Leadership Data-Driven and CBHRM: Interplay of Skills in Public Administration

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Abstract: The increasing complexity of public sector challenges needs a shift from intuition-based decision-making to evidence-based approaches, particularly in human resource management (Cho et al., 2023). This paradigm shift requires leaders able to leverage data analytics to manage strategically human resources within public administration (Magakwe, 2025; Cho et al., 2023). The digital transformation in public sector needs to move beyond traditional practices to embrace new strategies for performance optimization ("Digital Transformation in Public Sector Human Resource Management," 2024). This paper explores the interplay between data-driven and soft skills, examining how these elements facilitate efficient transformation programs and enhance public service delivery (Adie et al., 2024) (Bastidas et al., 2023). Specifically, it investigates how leaders in public administration need to integrate sophisticated data analytics and soft competency frameworks to support an adaptive and high-performing workforce (García, 2025; Zervas & Stiakakis, 2024). The objective is to delineate the weight of the skills and competencies required for public sector leaders to navigate the complexities of data-driven decision-making (Adie et al., 2024). This integration is crucial to raise a workforce capable of navigating and ensuring public sector development (Adie et al., 2024; Zervas & Stiakakis, 2024). This research will delve into the competencies required by Human Resource Directors within these highly adaptive and scalable organizations, particularly examining how a human-centric approach to digital leadership can foster an environment leading to innovation and efficiency in public service.

Keywords: Leadership data-driven, CBHRM, Skills, Public administration

1. Introduction

The implementation of data-driven technologies marks the onset of a transformative era (Haug et al., 2023), in which public administrations are compelled to undertake significant organizational changes (Larson & DeChurch, 2020; Stonehouse & Konina, 2020), aimed at reshaping structures and redefine roles (Kollmann et al., 2021). This paradigm change requires leaders able to leverage data analytics to manage strategically human resources (Magakwe, 2025; Cho et al., 2023), shifting from intuition-based decision-making to evidence-based approaches (Cho et al., 2023). This is necessary for constant adaptation and continuous reskilling of leaders (Davenport & Ronanki, 2018). Traditional skills are increasingly insufficient to manage AI systems, their potential applications, imposing a leadership characterized by adaptability, digital literacy, and the right mindset (Chamorro-Premuzic et al., 2018; Pearce, 2018; Reynolds, 2018); they must be able to evolve with evolving organizational expectations and values (Forst & Jeske, 2019).

As AI changes take root, leaders need to be able to handle these changes (Ciarli et al., 2021) with an appropriate mindset. AI systems leverage big data analytics, deploy deep learning algorithms, and enable the formulation of objective, data-driven decisions. AI demonstrates substantial potential in enhancing efficiency and enabling strategic decision-making within predefined regulatory and procedural frameworks. Its effectiveness depends on the quality and integrity of the data, and it correlates above all on the ability to interpret and implement it, because its capacity for transformative innovation is inherently limited when it comes to challenging or transcending existing institutional paradigms (Kollmann et al., 2023).

It is essential for being competitive in the labour market (Davenport, 2006; Kane, 2017): public administrations currently face challenges in attracting top talent, as the private sector is often perceived as more appealing to skilled leaders (Chen et al., 2013).

This paper explores the interplay between data-driven and soft skills, highlighting the impact that they have on enhancing public service delivery. Specifically, it investigates which are the skills that Italian public administration leaders have in order to address the reskilling process versus data analytics and/or soft skills to support an adaptive and high-performing workforce (García, 2025; Zervas & Stiakakis, 2024). The objective is to delineate the weight of the skills and competencies required for public sector leaders to navigate the complexities of data-driven decision-making (Adie et al., 2024). This integration is crucial to raise a workforce capable of navigating and ensuring public sector development (Adie et al., 2024; Zervas & Stiakakis, 2024). This is explorative research and it will delve into the competencies required by ten Italian Human Resource Directors within these highly adaptive and scalable organizations, particularly examining how a human-centric approach

to digital leadership can foster an environment leading to innovation and efficiency in public service (Zhang et al., 2024; Abbu et al., 2025).

2. Literature Review

In recent years, the pervasive impact of digital transformation has reshaped the landscape of strategic human resources management processes, requiring public administrations to develop new organizational and professional skills that have brought to light the pivotal role of two paradigms: data-driven leadership and CBHRM.

Data-driven leader

The literature research highlights that the data-driven leader is someone who promotes accountability and fosters a data-driven culture, where decisions are based on facts and data, thereby avoiding unfounded opinions, cognitive biases, groupthink and self-censorship.

The leaders possess strong analytical skills and data self-efficacy, the ability to handle, discuss, and understand processes and biases (Schmidt, van Dierendonck, and Weber, 2023). They integrate management science principles, through which leaders make strategic decisions, improve operational efficiency, and drive innovation. They emphasize the central role of data in organizational culture, improving workforce engagement, and driving competitive advantage. Data-driven leaders use data-informed decision-making practices to acquire, evaluate, and interpret data to make strategic decisions, reducing the risk associated with decisions based merely on intuition. (Chigbu and Makapela, 2025).

In this regard, Schmidt van Dierendonck and Weber (2023) argue that the data-driven leader is characterized by an integrated set of three core competencies—technical, strategic, and relational—which must coexist to enable a genuine transformation of decision-making processes.

The technical competencies include the ability to understand, interpret, and critically evaluate both quantitative and qualitative data. As Gray, Bounegru, and Gerlitz (2018) emphasize, data ability goes beyond the ability to "read numbers", entailing the capacity to critically question the origin of data, the methods used for its collection, the metrics applied and the broader social implications of its analysis.

In the public sector, these leaders are able to read and interpret services performance indicators, analyse administrative data and monitoring dashboards. Without a strong technical foundation, data is at risk of being overlooked or misinterpreted, resulting in poorly informed decisions. Beyond technical skills, a data-driven leader needs to possess professional competencies, such as the ability to translate data-driven insights into decisions. This requires integrating data into policy-making processes, using it to define priorities, evaluate impacts, and anticipate future scenarios.

This leader could be defined as "a visionary" (Schmidt et al.,2023) - one who can align analytical findings with the organization's mission and leverage tools such as predictive analytics and data forecasting to identify emerging problems and opportunities. In public administration, this means using analytical insights to enhance strategic planning.

Another dimension of the data-driven leader involves relational and organizational competencies. As Kewalramani and Panyam (2024) argue: "it is transformative leadership - capable of promoting data culture, managing resistance, and enabling change - that ultimately determines the success of data adoption within organizations."

According to this approach, the concept of data-driven leadership requires a set of skills and, where there is no evidence, it imposes new reskilling programs that become strategic levers for improving the efficiency, transparency, and quality of public services.

Table 1: Data-driven Skills

Skill / Competency	Description	Sources
Data Literacy	Ability to read, understand, and interpret data for decision-making.	Schmidt et al. (2023); Chen (2019); Niggl et al. (2023)
Analytical Thinking	Critical thinking using data; pattern recognition and logical reasoning.	Schmidt et al. (2023); Faúndez & de la Fuente-Mella (2022)

Skill / Competency	Description	Sources
Data Self-Efficacy	Confidence in using data and understanding its potential and limitations.	Schmidt et al. (2023); Chen (2019)
Strategic Vision	Ability to align data insights with long-term organizational goals.	Schmidt et al. (2023); Faúndez & de la Fuente-Mella (2022)
Problem Spotting	Identifying challenges or opportunities early using data insights.	Schmidt et al. (2023)
Influencing & Storytelling	Translating data into compelling narratives to influence stakeholders.	Schmidt et al. (2023); Niggl et al. (2023)
Knowledge Facilitation	Encouraging data sharing and cross-functional learning.	Schmidt et al. (2023); Niggl et al. (2023)
Technical Understanding	Awareness of tools, systems, and analytics capabilities.	Faúndez & de la Fuente-Mella (2022); Niggl et al. (2023)
Team Building	Assembling and empowering the right talent to support data initiatives.	Schmidt et al. (2023); Niggl et al. (2023)
Cultural Leadership	Creating an environment where data-informed decision-making is valued.	Niggl et al. (2023); Chen (2019)

CBHRM

CBHRM focuses on the systematic use of competency-based models – which define the knowledge, skills, behaviours, and attributes required for effective performance – to manage human resources within organizations (recruitment, training, evaluation, and career development) (Spencer & Spencer, 1993). The term "competence" includes a set of measurable or observable knowledge, skills, abilities, and behaviours that influence to individual and organizational performance (Boyatzis, 1982; Spencer & Spencer, 1993). Unlike formal education or certifications, competencies focus on what a person can perform a role under real-world conditions. This model distinguishes behavioural (such as teamwork, communication, and adaptability) and technical (such as data analysis, clinical procedures, or project management, Dubois & Rothwell, 2004). They provide a framework for both individual and organizational development (Lucia & Lepsinger, 1999), improving transparency in HR practices, and supporting continuous learning (Campion et al., 2011). Numerous studies conducted in public administrations have highlighted the positive effects of using this model on organizations. In the healthcare sector, for example, Gunawan et al. (2019) shed on how CBHRM has improved service delivery and employee motivation. In educational organizations, competency-based systems have improved staff development and performance (Arif and Smiley, 2004).

From a theoretical standpoint, competencies integrate the resource-based view (RBV), according to which human resources are critical factors for competitive advantage. Thus, organizations that identify, develop, and leverage competencies are more likely to achieve high performance (Lepak and Snell, 1999).

Table 2: CBHRM Skills

Skill / Competency	Description	Sources
Problem Solving	Critically analyze complex problems using data to identify key issues and propose effective solutions.	Jablokow (2008); Heifetz & Laurie (1997)
Strategic Vision	Anticipate future scenarios and define long-term goals and strategies accordingly.	Goldman & Casey (2010); Hughes et al. (2014)
Systemic Thinking	Understand interrelations among elements to develop an integrated and coherent perspective.	Kunc (2024); Senge (1990)
Process Management	Plan, organize, and manage resources and activities efficiently, aligned with strategic objectives.	Davenport (1993); Strielkowski et al. (2023)
Team Development	Promote employee growth through feedback, delegation, and recognition, ensuring fairness and motivation.	Goleman et al. (2013); Yukl (2012)
Team Leadership	Coordinate teams, assign roles, promote inclusion, and encourage collaboration.	Zaccaro et al. (2001); Hoch & Kozlowski (2014)
Change Promotion	Embrace and foster continuous improvement and innovation, positioning change as a positive force.	Kotter (1996); Nelson & Squires (2017)

Skill / Competency	Description	Sources
Responsible Decision-Making	Make timely, well-reasoned decisions under uncertainty, while assuming full accountability.	Schoemaker et al. (2013); Kahneman (2011)
Results Orientation	Set ambitious, value-oriented goals and take proactive action to achieve high-quality outcomes.	Locke & Latham (2002); Collins (2001)
Relationship Management	Build trust-based internal and external networks through effective, stakeholder-focused communication.	Goleman (1995); Boyatzis (2006)
Negotiation	Facilitate agreement between differing interests through constructive conflict resolution.	Fisher et al. (2011); Lewicki et al. (2020)
Service Quality Orientation	Understand and respond to stakeholder needs through active listening and continuous improvement.	Zeithaml et al. (1990); Johnston (2001)
Emotional Resilience	Stay calm and maintain performance under stress, while managing one's own and others' emotions.	Luthans & Youssef (2007); Tugade & Fredrickson (2004)
Self-Development	Pursue ongoing growth through reflection, feedback, and continuous learning.	London (2002); Kolb (1984)
Organizational Awareness	Act in line with organizational values, promoting transparency, fairness, and public interest.	Goleman (2000); Ashkanasy & Daus (2005)

Towards a Critical Integration of Data-Driven Leadership and CBHRM Frameworks

While both the Data-Driven Leadership and Competency-Based Human Resource Management (CBHRM) paradigms respond to the evolving demands of digital transformation, their integration within public sector scholarship and practice remains limited and under-theorized. Although CBHRM emphasizes the importance of strategic skills, it does not provide leaders with the tools needed to manage complex and constantly evolving information systems. The Data-Driven Leadership model, by contrast, is a dynamic approach that promotes continuous learning and evidence-based decision-making. It leverages technical skills, strategic vision, and interpersonal skills, with particular emphasis on the use of data.
Unlike CBHRM, data-driven leadership integrates data with strategies. However, the literature on this topic remains fragmented. For example, the triadic model, proposed by Schmidt et al. (2023), doesn't measure competences, professional development, and performance alignment. Furthermore, it idealizes the figure of the data-driven leader, neglecting the cultural resistance and inertia typical of bureaucratic contexts.

Both models have limitations. CBHRM should consider analytical tools and predictive HR metrics. At the same time, the data-driven leadership model needs to be used into existing HR systems.

This put in evidence that a hybrid approach is necessary. This study aims to bridge the gap between the two paradigms and contribute to their mutual enrichment.

It shows how CBHRM can operationalize the insights of data-driven leadership, while the latter can breathe strategic agility and cultural transformation into CBHRM's structured approach. In this way, the paper proposes a synthesis model more attuned to the challenges of contemporary public sector innovation.

3. Methodology

This study adopts an exploratory qualitative approach rooted in the Gioia methodology (Gioia et al., 2013), which prioritizes the emic perspectives of organizational actors to inductively develop conceptual insights. The guiding epistemological assumption is that organizational members are knowledgeable agents, capable of articulating their experience in meaningful and analytically rich ways.

The sample comprises 10 HR directors and 48 group members across public sector organizations in Italy. Participants had 5 years of professional experience on average in which they managed five direct reports (70% of participants identified as male, 30% as female overall). The questionnaires consider an auto-evaluation for leaders and a leader's evaluation by the groups. While this number may appear limited from a quantitative standpoint, in qualitative and inductive research, depth and relevance of information are predominant compared to statistical representativeness (Patton, 2002).In line with qualitative research standards, the sample was selected using purposive and theoretical sampling, targeting those in leadership and HR supervisory roles, who could offer rich insights into the phenomenon of data-driven leadership in public administration. As Guest et al. (2006) note, saturation in thematic analysis can often be achieved within 6 to 12 interviews, particularly when the sample is relatively homogeneous in terms of experience and role—as in this case. The inclusion of

group-level perspectives (n=48) provides a meaningful triangulation of the HR managers' self-assessments, thus enhancing construct validity (Yin, 2014). The distribution across different levels of public administration - Municipalities (60%) to Provinces (30%) to Courts (10%) - and geographical areas -the majority were situated in North Italy (50%), then South Italy (30%), and Central Italy (20%)- ensures contextual diversity, which supports analytic generalizability rather than statistical generalization (Yin, 2014; Maxwell, 2013).

Analytical Strategy and Use of Gioia Methodology

The study draws on the Gioia methodology to develop a structured, conceptually rich understanding of emerging leadership competencies. This method allows for systematic coding and abstraction from raw data into second-order themes and aggregate dimensions. The process was carried out in several stages:

First-Order Coding (Informant Terms): Responses were initially analyzed using in vivo codes, retaining the language and meaning provided by participants. This process allows to understand the perception participants have on leadership and data use.

Second-Order Themes (Researcher Terms): Through iteration with participants, conceptual categories have emerged, that are included in the study after comparation with the literature framework.

Aggregate Dimensions: Conceptual categories were catalogued into constructs, such as "data self-efficacy," "strategic insight," or "relational leadership under digital transformation." To analyse the replies to a hybrid structure was used. For structured analysis it was used binary model, presence/absence, and Likert-scale for self and peer evaluation. It was integrated with open-ended responses and comparative interviews (Glaser and Strauss, 2017). This hybrid approach has allowed to develop a quantitative and qualitative interpretation of the present competencies within public administrations, allowing to understand the interplay between perceived leadership capabilities and actual workplace dynamics.

The questionnaire examines the presence (or absence) of 25 competencies, deduced by literature review. The skills were adapted to the public administrations, and they are listed in the table below.

Table 3: Data driven and CBHRM Skills

Skill / Competency	Description	Sources
Problem Solving	Critically analyze complex problems using data to identify key issues and propose effective solutions.	Jablokow (2008); Heifetz & Laurie (1997); Schmidt et al. (2023)
Strategic Vision	Anticipate future scenarios and define long-term goals and strategies accordingly.	Goldman & Casey (2010); Hughes et al. (2014); Schmidt et al. (2023); Faúndez & de la Fuente-Mella (2022)
Systemic Thinking	Understand interrelations among elements to develop an integrated and coherent perspective.	Kunc (2024); Senge (1990)
Process Management	Plan, organize, and manage resources and activities efficiently, aligned with strategic objectives.	Davenport (1993); Strielkowski et al. (2023)
Team Development	Promote employee growth through feedback, delegation, and recognition, ensuring fairness and motivation.	Goleman et al. (2013); Yukl (2012)
Team Building	Assembling and empowering the right talent to support data initiatives.	Schmidt et al. (2023); Niggl et al. (2023)
Team Leadership	Coordinate teams, assign roles, promote inclusion, and encourage collaboration, including remotely.	Zaccaro et al. (2001); Hoch & Kozlowski (2014)
Change Promotion	Embrace and foster continuous improvement and innovation, positioning change as a positive force.	Kotter (1996); Nelson & Squires (2017)
Responsible Decision-Making	Make timely, well-reasoned decisions under uncertainty, while assuming full accountability.	Schoemaker et al. (2013); Kahneman (2011)
Results Orientation	Set ambitious, value-oriented goals and take proactive action to achieve high-quality outcomes.	Locke & Latham (2002); Collins (2001)
Relationship Management	Build trust-based internal and external networks through effective, stakeholder-focused communication.	Goleman (1995); Boyatzis (2006)

Skill / Competency	Description	Sources
Negotiation	Facilitate agreement between differing interests through constructive conflict resolution.	Fisher et al. (2011); Lewicki et al. (2020)
Service Quality Orientation	Understand and respond to stakeholder needs through active listening and continuous improvement.	Zeithaml et al. (1990); Johnston (2001)
Emotional Resilience	Stay calm and maintain performance under stress, while managing one's own and others' emotions.	Luthans & Youssef (2007); Tugade & Fredrickson (2004)
Self-Development	Pursue ongoing growth through reflection, feedback, and continuous learning.	London (2002); Kolb (1984)
Organizational Awareness	Act in line with organizational values, promoting transparency, fairness, and public interest.	Goleman (2000); Ashkanasy & Daus (2005)
Data Literacy	Ability to read, understand, and interpret data for decision-making.	Schmidt et al. (2023); Chen (2019); Niggl et al. (2023)
Analytical Thinking	Critical thinking using data; pattern recognition and logical reasoning.	Schmidt et al. (2023); Faúndez & de la Fuente-Mella (2022)
Data Self-Efficacy	Confidence in using data and understanding its potential and limitations.	Schmidt et al. (2023); Chen (2019)
Problem Spotting	Identifying challenges or opportunities early using data insights.	Schmidt et al. (2023)
Influencing & Storytelling	Translating data into compelling narratives to influence stakeholders.	Schmidt et al. (2023); Niggl et al. (2023)
Knowledge Facilitation	Encouraging data sharing and cross-functional learning.	Schmidt et al. (2023); Niggl et al. (2023)
Technical Understanding	Awareness of tools, systems, and analytics capabilities.	Faúndez & de la Fuente-Mella (2022); Niggl et al. (2023)
Cultural Leadership	Creating an environment where data-informed decision-making is valued.	Niggl et al. (2023); Chen (2019)

4. Results

The results reflect perceived proficiency across 25 key skills, covering strategic, analytical, interpersonal, and data-related domains.

Table 4: Results of questionnaire

Skill	Description	Auto-evalutation Skill present	Valutation by memebers of group Skill present
Problem Solving	Critically analyze complex problems using data to identify key issues and propose effective solutions.	5	31
Strategic Vision	Anticipate future scenarios and define long-term goals and strategies accordingly.	4	23
Systemic Thinking	Understand interrelations among elements to develop an integrated and coherent perspective.	8	35
Process Management	Plan, organize, and manage resources and activities efficiently, aligned with strategic objectives.	3	27
Team Development	Promote employee growth through feedback, delegation, and recognition, ensuring fairness and motivation.	4	34
Team Building	Assembling and empowering the right talent to support data initiatives.	6	23
Team Leadership	Coordinate teams, assign roles, promote inclusion, and encourage collaboration, including remotely.	6	16

Skill	Description	Auto-evalutation Skill present	Valutation by memebers of group Skill present
Change Promotion	Embrace and foster continuous improvement and innovation, positioning change as a positive force.	7	24
Responsible Decision-Making	Make timely, well-reasoned decisions under uncertainty, while assuming full accountability.	7	28
Results Orientation	Set ambitious, value-oriented goals and take proactive action to achieve high-quality outcomes.	8	34
Relationship Management	Build trust-based internal and external networks through effective, stakeholder-focused communication.	9	45
Negotiation	Facilitate agreement between differing interests through constructive conflict resolution.	2	12
Service Quality Orientation	Understand and respond to stakeholder needs through active listening and continuous improvement.	3	11
Emotional Resilience	Stay calm and maintain performance under stress, while managing one's own and others' emotions.	3	12
Self-Development	Pursue ongoing growth through reflection, feedback, and continuous learning.	6	34
Organizational Awareness	Act in line with organizational values, promoting transparency, fairness, and public interest.	4	36
Data Literacy	Ability to read, understand, and interpret data for decision-making.	3	24
Analytical Thinking	Critical thinking using data; pattern recognition and logical reasoning.	7	41
Data Self-Efficacy	Confidence in using data and understanding its potential and limitations.	2	12
Problem Spotting	Identifying challenges or opportunities early using data insights.	5	35
Influencing and Storytelling	Translating data into compelling narratives to influence stakeholders.	4	23
Knowledge Facilitation	Encouraging data sharing and cross-functional learning.	8	43
Technical Understanding	Awareness of tools, systems, and analytics capabilities.	3	13
Cultural Leadership	Creating an environment where data-informed decision-making is valued.	1	11

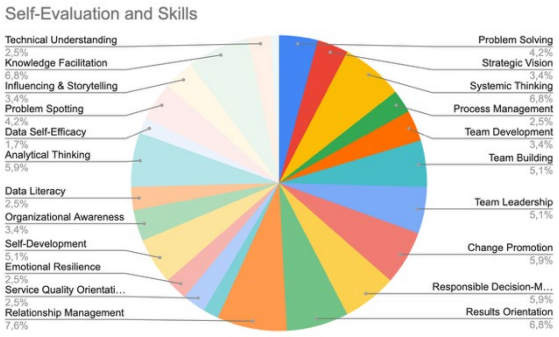

Figure 1: Self-evaluation and Skills

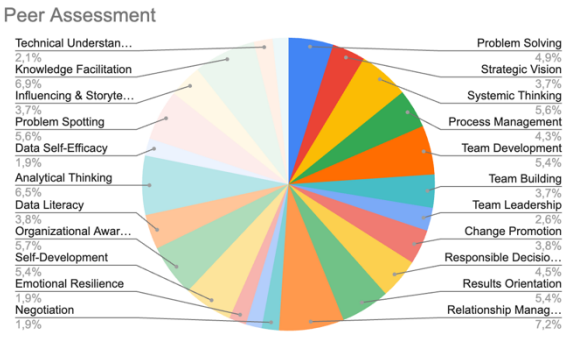

Figure 2: Peer Assessment

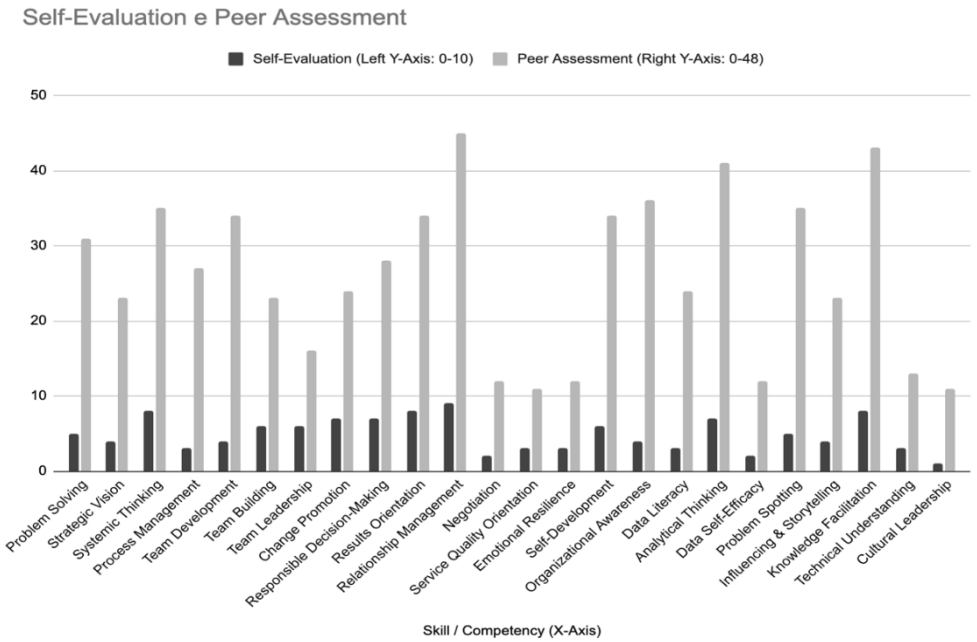

Figure 3: Comparation between self-evaluation and peer assessment

A consistent discrepancy is observed between self-evaluation scores and peer assessments. In nearly all competencies, the scores attributed by group members are significantly higher than the individual's self-ratings. This divergence may indicate a tendency towards self-critical judgment or anchoring heurism in self-assessment, contrasting with external perceptions that are more favourable.

Strategic and Analytical Competencies

High self-perception and strong peer recognition are noted in Systemic Thinking (Self: 8; Peer: 35), Analytical Thinking (7; 41), and Results Orientation (8; 34). These findings suggest a recognized capacity for high-level thinking, goal-setting, and data-driven analysis. In contrast, there seem to be self-assessed muted scores for Strategic Vision (4; 23) and Process Management (3; 27), which have moderate to strong peer recognition. This could point to a lack of confidence in long-term planning and operational efficiency, although peer stakeholders recognize value and competency in these aspects.

Interpersonal and Leadership Skills

Strong interpersonal engagement and disposition as well as a commitment to one's own and the team's growth are well evidenced by the high peer scores in Relationship Management (Self: 9; Peer: 45), Team Development (4; 34), and Self-Development (6;34). In contrast, the Team Leadership (6; 16) and Team Building (6; 23) have the lowest self-score and one of the lowest peer scores, confirming that this is an area that requires attention. Additionally, the Cultural Leadership (1;11) received relatively low peer scores compared to other areas, highlighting that this is a critical area for development and in fostering a data-driven organizational culture.

Data Competencies

While Analytical Thinking and Knowledge Facilitation (Self: 8; Peer: 43) are strong, other skills such as Technical Understanding (3; 13), Data Self-Efficacy (2; 12), and Data Literacy (3; 24) have lower evaluations from both leader and peers. This suggests an uneven profile; enhancing confidence and technical capacity in handling data tools and methodologies could significantly bolster performance in data-intensive environments.

Personal and Emotional Competencies

Moderate to low scores in Emotional Resilience (Self: 3; Peer: 12) and Negotiation (2; 12) reflect challenges in managing stress and conflicts. These are critical soft skills, particularly in high-stakes or dynamic environments, and their development may contribute to more balanced and effective performance.

Underestimated Strengths

Organizational Awareness (4; 36) and Problem Solving (5; 31) suggest alignment with institutional values and analytical capacity that the individual may not fully recognize. This underestimation may signal a need for reflective practices that reinforce self-confidence and accurate self-perception.

5. Conclusion

While numerous studies have highlighted the importance of addressing the challenges posed by artificial intelligence (e.g., De Cremer, 2019; Petrucci and Rivera, 2018), there remains a gap in the empirical research on how AI influences the day-to-day experiences of leaders. This paper has explored how AI may drive changes in terms of skills required by managers who interact with such technologies.

The study has based on explorative research that has involved Italian HR of public administrations to put in evidence existing key managerial competencies, for assessing their relevance and adaptability in the AI-driven context.

The findings of this study offer several practical implications for policy-makers and human resources (HR) professionals operating within public administration. Firstly, there is a necessity to develop frameworks that promote AI-related leadership. This makes an investment necessary in the creation of integrated competencies for public sector leaders, providing, also, mechanisms for continuous training and professional development.

The possibility of realizing digital literacy training, publicly funded leadership programs, or incentive schemes tied to the implementation of AI-informed governance practices that could support organizations in this changing way. Then, policy-makers need to adopt a multi-level governance approach. Coordination across departments can be enhanced by data-driven leadership practices. To be profitable it's necessary to invest in recruitment, training, and evaluation practices in line with the AI-integrated contexts. This means that the new leaders need to possess additional competencies such as digital self-efficacy, data interpretation, emotional intelligence, and resilience in the face of technological disruption. Finally, the study underscores the need to bridge the strategic approach on data-driven leadership with tangible operational practices. It is incumbent upon both legislators and administrative leaders to embed AI leadership competencies into civil service statutes, performance appraisal criteria, and organizational design. In this way, it is useful for ensuring that public administration is not merely reactive but proactively shaped by the evolving digital context.

Ethics Declaration: In collecting empirical data, this study followed the ethical requirements of the respective university. This research study has not collected any sensitive data from the data subjects and, hence, did not require ethical approvals from the university. However, information about the study and the possibility of publication was provided to all workshop participants, and informed consent was obtained prior to data collection.

AI Declaration: No AI tools were directly used in conducting the research. Language correction tools were employed during the development of the workshop and the writing of the manuscript to proofread and correct language errors

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