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LEADERSHIP ROLES IN AI IMPLEMENTATION: A QUALITATIVE STUDY OF SOCIO-TECHNICAL ALIGNMENT

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KALIT SO‘ZLAR/ КЛЮЧЕВЫЕ СЛОВА

sun’iy intellect, SI ni joriy etish, rahbarlik rollari, ijtimoiy-texnik tizimlar, inson va SI hamkorligi, SI savodxonligi, ishonch, mas’uliyat

ANNOTATSIYA/ АННОТАЦИЯ

Sun’iy intellekt (SI) tashkiliy faoliyatga tobora keng joriy etilayotgan bo‘lsa-da, texnologik vositalarning mavjudligi ularning mazmunli va samarali qo‘llanilishini o‘z-o‘zidan ta’minlamaydi. Tashkilotlarda SI vositalarini ish jarayonlari, xodimlarning imkoniyatlari, biznes ustuvorliklari, ishonch va mas’uliyat mexanizmlari bilan uyg‘unlashtirish zarur. Mazkur maqolada sun’iy intellektni joriy etish jarayonida muhim ahamiyat kasb etuvchi rahbarlik rollari hamda ushbu rollarning jamoa va menejerlar darajasida qanday amalga oshirilishi o‘rganiladi. Tadqiqot turli darajadagi SI yetukligiga ega tashkilotlarda sun’iy intellekt bilan bog‘liq tashkiliy o‘zgarishlarda bevosita ishtirok etgan rahbar va menejerlar bilan o‘tkazilgan to‘qqizta yarim tuzilgan intervyuga asoslangan eksplorativ sifat tadqiqoti sifatida tashkil etilgan. Ma’lumotlar nazariyaga asoslangan tematik tahlil va holatlararo qiyoslash usullari orqali tahlil qilingan. Besh o‘zaro bog‘liq rahbarlik roli: ijtimoiy-texnik tarjimon va vositachi, tanlovchi homiy va filtr, SI kompetensiyalarini rivojlantiruvchi, ishonchni muvofiqlashtiruvchi va chegaralarni belgilovchi hamda insoniy mas’uliyatni o‘z zimmasida saqlovchi rahbar rollari aniqlangan. Rahbarlar SI dan foydalanishni bir vaqtning o‘zida rag‘batlantirishi va cheklashi, texnologik imkoniyatlarni tashkiliy amaliyotga tarjima qilishi, xodimlarning salohiyatini rivojlantirishi, SI ga maqbul darajada tayanish uchun zarur shart-sharoitlarni yaratishi hamda muhim oqibatlarga olib keluvchi qarorlar uchun insoniy mas’uliyatni saqlab qolishi aniqlangan. Sun’iy intellektni joriy etish rahbarlik funksiyalarini almashtirmasdan, balki ularni qayta shakllantiradi; bunda rahbarlik SI asosidagi tashkiliy o‘zgarishlarda ijtimoiy-texnik muvofiqlikni ta’minlovchi amaliy mexanizm sifatida namoyon bo‘ladi.

ABOUT THE PAPER

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ANNOTATION

Artificial intelligence (AI) is increasingly embedded in organizational work, yet technological availability alone does not ensure meaningful implementation. Organizations must align AI tools with workflows, employee capabilities, business priorities, trust, and accountability structures. This study examines the leadership roles that become particularly salient during AI implementation and explores how these roles are enacted at the team and managerial level. The study employs an exploratory qualitative design based on nine semi-structured interviews with leaders and managers directly involved in AI-related organizational change across organizations with different levels of AI maturity. The data were analyzed using theory-informed thematic analysis and cross-case comparison. The findings identify five interconnected leadership roles: socio-technical translator and mediator, selective sponsor and filter, AI capability builder, trust calibrator and boundary-setter, and holder of human accountability. Leaders were found to simultaneously enable and constrain AI use, translate technological possibilities into organizational practice, develop employee capabilities, establish conditions for appropriate reliance on AI, and preserve human responsibility for consequential outcomes. The study argues that AI implementation reconfigures established leadership functions rather than replacing them and positions leadership as a practical mechanism of socio-technical alignment in AI-enabled organizational change.

Introduction

Artificial intelligence (AI) is becoming increasingly embedded in organizational work. AI-based systems are now used for information search, analysis, communication, forecasting, software development, customer interaction, decision support, and a growing range of knowledge-intensive activities. However, the organizational availability of AI does not necessarily result in meaningful implementation. Organizations may acquire AI tools, launch pilots, or encourage employee experimentation while still struggling to integrate these technologies into stable workflows, decision-making routines, professional practices, and accountability structures. It is therefore important to distinguish AI adoption from AI implementation. Whereas adoption refers broadly to the decision to introduce or begin using an innovation, implementation concerns the process through which that innovation becomes incorporated into actual organizational practice.

This distinction is particularly relevant to AI because organizational value is not produced by technological capabilities alone. Enholm et al. argue that value creation from AI depends on the interaction of technological resources with organizational processes, data, human capabilities, and managerial arrangements. Weber et al. similarly demonstrate that characteristics such as data dependency and technological inscrutability create distinctive implementation requirements, including coordination, organizational learning, data management, and lifecycle management. AI implementation consequently involves organizational adaptation around technology rather than the simple acquisition of a technical tool.

A socio-technical perspective provides a useful framework for understanding this process. Classical socio-technical systems theory conceptualizes organizations as combinations of interdependent technical and social subsystems whose effectiveness depends on their joint alignment. In AI-enabled work, the technical subsystem may include data, models, platforms, algorithms, interfaces, and technological infrastructure, whereas the social subsystem includes employees, managers, competencies, routines, decision rights, communication practices, trust, and accountability. Implementation difficulties emerge when these dimensions are misaligned. A technically sophisticated AI system may, for example, remain disconnected from actual workflows, be poorly understood by employees, produce outputs that do not fit organizational decision routines, or create uncertainty concerning responsibility.

This socio-technical character of implementation creates a significant managerial challenge. AI may require changes in workflow design, task allocation, employee competencies, coordination, quality-control procedures, and decision-making practices. In addition, AI-generated outputs may be incomplete, inaccurate, context-dependent, or difficult to interpret. Employees may resist AI because they question its usefulness or fear its consequences, while others may rely on it too readily. Managers are therefore required not only to encourage AI use but also to determine where the technology is appropriate, explain its purpose and limitations,

facilitate employee learning, establish boundaries for responsible use, and maintain accountability for AI-supported outcomes.

Existing research increasingly acknowledges the importance of leadership in this process. Tursunbayeva and Chalutz-Ben Gal emphasize the need for leaders to coordinate technological, organizational, and people-related dimensions of AI adoption. Hossain et al. conceptualize AI-related leadership through dynamic managerial capabilities involving technological awareness, adaptation, and transformation. At the team level, Koponen et al. show that managers of AI-integrated service teams face changing task, competence, relational, and ethical demands. These studies demonstrate that the integration of AI is accompanied by substantial managerial work.

Nevertheless, an important gap remains. Leadership is often conceptualized as a general success factor, organizational capability, or source of managerial support for AI adoption. Such approaches explain why leadership matters but provide less detailed understanding of how leadership is enacted during implementation itself. Specifically, less is known about the concrete managerial roles through which leaders translate technological possibilities into everyday work, distinguish valuable AI applications from technological hype, support employee experimentation, develop AI-related capabilities, regulate appropriate reliance on AI, and preserve responsibility when AI participates in organizational tasks and decisions.

A functional perspective on leadership provides a useful basis for addressing this problem. Functional leadership research focuses on the activities leaders perform to meet collective needs, including establishing direction, structuring work, managing boundaries, coordinating adaptation, and solving emerging problems. These leadership functions do not necessarily disappear when AI becomes part of organizational work. Instead, their practical content may change. Coordination may involve human-AI workflows; employee development may include AI literacy; judgment may require evaluation of AI-generated output; and responsibility may include determining which activities can be technologically delegated without transferring organizational accountability.

Literature review

The growing integration of artificial intelligence into organizational processes has stimulated considerable scholarly interest in the relationship between technological innovation, organizational transformation, and leadership. One of the fundamental issues in this literature is the distinction between technological adoption and actual implementation. Klein and Sorra conceptualize implementation as the process through which an innovation becomes incorporated into organizational routines and work practices, emphasizing that the introduction of a technology does not automatically ensure its effective use [6, 1058–1060]. This distinction is particularly relevant to artificial intelligence because organizations may introduce AI systems without sufficiently adapting workflows, employee competencies, decision-making procedures, and organizational responsibilities.

The organizational value of artificial intelligence has consequently been examined beyond the technological characteristics of AI systems themselves. Enholm et al., in their review of AI and business value, argue that the benefits of AI emerge through the interaction of technological resources with organizational processes, human capabilities, data, and managerial arrangements [2, 1712–1715]. Their approach demonstrates that technological investment alone cannot guarantee organizational value. Instead, successful implementation requires the development of complementary organizational capabilities that allow AI technologies to become integrated into existing activities and decision-making structures.

A similar position is developed by Weber et al., whose analysis emphasizes the distinctive organizational challenges associated with AI, including data dependency, technological inscrutability, coordination, organizational learning, and lifecycle management. From this perspective, AI implementation should be understood as a continuing organizational process rather than a one-time technological intervention. The effectiveness of AI depends on how organizations coordinate technological systems with human expertise, organizational routines, and mechanisms of control. Such an interpretation reinforces the importance of managerial actors who can connect technological opportunities with practical organizational requirements.

The socio-technical perspective provides an important theoretical foundation for understanding these relationships. Classical socio-technical systems theory maintains that organizational effectiveness depends on the appropriate relationship between technical and social subsystems [1, 786–789]. Cherns further emphasizes principles of participation, compatibility, and the joint consideration of technological and organizational conditions in system design [1, 787–790]. Applied to AI-enabled organizations, this perspective suggests that algorithms, data, platforms, and interfaces cannot be examined independently of employees, managerial practices, communication structures, competencies, and accountability mechanisms. Consequently, implementation problems may arise not from deficiencies in the technology itself but from insufficient alignment between the technical system and the social organization.

Contemporary research extends this socio-technical argument into the field of human-centered artificial intelligence. Herrmann and Pfeiffer argue that organizations themselves need to remain "in the loop" when AI systems are introduced, thereby extending human-centered AI beyond the individual user toward organizational structures and collective practices [3, 1527–1530]. Their approach highlights the importance of organizational learning, feedback mechanisms, role structures, and institutional conditions that allow AI systems to remain understandable and controllable. This position is particularly significant for leadership research because managers can function as mediators between technological capabilities and organizational practices.

Research on human–AI collaboration likewise indicates that effective AI integration requires a careful balance between technological delegation and human judgment. Kolbjørnsrud identifies organizational principles for human–AI collaboration that emphasize the redistribution of tasks between humans and intelligent systems while preserving human capabilities that are essential for judgment, coordination, and responsibility [8, 48–53]. Such findings challenge technologically deterministic interpretations according to which AI simply replaces existing managerial functions. Instead, AI can transform the content of managerial work by requiring leaders to reconsider task allocation, employee development, decision processes, and mechanisms of oversight.

The issue of trust constitutes another important dimension of AI implementation. Klingbeil, Grützner, and Schreck demonstrate that excessive reliance on AI can generate substantial costs, indicating that trust in artificial intelligence should not be understood simply as a positive attitude toward technological systems [7, 1–5]. Appropriate organizational use requires calibrated reliance based on an understanding of system capabilities and limitations. From a leadership perspective, this creates a need for managerial practices that establish appropriate boundaries, encourage verification, and prevent both unjustified resistance and excessive dependence on AI-generated outputs.

Leadership itself has increasingly been examined as a central organizational capability in AI transformation. Tursunbayeva and Chalutz-Ben Gal emphasize the importance of coordinating technological, organizational, and human dimensions of AI adoption, while Hossain, Fernando, and Akter conceptualize digital leadership through dynamic managerial capabilities associated with technological awareness, adaptation, and transformation [4, 194–199]. These perspectives indicate that leaders require more than general managerial competence: they need sufficient technological understanding to recognize AI opportunities and limitations while simultaneously managing organizational adaptation and employee responses.

At the team level, Koponen et al. demonstrate that managers working with AI-integrated service teams encounter changing task, competence, relational, and ethical requirements [9, 173–178]. Their findings suggest that AI integration does not eliminate the managerial role but changes the circumstances in which managerial functions are performed. Managers increasingly need to coordinate human–AI workflows, facilitate employee learning, address uncertainty, and maintain appropriate boundaries around technological use. This perspective corresponds with functional leadership theory, according to which leadership involves activities such as establishing direction, structuring work, coordinating adaptation, and addressing emerging organizational problems [10, 150–154].

The reviewed literature demonstrates a movement from technology-centered interpretations of AI adoption toward a more integrated understanding of AI implementation as a socio-technical and organizational process. Existing studies sufficiently establish the importance of organizational capabilities, human–AI collaboration, trust, employee competencies, and managerial adaptation. However, comparatively less attention has been given to the specific leadership roles through which socio-technical alignment is practically enacted during AI implementation. The literature therefore creates a conceptual basis for examining leadership not merely as a general organizational success factor, but as an active mechanism that translates technological possibilities into organizational practice, filters and prioritizes AI applications, develops employee capabilities, regulates reliance on AI, and preserves human accountability.

Research methodology

The study employed an exploratory and interpretive qualitative design. A qualitative approach was appropriate because the research question concerns managerial experiences, meanings, practices, and interpretations rather than statistical relationships between predetermined variables.

AI implementation was conceptualized as a socio-technical organizational process involving interaction between technological tools and organizational routines, employee capabilities, trust, decision-making, and accountability. This made an interpretive design particularly suitable because these relationships are strongly context-dependent.

The study aimed at analytical rather than statistical generalization. The purpose was to identify recurring patterns across information-rich cases and relate them to the socio-technical and functional leadership perspectives guiding the research.

The interview guide moved from organizational context toward increasingly focused questions concerning AI implementation, leadership practices, employee reactions, uncertainty, trust, verification, accountability, human judgment, and changing leadership requirements.

The interviews were analyzed using theory-informed thematic analysis. The analytical approach combined sensitivity to concepts derived from the theoretical framework with openness to patterns emerging from participants' accounts. The analysis was therefore neither purely inductive nor purely deductive.

First-cycle coding was conducted interview by interview. Theory-informed codes included socio-technical tensions, leadership mediation, bounded trust, accountability, and leadership-related change. Empirically emerging codes included AI as efficiency infrastructure, prompt literacy, sponsorship of bottom-up initiatives, and AI as a developmental step rather than a radical transformation of leadership. Codes were subsequently consolidated into a provisional codebook, broader categories, and higher-order themes.

The broader analysis produced four themes: AI implementation as an uneven and resource-shaped socio-technical process; leadership through mediation, sponsorship, and organizational alignment; conditional trust and retained human accountability; and reconfiguration rather than radical replacement of leadership work.

For the present article, leadership-related coded material was reorganized around the narrower research question concerning leadership roles. Cross-case comparison of segments associated with mediation, sponsorship, learning, trust, boundary-setting, verification, and accountability resulted in five interconnected leadership-role categories presented below.

Results

The analysis identified five leadership roles that became particularly salient during AI implementation: socio-technical translator and mediator, selective sponsor and filter, AI capability builder, trust calibrator and boundary-setter, and holder of human accountability.

These roles were not equally prominent in every interview. Their intensity varied according to AI maturity, employee readiness, available resources, and the type of AI application. Nevertheless, similar practices appeared across substantially different organizational environments.

Table 1.

Leadership roles identified in AI implementation

Leadership role	Central tension	Core practices
Socio-technical translator and mediator	Technological possibility vs. organizational reality	Translating strategy, connecting business and technical perspectives, communicating team constraints
Selective sponsor and filter	Experimentation vs. organizational value	Supporting initiatives, prioritizing use cases, allocating resources, rejecting unnecessary AI
AI capability builder	Access to AI vs. employee readiness	Training, workshops, practical examples, experimentation, leading by example
Trust calibrator and boundary-setter	AI usefulness vs. technological unreliability	Verification, quality control, critical evaluation, data-security and use boundaries
Holder of human accountability	Technological delegation vs. human responsibility	Retaining decision rights, reviewing outputs, clarifying responsibility

The first role concerned translation between organizational strategy, technological possibilities, and everyday work. Participants did not describe implementation simply as communicating an AI strategy downward. Instead, leaders frequently operated between different organizational perspectives.

"A leader is a double filter: top-down and bottom-up. From the top, the leader translates company goals to the team; from the bottom, the team highlights problems that need to be taken upward". (R2)

In the AI context, the same respondent described herself as an "AI evangelist" who explained AI across the company, collected ideas from business units, and evaluated them through both technological and business perspectives. Other respondents similarly emphasized that technological deployment alone was insufficient and that larger AI initiatives required leadership to explain the tool and help employees begin using it.

These accounts show that managers act as intermediaries between technology and organizational meaning. They make technological opportunities understandable, connect them to specific business and team-level problems, and communicate practical constraints through the organizational hierarchy. The findings therefore support an interpretation of leadership role reconfiguration rather than leadership substitution.

Discussion

The first theoretical implication concerns the nature of leadership change. Existing research shows that AI increases managerial competence, task, relational, and ethical demands (Hossain et al., 2025; Koponen et al., 2025). However, these developments do not necessarily imply the emergence of an entirely new leadership logic.

The present findings suggest that AI primarily reconfigures established leadership functions. Participants continued to describe leadership through responsibility, communication, direction-setting, employee support, coordination, and judgment. What changed was the technological environment in which these functions were enacted.

Coordination increasingly involved human-AI workflows. Employee development increasingly involved AI literacy. Managerial judgment increasingly included evaluation of AI-generated outputs. Responsibility increasingly involved decisions about which tasks could be delegated to AI without transferring accountability.

This distinction matters because it avoids both technological determinism and technological trivialization. AI is not simply another tool, because it changes the content and complexity of managerial work. At the same time, the empirical evidence does not support the conclusion that AI makes existing leadership principles obsolete.

The contribution is therefore not that each of the five identified functions is entirely new. Rather, AI implementation reconfigures them into an interconnected role configuration through which leaders enable, interpret, constrain, develop, and remain accountable for AI-enabled work.

The second contribution concerns socio-technical systems theory. Socio-technical research emphasizes the need for alignment between technical and social subsystems (Trist & Bamforth, 1951; Cherns, 1976). Contemporary human-centered AI research similarly emphasizes organizational arrangements that make AI understandable, controllable, and accountable (Herrmann & Pfeiffer, 2023).

However, socio-technical alignment can remain conceptually abstract unless attention is given to the organizational actors and practices through which alignment actually occurs. The findings position leaders as practical agents of such alignment.

The translator and mediator role connects technological possibilities with organizational goals and work realities. The selective sponsor role connects experimentation with resource allocation and business value. Capability building aligns technological opportunities with employee skills. Boundary-setting connects AI use with organizational control and governance. Accountability maintenance connects technological delegation with human responsibility.

This extends socio-technical reasoning from an organizational design principle toward an actor-centered explanation of implementation. Alignment is not achieved once and then maintained automatically. It is continuously produced through interpretation, coordination, learning, filtering, review, and managerial judgment.

Conclusion

This study examined the leadership roles that become particularly salient during AI implementation at the team and managerial level. Based on nine semi-structured interviews with leaders and managers directly involved in AI-related organizational change, the analysis identified five interconnected roles: socio-technical translator and mediator, selective sponsor and filter, AI capability builder, trust calibrator and boundary-setter, and holder of human accountability.

The findings answer the research question by demonstrating that leadership in AI implementation is enacted through a combination of interpretive, enabling, selective, developmental, governance, and accountability-related practices. Leaders translate technological possibilities into organizational work, support promising experimentation while filtering inappropriate applications, develop employees' capabilities to work with AI, construct conditions for appropriate reliance on technological outputs, and preserve human responsibility for consequential decisions.

The central conclusion is that AI implementation reconfigures rather than replaces leadership. Established functions such as coordination, communication, employee support, judgment, and responsibility remain visible. What changes are the technological objects around which these functions are organized and the conditions under which they must be performed.

The study contributes to AI implementation research by conceptualizing leadership not merely as an external success factor but as a practical mechanism through which socio-technical alignment is enacted. It contributes to leadership research by demonstrating that the managerial implications of AI can be understood as a reconfiguration of leadership practice rather than the emergence of an entirely separate leadership paradigm.

The findings further suggest that competent AI-related leadership requires a balance between technological openness and critical judgment. Leaders need sufficient AI literacy to understand possibilities and limitations while preserving the human dimensions of leadership that respondents repeatedly emphasized: responsibility, contextual judgment, communication, support, and decision ownership.

AI implementation therefore does not reduce the relevance of leadership. Instead, it makes leadership more explicitly concerned with the relationship between technological capability and organizational responsibility.

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