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Reinventing public managers in the digital age: competencies and innovative governance models across the European Union

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***Abstract*:** The digital revolution is reshaping public administration across the European Union, demanding new forms of leadership and innovation. The Public Manager 5.0 represents this new generation of leaders — professionals who blend technology, ethics, and empathy to create smarter and more inclusive governance. Through initiatives such as e-Estonia, AuroraAI in Finland, or MindLab in Denmark, EU states are proving that digital transformation is not only about efficiency but about building trust, transparency, and public value in the digital age. This research aims to explore and compare the evolution of digital maturity of public administration and the public manager in the digital age in a few selected member states of the European Union (EU). The other objectives were to design the competency profile of the public manager 5.0, to present the main changes recommended to the EU countries for increasing the digital transformation of their public administrations and innovative governance, and to set up the steps needed for the Romanian public administration to move on in the digital context. The methodology is based on a comparative documentary analysis of digital transformation practices in selected EU countries, as well as the EU's strategies in the field of digital governance. The empirical study was conducted based on the international databases: OECD Digital Government Index (DGI), United Nations E-Government Development Index (EGDI) 2024 and Eurostat. The results indicate significant differences between countries in terms of digital maturity, managerial culture, and public competencies adopted by public managers. The conclusion emphasizes the need for an integrated reform of managerial competencies in European public administration, focusing on digital, ethical, innovative, and sustainable public management.

Keywords: public administration; public manager 5.0; artificial intelligence; digital age; innovative governance; digital maturity; digital transformation.

JEL: H1; H7; M53.

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Introduction

The digital transformation of society and public administrations is one of the essential pillars of the European strategy for the digital decade and modern public governance. In the context of the concept of Society 5.0 – oriented towards the integration of advanced technology, artificial intelligence, data and human capabilities – there is a need for a new type of public manager: the public manager 5.0 and a new model of innovative governance. The public manager 5.0 is no longer just a traditional administrator, but a proactive actor who connects governance, technology, citizens, data and ethics. The innovative governance model in the EU involves a systemic transformation – from an administration centered on rules and bureaucracy, to one centered on people, data and collaboration (Pechová et al., 2024). The public manager 5.0 is the leader of this transition, combining digital skills, strategic thinking, ethical responsibility and a humanistic vision (Čičmancová & Soviar, 2024). Digital transformation is no longer just technological, but strategic – linked to leadership and organizational culture (Vraňaková et al. 2025; Strapchuk et al., 2025; Martin-Naranjo et al., 2025; Bartuseviciene & Butkus, 2024; Krajčík et al., 2023). The citizen becomes a co-creator of public policies and services (Becker et al., 2023). In this context, the public manager 5.0 plays a key role in the implementation of these models — he is a facilitator of innovation and inter-institutional collaboration (Hunková & Havierniková, 2024). The digital transformation of the public sector has fundamentally redefined the nature of governance and leadership within the European Union (Hyryavets & Nemish, 2024). The rapid development of artificial intelligence, big data, automation, and digital platforms has created both opportunities and challenges for public administrations (Androniceanu & Colesca, 2025; Savignac, 2025; Komarova et al., 2024; Aliane et al., 2023). Within this dynamic environment, the Public Manager 5.0 has emerged as a new type of leader — one who embodies the fusion between technological innovation, ethical governance, and human-centered leadership**.** Unlike traditional bureaucratic administrators, the Public Manager 5.0 operates in an ecosystem defined by data-driven decision-making, collaboration, and agility**.** This new managerial paradigm emphasizes *innovation, inclusion, transparency,* and *responsiveness* to citizens' needs (Nawawi at al., 2024). The manager is not only a decision-maker but also a facilitator of co-creation, building bridges between government institutions, citizens, academia, and the private sector. Such an approach aligns perfectly with the EU's principles of *Open Government, Digital Europe,* and *participatory democracy*. At the EU level, the digital transformation of public administrations is supported by multiple strategies and initiatives. For example, the report "Digitalisation in Europe – 2025 edition" highlights that digitalisation is a major priority for the EU. There are also "Digital Public Administration factsheets 2023" that monitor the level of interoperability, the use of innovative technologies in the public sector and the exchange of data in 31 countries.

Key elements of the European framework include:

- The "once-only" principle (a single entry of data by the citizen) and the "single digital gateway".
- Initiatives such as the Digital Europe Programme (2021–2027) for AI, digital skills, and data infrastructure.
- The proposal for a regulation on artificial intelligence ("AI Act") and strategies for interoperability between administrations.
- The EU Agenda for Digital Skills and Leadership in the Public Sector, which recognises the need to train managers in the digital domain.

This framework creates a favourable context for the emergence of the public manager 5.0, by establishing institutional benchmarks, technical standards, European funding, and performance indicators (Boyne & Meier, 2009). However, practical implementation differs greatly between countries, depending on administrative culture, existing professional skills, digital infrastructure, and political vision. In the context of innovative governance, EU member states have implemented transformative models that exemplify this new vision (Androniceanu, 2025). Estonia's e-Government system**,** Finland's AuroraAI program**,** and Denmark's MindLab are leading examples where digital tools are not ends in themselves but means to create public value and trust (Connor & Becker, 2003; Vyas-Doorgapersad, 2025)**.** These initiatives demonstrate that technological innovation can enhance transparency, reduce bureaucracy, and empower citizens through easy access to services and data (Bozhenko et al., 2024; Machova et al., 2023). However, innovative governance also requires cultural and institutional change**.** Technology alone cannot guarantee better governance unless it is guided by ethical principles, inclusivity, and competent leadership (Bryndin, 2020; Mugunzva & Manchidi, 2024; Shostya et al., 2023). The Public Manager 5.0, therefore, must possess both digital literacy and emotional intelligence**,** understanding that effective leadership in the digital era is about balancing human values with technological efficiency (Androniceanu, 2025; Anwar et al., 2025; Skypalova et al., 2025; Knezevic, 2023)**.**

The European experience shows that successful innovation in governance depends on three interrelated pillars**: (1)**Strategic Vision and Political Commitment **–** as seen in Estonia and Finland, where digitalization is a long-term national priority; (2) Collaborative Ecosystems – exemplified by France's *Etalab* or Germany's *GovTech Campus*, which unite the public sector with tech startups and civil society; (3) Ethical and Inclusive Governance – as promoted by Spain's *Digital Rights Charter* and Portugal's *Simplex+* program, ensuring that no citizen is left behind in the digital transition. In this framework, the central questions of the research are: what skills should the public manager 5.0 have? How do these skills manifest themselves in different EU states? What models of innovative digital governance and leadership can be identified? What initiatives are necessary to stimulate the training of public managers 4.0 and the extension of good practices of innovative governance in a digital context? Innovative governance is not merely a technological ambition but a new social contract between the state and its citizens — one in which technology

serves people, and the Public Manager 5.0 becomes the architect of an intelligent, inclusive, and sustainable administration.

1. Literature about Public Manager 5.0 and modern innovative governance in the digital context

The concept of public manager 5.0 derives from the Society 5.0 paradigm, launched in Japan, where technology is used to serve people, not the other way around.

1.1 The evolution of Public Manager 5.0

The public manager 5.0 is a leader in public administration who uses artificial intelligence, big data, blockchain and automation for decision-making and efficiency; promotes participatory and collaborative governance (citizen involvement and public-private partnership); ethically manages data and algorithms, ensuring transparency and digital inclusion and has adaptive leadership skills, oriented towards innovation and sustainability (Visvizi et al., 2025; Santos et al., 2024). Historically, public management has evolved from traditional administration (the Weberian "bureaucratic" model) to more flexible, performance-oriented governance models, then towards digital governance (Comfort et al., 2012). Table 1 shows the evolution of the public manager in the digital era.

Table 1. Evolution of the Public Manager from 1.0 to 5.0

Version	Era	Core focus	Technology use	Leadership model
Manager 1.0	Bureaucratic (20th century)	Rule compliance	None	Hierarchical
Manager 2.0	New Public Management	Efficiency & Results	Basic ICT	Managerial
Manager 3.0	E-Government	Service delivery online	Internet & Databases	Performance-oriented
Manager 4.0	Smart Governance	Data-driven decisions	IoT, Cloud, AI	Collaborative
Manager 5.0	Human-centered AI Governance	Ethical, inclusive leadership	AI, Big Data, Robotics	Ethical & Adaptive

Source: Authors, 2025

In this process, the public manager has changed his role: from policy implementer to service facilitator, collaborator with citizens, user of technologies and agent of change. The Public Manager 5.0 is not merely a digital expert but a transformational leader who integrates innovation, ethics, and empathy into governance. Through this lens, innovative governance in the EU becomes a living laboratory for the future of

public administration — one where technology serves democracy, data supports transparency, and leadership builds sustainable trust between the state and its citizens.

1.2 The main dimensions of the Public Manager 5.0

The main dimensions of the public manager 5.0 profile are the following:

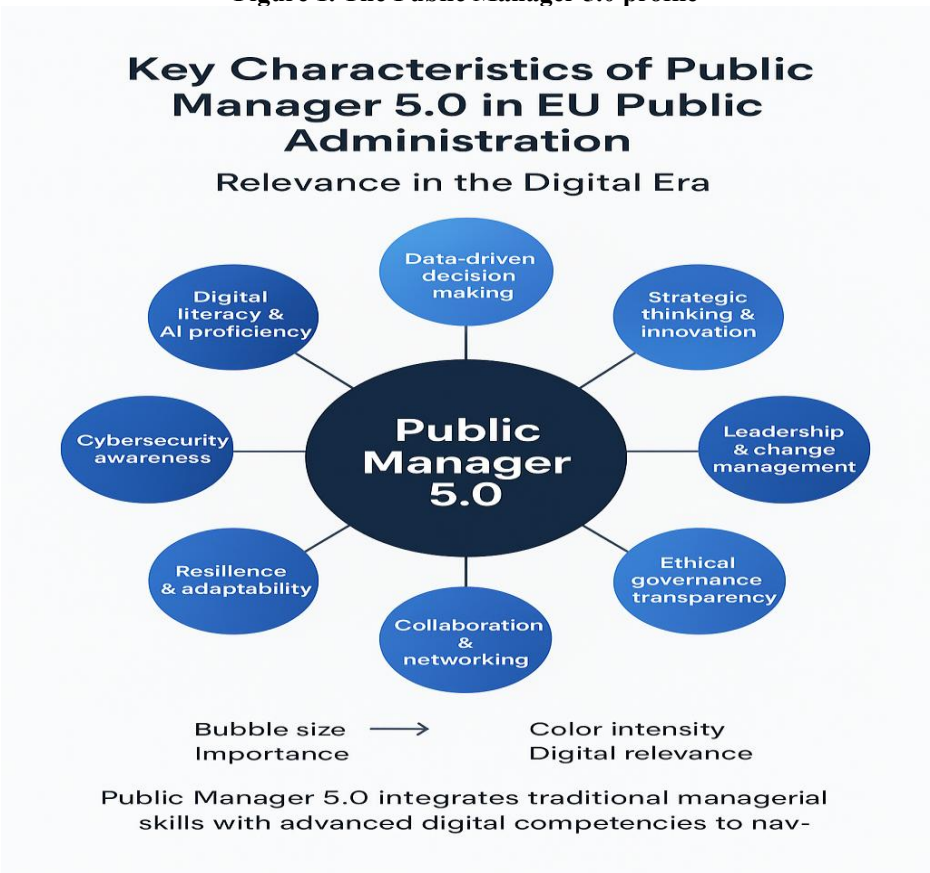
1. Citizen orientation and service personalization: The public manager 5.0 places the citizen at the center of the decision-making and service delivery process, adopting the principles of co-creation, digital participation and open access to data.
2. Digital skills and adaptive leadership: These include the ability to understand and capitalize on big data, artificial intelligence (AI), interoperability infrastructures, but also to lead mixed human-machine teams or digital equipment.
3. Human-machine collaboration in decision-making: In the 5.0 era, public decisions are increasingly based on digital tools, automation and algorithms, and the public manager must facilitate this collaboration, ensure data validity, respect transparency and ensure human control (Aikins, 2011).
4. Ethical, sustainable and resilient governance: The manager not only optimizes, but also promotes sustainability, digital inclusion, data protection, equity and institutional resilience to disruptions (e.g. pandemics, digital crises).
5. Continuous innovation and learning mindset: To respond to a rapidly changing digital environment, the public manager 5.0 cultivates a culture of innovation, continuous training, scenario reading and rapid adaptation (Bozeman & Kingsley, 1998).

Therefore, the notion of "public manager 5.0" combines traditional public leadership competencies (vision, resource management, ethics) with emerging competencies (digital, adaptation, data-driven governance). This profile becomes increasingly relevant as public administration evolves into an "administration 5.0".

1.3 The key characteristics of the Public Manager 5.0

The digital era and the rise of artificial intelligence are transforming the functioning of public administration. The Public Manager 5.0 must integrate digital technologies, data analysis, and ethical governance into decision-making processes to increase efficiency, transparency, and the impact of public policies. Figure 1 contains the main key characteristics of Public Manager 5.0 in the EU public administration in the Digital Era."

Figure 1. The Public Manager 5.0 profile



Source: Authors, 2025

Countries like Estonia, Finland, and Denmark show that successful digital transformation requires strong political commitment and visionary public leadership. Estonia's early adoption of *e-ID* and interoperability through *X-Road* demonstrates how long-term strategy and political continuity can create systemic efficiency. Finland's *AuroraAI* highlights the role of artificial intelligence in proactive governance, showing how leadership can anticipate citizen needs rather than simply respond to them (Wach et al., 2023). A major trend across the table is the shift from bureaucratic to user-centered governance. France's *Etalab* and the Netherlands' *City Deals* emphasize citizen participation and co-creation, integrating civic tech and community involvement in policymaking. Denmark's *MindLab* pioneered *design thinking* in public administration, reframing public services from the user's perspective. All models leverage data interoperability, AI, open data, and digital identity as core enablers of innovation. Germany's *GovTech Campus* and Spain's *Digital Transformation Plan* demonstrate how ecosystem collaboration (public–private–academic) accelerates innovation. Portugal's *Simplex+* program proves that

simplification, automation, and integration are essential to building trust and reducing bureaucracy. Several cases — particularly Finland, Spain, and Portugal — emphasize the ethical and inclusive dimensions of digital governance. Finland's approach to *digital ethics* and Spain's *Digital Rights Charter* illustrate that innovation must be balanced with privacy, security, and fairness. Portugal's *user-centric design* ensures digital services are accessible to all, including vulnerable groups. Across all cases, the Public Manager 5.0 emerges as a strategic, adaptive, and tech-savvy leader. They must combine technological literacy with emotional intelligence, collaborative leadership, and ethical awareness. The examples show that innovation flourishes in administrations where managers are empowered to experiment, learn, and lead across institutional boundaries.

1.4 The key competences of the Public Manager 5.0

Table 2 contains the key competences of Public Manager 5.0.

Table 2. Key competencies of the Public Manager 5.0

Competency	Definition / Importance	Analysis
Digital literacy & AI proficiency	The ability to understand, use, and implement digital technologies and AI in organizational processes.	The manager must utilize digital tools, interpret algorithms, and integrate AI to improve efficiency.
Data-driven decision making	Making decisions based on data analysis, statistics, and predictive models.	Reduces subjective errors and increases decision-making transparency. Requires data analysis and visualization skills.
Strategic thinking & innovation	The ability to anticipate trends and develop innovative strategies and creative solutions.	Essential for implementing proactive public policies and adapting to rapid changes.
Leadership & change management	The ability to lead teams and manage organizational transformations.	The manager must inspire, communicate effectively, and facilitate change adoption.
Ethical governance & transparency	Applying ethical principles in decision-making and promoting transparency.	Reduces the risk of corruption and increases citizens' trust.
Collaboration & networking	The ability to build partnerships and cooperate with various internal and external stakeholders.	The 5.0 manager operates within a collaborative ecosystem, including the private sector and international organizations.
Resilience & adaptability	The ability to cope with stress, crises, and rapid changes.	Essential in the context of political, social, and technological instability.

Competency	Definition / Importance	Analysis
Citizen-centric approach	Focusing on the needs and experiences of citizens.	Policies and services must efficiently respond to public needs and increase citizen satisfaction.
Cybersecurity awareness	Awareness of cyber risks and the application of data protection measures.	Critical in the digital era to protect sensitive information and ensure service continuity.

Source: Authors, 2025

EU state administrations should take a holistic and integrated approach to prepare Public Managers 5.0, combining technical skills, ethical governance, strategic vision, and citizen-focused leadership (Ribeiro et al., 2025). Continuous learning, innovation, and cross-border collaboration are key enablers of this transformation. EU states with strong digital infrastructure, institutional support, and adaptive culture could develop Public Managers 5.0 within 2–4 years. Countries starting from lower digital maturity may need additional time and support, but EU frameworks provide opportunities to accelerate the process.

1.5 Innovative governance models in the EU digital context

Innovative governance refers to a modern approach to public administration that uses new technologies, data, and collaborative methods to improve the effectiveness, transparency, and responsiveness of government (Stazyk & Goerdel, 2011; Katelo, 2024; Blašková et al., 2024). It moves beyond traditional bureaucratic models by promoting citizen participation, open data, cross-sector collaboration, and evidence-based decision-making. In the European Union, innovative governance aims to create smart, inclusive, and sustainable public institutions capable of adapting to rapid social and technological change (Brodny &Tutak, 2023). It integrates tools such as digital platforms, artificial intelligence, and co-creation processes, transforming government into a dynamic ecosystem that builds public value and trust through innovation and openness (Kant & Degefa, 2025; Khatami et al., 2024). It requires appropriate digital skills of public servants and users of e-services which remains an issue today (Bilan et al., 2023; Mishchuk et al., 2025). Innovative governance represents a modern paradigm of public administration that integrates technology, collaboration, and citizen engagement to create smarter, more adaptable, and more transparent systems of government. It responds to the growing complexity of contemporary societies, where traditional hierarchical and bureaucratic models are often too rigid to address dynamic social and technological challenges. Instead of focusing solely on rules and procedures, innovative governance emphasizes outcomes, flexibility, and learning**.** It relies on the idea that governments must constantly evolve, experiment, and co-create solutions together with citizens, businesses, and civil society.

Key elements of **innovative governance** in the digital age are: (1) Transparency and open data (Open Government Data); (2) Integrated and interoperable public services; (3) Digital citizen participation (e-participation, e-voting); (4) Digital leadership (Turan & Doğan, 2025) and adaptive organizational culture; (5) Digital ethics, security and data protection; (6) Intersectoral collaboration (public–private–civic–academic).

The key **characteristics of innovative governance** are the following:

(1) (*Citizen-Centered Approach*: Puts the needs, experiences, and feedback of citizens at the core of public decision-making; Encourages active participation through digital platforms, e-consultations, and co-creation of public services; Views citizens as *partners* rather than passive recipients of services.

(2) *Data-Driven Decision-Making* meaning: Uses data analytics, big data, and AI to design evidence-based policies; Promotes continuous monitoring and evaluation of results; Ensures transparency and accountability through open data initiatives.

(3) *Digital Transformation and Technological Innovation by:* Implements digital tools such as e-government platforms, blockchain, and cloud computing to enhance efficiency and accessibility; Encourages innovation labs, GovTech hubs, and experimentation in service delivery.

(4) *Collaboration and Network Governance through:* Moves beyond the traditional top-down structure by fostering cooperation between public institutions, the private sector, academia, and civil society; Encourages partnerships (Public–Private–People Partnerships) and policy co-design; Breaks down administrative silos through interoperability and shared digital infrastructures.

(5) *Agility and Flexibility through:* Encourages experimentation, adaptation, and learning from failure; Uses pilot projects and iterative policy design to test innovative ideas before large-scale implementation.

(6) *Transparency and Open Government as follows:* Promotes open access to information, participatory budgeting, and open data portals; Builds public trust by ensuring that decision-making processes are visible, understandable, and accountable.

(7) *Ethical and Inclusive Governance:* Addresses digital divide issues and ensures that innovation benefits all citizens, not just the digitally skilled; Upholds ethical principles in the use of AI, algorithms, and data privacy; Supports sustainability, equality, and human-centered technology design.

2 Comparative analysis of innovative digitalised governance and Public Manager 5.0 in the EU

The comparative analysis reveals that EU member states are converging toward a digital, data-driven, and citizen-oriented model of governance. However, the

strategies and instruments used vary according to each country's institutional capacity, political culture, and technological maturity. The methodology adopted consists of a comparative documentary analysis. Five representative countries – Estonia, Denmark, France, Germany and Romania – were selected to illustrate different stages of digital maturity and administrative culture. The evaluation criteria include: the level of digitalization of public services, digital managerial skills, organizational culture and the dimension of ethics in governance. The main sources are EU and OECD reports on digital administration, academic studies on digital transformation and good practice reports (Vigoda-Gadot & Beeri, 2011). Although a primary empirical survey is not carried out, the documentary approach allows highlighting trends, differences and lessons relevant for the training of the public manager 5.0 (Lazar, 2024).

A general comparative overview of innovative governance models and tools can be seen in the Table 3.

Table 3. Comparative frame – innovative governance models in selected EU states

Country	Initiative / Model	Digital Tools and Mechanisms	Impact / Results
Estonia	e-Estonia – 100% Digital Government	National digital ID (e-ID), X-Road interoperability platform, e-Residency, online voting	99% of public services online, >2% GDP saved annually, increased citizen trust
Finland	AuroraAI – AI-based Public Service Ecosystem	Artificial intelligence, big data analytics, collaborative platforms, personalized citizen services	Proactive services, higher citizen satisfaction, improved administrative efficiency
Denmark	MindLab / Digital Government Strategy 2022–2026	Design thinking, "digital by default" services, open data, shared digital infrastructure	Lower administrative costs, enhanced transparency, and user-centered service design
France	Etalab / beta.gouv.fr – Open Government Model	Open data platforms, public innovation labs, civic co-creation processes	Increased civic participation, redesigned services, and reusable public data
Netherlands	City Deals / Open State Foundation	Open data platforms, public–private–academic partnerships, smart city projects	Participatory governance, smart urban solutions, improved interinstitutional cooperation

Country	Initiative / Model	Digital Tools and Mechanisms	Impact / Results
Germany	GovTech Campus Deutschland	Public–private innovation ecosystem, AI, IoT, blockchain in administration	Faster digital transformation, new managerial competencies
Spain	Digital Transformation Plan for Public Administration 2021–2025	Government cloud, digital citizen folder ("Mi Carpeta Ciudadana"), Digital Rights Charter	Simplified citizen–state interaction, interoperability, transparency
Portugal	Simplex+ / ePortugal	One-stop digital portal for all services, administrative simplification, and process automation	Reduced bureaucracy, higher efficiency, and EU recognition for user-centric services

Source: Authors, 2025

In summary, innovative governance is not only about digitalization or efficiency — it represents a cultural transformation in how governments think, act, and relate to citizens. By combining technology, collaboration, ethics, and adaptability**,** EU member states are building governance systems that are more transparent, participatory, and resilient — foundations of the next generation of public management.

The concept of the Public Manager 5.0 reflects a new paradigm of leadership in the digital era — one that merges technological innovation, human-centered management, and ethical governance. Conducting a comparative analysis of how this model is implemented across EU member states is highly relevant for several reasons, both academically and practically.

The most relevant aspects concerning the new context for modern and innovative governance and the new Public Manager 5.0 are presented and explained here.

Understanding Diverse Governance Models. EU member states vary widely in their administrative traditions, political cultures, and levels of digital maturity. A comparative approach helps identify how different governance systems interpret and apply the principles of the Public Manager 5.0. For example, Estonia's fully digital public administration, Finland's AI-based service ecosystems, and France's open government initiatives each reflect unique paths toward digital transformation. By comparing these models, scholars and policymakers can better understand the contextual factors that influence success or resistance to change.

Identifying Best Practices and Transferable Lessons. A key value of comparative analysis lies in identifying best practices that can be adapted to other national contexts. Through cross-country comparison, we can detect which managerial competencies, strategies, and policies are most effective in promoting innovation, transparency, and citizen trust. This knowledge supports evidence-based

policymaking and helps countries such as Romania, Greece, or Bulgaria accelerate their own digital transformation by learning from frontrunners like Denmark, Finland, or Estonia.

Promoting European Cohesion and Policy Alignment. The European Union promotes digital governance as part of its strategic goals under the EU Digital Compass 2030 and the Tallinn Declaration on eGovernment (2017). Comparative research strengthens policy alignment and fosters institutional learning across member states. It supports the creation of a common European administrative culture that values innovation, collaboration, and digital ethics, ensuring that all citizens benefit equally from the digital transition.

Advancing Public Management Theory. From an academic perspective, comparative analysis contributes to the evolution of public management theory. The Public Manager 5.0 embodies the next stage after New Public Management and Digital Era Governance — emphasizing AI integration, emotional intelligence, and co-creation. By studying its manifestation across EU contexts, researchers can refine theoretical frameworks and develop a deeper understanding of how leadership adapts in an era of rapid technological change.

Building a Knowledge Base for Future Leaders. Comparative insights are essential for training and developing future public managers. They reveal the skills, attitudes, and leadership styles required to navigate complex digital ecosystems, manage ethical dilemmas in AI use, and maintain public trust. This knowledge helps universities, training institutions, and public agencies design curricula and leadership programs tailored to the competencies of the Manager 5.0.

3. Empirical research on digital public governance and skills in the EU

The present study employs a comparative secondary data analysis to examine the digital governance maturity and skills across selected European Union member states. For a "Public Manager 5.0", these findings imply two parallel priorities: invest in citizen and workforce digital skills and build institutional foundations (governance, data platforms, risk/ethics frameworks) to deploy AI and platform-based public services effectively. The empirical foundation rests on three internationally recognized data sources. First, the OECD Digital Government Index (DGI) 2023, published in 2024, provides composite scores measuring the institutional and organizational enablers of digital government, including digital-by-design approaches, data-driven public sectors, and user-centric service delivery. Second, the United Nations E-Government Development Index (EGDI) 2024 offers a complementary perspective by assessing the development of online public services, telecommunication infrastructure, and human capital at the national level. Third, indicators on digital skills were drawn from the Eurostat Digitalisation dataset (interactive edition, 2024), using data for 2023 that capture the proportion of individuals possessing basic or above-basic digital competencies. The analysis includes a sample of a few selected EU countries based on their representativeness

of different stages of digital transformation within the European administrative space. Descriptive statistics and cross-country visualizations (bar and scatter plots) were applied to identify relative performance and potential correlations between digital governance capacity and population digital literacy, which together define the operational environment of the emerging Public Manager 5.0. Table 4 contains an overall view of the most digitalised EU countries and Romania

Table 4. An overview of the most digitalised EU members and Romania

Criteria	Estonia	Denmark	France	Germany	Romania
Level of digitalization	Very high	High	Medium	High	Low
Digital leadership	Strategic	Participatory	Ethical	Systemic	In development
AI and Big Data skills	Advanced	Moderate	Moderate	Advanced	Limited
Organizational culture	Innovative	Collaborative	Adapted hierarchical	Rigid	Bureaucratic
Professional training	Continuous	Citizen-centred	Values-based	Efficiency-focused	Uneven

Source: Authors, 2025

Table 5 shows that the Nordic and Baltic countries lead in digital public governance, while Eastern European states remain in the consolidation phase.

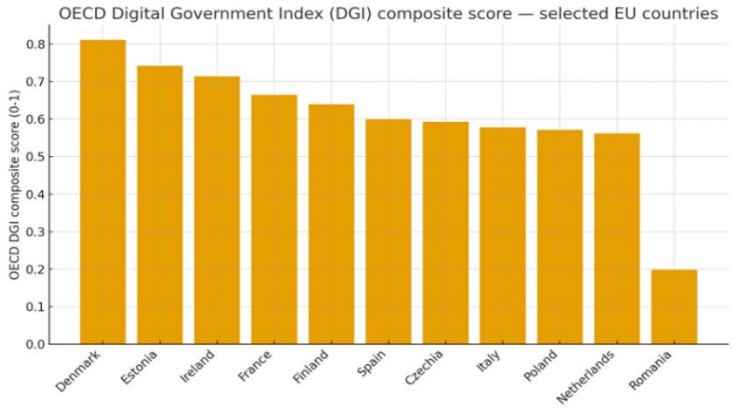
Table 5. Digital maturity of public management systems in the EU

Country	Digital Maturity Index (0–100)
Estonia	92
Denmark	88
Finland	85
Netherlands	83
France	76
Germany	74
Spain	72
Romania	58
Bulgaria	52

Source: European Commission (2025). Digital Economy and Society Index for 2024

Figure 2 presents the bar chart of OECD Digital Government Index (DGI) composite scores for selected EU countries (Denmark, Estonia, Ireland, Finland, France, Spain, Italy, Poland, Czechia, Netherlands, Romania).

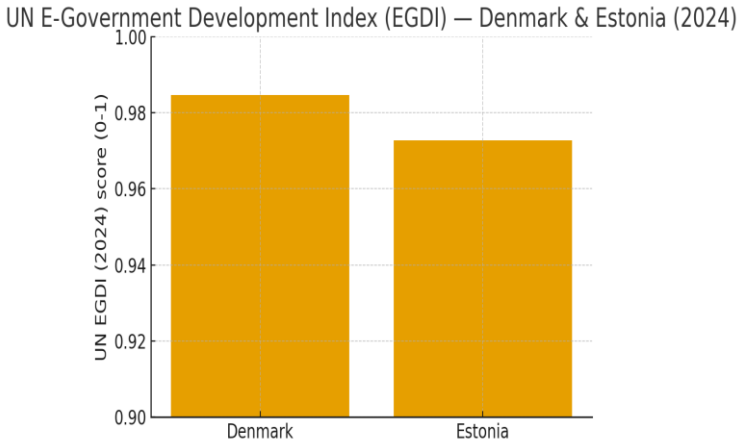
Figure 2. Composite score of digital government in the selected EU countries



Source: Authors based on the data source: OECD. (2025). Digital Government Index for 2024

Denmark and Estonia are front-runners among the selected EU countries in having the foundational elements for digital government (Denmark ≈ 0.811; Estonia ≈ 0.742). Countries such as Ireland and Finland also score well (≈0.71 and 0.64, respectively), while Romania is substantially lower (≈0.20), showing large intra-EU variation. This spread indicates differing readiness of public administrations to adopt advanced digital tools, data-driven decision-making, and service redesign consistent with a "Public Manager 5.0" mission (i.e., managing AI, platforms, and data in public services). Figure 3 shows a bar chart of the UN E-Government Development Index (EGDI) 2024 for Denmark and Estonia, the top EU performers in the UN ranking.

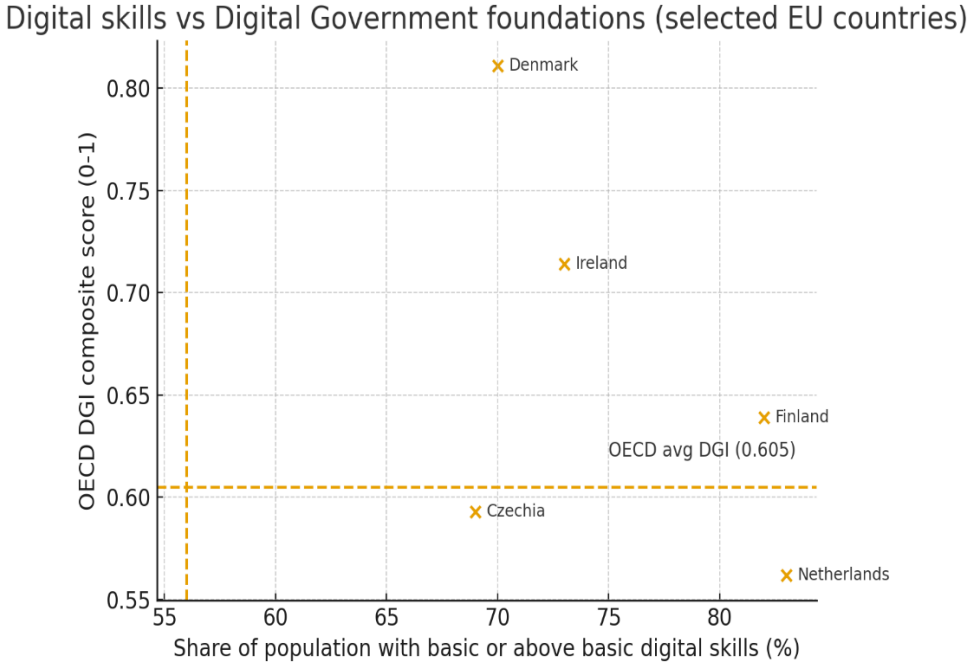
Figure 3. UN E-Government development index of Denmark and Estonia



Source: Authors based on the data source: United Nations. (2025). E-Government data centre / EGDI, 2024

The data that figure above confirm Denmark and Estonia position as global leaders in e-government delivery and online public services. High EGDI values align with strong digital identity, online service availability and connectivity — structural enablers for public managers experimenting with AI, automation and whole-of-government digital platforms.
Figure 4 presents the Scatter plot of DGI composite score vs share of population with basic-or-better digital skills (Eurostat) for five EU countries where both indicators are available (Netherlands, Finland, Ireland, Denmark, Czechia). The chart also shows OECD average DGI (0.605) and EU average basic-skills (56%) reference lines. Data sources: OECD DGI (composite scores) and Eurostat Digitalisation interactive (digital skills share).

Figure 4. The relationship between the DGI composite score and digital skills in the selected EU member states



Source: Authors based on the data sources: OECD DGI (composite scores) and Eurostat Digitalisation interactive

There is a loose positive relationship between population digital skills and DGI composite scores in this small sample, but the relationship is not perfectly linear. For instance, the Netherlands and Finland show very high digital-skill rates (≈83% and 82%) but more moderate DGI composite scores (Netherlands ≈0.56; Finland ≈0.64). This suggests that strong citizen digital capacity does not automatically translate into equally strong institutional digital foundations. Denmark (70% skills) scores highest

in DGI (≈0.81), indicating that strong institutional design and governance can compensate for a smaller (but still substantial) skills base.

4. Limitations of comparative research

Several methodological constraints must be acknowledged. The three data sources differ in their measurement frameworks, reference years (OECD 2023, UN 2024, Eurostat 2023), and degrees of reliance on expert assessments, which may introduce cross-dataset comparability issues. Moreover, the digital skills indicator captures individual capacities but does not reflect institutional or managerial digital competencies directly. Consequently, the findings should be interpreted as indicative of structural tendencies rather than as evidence of causal relationships.

5. Recommendations for the EU administrations from the perspective of Public Manager 5.0

As can be seen, the evolution of public administration in the European Union has been profoundly influenced by digital transformation, technological innovation, and changing citizen expectations. In this context, the role of the Public Manager 4.0 has emerged as a critical driver of efficiency, transparency, and responsiveness. Unlike traditional managers, Public Managers 4.0 are expected to combine technological competence, strategic thinking, and human-centered leadership**,** fostering a culture of innovation across the public sector. Developing this new generation of public leaders requires more than individual skills — it demands systemic reforms, organizational support, and targeted capacity-building programs**.** The following recommendations aim to guide EU public administrations in equipping their managers with the competencies, tools, and mindset needed to thrive in a digitally enabled, collaborative, and citizen-oriented governance environment**.** Based on our analysis and research results, a few relevant recommendations for the EU governance and for a new Public Manager 5.0 are presented and shortly explained further.

Implement Continuous Digital and AI Training by: Establishing specialized training programs focused on digital literacy, AI tools, and data analytics; Encouraging lifelong learning through online courses, workshops, and certifications; Collaborating with universities and tech companies to provide cutting-edge knowledge.

Promote Data-Driven Decision Making through: Developing platforms and systems that enable real-time access to data and analytics for managers; Providing training on interpreting big data, predictive models, and evidence-based policy design; Encouraging a culture of evidence-based governance.

Foster Strategic Thinking and Innovation as follows: Introduce programs that encourage strategic foresight, scenario planning, and innovation labs; Support

initiatives for co-creation of public services with citizens and private sector partners; Reward creative solutions and innovative policy approaches.

Strengthen Leadership and Change Management by: Offering specialized training in leadership, team management, and change management; Promoting mentorship programs pairing experienced leaders with emerging public managers; and developing competencies in communication, negotiation, and conflict resolution.

Ensure Ethical Governance and Transparency means: Integrate ethics and transparency modules into managerial training; Establish mechanisms for monitoring ethical compliance and anti-corruption practices; Promote a culture of accountability and public trust.

Encourage Collaboration and Networking by facilitating inter-institutional and cross-border cooperation within the EU; Supporting participation in European networks, working groups, and joint projects; Providing platforms for knowledge-sharing and best practices exchange.

Building Resilience and Adaptability can be developed by offering training on crisis management, resilience, and adaptive leadership; simulating real-world challenges (e.g., digital disruptions, public crises) to strengthen adaptability, and promoting mental health and well-being programs for managers.

Developing a Citizen-Centric Approach can be developed by training managers to design services around citizen needs and feedback, encouraging the use of digital tools for citizen engagement and monitoring citizen satisfaction to continuously improve services.

Raise Cybersecurity Awareness: Integrate cybersecurity modules into managerial training programs; Provide tools and protocols for protecting sensitive data and digital infrastructures; Ensure managers understand risk management in digital governance.

The successful implementation of these recommendations depends on the following: (1) Digital maturity: Countries with advanced digital infrastructure (e.g., Estonia, Finland) are more likely to succeed. (2) Political will: Strong government commitment to digital transformation and AI adoption is critical. (3) Educational systems: Availability of specialized programs in AI, data analytics, leadership, and ethics enhances success (Seniutis et al., 2024). (4) Organizational culture: Flexible, innovative, and citizen-focused organizations have higher chances. (5) Cross-border collaboration: Sharing best practices via EU networks boosts effectiveness (Hooijberg & Choi, 2001). Key Factors for Accelerating Success are: (1) Comprehensive EU-supported training programs. (2) Strong institutional backing and policy alignment. (3) Early adoption of digital and AI tools in public administration. (3) Continuous evaluation and feedback loops. (4) Encouraging a culture of innovation and resilience.

For **Romania, there are a few urgent priorities from the perspective of modern and innovative governance, and for Public Manager 5.0.**

The most relevant are the following:

- Create a National Program for Public Manager 5.0, in partnership with universities, training institutions, and experienced member states.
- Engage in European networks of digital transformation and public leadership (e.g., partnerships with Estonia, Denmark).
- Integrate digital, data, AI, and ethical governance skills into the curricula of initial and continuous training of public managers.
- Strengthen data governance, interoperability, and digital infrastructure at the national level to enable managers to be efficient.
- Promote an organizational culture oriented towards innovation, collaboration, openness to citizens, and less bureaucracy.

6. Conclusions

The public manager 5.0 represents an ethical, citizen-oriented digital leader, combining traditional public management competencies with emerging skills: digitalization, data, AI, innovation, and resilience. EU countries are not homogeneous in terms of the digital maturity of the administration and the profile of the public manager. There is a continuum from leading countries (Estonia, Denmark) to transition countries (Romania). Major differences derive from factors such as: digital infrastructure, managerial culture, professional training, public leadership, technology adoption and regulation. For Romania (and other transition countries) it is essential to develop a coherent program for training the public manager 5.0, which includes: digital competencies, adaptive leadership, digital ethics, data-driven governance, innovation and sustainability. European cooperation, the exchange of good practices between leading and transition countries, as well as European funding for digital transformation, are vital to accelerate the process. As we prove based on this research, transition to Administration 5.0 involves not only technology, but a new type of public leadership — the public manager 5.0 — capable of leveraging data, technologies, and collaboration to meet the challenges of the 21st century.

Conflict of Interest Statement

The author declares that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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