ability, and (x) is the application-ability relatedness scores, (x), derived from mTurk survey data.

Given the 52 abilities listed in the ICP, the Continuous Labour Force Survey assigns to each ability–occupation pair a level and an importance score.

Using these scores, following Felten et al. (2021), we define the Italian AI Occupational Exposure (AIOEit) as:

$$AIOEit_K = \frac{\sum_{j=1}^{52} A_j x_{Ljk} x_{Ijk}}{\sum_{j=1}^{52} L_{jk} x_{Ijk}}$$



In this section, we thus adjust the AIOEit index for each occupation by incorporating a parameter, denoted by θ , that captures the degree of potential AI complementarity—rather than substitution—within each profession. The complementarity-adjusted index, CAIOEit, is defined as follows:

$$CAIOEit_i = AIOEit_i * (1 - (\theta_i - \theta_{MIN})) \quad (8)$$



DATA AND METHODOLOGY



Theta

Pizzinelli et al. select 11 contexts that are most relevant to the likelihood that AI is adopted in a complementary (rather than substitutive) manner. For each occupation, they average and normalize these scores, together with the level of required education, to obtain a complementarity factor, denoted by θ .

- Individual or group face-to-face discussion
- Public Speaking
- Responsibility for the health and safety of others
- Responsibility for colleagues' outcomes
- Exposure to the external environment
- Proximity to other people
- Severity of consequences of errors
- Degree of autonomy in decision making
- Reputational impact of decisions
- Irregularities of job organization
- Degree of automation

It is informative to compare the AIOEit index with the θ factor, as they capture different dimensions of AI exposure.



DATA AND METHODOLOGY

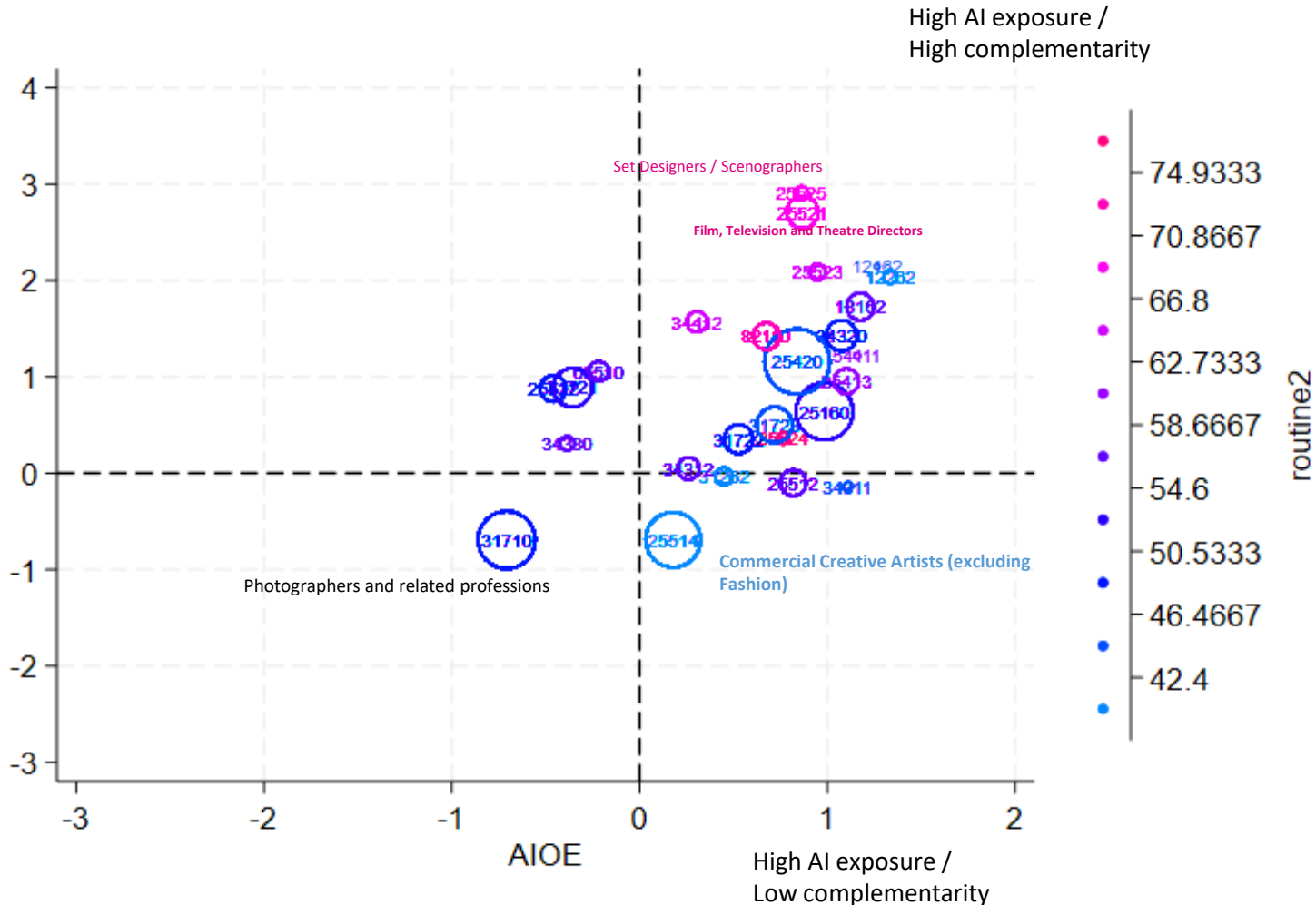


CP2021	Occupations (English)
25521	Film, Television and Theatre Directors
25522	Actors
25523	Artistic Directors
25524	Screenwriters
25525	Set Designers / Scenographers
25420	Journalists
25413	Advertising Copywriters
25514	Commercial Creative Artists
25512	Artistic Designers and Illustrators
25160	Public Relations and Image Specialists
12162	Entrepreneurs and Managers of Large Publishing, Film, Radio and Television Companies
12262	General Directors and Managers of Publishing, Film, Radio and Television Companies
13162	Entrepreneurs and Managers of Small Publishing, Film, Radio and Television Companies
31262	Radio and Television Broadcasting Technicians
31710	Photographers
31721	Audio-Visual and Video Recording Technicians
31722	Sound Technicians
31723	Audio-Video and Film Editing Technicians
34311	Radio and Television Announcers
34320	Technicians for the Organization of Radio, Television, Film and Theatre Production
34412	Stage Set Technicians
34330	Entertainers
54111	Cinema and Theatre Operators
34312	Presenters of Artistic and Entertainment Performances
65510	Stage Machinery and Equipment Technicians
82110	Elementary Occupations in Recreational and Cultural Services

CP2021 Code	Occupations (English)
25541	Composers
25542	Orchestra and Choir Conductors
25543	Instrumentalists
25544	Singers
25531	Choreographers
25532	Dancers
25551	Folk Culture Artists
25552	Variety Artists
25412	Dialogue Writers and Lyricists
26553	Singing Teachers
26554	Musical Instrument Teachers
63131	Musical Instrument Tuners
63132	Musical Instrument Makers and Repairers
55120	Beauticians and Make-up Artists
51310	Models and Related Professionals
34230	Instructors of Artistic Techniques



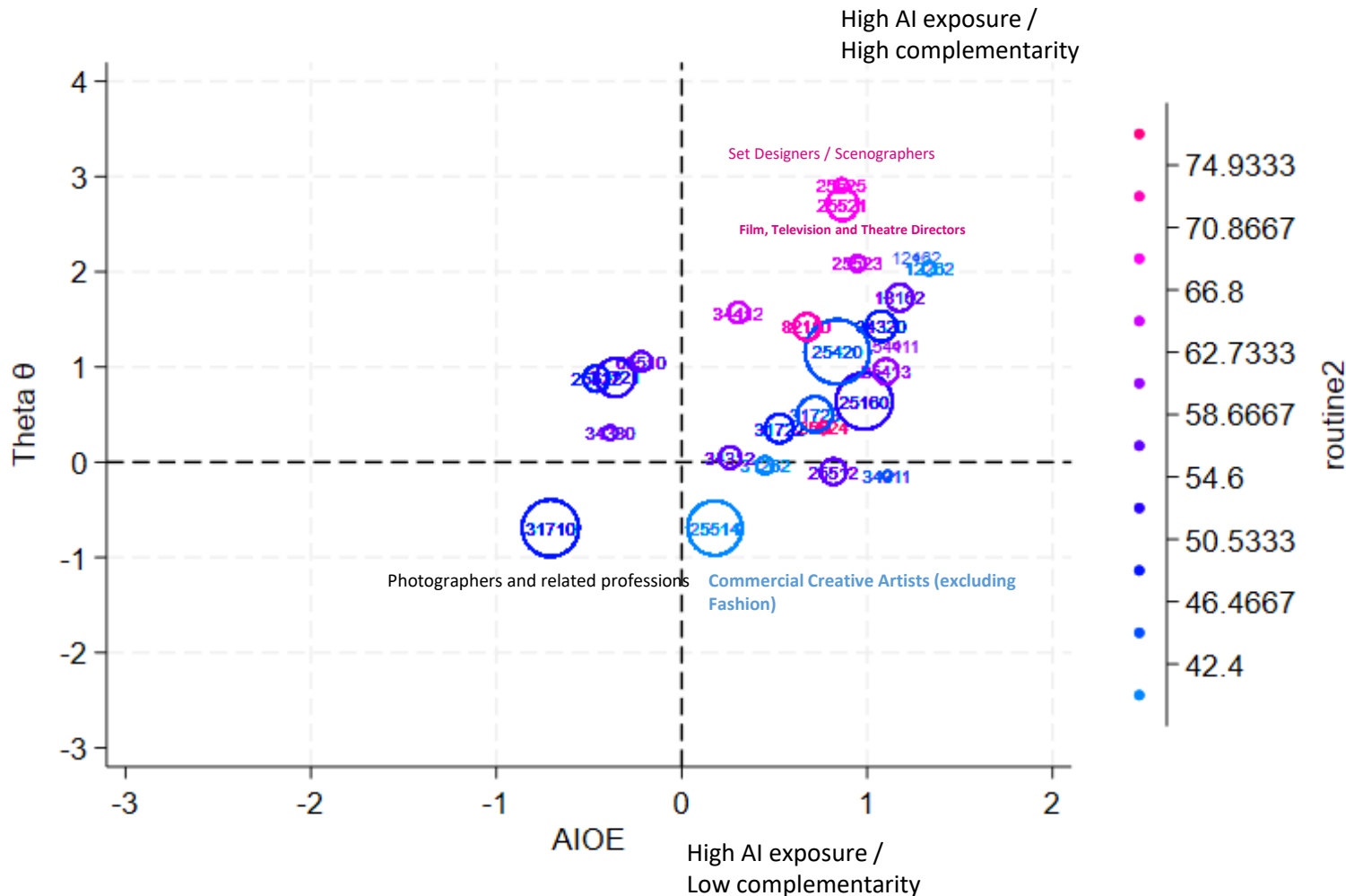
RESULTS



- The scatter plot highlights a highly heterogeneous structure within the audiovisual and creative industries in terms of AI exposure (AIOE), complementarity (Theta), and task routineness.
- Most occupations are concentrated in the upper-right quadrant, suggesting that many audiovisual professions combine relatively high exposure to AI technologies with high levels of complementarity rather than pure substitution.
- This pattern is particularly evident for directors, screenwriters, artistic directors, and managerial professions in publishing, film, radio, and television companies, which appear characterized by complex, creative, and coordination-intensive tasks that are difficult to automate completely.



RESULTS



- At the same time, the color gradient associated with routineness shows important differences within the sector.
- Occupations such as directors and screenwriters display higher routineness scores together with high AI exposure, suggesting that generative AI tools are increasingly penetrating even highly creative activities.
- However, these professions still remain strongly complementary to AI, likely because human creativity, interpretation, and artistic supervision continue to play a central role.
- By contrast, occupations such as commercial creative artists are positioned in the lower part of the graph, indicating lower complementarity and potentially greater substitution risks. These professions may be more vulnerable to AI-driven automation.
- Technical occupations related to audiovisual production — such as sound technicians, video-editing technicians, and broadcasting technicians — tend to occupy intermediate positions, reflecting a hybrid dynamic in which AI acts both as an efficiency-enhancing tool and as a source of task transformation.



ECONOMETRIC ANALYSIS



Audiovisual, music and performing occupation

Female

Age

Education level 2 ref. Level 1

Education level 3

Education level 4

Education level 5

Education level 6

Sector (Industry) ref. agriculture

Sector (Services)

Immigr

_cons

N

r2

AIOEit	
b/se	
-0.1358***	
[0.0059]	
0.0594***	
[0.0016]	
0.0027***	
[0.0001]	
-0.1178***	
[0.0165]	
-0.0627***	
[0.0158]	
0.0016	
[0.0159]	
0.1830***	
[0.0158]	
0.3746***	
[0.0158]	
0.2630***	
[0.0043]	
0.3631***	
[0.0042]	
-0.1221***	
[0.0025]	
-0.2501***	
[0.0163]	
167890	
0.3332	

- Audiovisual, music and performing arts occupations show significantly lower AI exposure than other occupations, after controlling for individual and job characteristics.
- The lower exposure is consistent with the strong creative, interpretative and relational nature of these occupations, which are less easily standardized and automated.
- Women exhibit higher AI exposure than men in the analysed sample.
- Higher educational attainment is associated with greater AI exposure, confirming that AI increasingly affects cognitive, creative and knowledge-intensive occupations.
- Economic sector is strongly associated with AI exposure, highlighting substantial differences across sectors.
- The migration-related variable shows a negative association with AI exposure, suggesting lower exposure among migrant workers in the analysed occupational structure.



CONCLUSIONS



Artificial Intelligence is reshaping the audiovisual and music industries through a complex process of technological transformation. The empirical evidence shows that exposure to AI varies significantly across occupations, depending on the degree of creativity, autonomy, coordination, and human interaction required.

Most artistic and managerial professions combine relatively high AI exposure with high complementarity, suggesting that AI is more likely to support and augment human work rather than fully replace it.

In contrast, some occupations characterized by more standardized or routinized creative tasks appear more vulnerable to substitution pressures generated by generative AI technologies.

The econometric analysis further highlights how AI exposure is associated with education, gender, and sectoral specialization.

The results suggest that the future of creative industries will depend on the capacity to integrate AI within production processes while preserving human creativity, artistic supervision, and cultural originality. In this perspective, training policies, digital skills, and ethical governance will play a crucial role in supporting a balanced and inclusive technological transition.



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