

ERP Labor Demand across Industries in Romania

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Abstract. *We conducted an analysis of 282 job postings listed by eJobs.com in Romania (as of November 2025). The postings were grouped into six industries: Digital & Tech, Energy & Infrastructure, Financial & Business Services, Manufacturing & Industry, Public & Social Sector, and Trade & Consumer Services. The analysis used four evidence-based indicators created using structured metadata: (i) the distribution of ERP postings across six industries (ERP_Share), (ii) the distribution of department / functional-area labels across industries (Diversity), (iii) the distribution of ERP postings requiring more than one foreign language across industries (Multilingualism), and (iv) the average career-level score for ERP postings (Entry Level = 1, Mid-Level = 2, and Senior Level = 3). Based on the above four indicators, a composite index (ERP_Intensity) was created to reflect the ERP sector demand rank and will be useful for continued research to study ERP-related posting concentration by industry. The analysis demonstrated significant differences between the ERP-related posting concentration patterns by industry. Manufacturing & Industry accounts for the largest share of ERP postings in the sample, followed by Trade & Consumer Services. Manufacturing & Industry also records the highest values for Diversity and Multilingualism, understood as the concentration of department / functional-area labels and multilingual ERP postings in the sample. Digital & Tech roles had the lowest representation in ERP job advertisements and did not contribute to the multilingual ERP postings observed in the sample. The available ERP job postings did not provide sufficient full-text detail to allow a reliable frequency analysis of terms associated with AI, RPA and cloud computing. Overall, ERP employment characteristics are likely to differ significantly between industries, which may provide insights into potential indirect indicators of enterprise-based digital transformation, cross-functional ERP integration, and international coordination.*

Keywords: Enterprise Resource Planning (ERP); job postings; labor demand; competency diversity; multilingualism; digital transformation; Romania.

Introduction

Digital transformation is changing how companies design processes, manage data and create value (Sunyaev et al., 2023). The role of ERP software is shifting from transaction processing toward broader support for digital transformation. As ERP systems move onto cloud computing platforms, they increasingly become hybrid and modular systems that allow firms to integrate business intelligence, analytics and data warehousing modules as organizational needs evolve (Bandara et

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al., 2023). The evolution of digital transformation and ERP systems has created demand for hybrid roles that combine functional-area knowledge, data management skills and expertise in integrating modular ERP components (Bandara et al., 2023).

Digital transformation is not homogeneous throughout organizations and industries, as illustrated in the previous research on digital transformation studies. Digital transformation is influenced by the operational capacity of each firm, the historical limitations of the firm, and by the changing dynamics of the firm's ecosystem (Irani et al., 2023; Plekhanov et al., 2023). An additional layer of complexity is added to enterprise resource planning (ERP) projects by the fact that ERP projects can be viewed as socio-technical projects impacted by several factors including governance, alignment of stakeholders, and implementation risk (Coşkun et al., 2022). Consequently, the evidence of employment-related skills associated with ERPs sheds light on where organizations are investing in process integration, compliance, and data-driven operational improvements.

The use of job postings to identify the skill sets that employers seek from job applicants provides a convenient method to quantify the amount of skill postings on the internet and therefore create a consistent and comparable means for displaying skill requirements across different industries in respect to ERP job roles by showing how organizations communicate their expectations of prospective employees through job postings and the types of skills they want. Moreover, skill extraction techniques have been validated as useful for the analysis of job postings by other researchers, providing insight into the difficulties associated with the categorization and quantification of skills at a macro level (Ao et al., 2023). This study employed job postings as an empirical proxy for ERP-related labor demand in order to examine how ERP-related postings, functional-area labels, multilingual requirements and career-level complexity are distributed across industries.

The relevance of the Digital Economy and Society (DESI) index within the state of the Digital Decade monitoring framework, since 2023, will serve as an indication of the progress toward digital targets set by the EU (European Commission, 2023a). The findings from the state of the Digital Decade report have underscored the importance of investing more in technology and skills relating to the digital economy (European Commission, 2023b). Consequently, the number of ERP jobs provides an indication of how much businesses are digitalizing their operations and will provide a greater context when assessing how Romania compares to other EU countries.

Objectives of the study:

- Identify how ERP-related postings are distributed across industries in the analyzed eJobs sample.
- Compare industries in terms of functional-area concentration, multilingual posting concentration, career-level complexity and composite ERP_Intensity.

An ERP system integrates and combines the use of multiple different types of information systems into one cohesive reporting and record-keeping system; enabling businesses to coordinate their business operations using data. Consequently, ERP job postings can be examined as partial and indirect signals of enterprise-level digital development.

This study does not claim to measure national digitalization directly. Instead, it examines whether ERP-related job postings can provide partial and indirect signals of enterprise-level digital development through posting concentration, functional-area diversity, multilingual requirements and role complexity.

Research questions:

- RQ1: In which industries are ERP-related postings most concentrated in the analyzed eJobs sample?

- RQ2: To what extent do ERP-related job postings in the analyzed eJobs sample provide indirect signals of cross-functional integration, multilingual coordination and role complexity across industries?

Literature review

Klaus et al. (2000) discuss early examples of the use of ERP systems as strategic tools in integrating an organization's business processes, optimizing the efficiency of their day-to-day operations and supporting decision-making. Monk and Wagner (2013) echo these findings in their most recent work regarding the evolution of ERP systems. Hitt et al. (2002) describe that there is substantial variability among organizations by industry regarding the speed at which they are implementing an ERP system given that it often corresponds to varying levels of complexity inherent within their business processes and their international reach, as well as their unique attributes that characterize each organization's business operation(s).

Aloini et al. (2012) argue that ERP environments require not only technical and functional competencies, but also managerial and coordination-related skills. In manufacturing and infrastructure-related contexts, language and communication skills may become relevant because firms often operate through supply chains and cross-border collaborations. Manufacturing and infrastructure industries are also associated with complex operational processes, which can create stronger needs for integrated information systems. Bradford and Florin (2003) also show that ERP implementation requires a combination of technical, analytical and organizational capabilities.

ERP systems have been found to provide different types of benefits depending on the nature of the organizational environment in which they are implemented (Shang & Seddon, 2002). For example, in technology-based organizations, ERP-related responsibilities may be embedded in broader software, platform, and/or integration roles and may not necessarily be advertised as "ERP" roles.

Based on the literature, it has become clear that the ERP role differences between industries can be analyzed employing a conceptual model derived from the literature. Key aspects influencing these ERP roles include the number of ERP roles per industry, diversity of competencies per industry, foreign language requirements per industry and complexity of the roles of the ERP. In addition, factors such as the level of internationalization, the nature of the organization's business (operating models), and the degree of sophistication of their internal processes also have a significant impact on the way organizations operate their ERP functions. Therefore, this study carries out a comparative analysis of different industries with regard to the above-mentioned factors both theoretically and empirically.

ERP was traditionally thought of as a system that records internal transactions only. However, more recently, ERP has also been viewed as a central component of the company's digital transformation strategy. Therefore, our focus on ERP is changing from an internal perspective to also including how companies are leveraging ERP systems in cloud-native architecture, platform ecosystems, and composable business process environments (Sunyaev et al., 2023). Because of this change, the relevance of the monolithic "all in one" ERP suite has decreased and the necessity for collaboration between independent ERP systems via middleware or interoperability, as well as coordinating between multiple ERP systems across the enterprise ecosystem, is increasing (Sunyaev et al., 2023). In addition, there has been a growing connection between the creation of new ERP value and the use of advanced analytics techniques and large-scale data integration capabilities. Empirical studies have shown that utilizing big data technologies in conjunction with ERP systems can increase the responsiveness of ERP systems; therefore, there exists an increased

need for hybrid profiles where ERP systems have the capabilities of combining business process knowledge with both data and integration capabilities (Bandara et al., 2023). Additionally, the organizational and sectoral contexts will continue to be a major factor in shaping the path for digital transformation; for example, many public and regulated sectors will have to overcome limitations created by legacy IT infrastructures and the complexity associated with their governance structures (Irani et al., 2023).

From an economic point of view, employers increasingly use job postings on the web as an empirical source to understand, measure, and compare skill demand within digital labor markets. Methodological studies have shown that job postings can be mined for skill information through scalable techniques. However, due to variations among the extraction techniques and categories available to analysts, there is the need for transparency in the development of job skills indicators and methods to validate the results produced by such techniques (Ao et al., 2023). Moreover, researchers have begun to use job postings as a means to identify changing competency requirements within digital labor market contexts, such as data science. In particular, text mining methodologies allow researchers to track changing expectations of technical, analytical, and cross-functional competencies (Smaldone et al., 2022). The results drawn from this study demonstrate that ERP job postings represent the formal methods used by an organization to assess its ability to use digital integration as an effective business tool. In addition, ERP job postings provide an important opportunity for an organization to identify regional variances in the level of demand for ERP related competencies across the various industries that utilize ERP as part of their business operations.

The indicators used in this study are intended to provide an early warning of potential enterprise-level digital transformation through ERP-related labor demand. The indicators cover the following:

- (1) the breadth of competencies required across the ERP domain, demonstrating cross-functional organization and process integration;
- (2) the organizational complexity of ERP roles, based on seniority and/or career levels;
- (3) cross-border and internationalization activities, indicated by multilingual competencies;
- (4) the extent to which ERP demand is concentrated in the labor market.

However, the indicators do not provide information about:

- (a) the current implementation status or success of ERP implementations within a company;
- (b) the adoption of specific emerging technologies (e.g. RPA, AI and cloud computing), which cannot be observed in organizational metadata;
- (c) other facets of the broader digital transformation phenomenon, including the digital customer experience, IT governance maturity and cultural changes.

These limitations provide insight into how to interpret ERP_Intensity as an indicator of labor demand for ERP, but it should not be interpreted as an overall indication of the level of digital transformation taking place.

Data and methodology

A total of 282 ERP job postings were examined, all of which were taken from the eJobs ERP page in November 2025. Each job posting was categorized into one of six different industry groups. Studies using historical data from similar online job postings have shown that analyzing labor demand at the national level using eJobs job postings should produce comparable results to those obtained from other forms of research (Ao et al., 2023).

eJobs is a suitable source for this study, being one of the largest job boards in Romania with the greatest number of job postings and very wide sectoral coverage. A major benefit of using eJobs

is that many of the advertisements contain structured and comparable features (e.g. industry category, career level, language of advertisement, and department/functional area). These features enable consistent indicators to be compared across industries, eliminating the need for varying formats and details in the full-text description of each advertisement.

On the downside, the eJobs database when used for this study may create a bias in coverage. Companies that use eJobs to post job vacancies represent only a small portion of all employers in Romania. This may lead to a lower representation of the number of employers who rely on internal recruiting, use staffing agencies/professional networks, and use alternate job boards. Moreover, the less visible posts may consist of senior level job postings, public sector competition for public contracts, and informal recruitment for local positions. In addition, the patterns across multiple industries may depict the postings (patterns) created by the recruiter, rather than the actual underlying demand in each industry for ERP personnel in Romania. For these reasons, the findings in this study should be viewed as indicative of the demand for posts in the eJobs ERP job posting market, not as absolute measures of the total demand for ERP individuals throughout Romania's various industries.

The measurements are taken from the structured fields of the eJobs database and are shown in Table 1. ERP_Share is calculated as the percentage of ERP-related postings in each industry out of the total number of ERP-related postings in the sample.

Diversity is measured as each industry's share of the total number of distinct department / functional-area labels observed in the ERP posting sample, based on the department codes available in the structured eJobs fields. This indicator captures how the observed functional breadth of ERP-related postings is distributed across industries.

Multilingualism is measured as each industry's share of all ERP postings requiring more than one foreign language in the sample, based on the foreign language categories available in the structured eJobs fields. This indicator captures how multilingual ERP postings are distributed across industries.

The average career level (complexity) score is based on the career level categories, where Entry Level = 1, Mid-level = 2 and Senior = 3. If multiple career level designations are used, the highest career level designation is recorded. Industry averages do not include missing values.

Following common practice in composite indicator construction, an industry-level composite measure, ERP_Intensity, was created using four standardized components with reference to the broader literature on composite indicators (Walheer, 2024):

$$\begin{aligned} ERP_Intensity_j &= \omega_1 \times ERP_Share_j^* + \omega_2 \times Complexity_j^* + \omega_3 \times Diversity_j^* + \omega_4 \\ &\times Multilingualism_j^* \end{aligned}$$

where:

$$\omega_1 = \omega_2 = \omega_3 = \omega_4 = \frac{1}{4},$$

* indicates min-max standardized values.

Since the four components are measured on different scales, each component was first transformed using min-max standardization before aggregation.

$$X_j^* = \frac{X_j - \min(X)}{\max(X) - \min(X)}$$

where X_j is the value of indicator X for industry j , and X_j^* is the standardized value.

Therefore, ERP_Intensity should be interpreted as a relative composite measure of ERP-related posting concentration, functional-area concentration, multilingual posting concentration and role complexity within the analyzed eJobs sample.

Equal weights were used because there is no strong theoretical basis for assigning priority to one component over another. This approach allows the four dimensions to contribute equally to the composite measure.

Because the dataset contains only ERP-related postings, ERP_Share is defined as an in-sample concentration measure, i.e., the percentage of all ERP job ads in the sample that belong to industry

$$\text{ERP_Share}_j = \frac{n_j}{N} \times 100, \text{ (with } N=282\text{);}$$

therefore, it reflects how ERP job demand is distributed across industries within the ERP posting market, not ERP penetration in the overall industry labor market. ERP_Share shows the number of ERP-related job postings in eJobs, broken down by industry. It should be viewed as an indicator of the ERP-related labor demand within a given industry, rather than as an indicator of the total number of firms using ERP systems.

Table 1. Industry-level Components of the ERP_Intensity Indicator: Definitions and Interpretation

Variable	Calculation formula	Meaning / interpretation
ERP posting share by industry (ERP_Share)	$\text{ERP_Share}_j = \frac{n_j}{N} \times 100$, where N = total ERP postings in the sample	Measures the concentration of ERP postings in industry (j) within the ERP sample (distribution across industries).
Job complexity (Complexity)	Mean career-level score based on Career level (Entry = 1, Mid = 2, Senior = 3); if multiple levels, use max	Indicates the maturity/seniority profile of ERP roles in the industry.
Competency diversity (Diversity)	$\text{Diversity}_j = \frac{D_j}{D_{total}} \times 100$, where D_j is the number of distinct department / functional-area labels observed in industry j , and D_{total} is the total number of distinct department / functional-area labels observed in the ERP posting sample.	Captures the distribution of department / functional-area labels across industries. Higher values indicate that a larger share of the observed functional-area labels in the sample is concentrated in industry j .
Multilingualism (Multilingualism)	$\text{Multilingualism}_j = \frac{M_j}{M_{total}} \times 100$, where M_j is the number of ERP postings requiring more than one foreign language in industry j , and M_{total} is the total number of ERP postings requiring more than one foreign language in the ERP posting sample	Captures the distribution of multilingual ERP postings across industries. Higher values indicate that a larger share of all multilingual ERP postings in the sample is concentrated in industry j .

Note: In this study, Diversity and Multilingualism are distributional indicators. They show how department / functional-area labels and multilingual ERP postings are distributed across industries in the analyzed ERP posting sample. They should not be interpreted as within-industry averages or within-industry rates.

Source: Authors' own research.

Data analysis

In this data analysis of ERP-related job postings retrieved from eJobs (completed in November 2025), there were 282 job postings that were categorized by 6 different sectors: Digital & Tech; Energy & Infrastructure; Financial and Business Services; Manufacturing & Industry; Public and Social Sector; Trade & Consumer Services. Each industry was analyzed using four descriptive indicators:

(a) ERP_Share, (b) Diversity, measured as the distribution of department / functional-area labels, (c) Multilingualism, measured as the distribution of postings requiring more than one foreign language, and (d) job complexity, measured through the average career-level score. Table 2 provides a breakdown of the four indicators grouped by the various industries analyzed. The sample includes active postings listed on the eJobs ERP page in November 2025 and classified using the structured metadata available on the platform. The search was based on the keyword “ERP”.

Manufacturing & Industry has the highest concentration of ERP-related postings in the sample (30.85%), followed by Trade & Consumer Services (19.50%). Additionally, the Energy & Infrastructure and Public & Social Sector each account for 15.25% of ERP-related postings, with Financial & Business Services (14.54%) close behind. Digital & Tech had the fewest ERP postings (4.61%) in this dataset.

In addition to the different distribution of ERP job postings, the observed functional-area labels are also unevenly distributed across industries. Manufacturing & Industry accounts for the largest share of department / functional-area labels in the sample (22.73%), followed by Trade & Consumer Services (21.21%), suggesting that these sectors concentrate a broader range of ERP-related functional areas. Manufacturing & Industry also accounts for the largest share of ERP postings requiring more than one foreign language in the sample (44.83%), whereas Digital & Tech accounts for 0.00% of the multilingual ERP postings observed in the sample (see Table 2). The mean complexity score is 2.26 across all analyzed sectors, with Manufacturing & Industry achieving the highest score (2.38), followed by Energy & Infrastructure (2.37) (Table 2).

Table 2. Industry distribution of ERP Job indicators (eJobs, November 2025; N = 282)

No.	Industry category	ERP_Share (% of ERP postings in the sample)	Diversity (% of all department / functional-area labels)	Multilingualism (% of all multilingual ERP postings)	Job complexity	ERP_Intensity	Rank
1	Digital & Tech	4.61	9.09	0.00	2.15	0.000	6
2	Energy & Infrastructure	15.25	12.12	6.90	2.37	0.437	4
3	Financial & Business Services	14.54	15.15	17.24	2.22	0.375	5
4	Manufacturing & Industry	30.85	22.73	44.83	2.38	1.000	1
5	Public & Social Sector	15.25	19.70	20.69	2.19	0.447	3
6	Trade & Consumer Services	19.50	21.21	10.34	2.24	0.513	2
	Total / Mean	100	100.00	100.00	2.26	-	-

Note: ERP_Share represents each industry’s share of all ERP-related postings in the sample. Diversity represents each industry’s share of all department / functional-area labels observed in the ERP posting sample. Multilingualism represents each industry’s share of all ERP postings requiring more than one foreign language. Diversity and Multilingualism are distributional indicators; they should not be interpreted as within-industry averages or within-industry rates. Job complexity is measured as the mean career-level score. ERP_Intensity is calculated as the equal-weighted average of the min-max standardized values of ERP_Share, Diversity, Multilingualism and Job complexity. Rank is based on ERP_Intensity, where 1 indicates the highest composite score.

Source: Authors’ own research.

Based on the composite ERP_Intensity score, Manufacturing & Industry ranks first, followed by Trade & Consumer Services and Public & Social Sector. Digital & Tech records the lowest ERP_Intensity score, reflecting its low representation in ERP postings, department / functional-area labels and multilingual ERP postings within the analyzed sample.

This research analyzes six different sectors of the economy: Digital & Tech, Energy & Infrastructure, Financial and Business Services, Manufacturing & Industry, Public and Social Sector, and Trade & Consumer Services. The research is based on four key indicators: the share of ERP postings, the distribution of department / functional-area labels, the distribution of multilingual ERP postings, and the complexity of job responsibilities. The first three indicators are shown in Figure 1 and job complexity is shown in Figure 2.

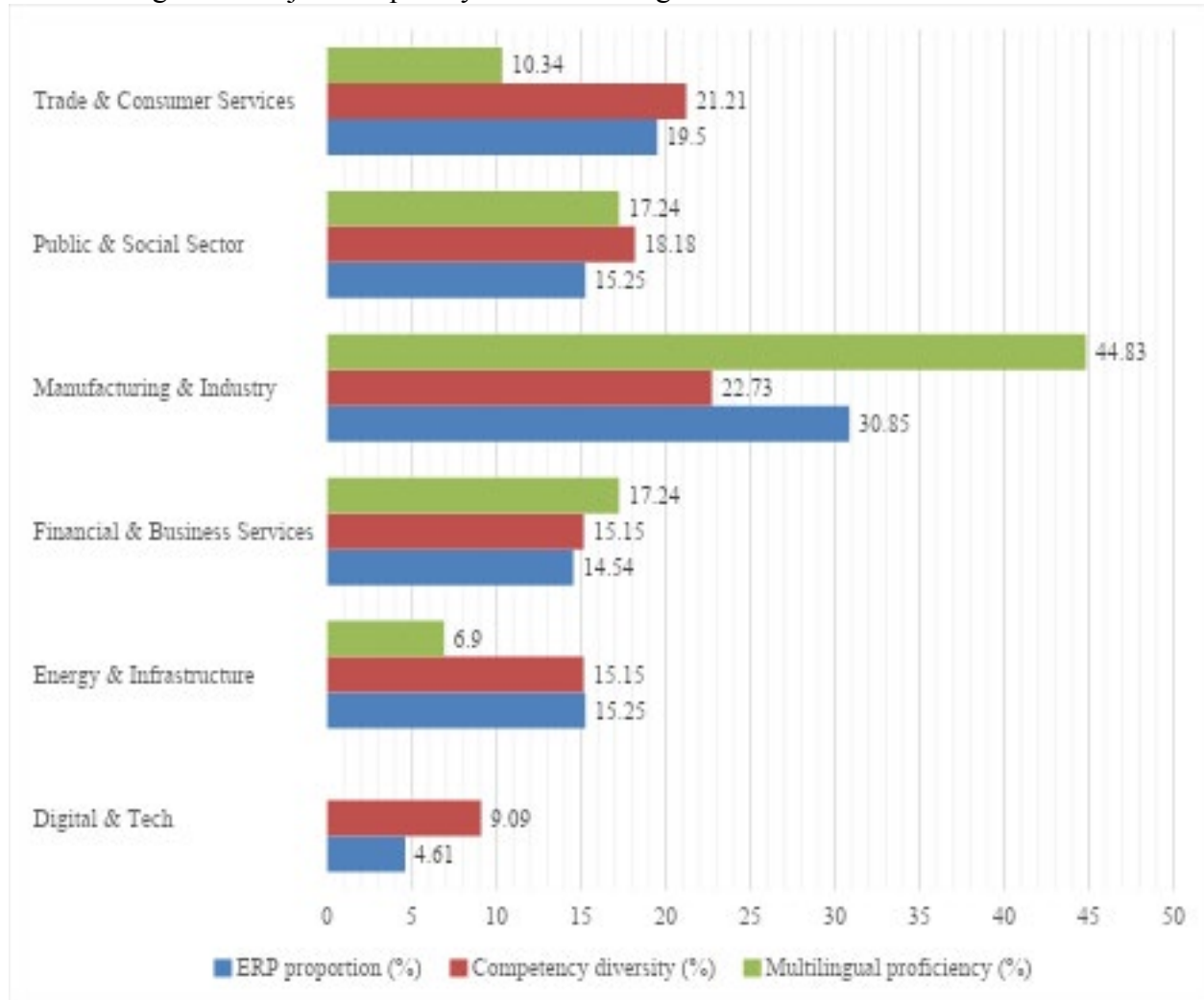


Figure 1. ERP_Share, Diversity and Multilingualism by industry category (% of sample totals)

Source: Authors' own research.

This section compares the four indicators in order to describe the distribution and characteristics of ERP-related postings across industries. The analysis provides insights into how ERP-related roles are represented across industries in terms of operational, administrative and strategic characteristics, with a comparison between each sector.

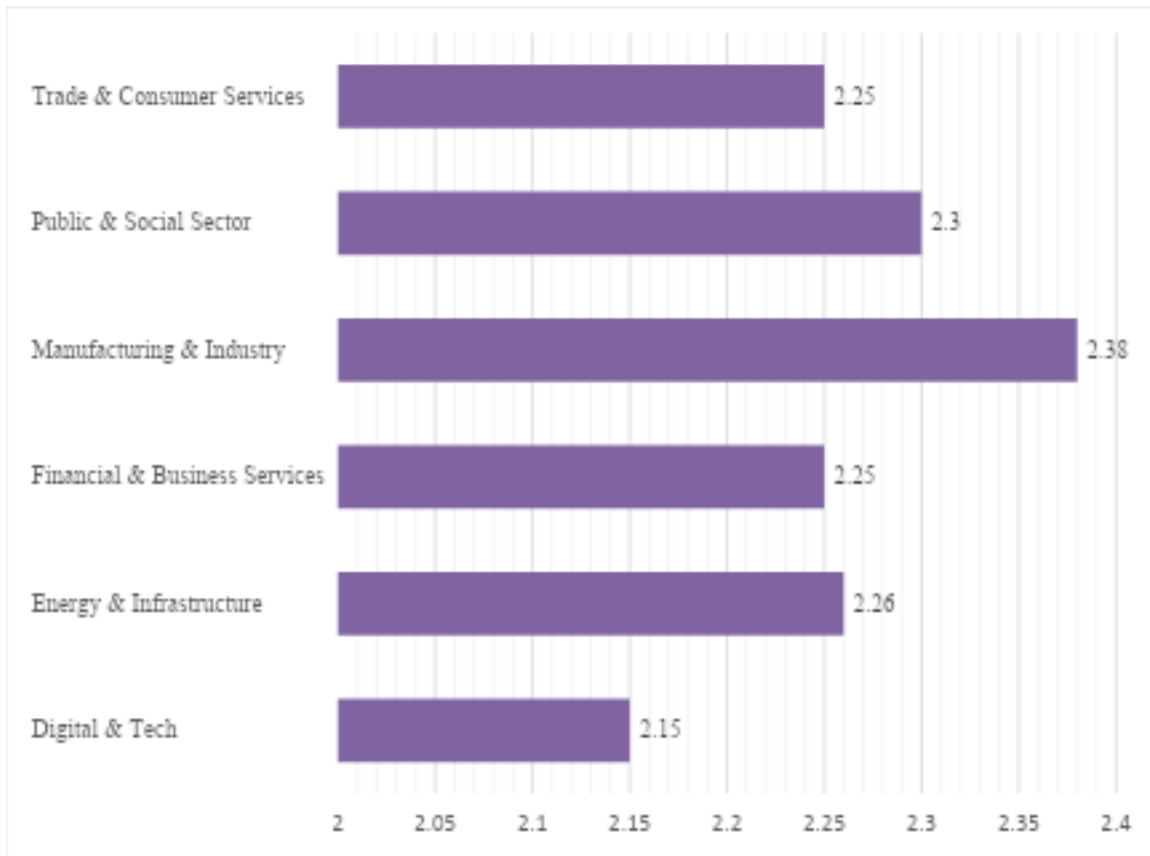


Figure 2. ERP job complexity by industry category (index)

Source: Authors' own research.

A comparative analysis of the indicators

Digital & Tech accounts for 0.00% of multilingual ERP postings in the sample, while Manufacturing & Industry accounts for the largest share, at 44.83%. This suggests that multilingual ERP postings are most strongly concentrated in Manufacturing & Industry; however, this data point should be viewed in the context of the total share of multilingual ERP postings in the sample, as opposed to the percentage of Manufacturing & Industry related postings that were multilingual.

The diversity metric displays the distribution of functional-area/department labels across different industries. Digital and Tech labels are represented as 9.09%, while Manufacturing & Industry labels account for 22.73%. The largest number of functional-area label observations fall into the Manufacturing & Industry and Trade & Consumer Services sectors; consequently, this appears to indicate that there is more of a concentration of a broader range of ERP-related functional areas represented by these two sectors within the sample analyzed. Therefore, while the diversity indicator does indicate an industry-by-industry distribution of functional-area labels, it should not be interpreted to represent an average count of the competencies needed to be successful in the respective industries.

The category of Digital & Tech represents just 4.61% of all ERP job postings across this sample, while Manufacturing & Industry accounts for the largest share of postings, at 30.85%. The higher concentration of ERP-related postings in Manufacturing & Industry may reflect the importance of integrated information systems in sectors characterized by complex production, logistics and resource-planning processes.

The final indicator, which refers to position complexity, has mostly similar values ranging from 2.15 to 2.38 with a mean of 2.26 overall, based on Figure 2 above. Therefore, this indicator shows a relatively uniform level of job complexity for ERP professionals across all industries with negligible differences between industries, indicating that industry-to-industry variability is being driven more by content and competence of the position versus the formal structural hierarchy of the position types. Stated differently, position complexity is the most uniform measure of complexity across all industries, suggesting that there will be a similar level of structural and hierarchical requirements for ERP professionals across all industries.

For this reason, when analyzing the indicators, it is clear that there are large variations in the distribution of ERP-related postings across industries and that there are significant differences in the distribution of functional-area labels and multilingual ERP postings. While there are few variations between the sectors with regard to structural complexity, the results of this analysis will provide an overview of the relationships between the sectors and will provide a framework for carrying out an industry-level analysis.

A comparative analysis across industries

Compared with the other industries, Digital & Tech records the lowest values for several indicators, including ERP_Share and multilingualism. This indicates that ERP-labelled job postings are less visible in this industry within the analyzed eJobs sample, compared with other sectors. The low representation of Digital & Tech in the ERP posting sample may suggest that ERP-related responsibilities in this sector are either less frequently advertised as explicit ERP roles or are embedded in broader software, platform or integration positions.

Energy & Infrastructure shows a moderate concentration of ERP-related postings in the analyzed sample. Energy & Infrastructure accounts for a relatively small share of multilingual ERP postings in the sample, which may indicate a lower visibility of multilingual ERP requirements in this sector compared with Manufacturing & Industry and Financial & Business Services. This may suggest that ERP-related roles in this sector are more closely associated with resource planning, monitoring and project coordination.

Financial & Business Services shows a balanced profile across the analyzed indicators and accounts for a notable share of multilingual ERP postings in the sample. This may reflect the presence of internationally oriented financial and business-service activities, although the available structured metadata do not allow direct observation of specific job tasks. Such activities may require linguistic and cultural competencies. Overall, the career-level complexity of Financial & Business Services postings is close to the sample average, suggesting a moderately defined seniority profile.

The largest portion of ERP posts in the sample related to Manufacturing & Industry. Manufacturing & Industry also has the highest diversity and multilingualism index scores. This indicates that Manufacturing & Industry concentrates the largest share of department / functional-area labels and multilingual ERP postings in the sample. Since Manufacturing & Industry has the highest Multilingualism value, there are correspondingly higher concentrations of multilingual ERP postings recorded in Manufacturing & Industry which may be associated with cross-border collaboration or international coordination requirements.

Public & Social Sector is characterized by an average share of ERP-related postings and a relatively high share of the department / functional-area labels observed in the sample. This may reflect the need to manage complex administrative processes, such as public resource planning,

budget management, or coordination of social projects. However, the moderate share of multilingual ERP postings may suggest a stronger national or institutionally oriented profile.

Trade & Consumer Services accounts for a relatively high share of ERP-related postings and department / functional-area labels, but a lower share of multilingual ERP postings compared with Manufacturing & Industry, Public & Social Sector and Financial & Business Services. The Trade & Consumer Services sector has an intermediate market orientation. ERP positions that are found in the Trade & Consumer Services sector facilitate the management of distribution networks, inventory, and internal marketing activities. The lower share of multilingual ERP postings suggests that multilingual requirements are less concentrated in this sector than in Manufacturing & Industry, Public & Social Sector and Financial & Business Services.

According to the comprehensive comparative analysis of this study, organizations with operational complexity, a need to coordinate across multiple functions, and increased exposure to global markets are likely to be associated with higher concentrations of ERP-related postings in the sample. Therefore, it appears that the degree to which ERP postings are generated within the job-posting sample may be more closely related to the complexity of business processes and the need to coordinate activities across multiple functional areas than to the general level of visibility of a particular sector in the job-posting sample.

At this time, the structured metadata available in this study are not sufficient to identify ERP job postings enabled by artificial intelligence (AI), robotic process automation (RPA), or cloud services. Consequently, AI, RPA, and cloud services are treated in this study only as potential areas for future research. Future research should use the complete text of job postings to verify the role of these technologies.

Conclusion

The data reveal a significant disparity among industries in their ERP postings across the analyzed eJobs sample. Manufacturing & Industry accounts for the largest share of ERP-related postings, as well as the highest concentrations of department/functional-area labels and multilingual ERP postings. In this way, ERP labor demand in this sector appears to have both broader functional coverage and the largest concentration of multilingual ERP postings in the sample. Conversely, Digital & Tech accounts for the smallest share of ERP-related postings and contributes no multilingual ERP postings in the analyzed sample. Therefore, the results of this analysis should be seen as evidence of concentration patterns within the eJobs ERP posting market, rather than being indicative of the level of ERP adoption or the extent of digital transformation across Romanian industries. Regarding ERP job complexity, the relatively similar values across industries suggest comparable structural and hierarchical requirements for these roles. The differences among sectors relate more to competency content and the specific organizational context rather than the formality of job complexity. This study suggests that ERP-related labor demand differs across industries, with implications for competency requirements, employee professional profiles and human resource strategies. Employers use job advertisements to describe the skills necessary for ERP jobs; however, they do not show how their organizations have changed as a result of their digital transformations. The results indicate patterns within the analyzed eJobs ERP posting sample, but they do not measure Romania's overall level of ERP adoption or large-scale digital transformation.

The next phase of research should focus on the creation of a text mining-based framework capable of identifying technology-related competencies from complete job postings. By using such an approach, researchers will be able to identify more accurately specific job skills related to cloud computing, robotic process automation (RPA), and artificial intelligence (AI) that are associated

with ERP systems. Due to the lack of complete job postings in the dataset used for this study, keyword frequency counts were not available for AI, RPA, and cloud computing.

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