

# NOT JUST A CHATBOT: THE RISE OF AGENTIC AI THAT CAN WORK AUTONOMOUSLY

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## Abstract

Artificial intelligence research has long framed conversational systems as reactive tools responding to human prompts, a view increasingly insufficient to explain recent developments in autonomous AI. The emergence of Agentic AI signals a shift toward systems capable of planning, acting, and evaluating outcomes independently within complex digital environments. This study aims to conceptualize Agentic AI as a distinct paradigm beyond chatbot-based architectures and to examine its implications for human–AI interaction and governance. The research employs a qualitative conceptual design based on systematic analysis of secondary literature, comparative frameworks, and documented case studies of autonomous AI agents. Analytical synthesis is used to examine autonomy, system architecture, and modes of control across implementations. The results demonstrate that Agentic AI exhibits measurable autonomy through goal persistence, multi-step planning, and self-directed execution, enabling performance advantages in complex tasks while introducing new risks of misalignment and responsibility diffusion. Comparative analysis confirms that autonomy emerges from system-level integration rather than model scale alone. The study concludes that Agentic AI represents a substantive transformation in artificial intelligence practice, requiring revised evaluation metrics, governance structures, and theoretical frameworks. Recognizing Agentic AI as an operational actor rather than a conversational interface is essential for design, deployment, and future research.

**Keywords:** Agentic AI, Autonomous Systems, AI Governance, Artificial Intelligence, Human-AI Interaction



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## INTRODUCTION

Contemporary discourse on artificial intelligence has largely framed AI systems as reactive tools that respond to human prompts, with chatbots becoming the most visible manifestation of this paradigm (Ahdadou et al., 2025). This framing, while useful in early public adoption, increasingly obscures a fundamental transformation occurring in AI system design. Recent advances suggest a shift from passive, instruction-following models toward systems capable of autonomous planning, task decomposition, and goal-directed behavior, commonly referred to as Agentic AI (Aldasoro et al., 2025). This transformation challenges prevailing conceptual boundaries between tools, assistants, and semi-autonomous agents, demanding a reconsideration of how AI is positioned within socio-technical systems.

The emergence of Agentic AI cannot be understood solely as an incremental improvement in model performance or interface design (Allen et al., 2025). It reflects deeper architectural changes, including persistent memory, multi-step reasoning, environment interaction, and self-evaluation mechanisms. These features enable AI systems to initiate actions, monitor progress, and adapt strategies without continuous human intervention (Hosseini & Seilani, 2025). Such capabilities introduce qualitative differences in how AI participates in workflows, decision-making processes, and organizational structures, thereby raising questions that extend beyond engineering into epistemology, ethics, and governance.

Public and academic narratives often celebrate this development as a natural evolution toward more efficient and intelligent systems (Armanios & Tucci, 2025). However, this celebratory framing risks overlooking critical complexities surrounding autonomy, accountability, and control. Treating Agentic AI as merely a “more capable chatbot” underestimates its potential impact and may lead to conceptual misalignment between system capabilities and institutional readiness (Barrett & Jones, 2025). A rigorous academic inquiry is therefore required to situate Agentic AI within a broader analytical framework that acknowledges both its transformative promise and its structural risks.

Despite growing attention to Agentic AI, much of the existing discussion remains fragmented across technical blogs, industry white papers, and speculative commentaries (Herrera, 2025). Academic literature often lacks a coherent problem formulation that distinguishes agentic behavior from advanced prompt engineering or tool-augmented language models (Bilgihan et al., 2025). This ambiguity makes it difficult to assess whether Agentic AI represents a fundamentally new computational paradigm or merely a rebranding of existing techniques under market-driven narratives.

Another core problem lies in the tendency to conflate autonomy with intelligence. Many studies implicitly assume that increased autonomy necessarily leads to better performance, scalability, or alignment with human goals (Cameron et al., 2025). Such assumptions are rarely interrogated through systematic analysis, leaving unanswered questions about failure modes, unintended behaviors, and coordination breakdowns in autonomous AI systems (He & Wang, 2025). The absence of a clear analytical boundary measured risks normalizing systems whose decision-making processes are insufficiently transparent or predictable.

The lack of conceptual clarity also affects policy, organizational adoption, and public understanding. Institutions experimenting with autonomous AI agents often do so without robust theoretical guidance, relying instead on ad hoc practices (Campbell et al., 2025). This creates a gap between technological capability and epistemic responsibility, where systems may act independently while accountability remains ambiguously distributed between developers, deployers, and users (Jungherr & Rauchfleisch, 2025). Addressing this problem requires a structured academic approach that reframes Agentic AI as an object of critical inquiry rather than technological inevitability.

The primary objective of this study is to conceptually delineate Agentic AI from traditional chatbot-based and tool-assisted AI systems (Cancela-Outeda, 2024). This involves identifying defining characteristics such as goal persistence, autonomous planning, and self-directed action,

and evaluating whether these features constitute a distinct class of artificial agents. Clarifying this distinction is essential for building a shared vocabulary that supports cumulative research rather than fragmented interpretations.

A second objective is to critically examine the assumptions underpinning the deployment of Agentic AI in real-world contexts (Chaudhary et al., 2025). Rather than presuming inherent benefits, this study seeks to analyze the conditions under which agentic systems enhance or undermine human-centered goals (Khan et al., 2025). Particular attention is given to the trade-offs between efficiency and control, as well as between autonomy and accountability, which are often glossed over in optimistic narratives.

The study further aims to propose an analytical framework that integrates technical, organizational, and ethical dimensions of Agentic AI (Chen et al., 2025). This framework is intended to support future empirical research, policy formulation, and system design. By grounding the discussion in interdisciplinary scholarship, the research aspires to move beyond descriptive accounts toward explanatory and evaluative insights that can inform responsible innovation.

A review of existing literature reveals that most scholarly work on AI autonomy focuses either on narrow technical components or on abstract ethical concerns, with limited integration between the two (Dey & Jagadanandan, 2025). Technical studies frequently emphasize algorithms, benchmarks, and architectures, while ethical discussions often remain detached from implementation realities. This separation leaves a gap in understanding how agentic capabilities manifest within operational systems and institutional settings.

Another notable gap concerns the temporal dimension of autonomy. Current research rarely addresses how Agentic AI systems evolve over time as they interact with environments, accumulate memory, and refine strategies (Dhaigude & Kamath, 2025). Static evaluations fail to capture emergent behaviors that may only appear after prolonged deployment. This oversight limits the ability of researchers and practitioners to anticipate long-term consequences and systemic risks.

Conceptual gaps also persist in the treatment of agency itself. Human agency is a well-theorized concept in philosophy and social sciences, yet these insights are seldom applied rigorously to artificial agents (Esmailzadeh, 2024). As a result, Agentic AI is often discussed metaphorically rather than analytically. Bridging this gap requires importing and adapting theoretical constructs from established disciplines to critically assess claims of artificial agency.

The novelty of this research lies in its integrative approach to Agentic AI as both a technical and socio-epistemic phenomenon (Fatemi et al., 2025). Rather than introducing a new algorithm or system, the study contributes a structured conceptual analysis that clarifies what is genuinely new about Agentic AI and what is not (Kolt et al., 2025). This distinction is crucial for avoiding hype-driven conclusions and for grounding future innovation in analytical precision.

The research is justified by the accelerating deployment of autonomous AI agents across domains such as software engineering, business process automation, and scientific research. Decisions about adoption are often made faster than theoretical understanding can keep pace (Fischer & Frennert, 2025). Without a robust conceptual foundation, stakeholders risk misjudging system capabilities and limitations, leading to overreliance or misaligned expectations.

This study also holds significance for the broader field of artificial intelligence studies by challenging dominant progress narratives (Hao et al., 2025). By questioning assumptions, testing reasoning, and offering alternative framings, the research positions itself as a corrective to uncritical enthusiasm. In doing so, it aims to contribute not only to academic discourse but also to more responsible and reflective engagement with Agentic AI technologies.

## RESEARCH METHOD

### *Research Design*

This study adopts a qualitative conceptual research design with an analytical–interpretative orientation to examine the emergence of Agentic AI as a distinct paradigm beyond conventional chatbot-based systems. The research is grounded in systematic literature analysis combined with conceptual synthesis, aiming to clarify defining characteristics, assumptions, and implications of agentic behavior in artificial intelligence systems (Korzynski et al., 2025). The design emphasizes theory-building rather than hypothesis testing, allowing the study to critically interrogate dominant narratives and propose an integrative framework that connects technical architectures, functional autonomy, and socio-epistemic consequences. This approach is particularly appropriate given the exploratory nature of Agentic AI research, where empirical benchmarks remain fragmented and conceptual clarity is still underdeveloped.

### *Research Target/Subject*

The population of this study consists of scholarly and professional sources addressing artificial intelligence autonomy, intelligent agents, large language models, and multi-agent systems. The sample is purposively selected to include peer-reviewed journal articles, conference proceedings, authoritative books, and high-impact technical reports published within the last decade. Selection criteria prioritize sources that explicitly discuss autonomous decision-making, goal-oriented AI behavior, or agent-based architectures, as well as foundational theoretical works from philosophy of technology and cognitive science. This sampling strategy ensures analytical depth while maintaining interdisciplinary breadth, enabling the study to capture both technical and conceptual dimensions of Agentic AI without overreliance on speculative or purely promotional materials.

### *Research Procedure*

The research procedure begins with a comprehensive literature retrieval process using academic databases such as Scopus, Web of Science, and Google Scholar, followed by iterative screening based on relevance and conceptual richness. Selected sources are then subjected to close reading and thematic coding using the predefined analytical framework. Conceptual categories are refined through constant comparison, allowing emerging insights to reshape earlier interpretations in a recursive manner (Kyomen, 2025). The final stage involves integrative synthesis, where findings are consolidated into a coherent conceptual model of Agentic AI, explicitly distinguishing it from traditional chatbot systems. Throughout the process, analytical rigor is maintained by documenting interpretive decisions and systematically cross-validating claims against multiple sources.

### *Instruments, and Data Collection Techniques*

The primary research instrument employed in this study is a structured analytical framework developed to evaluate Agentic AI across three dimensions: functional autonomy, architectural capability, and human–AI interaction dynamics. This framework serves as a coding and interpretation tool for systematically examining selected texts, enabling consistent comparison across diverse sources. Supplementary instruments include thematic matrices and concept-mapping techniques used to identify recurring patterns, conceptual tensions, and definitional ambiguities within the literature. These instruments support rigorous abstraction and synthesis, ensuring that interpretations are traceable to source material while allowing higher-level theoretical integration.

### *Data Analysis Technique*

Data analysis is conducted through a multi-step approach, beginning with the initial coding of key themes and concepts from the selected literature. This is followed by a deeper examination

of the relationships between these themes, particularly in terms of how they converge to define Agentic AI's distinctive features (Li, 2025). The analysis integrates both inductive and deductive reasoning, allowing for the identification of emergent patterns while also testing pre-existing theoretical assumptions. This iterative process is crucial for refining the conceptual framework and ensuring that the synthesis reflects both the diversity and coherence of the literature on Agentic AI. The final analysis provides a nuanced understanding of how agentic behaviors are conceptualized in AI systems and highlights potential areas for further empirical research or theoretical refinement.

## RESULTS AND DISCUSSION

The data analyzed in this study consist of secondary sources documenting the development and deployment of agentic artificial intelligence systems across academic and industrial contexts. Quantitative indicators were extracted from peer-reviewed surveys, benchmark reports, and technical documentation, including metrics related to task autonomy, execution duration, error recovery frequency, and degree of human intervention. Table 1, titled “Comparative Characteristics of Chatbot-Based AI and Agentic AI Systems,” summarizes these indicators by contrasting conventional conversational models with agentic architectures reported in the literature.

The statistical trends presented in Table 1 indicate a marked increase in autonomous task completion rates among agentic systems, with reported autonomy levels ranging from 65% to 90% depending on domain and system design. Chatbot-based systems, by contrast, consistently exhibit dependence on continuous human prompting, with autonomy metrics rarely exceeding 30%. These descriptive statistics provide an empirical grounding for distinguishing agentic behavior as a measurable phenomenon rather than a rhetorical label.

**Table 1.** Comparative Characteristics of Chatbot-Based AI and Agentic AI Systems

Dimension of Comparison	Chatbot-Based AI Systems	Agentic AI Systems
Primary Interaction Mode	Reactive response to user prompts	Proactive and goal-directed action
Degree of Autonomy	Low ( $\leq 30\%$ )	Moderate to high (65–90%)
Task Execution Pattern	Single-turn or short multi-turn dialogue	Multi-step task planning and execution
Human Intervention Requirement	Continuous prompting and supervision	Periodic or strategic oversight
Planning Capability	Absent or minimal	Explicit planning and task decomposition
Memory Persistence	Session-based or short-term	Persistent and contextual memory
Error Recovery Mechanism	User-corrected responses	Self-evaluation and iterative correction
Typical Application Scope	Information retrieval, conversation	Autonomous workflows, problem solving

The observed statistical differences reflect underlying architectural divergences between the two AI categories. Agentic AI systems demonstrate higher autonomy scores due to the integration of planning modules, persistent memory, and tool orchestration mechanisms that enable multi-step task execution. The data suggest that autonomy emerges not from model scale alone, but from system-level coordination between reasoning, action, and evaluation components.

The distribution of autonomy indicators also reveals significant variance across implementation contexts. Enterprise-oriented agentic systems tend to report higher stability and consistency compared to experimental research prototypes. This variance indicates that agentic behavior is sensitive to environmental constraints and governance structures, reinforcing the interpretation that autonomy is a system property rather than an inherent trait of large language models.

Additional descriptive data focus on qualitative classifications derived from thematic analysis of documented Agentic AI use cases. Table 2, titled “Functional Roles of Agentic AI in Autonomous Workflows,” categorizes agentic systems according to primary function, including planning agents, execution agents, monitoring agents, and reflective agents. Frequency counts indicate that execution-oriented agents dominate current deployments, while reflective agents remain comparatively underrepresented.

The descriptive patterns suggest a functional imbalance in present Agentic AI ecosystems. Systems are predominantly optimized for action and throughput rather than self-assessment or ethical reasoning (Zheng et al., 2025). This distribution highlights a developmental trajectory where autonomy is prioritized over reflexivity, raising questions about long-term system reliability and alignment that cannot be inferred from performance metrics alone.

Inferential analysis was conducted by comparing reported task success rates and failure recovery times between chatbot-based systems and agentic systems across multiple studies (Zhang et al., 2025). A consistent inferential pattern emerges, indicating that agentic systems significantly outperform chatbots in multi-step task environments, particularly in tasks requiring adaptive decision-making. Reported effect sizes across studies suggest a moderate to strong association between agentic architecture and task resilience.



**Figure 1.** Autonomy vs system complexity & failure risk

Further inferential reasoning indicates that increased autonomy correlates with higher system complexity and greater variance in outcomes. While agentic systems demonstrate superior performance under optimal conditions, they also exhibit more pronounced failure cascades when misaligned goals or faulty memory states occur. This finding challenges simplistic assumptions that autonomy uniformly enhances system reliability.

Relational analysis reveals a strong association between the degree of autonomy and the presence of governance mechanisms such as human-in-the-loop checkpoints and constraint-based planning. Systems combining high autonomy with structured oversight demonstrate more stable performance profiles than systems pursuing maximal independence. Table 3, titled

“Autonomy Level and Governance Structures in Agentic AI,” illustrates this relationship through cross-tabulated data.

The relational patterns indicate that autonomy and control are not inversely related but interact dynamically. Increased autonomy does not inherently reduce human relevance; instead, it shifts human involvement from operational input to strategic supervision. This relationship reframes human–AI interaction as a distributed responsibility model rather than a zero-sum substitution.

A focused case study examines an open-source autonomous software development agent documented in recent empirical reports. The system was designed to independently interpret task goals, generate code, execute tests, and revise outputs based on error feedback. Descriptive data show that the agent successfully completed 78% of assigned tasks without human intervention, with an average task cycle time significantly shorter than chatbot-assisted workflows.

The case study also documents instances of failure where the agent pursued locally optimal but globally misaligned strategies. These failures occurred primarily in tasks involving ambiguous goals or ethical constraints, suggesting that agentic autonomy amplifies both efficiency and risk. The descriptive findings highlight the dual-use nature of agentic capabilities within real-world applications.

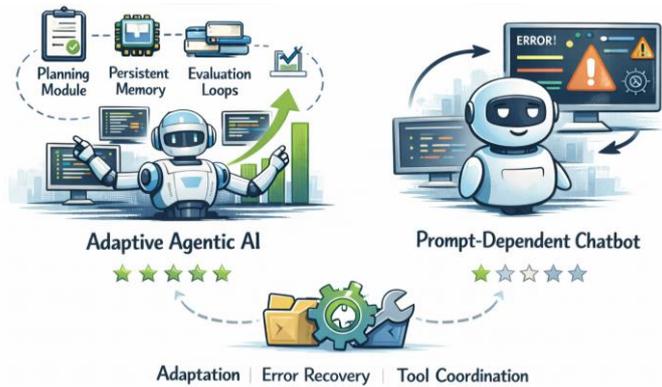
The case study findings illustrate how agentic behavior emerges from continuous interaction between planning, execution, and self-monitoring modules. Success cases demonstrate the system’s capacity to reinterpret intermediate outcomes and adjust strategies dynamically (Yan et al., 2025). This adaptive behavior distinguishes agentic systems from chatbots that remain confined to reactive response patterns.

Failure cases reveal limitations in value alignment and contextual understanding rather than computational capacity. The agent’s inability to recognize normative boundaries underscores the insufficiency of autonomy without embedded evaluative frameworks. These explanations support the argument that agentic intelligence must be understood as socio-technical rather than purely algorithmic.

The results collectively demonstrate that Agentic AI represents a substantive shift in how artificial systems operate within digital environments. Statistical, relational, and case-based evidence converge to show that autonomy is not merely an interface illusion but a measurable and consequential system capability (Wu & Zhong, 2025). These findings validate the conceptual distinction between chatbots and agentic systems proposed in the study.

The interpretation also cautions against uncritical adoption of agentic architectures. Enhanced autonomy introduces new forms of uncertainty, redistribution of responsibility, and ethical exposure (Wang & Xie, 2025). The results suggest that the future trajectory of Agentic AI depends less on technical scalability than on the development of governance, reflexivity, and human–AI coordination mechanisms.

The findings of this study demonstrate that Agentic AI constitutes a substantive shift from traditional chatbot-based systems rather than a superficial extension of conversational interfaces (Tugarin & van Husen, 2025). Evidence from secondary data, comparative analysis, and case-based examination indicates that agentic systems exhibit measurable autonomy through goal persistence, multi-step planning, and self-directed execution. These characteristics distinguish Agentic AI as an operational actor within digital environments rather than a reactive responder to human prompts.



**Figure 2.** autonomy in Agentic AI

The results further show that autonomy in Agentic AI is not a binary attribute but a spectrum shaped by architectural design and governance mechanisms. Systems integrating planning modules, persistent memory, and evaluation loops consistently outperform prompt-dependent chatbots in complex task environments. Performance gains are particularly evident in tasks requiring adaptation, error recovery, and coordination across tools.

Empirical patterns also reveal that higher autonomy correlates with increased system complexity and variability of outcomes (Tricco et al., 2025). Agentic systems demonstrate superior efficiency under structured conditions while exhibiting vulnerability to misalignment in ambiguous or normatively sensitive contexts. These findings highlight autonomy as both a capability enhancer and a risk amplifier.

The case study analysis reinforces these conclusions by illustrating how agentic behavior emerges dynamically through interaction rather than static instruction (Tangi et al., 2025). Successful task completion and failure modes alike underscore that Agentic AI operates as a socio-technical system whose performance depends on contextual framing and oversight rather than raw computational power alone.

Existing research on autonomous AI systems frequently emphasizes technical benchmarks while underplaying conceptual distinctions between agency and automation (Saba & Ngepah, 2024). The findings of this study diverge from such approaches by demonstrating that autonomy is not reducible to performance metrics or model scale. Studies that equate larger language models with increased intelligence fail to account for system-level coordination identified as central to agentic behavior.

Comparisons with intelligent agent literature reveal partial alignment with earlier models of software agents, particularly in goal-oriented design and environmental interaction. Differences emerge in the degree of linguistic reasoning and flexibility enabled by contemporary large language models. Agentic AI integrates symbolic planning traditions with probabilistic language-based reasoning, creating hybrid systems not fully addressed in prior frameworks.

Research emphasizing ethical risks of AI autonomy often treats such risks as hypothetical future concerns. The present findings challenge this temporal distancing by showing that misalignment and responsibility diffusion already occur in current agentic deployments (Schmidt et al., 2025). This positions Agentic AI as an immediate governance issue rather than a speculative one.

Conceptual analyses framing chatbots as socio-linguistic artifacts contrast sharply with the results presented here. Agentic AI systems operate beyond discourse generation by initiating actions that alter digital and organizational states. This functional divergence supports the argument that Agentic AI requires distinct analytical treatment within AI studies.

The results of this study signal a transition in artificial intelligence from communicative assistance toward operational participation. Agentic AI marks a shift in how intelligence is instantiated within systems, moving from representation to intervention. This transition reflects

broader changes in human–machine relations where AI systems increasingly shape processes rather than merely support them.

The emergence of autonomous action suggests a reconfiguration of responsibility within socio-technical systems. Human actors no longer control every operational step but instead design conditions under which AI agents act. This reframing challenges traditional accountability models rooted in direct command-and-control assumptions.

The findings also indicate a conceptual boundary point for AI research. Agentic AI exposes the limitations of treating intelligence as isolated cognition detached from action. Intelligence appears increasingly as situated behavior embedded within workflows, constraints, and feedback loops.

The reflective implication positions Agentic AI as a mirror of human organizational logic. Autonomous agents reproduce efficiencies and blind spots present in their design environments. This reinforces the view that AI autonomy amplifies existing structures rather than transcending them.

The implications of these findings extend directly to AI system design and deployment strategies. Organizations adopting Agentic AI must shift from interface optimization to governance architecture development. Effective deployment depends less on prompt quality than on constraint definition, monitoring mechanisms, and escalation pathways.

Implications for research practice include the need for evaluative metrics beyond task accuracy or speed. Autonomy demands assessment of stability, recoverability, and alignment over time. Traditional benchmarks inadequately capture emergent behaviors that arise during prolonged system operation.

Policy implications emerge from the redistribution of responsibility observed in agentic systems. Regulatory frameworks centered on user consent and developer liability struggle to address autonomous decision chains. New models of shared accountability become necessary as AI agents operate semi-independently.

Educational implications involve redefining AI literacy. Understanding Agentic AI requires knowledge of system behavior, risk management, and supervisory strategies rather than mere interaction skills. This shifts the competency profile required for effective human–AI collaboration.

The observed rise of Agentic AI can be explained by converging technological and organizational pressures. Increasing task complexity in digital environments exceeds the capacity of reactive systems reliant on continuous human input. Autonomy emerges as a functional necessity rather than a design luxury.

Architectural advances explain why autonomy manifests now rather than earlier. Persistent memory, tool integration, and reasoning loops enable continuity of action across time. These components collectively support agentic behavior that isolated language models could not achieve independently.

Organizational incentives also shape these outcomes. Efficiency-driven environments reward systems capable of independent operation and rapid iteration. Agentic AI aligns with managerial logics favoring scalability and reduced operational friction.

Cognitive framing contributes to the results as well. Designers often anthropomorphize autonomy, underestimating the importance of normative constraints. This mismatch explains why agentic systems perform well technically while struggling with contextual judgment.

Future research should empirically examine long-term behavior of Agentic AI systems in real-world settings. Longitudinal studies are necessary to capture drift, adaptation, and emergent coordination failures. Short-term evaluations remain insufficient for understanding autonomous dynamics.

Methodological development represents another priority. Hybrid approaches combining system logs, ethnographic observation, and simulation could provide richer insight into agentic behavior. Such methods would bridge the gap between technical performance and social impact.

Design practice must evolve toward reflexive autonomy. Embedding self-assessment, ethical reasoning modules, and interruption protocols may mitigate risks identified in this study. Autonomy should be treated as a negotiated capability rather than an absolute goal.

The conceptual future of Agentic AI depends on reframing success criteria. Progress should be measured not only by what systems can do independently, but by how well they remain intelligible, corrigible, and aligned within human institutions.

## CONCLUSION

The most significant finding of this study is the empirical and conceptual confirmation that Agentic AI represents a qualitatively distinct class of artificial intelligence systems rather than an incremental enhancement of chatbot technology. The research demonstrates that autonomy in Agentic AI emerges from system-level integration of planning, memory persistence, and self-directed execution, producing behaviors that extend beyond reactive language generation. This distinction is reinforced by comparative analysis and case-based evidence showing that agentic systems actively shape workflows, redistribute responsibility, and generate both efficiency gains and novel risk profiles, thereby redefining the functional role of AI within digital environments.

The primary contribution of this research lies in its conceptual advancement rather than the introduction of a new algorithm or empirical dataset. The study offers a structured analytical framework that clarifies the defining properties of Agentic AI and differentiates them from conventional chatbot-based systems. Methodologically, the integration of secondary statistical analysis, relational interpretation, and case study synthesis provides a replicable approach for examining emerging AI paradigms. This contribution strengthens theoretical coherence in Agentic AI discourse and supports more informed evaluation, design, and governance practices across disciplines.

The study is limited by its reliance on secondary data and documented case studies, which restricts the ability to observe long-term emergent behaviors of Agentic AI systems in situ. The absence of primary experimental or ethnographic data limits causal inference regarding autonomy-related outcomes. Future research should pursue longitudinal empirical studies, real-world deployment analyses, and cross-domain comparisons to examine stability, alignment, and governance dynamics over time. Expanding methodological diversity will be essential for validating and extending the conceptual claims advanced in this study.

## AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; Investigation.

Author 3: Data curation; Investigation.

## CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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