CARMA 2026

8th Int. Conf. on Advanced Research Methods and Analytics
1-3 July 2026, Valencia, Spain
DOI: https://doi.org/10.4995/CARMA2026.2026.21999

Recruitment and Soft Skills in the Italian Labor Market: A Focus on the Tourism Sector

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How to cite: Pirotta, D.; Mariani, P.; Marletta, A.; Zenga, M. (2026). Recruitment and Soft Skills in the Italian Labor Market: A Focus on the Tourism Sector. In: 8th International Conference on Advanced Research Methods and Analytics (CARMA 2026). Valencia, 1-3 July 2026. https://doi.org/10.4995/CARMA2026.2026.* [To be completed by the publisher]

Abstract

This paper investigates the evolution of soft skill requirements within the Italian tourism labor market between 2016 and 2024. By developing a robust analytical framework that integrates heterogeneous data sources — including internal recruitment records from The Adecco Group and the international ESCO taxonomy — the study maps the longitudinal trajectories of key professional profiles. Methodologically, a Weighted Factorial Analysis (WFA) is applied to a three-way data structure to identify shifts in competency demand, particularly in the post-pandemic landscape. Results reveal a significant transition from operational and client-oriented tasks toward proactivity and problem-solving. The study emphasizes the critical role of multi-table data harmonization in "skill intelligence" and sets the stage for future research. The forthcoming integration of 2025 data and wage variables will enable a deeper exploration of the correlation between specific soft skills and economic returns in the sector.

Keywords: *Labor market; Soft skills; Three-way data; Time trajectories; Weighted Factorial Analysis.*

1. Introduction

The primary objective of this study is to analyse employment trends in the Italian tourism sector, focusing specifically on the professional skills required by the market. The study draws on administrative data relating to new hires provided by The Adecco Group — a leading player in the national recruitment sector — covering the period from 2016 to 2024. The use of such high-quality private-sector datasets has proven essential in bridging the information gap between enterprise needs and the actual valorization of competencies in the Italian context (Mariani, Marletta, & Zenga, 2020).

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Editorial Universitat Politècnica de València

In recent years, profound structural changes in the labor market have placed human capital at the heart of production processes. These dynamics are not only transforming recruitment but are also strictly linked to broader issues of labor market inclusion and economic well-being (Mariani et al., 2022). Against this backdrop, employee assessment must move beyond traditional approaches based solely on previous professional experience to incorporate individual skills. While academic literature has proposed numerous classification models — from the pioneering contributions of McClelland (1973) and Boyatzis (1982) to complex tools such as Emotional Competency Theory (ECT) — establishing a definitive ranking of the most in-demand skills remains challenging. This difficulty stems from the heterogeneity of tasks associated with different professional roles, as well as the multidimensional nature of a skill's 'relevance', which can be expressed in terms of demand frequency or financial return.

In the well-established distinction between hard (technical) and soft (transferable) skills, the latter have come to play a decisive role in defining profiles of excellence. Recent empirical evidence (Unioncamere-Excelsior) confirms that transferable skills are considered as important as, if not more important than, technical skills in over 80% of recruitment processes, albeit with significant variations between managerial roles and unskilled professions. The focus on the soft skills has been studied from other authors searching for the most requested competencies in the Italian labor market (Pastore et al., 2024) and in comparison, among other European countries (Rienda et al., 2024). Based on this, this study analyses the soft skills identified in the tourism sector to outline the most sought-after profiles and identify their dynamic evolution over the last decade.

2. Data and Context

In a market context characterised by the growing importance of cross-functional skills, statistical methods are essential for transforming raw data into structured information. For this project, an analytics framework was developed by integrating internal Adecco Group archives with external institutional databases. The analyzed dataset regards job offers about the Italian territory covering almost all the Italian regions. The entire data cleaning, integration, and statistical analysis process was implemented using R software version 4.5.2. Specifically, the tidyr package was utilized for data cleaning and organization, while the psych and FactoMineR packages were employed for factor analysis and the treatment of supplementary variables. (R_core team, 2026).

The final dataset resulted from combining various data dimensions, harmonised via a unique identifier linking job advertisements to the anonymised profiles of hired candidates. From internal sources, socio-demographic variables (gender, nationality, age, and education) and contractual details (employment sector, professional category, and company size) were

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extracted. These were coupled with data on the soft skills required for each vacancy (e.g., teamwork, problem-solving, or self-control).

Regarding external sources, the database was enhanced by integrating the ESCO (European Skills, Competences, Qualifications and Occupations) taxonomy. This European standard acts as a multilingual dictionary for classifying occupations and skills, ensuring data interoperability, international interpretability, and transparency for 'skill intelligence' analysis. To ensure comparability, an alignment exercise was performed between internal occupational categories and the ESCO taxonomy. The resulting framework comprises sequential modules, moving from data integration to descriptive analysis, and culminating in multivariate analysis and time-series trajectories.

3. Methodology

The methodological framework is built upon a three-way data structure, denoted by the array $X = \{x_{ijt}\}$, where the three dimensions represent professional profiles *I*, soft skills *J*, and the time period *T*. This structure is particularly suited for evaluating professional requirements across a temporal dimension (Vichi, 1990; Liberati & Mariani, 2012). Each element in the array captures the relative frequency of a specific skill for a given job profile in a particular year. To analyze how these requirements evolve over time, the array is reorganized through a matrix unfolding procedure. Specifically, the annual data (frontal slices) are concatenated into a single stacked matrix,

$$X = \begin{bmatrix} X^{(1)} \\ X^{(2)} \\ \vdots \\ X^{(T)} \end{bmatrix}, \tag{1}$$

which allows each job profile to be traced as a multivariate time trajectory. This approach enables us to visualize the "path" a profession takes as its skill requirements change from 2016 to 2024, following the geometric approach to multivariate time trajectories (D'Urso, 2000; Coppi & D'Urso, 2001). The study employs Weighted Factor Analysis (WFA), a weighted extension of principal component analysis (Abdi & Williams, 2010) that incorporates specific diagonal matrices (D_r and D_c) to balance the influence of different profiles and skills. By performing an eigen-decomposition of the weighted covariance structure ($S = X^T D_r X D_c$), the data is projected onto a common factorial space. This space simplifies the complex dynamics of the labor market, making it possible to identify significant trends and compare the evolution of different professional figures within a single, interpretable map.

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4. Application and Results

4.1. Demographic characteristics of new hires

Between 2016 and 2024, the dataset recorded over eleven thousand new hires involving approximately five thousand five hundred individuals. The analysis reveals a clear prevalence of the airport staff sector and a marked geographical concentration in the North-West of Italy. According to ESCO classifications, travel consultants and airport maintenance technicians emerged as the most frequent profiles. The workforce is demographically young, with a median age of twenty-seven and a nearly equal distribution between men and women. In terms of educational attainment, school-leaving certificates represent the most common qualification, appearing significantly more often than university degrees. The market is fundamentally defined by its high flexibility; indeed, the vast majority of employment contracts are fixed-term, typically lasting for a median period of seventy-four days. This duration notably extends to one hundred and twenty-two days when considering only those contracts that exceed a two-week period. Table 1 illustrates these distributions in both absolute and relative terms.

Table 1. Distribution of new hires in the tourism sector by sub-sector and demographic variables (2016-2024): Absolute frequencies and percentage subtotals by category. Source: Elaboration based on The Adecco Group data.

	Percentage	Value
Industrial sub-sector		
Airport Staff	94.6%	10658
Tourism / Tour Operators / Travel Agencies	5.4%	612
Professional Profiles (ESCO code)		
Travel consultants and clerks (code 4221)	54.6%	6148
Airport maintenance technicians (code 3119.1)	27.5%	3104
Transport clerks (code 4323)	12.5%	1412
Activity leaders (code 3423.1)	3.1%	344
Other professions	2.3%	262
Geographic Area		
North-West	84.9%	9567
Center	7.0%	793
North-East	4.6%	521
South and Islands	3.5%	389
Gender		
F	50.6%	5708
M	49.4%	5562
Age groups		
15–24	34.2%	3854
25–34	37.7%	4248
35–49	21.6%	2432

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50–64	6.5%	736
Educational qualification		
High school diploma	40.1%	4521
University degree	15.8%	1782
Not declared	44.1%	4967
Contract type		
Fixed-term	96.2%	10846
Permanent	3.8%	424

4.2. Soft skills requirements

An analysis of soft skills reveals that almost half of all job advertisements do not specify any soft skills in the entry requirements. The most common requirements among the skills that are explicitly stated relate to a focus on quality, motivation and energy, and problem-solving.

However, demand for skills varies significantly depending on professional profile and gender. For roles with a high interpersonal component, such as travel consultants and entertainers, motivation, customer focus, and communication skills are paramount. Conversely, technical and operational roles (e.g. maintenance staff and transport workers) are more closely associated with quality orientation and problem-solving. From a demographic perspective, motivation and energy are particularly important for women and graduates, while quality orientation increases progressively with age, peaking in the 50–64 age group. For simplicity and concision, Table 2 shows the percentage distribution of soft skills required across the total analysed sample.

Table 2. Distribution of soft skill requirements in the tourism sector (2016–2024): Percentage values. Source: Elaboration based on The Adecco Group data.

Soft skills required	Percentage
Soft skills not required	45.5%
Quality orientation	17.7%
Motivation, optimism and energy	15.9%
Problem solving and analysis	12.1%
Customer orientation	9.7%
Communication	8.2%
Initiative	6.2%
Team Working	3.8%
Adaptability to change	1.9%
Result orientation	1.8%
Planning and organizing	1.3%
Change management	0.4%
Entrepreneurship	0.2%
Resource management	0.1%

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4.3. WFA Application and Time Trajectories

The application of Weighted Factorial Analysis (WFA) to the four selected ESCO profiles — Airport Maintenance Technicians, Activity Leaders, Travel Consultants, and Transport Clerks — explains approximately forty-eight percent of the total variance. As illustrated in Figure 1, the first two latent dimensions provide a common factorial space to visualize these heterogeneous recruitment dynamics and the longitudinal evolution of professional requirements.

The trajectories plotted in the factorial map reveal distinct patterns of change between 2016 and 2024. Specifically, Component 1 is positively correlated with the "Problem solving and analysis" and "Client orientation" skills, while showing a strong negative correlation with "Quality Orientation". The second component is strongly negatively correlated with "Initiative". Travel Consultants exhibit the most significant transition: while the 2016–2018 period was characterized by a focus on operational effectiveness and client-oriented competencies, the post-pandemic phase (2022–2024) shows a marked shift toward proactivity, initiative, and problem-solving skills. Conversely, Transport Clerks display relatively stable trajectories, suggesting a more consistent skill demand over time. Both Activity Leaders and Airport Maintenance Technicians show a gradual reinforcement of autonomy and analytical problem-solving in recent years, though Activity Leaders exhibit higher variability, reflecting a greater sensitivity to external market shocks.

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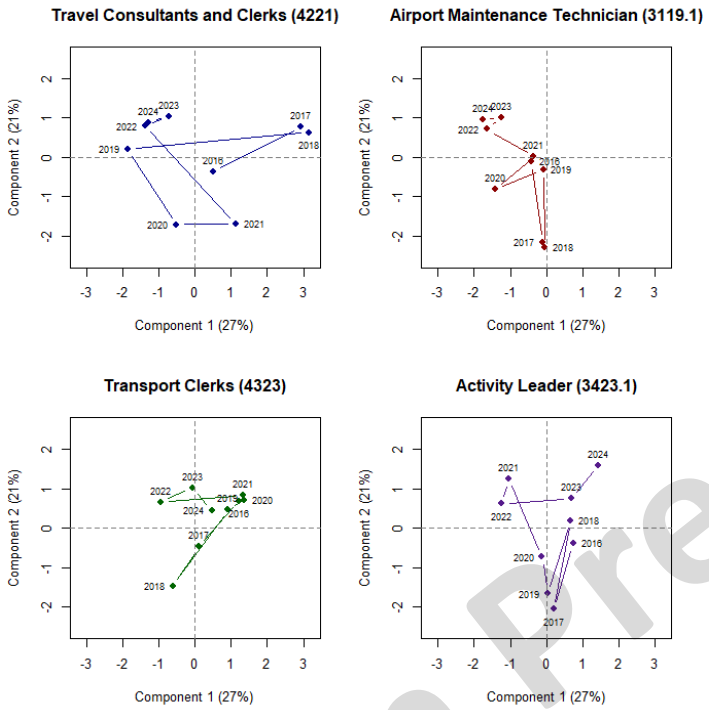


Figure 1. Time trajectories for Tourism sector job profiles from 2016 to 2024. Source: Elaboration based on The Adecco Group data.

5. Conclusions

This study provides a comprehensive overview of labor market dynamics in the Italian tourism sector (2016–2024), focusing on evolving soft skill demands. A key contribution is the creation of a robust framework capable of harmonizing heterogeneous data sources. By integrating Adecco Group recruitment records with the ESCO taxonomy, we transformed fragmented information into a structured longitudinal dataset. This multi-table integration was essential for applying WFA and mapping how professional roles shifted their requirements in response to structural changes.

The findings highlight a post-pandemic pivot toward proactivity in roles like Travel Consultants and an increased demand for autonomy in technical profiles. However, this represents only the first stage of research. The forthcoming availability of 2025 data, including hiring trends and compensation figures, will allow for a more granular analysis. Future developments will explore the correlation between soft skill sets and wage levels, providing insights into the economic returns of human capital and supporting evidence-based recruitment and training strategies.

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Acknowledgments

This research was conducted as part of the project "The tourism labor market and new skills", a strategic collaboration between the Italian Ministry of Tourism and the University of Milano-Bicocca (Department of Economics, Quantitative Methods and Business Strategy). The study was carried out by a working group affiliated with the Bicocca Applied Statistics Centre (B-ASC). The authors also wish to express their gratitude to The Adecco Group for providing the administrative data and technical support essential for this analysis.

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