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AI-DRIVEN CORPORATE ORGANIZATIONAL RESTRUCTURING IN THE EUROPEAN UNION*

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Abstract. This study examines whether the growing adoption of artificial intelligence (AI) technologies is associated with measurable organizational restructuring processes within enterprises across the European Union (EU). While existing research mainly focuses on the determinants and performance effects of AI adoption, the organizational consequences of AI integration remain insufficiently explored. To address this gap, the study develops a capability-based conceptual framework linking internal enterprise-level capabilities, AI adoption mechanisms, and organizational restructuring outcomes. The empirical analysis is based on comparative Eurostat datasets covering EU countries and includes indicators related to digital capabilities, organizational innovation, AI adoption, and middle-management employment structures. Methodologically, the study applies a two-stage quantitative approach combining K-means cluster analysis and linear regression analysis. The results reveal substantial heterogeneity among EU countries in terms of digital integration, organizational innovation, and AI adoption intensity. The findings further suggest that AI-driven organizational restructuring does not manifest itself through simple managerial displacement. Instead, enterprise analytical capabilities – particularly the diffusion of Business Intelligence (BI) software – are positively associated with changes in middle-management structures in more digitally advanced organizational environments. The study contributes to the literature by shifting attention from AI adoption itself toward its organizational implications and by providing an indirect quantitative assessment of AI-driven corporate organizational restructuring within the EU.

Keywords: digital and innovation capabilities of enterprises; artificial intelligence (AI) adoption; corporate organizational restructuring; cluster analysis; regression analysis; European Union

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1. Introduction

The adoption of artificial intelligence (AI) technologies among European enterprises has increased significantly in recent years, reflecting their growing role in business operations and decision-making. In 2025, 19.95% of enterprises in the European Union (EU) reported using AI technologies, while adoption among large enterprises

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reached 55.03% (Eurostat, 2025). The use of AI spans multiple functional areas, with 34.70% of AI-adopting firms applying these systems in marketing and sales, and 31.05% in the organisation of business administration processes or management. In contrast, AI applications in logistics remain comparatively limited, accounting for only 6.08% of enterprises using AI technologies (Figure 1). These figures indicate not only the increasing diffusion of AI across firms but also its uneven integration across organizational functions, suggesting differentiated impacts on corporate structures and governance mechanisms. At the same time, the EU Artificial Intelligence Act and the AI Continent Action Plan make enterprise AI adoption a governance and competitiveness issue rather than only a matter of technological efficiency (European Parliament and Council, 2024; European Commission, 2025).

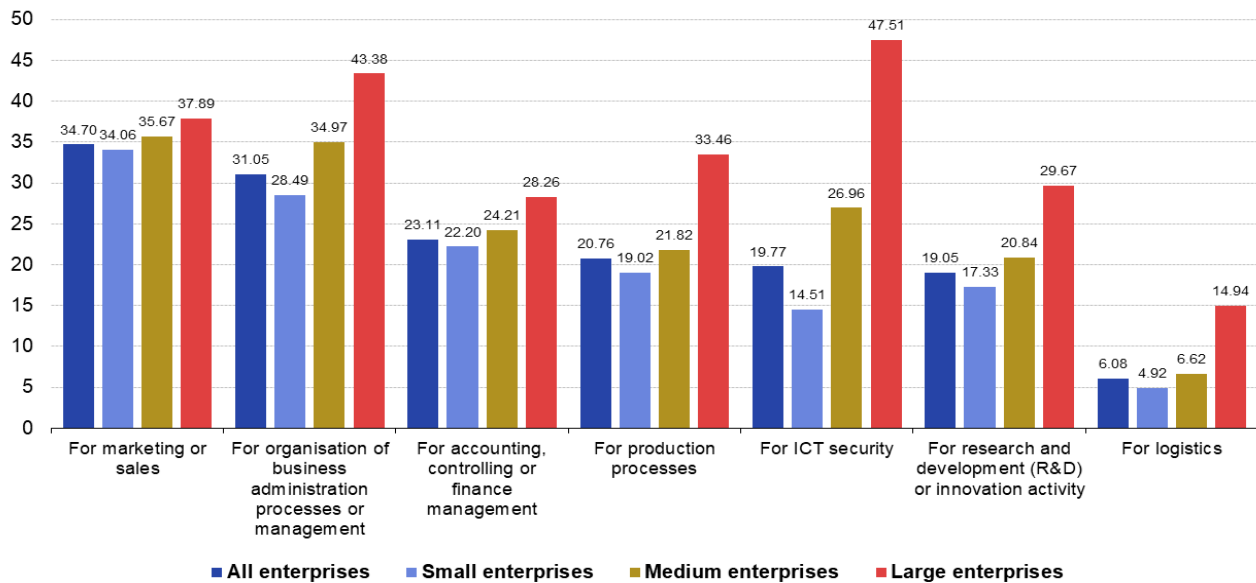


Figure 1. EU Enterprises Using AI Technologies by Type of Purpose and Size Class, %, 2025

Note: In 2025, 157,000 of the 1.53 million enterprises in the EU were surveyed. Of these enterprises, approximately 83% were small, 14% medium-sized and 3% large enterprises.

Source: Eurostat (2025).

Public disclosures from large firms also indicate that AI adoption is not limited to efficiency gains but is actively reshaping organizational boundaries, workflows, and hierarchies. In retail, Walmart's AI-powered warehouse automation illustrates how operational decisions and inventory flows are increasingly embedded in digital infrastructures, while automation changes the composition of warehouse work and reduces reliance on traditional supervisory routines (Walmart, 2025).

In platform and service-oriented firms, digital transformation processes and their impact on organizational structures and operations are especially evident (Cheng et al., 2025). Klarna's deployment of AI chatbots in customer operations was linked to workforce reduction and reconfiguration of service roles, demonstrating how automation can substitute routine functions and compress organizational layers (Klarna, 2024). In enterprise software, SAP's AI-related restructuring illustrates both capability building and workforce reallocation, indicating a broader shift toward technical-core dominance and hybrid coordination roles (SAP, 2024). Across these cases, a consistent pattern emerges: AI enables local units to experiment and operate more autonomously, but governance over standards, data and model interpretation becomes increasingly centralized. This dual-track architecture - combining operational decentralization with centralized control - redefines authority, reshapes middle-management functions and embeds governance mechanisms within algorithmic systems and organizational artifacts.

Against this background, the present study aims to examine whether the growing adoption of artificial intelligence technologies is associated with measurable organizational restructuring processes within enterprises across the EU, with particular attention to changes in middle-management structures. To address this objective,

the study combines capability-based and organizational perspectives on AI-driven transformation and applies a two-stage empirical methodology. First, cluster analysis is used to identify relatively homogeneous groups of EU countries based on indicators reflecting enterprise-level digital and innovation capabilities, as well as AI adoption mechanisms. Second, linear regression analysis is employed to assess the statistical relationship between these explanatory variables and organizational restructuring outcomes, operationalized through the share of employment in middle-management occupations (ISCO-08 groups 12–13 (International Labour Organization (ILO), 2026)). Within this framework, the study seeks to provide an indirect quantitative assessment of AI-driven corporate organizational transformation in the EU and to evaluate whether higher levels of AI integration, combined with stronger organizational capabilities, are associated with changes in managerial architecture and labor allocation patterns across EU countries.

2. Literature Review

The growing diffusion of artificial intelligence (AI) technologies has generated an expanding body of literature examining their role in firm-level digital transformation. A substantial stream of research focuses on the determinants of AI adoption, emphasizing the importance of internal capabilities, such as digital and innovation capacities, as well as external environmental conditions shaping technological uptake. Within this perspective, AI is primarily understood as a strategic and technological resource that enhances firm competitiveness through improved efficiency, data processing and decision-making quality (Enholm et al., 2022; Weber et al., 2023; Arroyabe et al., 2024; Rizana et al., 2025).

The study by Arroyabe et al. (2024) provides a strong empirical and theoretical foundation for understanding AI adoption processes, particularly within European SMEs. Drawing on dynamic capabilities and resource dependency theories, the authors demonstrate that internal organizational capabilities – especially digital and innovation capabilities – play a decisive role in enabling AI adoption, while external business environment support has a weaker and more context-dependent effect. Their large-scale empirical analysis highlights not only the direct positive effects of these capabilities but also their synergistic interaction, emphasizing the importance of capability integration. Notably, the findings indicate that digital capabilities exert a stronger influence than innovation capabilities, underscoring the centrality of technical readiness in AI implementation (Wamba, 2022; Arroyabe et al., 2024; Daly et al., 2025; Komarova et al., 2025).

Complementing this capability-based perspective, research on digital innovation explores how firms leverage AI to enhance performance and strategic outcomes. Fan (2025), for example, demonstrates that AI technologies significantly influence business strategies across multiple dimensions, including content creation, operational efficiency and customer engagement. The study highlights the dominant role of data analytics in shaping strategic decision-making, reinforcing the idea that AI enables more adaptive and data-driven organizational processes. Similarly, Cheng et al. (2025) provide a configurational analysis of digital innovation in platform enterprises, showing that innovation outcomes depend on the alignment of digital capabilities with ambidextrous learning strategies. Their findings reveal that no single factor is sufficient to drive digital innovation; instead, multiple pathways emerge through the interaction of technological and organizational elements. This perspective emphasizes the heterogeneity of platform firms and the importance of capability configurations in shaping innovation performance (Talaie-Khoei et al., 2024; Fan, 2025; Cheng et al., 2025).

Beyond strategic and innovation outcomes, digital transformation research has also examined broader economic, relational and capability-related effects. He et al. (2026), for instance, provide a detailed analysis of how enterprise digital transformation reshapes risk-sharing dynamics between firms and financial institutions. By reducing information asymmetry and alleviating financing constraints, digitalization enables more synchronized risk-taking between banks and firms, fundamentally altering traditional financial relationships. Related work also shows that digitalisation, knowledge management and technology transfer influence organizational capabilities and circularity, which is relevant for understanding how technological change extends beyond single firms into wider organizational ecosystems (Radavičius & Tvaronavičienė, 2022; He et al., 2026).

At the organizational level, complementary insights can be drawn from research on organizational capabilities, data-driven culture and AI-enabled performance. Studies of AI assimilation and AI capability show that organizational agility, customer agility and data-driven culture mediate the relationship between AI capability and firm performance. This perspective underscores the importance of structural and behavioral conditions in shaping collective performance and suggests that organizational effectiveness depends on the integration of multiple interrelated factors rather than on the presence of AI tools alone (Wamba, 2022; Wamba et al., 2024; Murire, 2024).

More direct attention to the organizational implications of AI is found in studies examining socio-technical dynamics and governance challenges. Lanne et al. (2025) conceptualize AI adoption as a process characterized by inherent tensions, requiring organizations to balance competing demands such as efficiency and ethics, or control and flexibility. Their analysis highlights that AI integration disrupts established processes, introduces new coordination challenges and reshapes human-technology interactions. Earlier organizational research similarly shows that AI changes decision-making architectures, creates an automation-augmentation paradox and introduces new forms of algorithmic control, which is directly relevant to the transformation of managerial roles (Jarrahi, 2018; Kellogg et al., 2020; Bankins et al., 2022; Menshikov et al., 2024).

The literature on AI governance further expands this view by examining how organizations design and implement mechanisms to manage AI systems. Birkstedt et al. (2023) conceptualize AI governance as a socio-technical system encompassing rules, processes and stakeholder interactions, and identify key themes such as regulation, technological infrastructure and organizational context. Papagiannidis et al. (2023) and Papagiannidis et al. (2025) emphasize the gap between high-level ethical principles and their practical implementation, arguing that effective AI governance requires the integration of ethical considerations into organizational processes and decision-making frameworks. Together, these studies highlight that AI governance is a dynamic and multi-level challenge that extends beyond compliance toward continuous organizational adaptation (Birkstedt et al., 2023; Papagiannidis et al., 2023, 2025).

Legal and regulatory perspectives provide additional insights into the institutional environment shaping AI adoption. Wachter et al. (2017) critically examine the concept of a “right to explanation” under the General Data Protection Regulation (GDPR), demonstrating that existing regulatory provisions offer only limited transparency and accountability mechanisms. This limitation has important implications for organizational governance, as it constrains the ability to fully understand and challenge algorithmic decision-making processes. Building on this, Vacek (2026) introduces the concept of role responsibility, suggesting that AI systems can be understood as occupying functional roles within organizations. This perspective offers a novel way to conceptualize the redistribution of responsibility and authority in AI-enabled environments.

Further contributions come from studies examining regulatory frameworks and their impact on organizational practices. Cors and Thiébaud (2025) analyze the EU AI Act as a risk-based regulatory system that both constrains and enables innovation. Their findings suggest that compliance requirements may impose operational challenges while simultaneously enhancing trust and legitimacy, thereby influencing firm behavior and strategic choices. In a similar vein, Minotakis (2025) adopts a critical, worker-centred perspective to examine how AI reshapes labor processes and organizational power dynamics. The study highlights that algorithmic management systems can intensify surveillance and reinforce power asymmetries, while existing regulatory frameworks provide only partial protection for workers. The adoption of Regulation (EU) 2024/1689 and the EU AI Continent Action Plan strengthens this institutional perspective by linking AI deployment with risk management, transparency, industrial capacity and organizational readiness (European Parliament and Council, 2024; European Commission, 2025; Murire, 2024).

Despite the breadth of existing research, several important gaps remain. First, while capability-based and innovation-oriented studies provide detailed insights into the determinants and strategic outcomes of AI adoption, they largely overlook its internal organizational consequences. Second, research on digital transformation and inter-organizational dynamics tends to focus on financial, relational, or performance-related outcomes, rather than structural changes within firms. Third, although studies on AI governance and regulation highlight the complexity of managing AI systems, they often remain at a conceptual or institutional level,

providing limited empirical evidence on how governance mechanisms translate into concrete organizational restructuring. Finally, while emerging research acknowledges the socio-technical and power-related dimensions of AI, there is still insufficient understanding of how AI adoption reshapes hierarchical configurations, decision-making centralization, and the role of middle management.

Against this background, the present study aims to address this gap by moving beyond the analysis of AI adoption toward its organizational consequences. Specifically, it seeks to examine how AI usage influences corporate organizational restructuring, with particular attention to changes in decision-making centralization, hierarchical configurations, and the role of middle management. By integrating insights from capability-based theories, governance frameworks, and empirical observations of enterprise-level transformations, the study contributes to a more comprehensive understanding of how digital transformation translates into structural change within organizations.

3. Conceptual Framework and Research Methodology

The development of a conceptual framework and research methodology for analyzing AI-driven organizational transformation requires a clear integration of theoretical perspectives on technology adoption, firm capabilities and organizational change. In recent literature, artificial intelligence is increasingly conceptualized not merely as a technological tool, but as a socio-technical system that interacts with organizational structures, human capital and managerial processes. This perspective emphasizes that the effects of AI are mediated by internal capabilities and organizational conditions, rather than being determined solely by the availability of technology. In particular, AI-driven transformation unfolds through mechanisms such as general AI adoption and administrative AI integration, which reshape not only productivity outcomes but also coordination structures and the distribution of roles within enterprises (Jarrahi, 2018; Raisch & Krakowski, 2021; Enholm et al., 2022; Weber et al., 2023;).

Within this broader context, the study by Arroyabe et al. (2024) provides a valuable conceptual and methodological foundation for examining AI-driven organizational restructuring, although its empirical scope is limited to AI adoption rather than organizational outcomes. Conceptually, the article demonstrates that AI adoption in enterprises is primarily driven by internal capabilities – particularly digital and innovation capabilities – while external environmental support plays a comparatively weaker and contingent role (Arroyabe et al., 2024). This insight is directly relevant for our research, as it suggests that organizational restructuring is likely to be endogenous to firm-level capabilities rather than externally imposed, thereby supporting a capability-based explanation of changes in hierarchy, decision-making centralization, and the role of middle management. In line with this reasoning, our conceptual framework links internal capabilities, AI adoption mechanisms, and organizational outcomes, as illustrated in Figure 2.

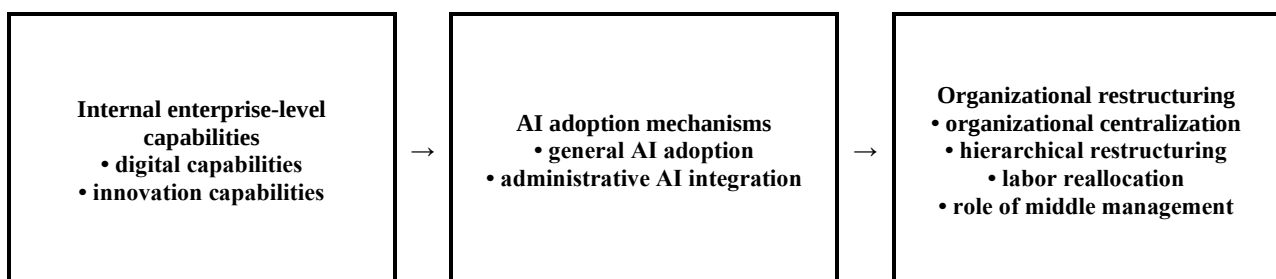


Figure 2. Conceptual Model of AI-Driven Corporate Organizational Restructuring

Source: elaborated by the authors based on Arroyabe et al. (2024), Jarrahi (2018), Raisch & Krakowski (2021), Filippucci et al. (2024) and Komarova et al. (2025).

Although external environmental support may influence AI adoption, the present study focuses primarily on enterprise-level organizational dynamics and therefore operationalizes only internal organizational dimensions. In this framework, internal enterprise-level capabilities are conceptualized as enabling conditions that facilitate AI adoption, while AI adoption itself is treated as an intermediate mechanism through which organizational restructuring processes emerge. Consequently, the conceptual model distinguishes analytically between

capability-related factors, AI adoption mechanisms, and organizational outcomes in order to preserve causal consistency between the different stages of transformation.

To translate the conceptual framework into an empirical research design, the study operationalizes each conceptual dimension through a system of indirect and direct indicators derived from Eurostat datasets. Accordingly, Table 1 serves as a methodological bridge between the conceptual model presented in Figure 2 and the empirical analysis by linking abstract theoretical dimensions with measurable statistical indicators and corresponding data sources.

Table 1. Indicators Methodologically Related to the Conceptual Model of AI-Driven Corporate Organizational Restructuring

Conceptual dimension	Conceptual variable	Operational indicator	Empirical proxy / measurement	Source of data	Expected relationship
Internal enterprise-level capabilities	Digital capabilities	Enterprise digital integration capacity	Share of enterprises using Enterprise Resource Planning (ERP) software	Eurostat, 2026a	Higher ERP diffusion increases enterprises' capacity to integrate AI into organizational coordination and decision-making
		Data-analytics capability	Share of enterprises using Business Intelligence (BI) software	Eurostat, 2026b	Higher BI usage supports AI-enabled analytical and centralized management functions
	Innovation capabilities	Organizational innovation capacity	Share of enterprises introducing business process innovations in procedures/external relations	Eurostat, 2023, 2024	Enterprises with stronger innovation practices are more likely to reorganize processes around AI systems
		Managerial innovation capacity	Share of enterprises introducing innovations in work responsibility, decision-making, and HRM		Organizational experimentation facilitates AI-related restructuring of internal governance
AI adoption mechanisms	General AI adoption	AI use intensity	Share of enterprises using at least one AI technology	Eurostat, 2026c	Greater AI adoption intensifies organizational transformation pressures
	Administrative AI integration	AI use in management and administration	Share of AI-adopting enterprises using AI for business administration processes or management	Eurostat, 2026d	AI integration into management processes contributes to restructuring of coordination and control functions
Organizational restructuring	Organizational centralization	Centralized coordination systems	-	-	-
	Hierarchical restructuring	Changes in organizational procedures	-	-	-
	Labor reallocation	Changes in managerial employment structure	ISCO-08 groups 12–13 employment share	Eurostat, 2026e	AI may reduce routine supervisory roles while increasing demand for hybrid coordination and oversight functions
	Role of middle management	Middle-management transformation			

Source: elaborated by the authors based on Figure 2 and Eurostat data.

The proposed conceptual and methodological framework therefore allows the study to move from abstract theoretical assumptions about AI-driven organizational transformation toward a systematic empirical assessment of enterprise-level restructuring processes within the European Union. By combining indicators of

internal organizational capabilities, AI adoption mechanisms, and restructuring-related outcomes, the framework makes it possible to examine not only the diffusion of AI technologies, but also their potential implications for organizational coordination, managerial architecture, and labor reallocation. On this basis, the following section presents the data sources, indicator construction procedures, and methodological approach used for the empirical analysis of AI-driven corporate organizational restructuring across EU countries.

4. Data and Method

The empirical analysis is based on comparative Eurostat datasets covering EU countries and focusing on three analytically interconnected dimensions of AI-driven organizational transformation: internal enterprise-level capabilities, AI adoption mechanisms, and organizational restructuring outcomes. In line with the conceptual framework presented in Figure 2 and operationalized in Table 1, the study combines indicators reflecting digital and innovation capabilities, the diffusion of AI technologies in enterprises, and structural organizational changes.

Tables 2–5 therefore present the empirical indicators corresponding to the main dimensions of the conceptual model and provide the basis for examining how AI adoption may be associated with broader organizational transformation processes within enterprises across the EU.

Table 2. Enterprises Using Enterprise Resource Planning (ERP) Software and Business Intelligence (BI) Software, % of All Enterprises, EU Countries, 2023 and 2025

EU country	ERP 2023	ERP 2025	ERP Δ 2025/23	BI 2023	BI 2025	BI Δ 2025/23
EU-27	43.4	46.5	3.1	15.4	16.3	0.9
Austria	40.1	37.5	-2.6	17.8	17.2	-0.6
Belgium	59.5	62.5	2.9	31.2	32.5	1.3
Bulgaria	21.7	26.6	4.9	4.2	6.8	2.7
Croatia	25.4	21.9	-3.5	12.0	11.6	-0.4
Cyprus	41.6	41.0	-0.6	20.8	22.1	1.3
Czechia	29.0	49.7	20.7	10.9	17.1	6.2
Denmark	67.3	66.3	-1.0	40.3	41.7	1.4
Estonia	31.2	35.1	4.0	15.9	17.9	2.0
Finland	56.9	58.1	1.2	38.9	43.4	4.5
France	47.3	53.9	6.6	10.7	10.7	0.0
Germany	43.7	43.5	-0.2	14.2	13.2	-1.0
Greece	45.3	54.8	9.5	8.7	9.5	0.8
Hungary	35.2	30.9	-4.4	7.9	9.3	1.3
Ireland	30.2	33.8	3.6	21.3	25.9	4.6
Italy	42.3	49.5	7.3	17.6	16.0	-1.6
Latvia	34.0	32.1	-1.9	9.4	12.9	3.5
Lithuania	41.9	41.3	-0.6	11.6	25.2	13.6
Luxembourg	43.8	49.4	5.5	19.6	23.6	4.0
Malta	46.5	46.3	-0.2	22.0	24.4	2.5
Netherlands	51.9	52.6	0.7	31.1	35.9	4.7
Poland	36.0	39.1	3.1	10.5	11.7	1.2
Portugal	47.2	48.3	1.1	11.8	13.0	1.2
Romania	22.6	29.3	6.7	7.5	8.2	0.7
Slovakia	26.2	26.7	0.5	13.0	14.5	1.5
Slovenia	37.0	35.5	-1.5	13.2	13.7	0.5
Spain	54.6	60.4	5.8	18.0	23.0	5.0
Sweden	58.6	28.1	-30.5	22.2	22.0	-0.2

Source: compiled by the authors based on Eurostat (2026a, 2026b).

At the EU-27 level, the share of enterprises using ERP software increased from 43.4% to 46.5%, while BI software usage rose from 15.4% to 16.3% (Table 2). This suggests a gradual strengthening of enterprise-level digital integration capacities and data-driven management practices within the European economy. However, substantial cross-country variation remains evident. Northern and Western European countries generally demonstrate the highest levels of ERP and BI diffusion, reflecting more advanced digital infrastructures and organizational capabilities. Denmark, Finland, Belgium, and the Netherlands exhibit particularly high ERP

adoption rates, exceeding 50% of enterprises in 2025, while Denmark and Finland also show exceptionally high BI usage. In contrast, several Central and Eastern European countries continue to display comparatively lower levels of digital integration, although some of them demonstrate rapid growth dynamics. Czechia represents one of the most notable cases, with ERP usage increasing by 20.7 percentage points between 2023 and 2025, accompanied by a significant rise in BI adoption. Lithuania also demonstrates substantial growth in BI diffusion, increasing from 11.6% to 25.2% (Table 2).

From the perspective of the conceptual framework, these indicators suggest important differences in enterprise-level digital capabilities across EU countries. Since ERP and BI systems facilitate organizational coordination, information standardization, and data-driven managerial control, their diffusion may increase enterprises' capacity to integrate AI technologies into administrative and decision-making processes. At the same time, the uneven distribution of these capabilities across countries indicates that the organizational preconditions for AI-driven restructuring remain structurally differentiated within the EU.

Table 3. Enterprises that Introduced Business Process Innovations in Procedures / External Relations and Work Responsibility / Decision-Making / HRM, % of All Enterprises, EU Countries, 2018–2020 and 2020–2022

EU country	Procedures / external relations 2018–2020	Procedures / external relations 2020–2022	Δ 2020–2022 / 2018–2020	Work responsibility / decision-making / HRM 2018–2020	Work responsibility / decision-making / HRM 2020–2022	Δ 2020–2022 / 2018–2020
EU-27	15.2	16.9	1.7	20.5	21.5	1.0
Austria	31.4	25.7	-5.7	33.2	26.5	-6.7
Belgium	25.8	33.3	7.5	10.1	19.3	9.2
Bulgaria	9.2	10.5	1.3	8.3	11.0	2.7
Croatia	16.8	18.7	1.9	23.3	24.3	1.0
Cyprus	39.2	36.4	-2.8	39.0	38.1	-0.9
Czechia	13.5	38.6	25.1	19.2	20.4	1.2
Denmark	23.9	22.9	-1.0	13.8	16.6	2.8
Estonia	14.6	14.1	-0.5	25.6	24.3	-1.3
Finland	16.1	17.6	1.5	25.1	27.0	1.9
France	14.6	17.5	2.9	20.6	25.0	4.4
Germany	19.8	19.6	-0.2	32.1	30.7	-1.4
Greece	31.6	37.3	5.7	36.9	43.9	7.0
Hungary	6.3	9.0	2.7	8.4	9.1	0.7
Ireland	22.6	21.1	-1.5	20.9	16.1	-4.8
Italy	21.0	18.6	-2.4	27.7	25.6	-2.1
Latvia	7.7	7.9	0.2	12.3	13.7	1.4
Lithuania	11.4	15.3	3.9	13.9	16.3	2.4
Luxembourg	16.3	12.7	-3.6	17.4	14.4	-3.0
Malta	19.4	18.3	-1.1	27.2	24.6	-2.6
Netherlands	12.3	12.5	0.2	13.6	16.1	2.5
Poland	8.8	14.2	5.4	10.5	14.4	3.9
Portugal	18.2	20.8	2.6	22.2	29.9	7.7
Romania	2.8	2.2	-0.6	4.2	3.6	-0.6
Slovakia	10.0	12.7	2.7	8.5	10.7	2.2
Slovenia	10.4	14.7	4.3	13.9	16.4	2.5
Spain	4.3	4.3	0.0	6.8	7.0	0.2
Sweden	6.8	6.6	-0.2	16.4	16.9	0.5

Notes: Procedures / external relations refers to new business practices for organizing procedures or external relations. Work responsibility / decision-making / HRM refers to new methods of organizing work responsibility, decision-making or human resource management.

Source: compiled by the authors based on Eurostat (2023, 2024).

The data from Table 3 demonstrate a moderate overall increase in organizational innovation activity across the European Union, suggesting that enterprises increasingly experiment with new coordination mechanisms, managerial practices, and internal governance structures. At the EU-27 level, the share of enterprises introducing innovations in procedures and external relations increased from 15.2% to 16.9%, while innovations related to work responsibility, decision-making, and HRM rose from 20.5% to 21.5%.

At the country level, however, organizational innovation dynamics remain highly uneven. Several countries demonstrate particularly strong growth in organizational restructuring-related practices. Czechia recorded the largest increase in innovations related to procedures and external relations, rising by 25.1 percentage points, while Belgium and Greece also exhibited substantial growth in both dimensions of organizational innovation. Portugal demonstrated one of the strongest increases in innovations related to work responsibility, decision-making, and HRM, rising from 22.2% to 29.9%. These patterns may indicate intensified organizational adaptation processes associated with digital transformation and the growing integration of AI-related managerial practices.

At the same time, a number of countries experienced stagnation or decline in some organizational innovation indicators. Austria, Ireland, Italy, Luxembourg, and Malta recorded decreases in at least one of the observed dimensions, suggesting that organizational restructuring processes remain uneven and context-dependent across the EU. Such variation may reflect differences in digital maturity, institutional conditions, managerial traditions, or sectoral composition of national economies.

From the perspective of the conceptual framework, the indicators presented in Table 3 can be interpreted as indirect evidence of organizational restructuring capacity and managerial adaptation. Innovations in procedures, coordination mechanisms, decision-making practices, and HRM are closely related to the transformation of enterprise governance structures and may constitute organizational preconditions for broader AI-driven restructuring processes. In this sense, the data suggest that organizational transformation within the EU is occurring not only through technological adoption itself, but also through gradual changes in managerial architecture and internal coordination practices.

Table 4. Enterprises Using at Least One AI Technology and AI-Adopting Enterprises Using AI for Business Administration or Management, EU Countries, % of All Enterprises, 2023 and 2025

EU country	AI use 2023	AI use 2025	AI use Δ 2025/23	AI for administration /management 2023	AI for administration /management 2025	AI for administration /management Δ 2025/23
EU-27	8.0	20.0	12.0	21.3	31.0	9.8
Austria	10.8	30.0	19.2	29.6	37.9	8.3
Belgium	13.8	34.5	20.7	25.6	39.6	14.0
Bulgaria	3.6	8.6	5.0	19.2	32.5	13.4
Croatia	7.9	15.2	7.3	15.3	23.5	8.2
Cyprus	4.7	9.3	4.6	28.0	45.3	17.3
Czechia	5.9	17.6	11.7	24.7	40.0	15.3
Denmark	15.2	42.0	26.8	23.0	23.8	0.8
Estonia	5.2	23.4	18.2	31.4	48.7	17.3
Finland	15.1	37.8	22.7	16.0	26.4	10.4
France	5.9	18.2	12.3	11.0	: (u)	-
Germany	11.6	26.0	14.4	19.9	27.6	7.8
Greece	4.0	8.9	4.9	16.9	26.1	9.1
Hungary	3.7	10.4	6.7	22.7	31.6	8.9
Ireland	8.0	19.6	11.6	22.3	38.7	16.4
Italy	5.0	16.4	11.4	19.9	25.7	5.8
Latvia	4.5	12.2	7.7	19.5	36.2	16.8
Lithuania	4.9	21.3	16.4	22.1	34.3	12.1
Luxembourg	14.4	33.6	19.2	18.7	27.2	8.6
Malta	13.2	21.6	8.4	14.3	21.3	7.0
Netherlands	13.4	33.2	19.8	29.0	39.3	10.3
Poland	3.7	8.4	4.7	26.4	42.9	16.5
Portugal	7.9	11.5	3.6	31.5	40.8	9.3
Romania	1.5	5.2	3.7	18.5	35.2	16.7
Slovakia	7.0	18.0	11.0	14.5	14.8	0.3
Slovenia	11.4	21.6	10.2	19.6	35.2	15.7
Spain	9.2	20.3	11.1	24.2	28.6	4.4
Sweden	10.4	35.0	24.6	20.3	35.0	14.7

Note: (u) – low reliability.

Source: compiled by the authors based on Eurostat (2026c, 2026d).

Data in Table 4 demonstrate a rapid expansion of AI adoption across the European Union. At the EU-27 level, the share of enterprises using at least one AI technology increased from 8.0% in 2023 to 20.0% in 2025, representing a growth of 12 percentage points. At the same time, the share of AI-adopting enterprises using AI specifically for the organisation of business administration processes or management increased from 21.3% to 31.0%, indicating that AI integration increasingly extends beyond technical experimentation toward managerial and organizational functions.

Considerable differences between EU countries remain visible. Denmark, Belgium, Finland, Sweden, Luxembourg, and the Netherlands demonstrate some of the highest levels of overall AI adoption, suggesting relatively advanced digital ecosystems and stronger enterprise-level technological capabilities. Denmark recorded one of the most substantial increases, with AI adoption rising from 15.2% to 42.0% between 2023 and 2025. Similarly strong growth dynamics can be observed in Sweden, Belgium, and Finland. Several Central and Eastern European countries continue to display lower absolute levels of AI adoption, although some of them demonstrate rapid relative growth. Estonia, Lithuania, Latvia, and Czechia experienced particularly notable increases in AI integration into management and administrative processes.

The second dimension of Table 4 - AI use in business administration and management - is especially relevant from the perspective of organizational restructuring. In many countries, the growth of administrative AI integration exceeds the growth of general AI adoption, suggesting that enterprises increasingly apply AI technologies not only to technical or operational tasks but also to coordination, analytical and managerial functions. Countries such as Cyprus, Estonia, Poland, Latvia and Romania exhibit especially strong increases in managerial AI usage, indicating a gradual embedding of algorithmic systems into organizational governance and administrative decision-making processes. This management-related AI indicator is central because it captures the embedding of AI into coordination, analytical and administrative functions rather than only technical experimentation (Hansen et al., 2024; Talaei-Khoei et al., 2024; Nguyen & Elbanna, 2025; Maknickienė et al., 2026).

From the perspective of the conceptual framework, these trends suggest that AI adoption is becoming an increasingly important mechanism of enterprise-level organizational transformation within the European Union. The growing use of AI in management-related activities may contribute to changes in organizational coordination, decision-making centralization, and managerial roles, thereby creating structural pressures for broader organizational restructuring processes. At the same time, the uneven diffusion of AI technologies across EU countries indicates that the intensity and forms of AI-driven transformation remain highly differentiated across national economic systems and organizational environments.

Table 5. Employment in Middle-Management Occupations, % of Total Employment within 15–64, ISCO-08 Groups 12–13, EU Countries, 2023 and 2025

EU countries	2023	2025	Differences, 2025/23
EU-27	3.1	3.3	0.2
Austria	3.9	3.8	-0.1
Belgium	5.0	6.3	1.3
Bulgaria	3.0	4.3	1.3
Croatia	3.8	4.5	0.7
Cyprus	2.8	3.0	0.1
Czechia	3.8	3.9	0.1
Denmark	1.8	2.4	0.6
Estonia	5.8	5.5	-0.3
Finland	2.3	2.9	0.6
France	4.5	4.8	0.3
Germany	2.4	2.5	0.1
Greece	1.6	1.5	-0.1
Hungary	2.8	3.7	0.9
Ireland	5.8	6.2	0.4
Italy	1.5	1.6	0.1
Latvia	5.2	5.1	-0.1
Lithuania	5.7	6.3	0.6
Luxembourg	2.5	:	-

EU countries	2023	2025	Differences, 2025/23
Malta	5.2	5.6	0.3
Netherlands	3.9	4.2	0.3
Poland	4.0	4.2	0.3
Portugal	2.9	3.3	0.4
Romania	1.3	1.5	0.2
Slovakia	3.6	3.6	0.0
Slovenia	2.8	2.7	0.0
Spain	2.4	2.5	0.1
Sweden	5.4	5.2	-0.2

Note: ISCO-08 groups 12–13 (ILO, 2026) are used as an operational proxy for middle-management occupations. “:” – data not available

Source: authors’ calculations based on Eurostat (2026e); the indicator is calculated as (ISCO-08 OC12 + OC13) / TOTAL employed persons × 100

At the aggregate EU-27 level, the share of employment in these occupational groups increased slightly from 3.1% to 3.3% (Table 5), indicating that no large-scale displacement of managerial occupations is observable at the macro level during the analysed period. Instead, the data suggest a more gradual and differentiated transformation of managerial structures within European enterprises.

Significant cross-country variation nevertheless remains evident. Several countries recorded relatively strong increases in middle-management employment shares, including Belgium, Bulgaria, Hungary, Croatia, Finland, and Lithuania. Belgium and Bulgaria demonstrated the largest increases, both rising by 1.3 percentage points. These trends may indicate that AI adoption and digital transformation do not necessarily eliminate managerial roles, but instead generate demand for new forms of coordination, supervision, and hybrid managerial-analytical functions associated with technologically intensified organizational environments.

At the same time, a number of countries experienced stagnation or moderate decline in middle-management employment shares. Estonia, Sweden, Austria, and Greece recorded small decreases, while Slovakia and Slovenia remained largely unchanged. Such variation suggests that the organizational effects of AI adoption may differ substantially depending on national institutional contexts, sectoral structures, labor market characteristics, and enterprise-level managerial models. In some organizational environments, AI integration may compress hierarchical layers and reduce routine supervisory functions, whereas in others it may increase the need for coordination between digital systems, operational units, and strategic management.

From the perspective of the conceptual framework, the data presented in Table 5 provide indirect evidence that AI-driven organizational restructuring does not produce a uniform reduction of managerial occupations across the European Union. Rather, the observed dynamics support the interpretation that AI transformation may simultaneously centralize analytical and decision-making functions while also creating new coordination-intensive managerial roles. Consequently, organizational restructuring appears to involve not only labor substitution, but also the reconfiguration and hybridization of middle-management functions within digitally transforming enterprises.

To further examine the potential relationship between AI adoption and organizational restructuring within the EU, the study applies a combination of cluster analysis and linear regression analysis. The methodological objective is not merely to describe the diffusion of AI-related indicators, but to assess whether differences in enterprise-level digital capabilities and AI adoption mechanisms are systematically associated with changes in middle-management employment structures across EU countries.

At the first stage, cluster analysis is used to identify relatively homogeneous groups of EU countries based on key explanatory variables related to internal enterprise-level capabilities and AI adoption mechanisms (Figure 2). This approach allows the study to account for structural heterogeneity within the EU and to distinguish between countries with relatively advanced and less advanced AI-driven organizational transformation environments.

At the second stage, linear regression analysis is employed to evaluate the statistical relationship between AI-related explanatory variables and organizational restructuring outcomes. The dependent variable is operationalized as the share of employment in middle-management occupations (ISCO-08 groups 12–13), which serves as a proxy indicator for changes in managerial architecture and labor reallocation processes within enterprises (Table 1). Independent variables include indicators reflecting enterprise-level digital and innovation capabilities, and AI adoption mechanisms: general AI adoption and administrative AI integration (Table 1).

Within this framework, the empirical analysis seeks to test whether higher levels of AI integration – combined with digital / innovation organizational capabilities – are associated with measurable changes in middle-management structures across EU countries. Although the available data do not allow direct observation of all dimensions of organizational restructuring, the proposed methodological approach provides an indirect quantitative assessment of AI-driven corporate organizational transformation within the EU.

5. Results and Discussion

The empirical analysis begins with a K-means cluster analysis aimed at identifying relatively homogeneous groups of EU countries according to the level of development of AI-driven organizational transformation environments. The clustering procedure includes six variables reflecting the key dimensions of the conceptual framework: the share of enterprises using ERP software and BI software in 2023 (Table 2); the share of enterprises that introduced business process innovations in the areas of procedures / external relations and work responsibility / decision-making / HRM during 2020–2022 (Table 3); and the share of enterprises using at least one AI technology together with the share of AI-adopting enterprises using AI for business administration processes or management in 2023 (Table 4).

Based on these indicators, the K-means procedure generated two clusters representing different levels of enterprise-level digital capabilities, organizational innovation intensity, and AI integration. The first cluster includes countries characterized by comparatively lower levels of digital integration and AI-driven organizational transformation, while the second cluster consists of countries demonstrating relatively more advanced organizational transformation environments associated with stronger digital capabilities and higher AI adoption intensity. The results of the clustering procedure, including final cluster centers and cluster membership, are presented in Table 6.

Table 6. Results of K-Means Cluster Analysis: Final Cluster Centers and Cluster Membership, EU Countries, n = 27

Clustering variables	Cluster 1: less advanced environments, n = 12	Cluster 2: relatively advanced environments, n = 15
Share of enterprises using ERP software, 2023	30.9	49.8
Share of enterprises using BI software, 2023	11.5	21.7
Share of enterprises that introduced business process innovations in the area of procedures / external relations, 2020–2022	14.9	20.3
Share of enterprises that introduced business process innovations in the area of work responsibility / decision-making / HRM, 2020–2022	15.0	24.1
Share of enterprises using at least one of the AI technologies, 2023	5.6	10.3
Share of AI-adopting enterprises using AI for the organisation of business administration processes or management, 2023	21.3	21.9
Cluster membership	Bulgaria, Croatia, Czechia, Estonia, Hungary, Ireland, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia	Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Italy, Luxembourg, Malta, Netherlands, Portugal, Spain, Sweden

Source: authors' calculations based on the data from Tables 2–4 using IBM SPSS Statistics software

The results presented in Table 6 demonstrate a clear structural differentiation between the two identified clusters of EU countries. Cluster 1, consisting primarily of Central and Eastern European countries, is characterized by comparatively lower levels of ERP and BI diffusion, weaker organizational innovation activity, and lower

overall AI adoption intensity. In contrast, Cluster 2 includes mainly Western and Northern European countries demonstrating substantially higher levels of enterprise digital integration, organizational innovation, and AI adoption. For example, the average share of enterprises using ERP software reaches 49.8% in Cluster 2 compared to 30.9% in Cluster 1, while the share of enterprises using at least one AI technology is almost twice as high in Cluster 2 (10.3%) as in Cluster 1 (5.6%). Similar differences are visible in organizational innovation indicators related to managerial practices, decision-making, and business process transformation.

At the same time, the differences between clusters appear less pronounced in the indicator reflecting the use of AI for business administration and management among AI-adopting enterprises. This may suggest that once enterprises adopt AI technologies, the integration of AI into managerial and administrative functions becomes relatively widespread across different organizational environments. Nevertheless, the overall cluster structure indicates that EU countries remain highly heterogeneous in terms of the organizational and technological conditions associated with AI-driven transformation processes.

From the perspective of the conceptual framework, these findings support the assumption that AI-driven organizational restructuring develops within broader configurations of enterprise-level digital and innovation capabilities rather than through isolated technological adoption alone. The clustering results therefore provide an empirical basis for examining whether differences in these organizational transformation environments are associated with differences in middle-management restructuring dynamics across EU countries. Accordingly, Table 7 presents comparative indicators of changes in middle-management employment structures between 2023 and 2025 for the identified country clusters.

Table 7. Differences in Employment Rates in Middle-Management Occupations, EU Countries, 2025/2023

Set of countries	Minimum value	Maximum value	Mean value
EU, n = 26*	-0.3	+1.3	+0.3
Cluster 1: countries with less advanced AI-driven organizational transformation environments, n = 12	-0.3	+1.3	+0.3
Cluster 2: countries with relatively advanced AI-driven organizational transformation environments, n = 14**	-0.2	+1.3	+0.3

Notes: * Luxembourg is excluded due to missing data for calculating changes in middle-management employment. ** Without Luxembourg.

Source: authors' calculations

The results presented in Table 7 indicate that differences in the average dynamics of middle-management employment between the two identified clusters remain relatively limited at the aggregate level. Both clusters demonstrate a positive mean change of approximately +0.3 percentage points in the share of employment in middle-management occupations between 2023 and 2025. At the same time, the internal variation within each cluster remains substantial, with both groups including countries that experienced either increases or decreases in middle-management employment shares. The minimum values range from -0.3 in Cluster 1 to -0.2 in Cluster 2, while the maximum value reaches +1.3 in both clusters.

These findings suggest that AI-driven organizational restructuring does not manifest itself through a simple or uniform reduction of middle-management employment across countries with more advanced digital and AI capabilities. Instead, the observed dynamics appear considerably more differentiated and may reflect multiple organizational adaptation pathways. In some cases, AI integration may contribute to the compression of traditional supervisory layers, while in others it may stimulate demand for new coordination-intensive managerial functions associated with digital governance, analytical oversight, and hybrid organizational control structures.

Importantly, the similarity of average cluster-level outcomes also indicates that broad macro-level comparisons alone may be insufficient for identifying the organizational effects of AI adoption. The relationship between AI-driven transformation environments and changes in middle-management structures may therefore depend on the specific interaction between individual explanatory variables rather than on cluster membership itself. For this reason, the next stage of the analysis applies linear regression models separately within each cluster in order to examine whether particular dimensions of digital capabilities, organizational innovation, and AI

adoption are statistically associated with differences in middle-management employment dynamics across EU countries.

For Cluster 1, the regression procedure did not identify any statistically significant explanatory variables suitable for inclusion in the regression equation. As indicated by the SPSS output, no predictor variables met the criteria for entry into the model for the countries belonging to Cluster 1. This result suggests that, within the group of countries characterized by comparatively lower levels of digital integration and AI-driven organizational transformation, the selected indicators of enterprise-level digital capabilities, organizational innovation, and AI adoption do not demonstrate a statistically significant relationship with changes in middle-management employment structures during the analysed period.

From the perspective of the conceptual framework, this may indicate that AI-driven organizational restructuring processes in less digitally advanced organizational environments remain either relatively weak, institutionally fragmented, or insufficiently developed to produce measurable and systematic changes in managerial employment structures at the macro level. Alternatively, the absence of statistically significant relationships may reflect the influence of additional contextual factors not captured within the present model, including sectoral composition, labor market structures, institutional arrangements, or time-lag effects associated with organizational transformation processes.

The regression results for Cluster 2 demonstrate that only one explanatory variable – the share of enterprises using Business Intelligence (BI) software – was statistically significant and therefore retained in the final regression model. The variable exhibits a positive standardized coefficient (Beta = 0.581) and remains statistically significant at the 5% level ($p = 0.030$), indicating a moderate positive relationship between BI software diffusion and changes in middle-management employment structures within the countries characterized by relatively advanced AI-driven organizational transformation environments.

The positive coefficient suggests that higher levels of enterprise analytical and data-processing capabilities are associated with increases in the share of employment in middle-management occupations. From the perspective of the conceptual framework, this finding may indicate that digitally advanced organizational environments do not necessarily eliminate managerial roles, but instead generate demand for new coordination-intensive and analytical managerial functions. In such environments, middle management may increasingly perform hybrid roles connected with data interpretation, coordination between operational units and AI systems, and organizational oversight of digital infrastructures.

At the same time, the remaining explanatory variables – including ERP software diffusion, organizational innovation indicators, general AI adoption, and AI use for business administration and management – were excluded from the final model due to statistical insignificance. This result suggests that, within relatively advanced AI-driven organizational environments, enterprise analytical capability represented by BI diffusion may play a more direct role in managerial restructuring processes than general AI adoption intensity itself. In other words, organizational transformation may depend less on the mere adoption of AI technologies and more on the development of analytical coordination infrastructures capable of embedding AI into managerial decision-making processes.

Based on the unstandardized coefficients presented in the regression output, the regression equation for Cluster 2 can be expressed as:

$$y = -0.212 + 0.022x_{BI}$$

where:

y – difference in employment in middle-management occupations between 2023 and 2025;

x_{BI} – share of enterprises using BI software in 2023.

According to the model, an increase of one percentage point in the share of enterprises using BI software is associated, on average, with an increase of approximately 0.022 percentage points in the share of employment

in middle-management occupations within Cluster 2 countries. The numerical effect is modest, but theoretically meaningful because it links managerial restructuring not to AI adoption as a formal technological indicator, but to the presence of analytical infrastructures that make AI-enabled coordination organizationally usable.

The empirical findings generally support the capability-based interpretation of AI-driven organizational transformation developed in the literature. The cluster analysis shows that EU countries with higher levels of ERP and BI diffusion, stronger organizational innovation indicators, and higher AI adoption form a distinct group of more advanced AI-driven organizational transformation environments. This is consistent with Arroyabe et al. (2024), who argue that internal digital and innovation capabilities are crucial enabling conditions for AI adoption. However, the present study extends this argument by showing that these capabilities are not only associated with AI adoption itself, but also form broader national environments in which organizational restructuring processes may become more visible.

At the same time, the regression results refine the assumption that AI adoption directly produces restructuring. In Cluster 2, only BI software diffusion demonstrated a statistically significant positive relationship with changes in middle-management employment, while general AI adoption and AI use in administration were excluded from the final model. This finding suggests that organizational restructuring is not driven simply by the presence of AI technologies, but by the analytical and managerial infrastructures that allow enterprises to embed data-driven systems into decision-making processes. This result corresponds with Fan (2025), who emphasizes the role of data analytics in strategic decision-making, and with Cheng et al. (2025), who show that digital innovation depends on configurations of capabilities rather than on a single technological factor. It also supports the broader argument that productivity and organizational gains from AI depend on complementary capabilities, workflow redesign and diffusion conditions rather than on formal adoption alone (Wamba, 2022; Wamba et al., 2024; Talaei-Khoei et al., 2024; Filippucci et al., 2024).

The positive relationship between BI diffusion and middle-management employment also complicates the widespread expectation that AI necessarily reduces managerial layers. Instead of confirming a straightforward substitution effect, the results suggest that in more digitally advanced environments, AI-related transformation may increase demand for hybrid managerial-analytical roles. This partially agrees with Vacek (2026), who conceptualizes AI systems as occupying functional roles within organizations, thereby redistributing rather than simply eliminating responsibility. It also aligns with Birkstedt et al. (2023), Papagiannidis et al. (2025) and Bankins et al. (2022), who argue that AI governance requires organizational structures, rules and coordination mechanisms; such governance may actually reinforce the need for specialized middle-management functions rather than eliminate them.

The absence of significant predictors in Cluster 1 further suggests that AI-driven restructuring is context-dependent. In countries with less advanced digital and organizational environments, the selected indicators do not yet produce measurable changes in middle-management employment. This finding is consistent with Lanne et al. (2025), who describe AI implementation as a socio-technical process shaped by organizational tensions, institutional readiness, and adaptation capacity. It also supports the argument by Arroyabe et al. (2024) that internal capabilities condition the effectiveness of AI adoption: where these capabilities are weaker, the organizational effects of AI may remain fragmented, delayed, or statistically invisible.

The results only partially correspond to critical perspectives on algorithmic management and labor substitution. Minotakis (2025) emphasizes that AI may intensify surveillance, reinforce power asymmetries and transform labor control. The present findings do not directly contradict this view, but they do not provide evidence of broad middle-management displacement either. Rather, they suggest that AI-driven restructuring may occur through reconfiguration and hybridization of managerial roles, not only through reduction. Recent occupational-exposure evidence similarly indicates that generative AI is more likely to transform task content and administrative work than to produce immediate and uniform job disappearance across all managerial categories (Kellogg et al., 2020; Stark & Vanden Broeck, 2024; International Labour Organization, 2025).

Overall, the findings support the existing literature in three ways: first, they confirm the importance of internal digital and innovation capabilities for AI-related transformation; second, they show that AI adoption alone is

insufficient to explain organizational restructuring; and third, they indicate that managerial restructuring may take the form of role reconfiguration rather than direct displacement. The main contribution of the study is therefore to shift the discussion from AI adoption as a technological outcome toward AI-driven organizational restructuring as a capability-dependent, analytically mediated, and institutionally differentiated process across EU countries.

6. Conclusions

The present study examined whether the growing adoption of artificial intelligence technologies is associated with measurable organizational restructuring processes within enterprises across the European Union, with particular attention to changes in middle-management structures. Overall, the findings suggest that AI-driven corporate organizational restructuring is not a uniform or technologically deterministic process, but rather a differentiated transformation conditioned by enterprise-level digital and innovation capabilities, organizational environments, and analytical infrastructures.

The empirical analysis demonstrated substantial heterogeneity among EU countries in terms of digital integration, organizational innovation, and AI adoption intensity. The K-means cluster analysis identified two relatively distinct groups of countries characterized by different levels of AI-driven organizational transformation environments. Countries belonging to the more advanced cluster generally exhibited higher levels of ERP and BI diffusion, stronger organizational innovation activity, and greater AI adoption intensity, indicating that AI-driven transformation develops within broader configurations of organizational and technological capabilities rather than through isolated technological adoption alone.

At the same time, the results of the regression analysis suggest that the organizational consequences of AI adoption are more complex than assumptions about direct labor substitution or automatic hierarchical reduction. In the cluster of more digitally advanced countries, only BI software diffusion demonstrated a statistically significant positive relationship with changes in middle-management employment structures. This finding indicates that enterprise analytical capabilities and data-driven coordination infrastructures may play a more important role in organizational restructuring than general AI adoption intensity itself. Rather than eliminating managerial roles, AI-driven transformation may contribute to the emergence of hybrid managerial-analytical functions associated with coordination, oversight, and governance of digital systems. In contrast, no statistically significant relationships were identified within the cluster of less advanced organizational transformation environments, suggesting that the organizational effects of AI adoption may remain fragmented, delayed, or institutionally constrained in contexts with weaker digital and innovation capabilities.

Thus, the study achieved its main research objective by providing an indirect quantitative assessment of AI-driven corporate organizational restructuring within the EU and by demonstrating that higher levels of AI integration combined with stronger organizational capabilities may be associated with measurable changes in middle-management structures. Importantly, the findings indicate that organizational restructuring related to AI adoption should be interpreted not only in terms of labor substitution, but also as a broader process of managerial reconfiguration and transformation of organizational coordination mechanisms.

The study contributes to the existing literature in several ways. First, it shifts the analytical focus from AI adoption itself toward the organizational consequences of AI integration. Second, it develops a capability-based conceptual framework linking internal enterprise-level capabilities, AI adoption mechanisms, and organizational restructuring outcomes. Third, it proposes an original methodological approach combining cluster analysis and regression analysis in order to examine organizational transformation processes across heterogeneous EU environments. In this sense, the study contributes to bridging the gap between research on technological adoption, digital transformation, and organizational restructuring.

At the same time, several limitations should be acknowledged. The study relies primarily on aggregate Eurostat indicators and therefore cannot directly observe internal organizational processes, governance structures, or firm-level managerial practices. Several dimensions of organizational restructuring were operationalized through indirect proxy indicators, which limits the precision of causal interpretation. In addition, the relatively

short time horizon may not fully capture long-term restructuring effects associated with AI integration, especially given potential institutional and organizational time lags. Finally, the analysis focuses on macro-level cross-country patterns and does not account for sectoral heterogeneity, firm size differences, or industry-specific organizational models, which may substantially influence the relationship between AI adoption and organizational restructuring. Future research may therefore extend the present analysis through longitudinal firm-level datasets, sector-specific studies and qualitative organizational case studies examining how AI technologies reshape coordination mechanisms, managerial authority, task exposure, capability development and governance structures within enterprises over longer periods of time.

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