From Tradition to Innovation: A Scoping Review of AI Adoption and the "In Vino VeritAI" Case

Type 2

In Vino VeritAI

Abstract

This scoping review addresses the following question: How does Artificial Intelligence adoption impact organizational Roles, Activities, Norms, and Values, and how can the Contextual Integrity Framework help interpret these changes? While AI adoption offers significant gains in predictive accuracy and efficiency, in traditional sectors it often conflicts with established workplace norms and artisanal identities. Drawing on 21 empirical, theoretical, and policy sources retrieved between March and April 2026, we synthesize the literature into four interrelated pillars: Roles, Activities, Norms, and Values. We apply the resulting framework to the worked use case of "In Vino VeritAI," a traditional winery transitioning to precision agriculture. Our findings are synthesized into a practical adoption checklist for managers, demonstrating that for low-tech SMEs, AI must serve as a collaborative tool that safeguards human expertise. We conclude by identifying research gaps regarding the socio-technical impact of AI on artisanal SMEs and the financial trade-offs required for small-scale implementation.

Keywords

AI Adoption, Scoping Review, Contextual Integrity, SME Management, Viticulture, Winery.

1 Introduction

The digital transformation of the modern workplace has shifted critical organizational tasks from human discretion to automated algorithmic systems. In traditional and "low-tech" sectors—such as agriculture and artisanal manufacturing—this evolution is particularly complex. Organizations face a difficult strategic dilemma: balancing efficiency gains with risks to professional identity, artisanal heritage, and worker autonomy. Policy instruments, such as the EU AI Act, primarily focus on compliance after adoption, offering limited support for evaluating whether AI should be implemented in the first place. To address this complexity, this study adopts the Contextual Integrity (CI) framework. Originally developed to evaluate informational privacy, CI provides a robust lens for analyzing "context-relative informational norms"—specifically, how AI alters the flow of data, responsibilities, and power dynamics within professional settings. Research Question: Which practical criteria, analyzed through the dimensions of Roles, Activities, Norms, and Values, determine the readiness and ethical feasibility of AI adoption in traditional professional environments? As a Type 2 scoping review, this paper aims to produce a domain-agnostic framework—an adoption checklist—that can be applied across different traditional sectors with minimal adjustment. Our framework expands the research question into four interrelated themes:

- Roles and Competencies: The redistribution of accountability and the emerging skills gap between veteran experts and digital systems.
- Activities and Operational Workflow: The shift from heuristic-based observation to real-time, data-driven decision support.
- Norms and Risk Management: The establishment of governance models to mitigate "black-box" opacity and invasive workplace surveillance.
- Values and Corporate Responsibility: The alignment of AI strategy with long-term sustainability, artisanal values, and stakeholder trust.

2 Methodology

This study applies a scoping review methodology to identify the practical factors influencing AI adoption through the CI framework. Searches were carried out between March 24th and April 9th, 2026, primarily using Google Scholar, supplemented by Web of Science, ScienceDirect, and SSRN. Search Strategy and Eligibility Boolean search strings were structured around four concept areas, combining technology terms (e.g., "AI adoption", "Predictive Analytics") with context-specific keywords (e.g., "Traditional SME", "Workplace Norms", "Artisanal Industry"). The publication window was set from 2015 to 2026 to capture the most recent technological and regulatory developments. Screening and Selection (PRISMA-ScR) Following a rigorous three-stage screening procedure, an original pool of 100 sources was reduced to a final corpus of 21 empirical, theoretical, and policy publications.

- Identification: 100 records identified through database searching.
- Screening: 50 records were excluded after title/abstract review for lack of relevance to organizational contexts.
- Eligibility: 50 full-text articles were assessed. 17 sources were excluded due to insufficient methodological rigor or commercial bias (unreliable whitepapers), and 12 were discarded for failing to align with the four dimensions of the CI framework.
- Inclusion: 21 sources were retained for the final qualitative synthesis.

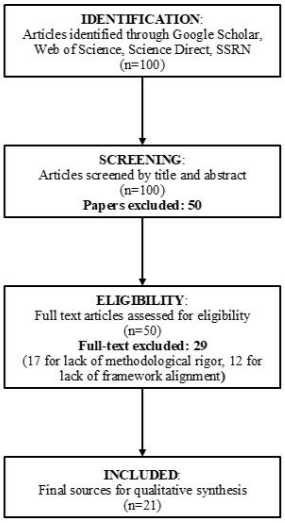

Figure 1:

Data Coding and Synthesis Data from these sources were retrieved, processed, and organized into the four main themes. We coded each source independently to identify key variables such as trust factors, accountability gaps, and skill requirements. The resulting synthesis forms the basis of the adoption checklist applied in the "In Vino VeritAI" case study. Full methodological details, including particular inclusion criteria and search strings, are reported in the Appendix.

3 Framework

3.1 Roles and Competencies

Role and competence transformation. The reviewed literature demonstrates that AI adoption fundamentally redistributes responsibilities among managers, technical experts, and employees [1]. In these studies, AI is not framed as a simple technical addition, but as a process that requires organizations to redesign workflows, strengthen coordination, and support new forms of collaboration across functions [1]. This shift also increases the importance of leadership and organizational readiness, since firms must be able to manage change while aligning technological tools with existing work structures [2]. Concurrently, this transformation demands new skill sets. Organizations need employees and managers who can understand, apply, and supervise AI-supported processes, combining technical knowledge with analytical skills, digital awareness, and domain expertise [2]. Differences between firms further suggest that internal capabilities and organizational alignment play an important role in determining whether AI adoption leads to meaningful outcomes [3].

Human oversight and role clarity.Current evidence strongly counters the notion that AI does not remove human responsibility from the workplace [4]. On the contrary, as AI becomes involved in decision-making, the need for role clarity becomes even more important [3]. Ethical and managerial accountability remain central, since algorithmic outputs still require interpretation, supervision, and final judgment by human actors [4]. This is especially relevant in decision-sensitive contexts, where transparency and accountability influence both trust in AI systems and their acceptance within organizations [3]. Current evidence indicates that successful AI integration transcends mere technological deployment; it fundamentally requires proactive leadership, continuous capability development, cross-functional integration, and unambiguous human accountability over algorithmically supported decisions [1][4].

3.2 Activities and Operational Workflow

Transformation of organizational activities. AI reshapes daily operations execution. Instead of doing everything manually, many tasks like forecasting, planning, and managing inventory are now supported by AI systems that analyze data and suggest actions [9][2]. For example, AI can predict customer demand, detect potential delays, or suggest the best delivery routes, which helps companies work faster and make fewer mistakes [9]. Because of this, employees spend less time on repetitive tasks and more time checking results, solving problems, and making decisions [3]. AI also improves accuracy in everyday operations. Since systems use large amounts of data, decisions are often more precise compared to manual work. This can reduce costs, avoid overproduction, and improve overall efficiency. At the same time, companies become more dependent on data quality, meaning that incorrect or incomplete data can negatively affect the results [2]. Workflow integration and real-time operations. AI also changes how activities are connected inside the company. Instead of working in separate steps, tasks become more integrated because AI systems update information in real time. For example, if demand suddenly increases, production, inventory, and delivery plans can automatically adjust without waiting for manual coordination [9]. This makes workflows faster, more flexible, and better connected across departments.

3.3 Norms and Risk Management

As more AI tools are integrated into workplaces, organizational norms have been shifting towards a better balance between efficiency and responsibility. The primary norm that comes out of the literature is transparency, meaning that AI systems should allow for explanations rather than operating in a black-box system [7][13]. It is directly related to the need for organizations to retain their responsibility and not delegate all of it to algorithms [4]. In addition, with the adop-

tion of AI technology comes considerable risks to the privacy and freedom of employees. Data tracking and emotional recognition may lead to increased surveillance and, thus, a power imbalance between employers and employees [6]. Despite a number of studies on the benefits of integrating AI in terms of improving efficiency, there are also numerous sources that point out the potential consequences of imposing conformity and, therefore, causing stress among workers [14][15]. However, the norms of risk management are being adapted to a more forward-looking perspective. Companies will not only need to react to any issues arising from their operations but also be ready to predict and prevent the risks of discrimination, unethical use of information, and opacity [8][12]. Nevertheless, there is an evident contradiction: while more importance is being attributed to ethics in business processes, companies have to act quickly and efficiently, which can sometimes lead to a disregard for risk management [7].

3.4 Values and Corporate Responsibility

The integration of Artificial Intelligence (AI) within corporate frameworks has increasingly been framed in the literature not merely as a technical challenge, but as a strategic process closely associated with organizational values and governance structures [16][17]. AI adoption is frequently discussed as more effective when it extends beyond short-term profit maximization and is aligned with Corporate Responsibility (CR) practices that support long-term sustainability [18]. Across recent contributions in business ethics and management research, CR emerges as a central mechanism for addressing risks associated with algorithmic bias. In the absence of transparent governance frameworks and ethical oversight, AI systems may reproduce or amplify historical inequalities, potentially leading to reputational damage and erosion of stakeholder trust [19]. Within this body of literature, AI ethics is often conceptualized as a moderating factor: organizations that explicitly promote ethical values, accountability, and transparency tend to report higher levels of employee trust in AI-enabled systems. This, in turn, is associated with reduced resistance to technological change and more effective adoption processes, especially when leadership adopts transparent, blockchain-enabled or decentralized communication models. More broadly, the literature highlights a growing convergence between AI governance, CR, and Environmental, Social, and Governance (ESG) objectives. Recent research suggests that navigating ethical dilemmas through structured strategies for fairness and accountability can enhance organizational legitimacy across multiple operational domains [20]. From this perspective, AI is increasingly framed not as an inherently disruptive technology, but as a tool whose impact depends on the values and responsibility frameworks guiding its implementation. Overall, existing research suggests that when commercial objectives are balanced with a value-driven approach, AI adoption may support both ethical orientation and sustainable competitive positioning.

Figure 2:

4 Worked Case: "In Vino VeritAI" winery

To demonstrate the practical applicability and explanatory power of the framework, we analyze the adoption of AI within "In Vino VeritAI", a traditional, lowtech SME that manages the entire value chain, from grape harvest in the vineyard to bottling and direct sales. One of the goals of the winery is to transition from intuition-based farming to precision agriculture. Specifically, the management aims to integrate IoT (Internet of Things) soil sensors, vineyard-monitoring drones, and predictive machine learning algorithms to optimize harvest timing, water usage, and disease prevention. New technologies can also prevent supply chain disruptions and enhance client services. However, introducing AI into a low-tech environment presents a complex managerial dilemma: optimizing operations without distorting the winery's historical identity and artisanal heritage. [11]

Impact of AI in Roles & Activities: AI fundamentally transforms operational schedules by relying on real-time data. The implementation of Geographic Information Systems (GIS) and IoT sensors allow the winery to dynamically monitor vineyard health and optimize harvest timing based on micro-climate data, reducing crop waste and maximizing yield [10]. The introduction of these systems exposes an immediate "skill gap". Veteran agronomists and master winemakers possess decades of deep domain expertise but they lack the data literacy required to supervise the outputs of advanced AI systems. They will need to attend a training course on these new technologies in order to be able to collaborate with AI because as highlighted in the previous part the AI will always need the supervision of the human eye. Furthermore, integrating AI into supply chain management leverages synergies with external stakeholders [21] to swiftly resolve logistical disruption, such as sudden shortages of glass bottles or transport delays [9]. Management faces a critical "Make or Buy" dilemma, ultimately relying on external System Integrators to deploy these complex architectures [1]. To ensure successful adoption and bridge the resulting skill gap [2], leadership must actively foster trust among the farming staff. AI functions only as a decision support tool, ensuring that the head winemaker and the chief agronomist retain absolute final decision-making authority [3].

Impact of AI in Norms & Values: A primary managerial task is to calibrate the human-machine relationship so that traditional human knowledge-sharing among farmers is not lost to algorithmic isolation [5]. Moreover, strict data governance rules must be enforced, requiring continuous supervision [7][8]. The winery must establish clear boundaries to protect employee privacy: GIS and monitoring tools must never evolve into invasive workplace surveillance or "Emotion AI" directed at farm workers, which would foster toxic power dynamics and severe workplace stress [6][10]. Introducing the AI is a strategic process that needs to be closely in line with the winery's fundamental governance and Corporate Responsibility (CR) goals [16][17]. If AI is used only to maximize short-term profits, like aggressively automating the harvest just to cut labor expenses, the business runs the danger of suffering serious reputational harm. A typical customer that appreciates the brand's traditional and artisanal background may become hostile to such an opaque, profit-centric strategy [19]. To avoid these risks, the winery should utilize AI ethics as a moderating factor. AI adoption must be directed toward Environmental, Social, and Governance (ESG) objectives, such as using predictive algorithms to optimize water conservation and reduce pesticide use in the vineyards [20][18]. Additionally, leadership actively fosters employee trust by ensuring clear governance and accountability for how these algorithms support decisions. In conclusion, adopting AI in traditional SMEs is not just a technological change but a complex organizational transformation requiring significant time and financial investment. Due to these high barriers, smaller firms are often not yet ready, while

larger and more advanced companies can act as pioneers. By testing and scaling these technologies, they can help make AI more accessible, supporting a gradual transition toward a more innovative and sustainable agricultural sector.

5 Gaps and Future Work

Research Gaps and Future Directions: While the Contextual Integrity framework provides a robust theoretical foundation for understanding AI adoption, our review identifies significant gaps in the current literature. Primarily, existing research is overwhelmingly concentrated on large technology firms and corporate environments. There is a critical lack of empirical studies examining the socio-technical impact of AI on traditional, artisanal, or agricultural Small and Medium Enterprises (SMEs). To address these gaps, future research must move beyond theoretical surveys and adopt more rigorous, context-specific methodologies. We propose three actionable directions for future work:

- **Ethnographic and Field Studies**: Future research should prioritize qualitative, on-the-ground studies in low-tech environments. Understanding how frontline agricultural workers and artisans actually interact with AI tools (e.g., algorithmic harvest predictors) will provide a more accurate picture than managerial surveys.
- **Analyzing Managerial Tensions in SMEs**: Future literature must rigorously investigate the cost-benefit friction of AI for small enterprises. Research is needed to quantify the financial sacrifices required for implementation against the potential pushback from traditional labor forces.
- **Framework Calibration**: As noted in our findings, the norms and roles developed within large technology firms do not seamlessly transfer to a vineyard. Future studies must adapt and calibrate frameworks like Contextual Integrity specifically for the operational realities of artisanal SMEs, ensuring they serve as practical implementation checklists rather than abstract academic concepts.

6 Conclusion

This scoping assessment shows that strong commitment to contextual integrity is necessary for effective AI adoption, in addition to technological preparedness. Through a methodical examination of the literature using the Roles, Activities, Norms, and Values lenses, we come to the conclusion that organizations need to take proactive measures to address the "responsibility dilemma." AI must be integrated in a way that respects established organizational standards; it cannot just be superimposed on conventional procedures. The evidence synthesized in this review confirms that for traditional SMEs like In Vino VeritAI, AI adoption is a socio-technical challenge rather than a mere financial investment. Our findings reveal that the primary obstacle is not technological capacity, but the "delegation tension." To maintain contextual integrity, AI adoption must ensure that algorithmic outputs remain subordinate to human judgment, preventing the erosion of professional agency in high-stakes decisions. By balancing operational efficiency with the winery's artisanal identity, firms can navigate the digital transition through a model of collaborative augmentation. This Type 2 checklist serves as a strategic bridge between technological innovation and the preservation of human-centric professional norms in the traditional workplace. While AI can optimize the precision of the harvest, it cannot replicate the heritage of the palate. The future of the winery lies in data-driven tools that serve, rather than replace, centuries-old intuition.

Appendix

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B Search Strategy

The search strategy was created systematically based on the main concepts established in the research question and the literature found. Boolean operators (AND, OR) were used while creating search strings to combine terms for the desired context. The results were filtered by English language, suitability to the research question, and a publication date range of 2017 to present.

C Search string

The search string were made combining different key words with Boolean operator in between. The most useful were:

- "Ai adoption and costumer trust or acceptance"
- "Ai for SME and supply chain"
- "Ai vs stakeholders"
- "AI and organizational norms and privacy"
- "Ai adoption and corporate values"
- "Ethical Ai and Business goal"
- "Ai and organizational roles"
- "Task transformation due to AI"
- "Ai-Argumented work and decision making"
- "Ai in the Wine industry"
- "Ai for agriculture"

D Databases

Google Scholar, supplemented by Web of Science, ScienceDirect, and SSRN.

E Screening funnel

The screening and elimination of the sources were done in three stages:

1. Elimination by title: After the combined search strings were entered into the databases, 100 sources were identified. Duplicates across the databases and off-topic results were removed, passing 50 onto the next stage.
2. Elimination by abstract: The abstracts of the 50 sources were read and 31 sources were excluded because not focusing on tasks or delegation.
3. Final Screening: The final 31 sources were read and pass through a full-text skim review, maintaining 21 sources.

F AI use disclosure

Tools used: Claude, Gemini and ChatGPT were used to assist with search query formulation, initial thematic organization of coded factors, and draft editing of prose sections. How used: The tool was used to suggest search terms and propose initial thematic groupings. The visual framework was generated using an AI-based image generation tool (DALL·E, OpenAI) based on the author's conceptual design (chat-gpt) nella parte di chat All AI suggestions were checked by team members.

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H Coding Scheme

Table 1: Coding scheme table, reporting the title of the paper, the type of evidence, the factors, the themes and the context

Title	**Evidence type**	**Factor**	**Theme**	**Context**
Organizational implications of AI adoption – A multiple-case study on System integrators	Empirical	AI adoption triggers significant organizational design changes, demanding increased teamwork, collaboration, and new types of knowledge. The technology eliminates certain routine tasks but simultaneously creates new jobs and roles within the ecosystem.	Roles or Activities	System integrators and companies using sensor technologies.
Key Factors Influencing AI Implementation in Large Organizations	Empirical	AI implementation relies heavily on human and organizational factors, not just technical ones. Success requires active leadership engagement, overcoming the skills gap through upskilling, and establishing clear AI governance to build trust and transparency among the workforce.	Roles and Norms	Large organizations across multiple sectors such as manufacturing, banking, retail and software.
What determines AI adoption in companies? Mixed-method evidence	Empirical	Successful AI adoption and AI readiness depend heavily on organizational factors such as role clarity, perceived trust, and perceived benefits. AI ethics acts as a critical moderator by enhancing trust and clarifying the boundaries between humans and machines.	Roles or Norms	Small and medium-sized enterprises, particularly in manufacturing contexts.
Setting the future of digital and social media marketing research	Systematic Review	Socio-technical alignment, psychological trust barriers, and human-centric value systems in AI adoption.	Ethics and Trust	Global digital business environment and broader societal implications of AI-driven marketing and interaction.

Title	Evidence type	Factor	Theme	Context
Understanding digital transformation: A review and a research agenda	Systematic Review	Structural transformation, organizational agility, and strategic governance frameworks for digital evolution.	Digital Transformation	Strategic management within global corporations and leadership challenges of large-scale digital shifts.
Exploring how AI adoption in the workplace affects employees: a bibliometric and systematic review	Systematic Review	AI adoption is influenced by organizational strategies and employee-related factors such as psychological safety, work autonomy, and perceptions of AI-driven change.	Roles and Norms	Workplaces integrating AI technologies across different industries.
An artificial intelligence algorithmic approach to ethical decision-making in human resource management processes	Theoretical	The need for ethical frameworks to balance automated decision-making with human judgment. Managers must maintain algorithmic accountability over AI decisions to avoid discrimination and bias.	Values	Human Resource Manager.
Emotion AI at Work: Implications for Workplace Surveillance, Emotional Labor, and Emotional Privacy	Theoretical	The adoption of Emotion AI in the workplace leads to invasive surveillance that threatens emotional privacy and increases stress, anxiety, and loss of autonomy.	Norms	General work environment and workplace surveillance.
The ethics of AI business practices: a review of 47 AI ethics guidelines	Theoretical	AI ethical guidelines focus mainly on technical aspects while neglecting context. Ethical AI adoption should be guided by fair business practices based on fairness, accountability, sustainability and transparency.	Norms	Corporate governance and ethical guidelines for AI technology firms.