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Autonomous AI agents as digital employees in organizations: A systematic literature review

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Abstract

This study presents a systematic review of the existing literature on autonomous AI agents as digital employees. This research aims to provide an overview of the current state of the research and to provide suggestions for future research in the field. Using the PRISMA 2020 framework, studies were found using a predefined search string on Google Scholar, Scopus, Web of Science, IEEE Xplore, ScienceDirect, SpringerLink, ResearchGate, and arXiv.org. Thirty-seven studies between 2023 and 2026 were included in this research according to the eligibility criteria. The studies were coded according to five dimensions: disciplinary domain, organizational setting, AI technology, theoretical framework, and methodology. The most common fields of study were information systems, corporate governance, strategic management, and organizational change. Autonomous AI agents were the most common technology studied, followed by collaborative AI agents, generative AI, and multi-agent systems. The majority of studies did not use a theoretical framework or utilized qualitative, descriptive, or exploratory research methods. Through conducting this literature review, the different dimensions of the research on autonomous AI agents as digital employees were organized. Additionally, recommendations for future research were made in the area of theory development, governance studies, source studies, and implementation studies.

Keywords: Autonomous AI agents, agentic AI, digital employees, organizational design, governance, workforce transformation

Introduction

Artificial intelligence and automation are transforming work, organizational structures, and digital culture. Organizations increasingly use AI to improve operational efficiency, support decision-making, coordinate teams, and manage real-time communication (Jarrahi, 2019; Öztürk, 2021; Shen & Zhang, 2024; George, 2024; Njuru et al., 2025; Zifar et al., 2023). While automation focuses on automating specific tasks, agentic AI is an even more advanced form of AI that can accomplish a variety of tasks on its own. Unlike traditional AI systems that are usually limited to narrow tasks, agentic AI can observe conditions, act within a workflow, evaluate results, and improve future performance through machine learning, reinforcement learning, and multi-agent coordination (Acharya et al., 2025; Virodhula, 2025; Hosseini & Seilani, 2025; Alva & Pandey, 2026).

This development is important because autonomous AI agents are increasingly being discussed as digital employees. In organizational settings, digital employees are not only tools that support human workers; they may also carry out work processes, coordinate with people and systems, and participate in decision-making routines. These capabilities create opportunities for efficiency, adaptability, innovation, and new forms of human-AI collaboration. At the same time, they raise concerns about accountability, transparency, governance, job redesign, skills, employee identity, and the limits of machine autonomy (Gladden et al., 2022; Valentine, 2025; Van Zelderen et al., 2025; Wang, Hackett, et al., 2025; Wang & Zhang, 2025; Sridharan, 2025).

A systematic literature review is necessary because the research on autonomous AI agents as digital employees is recent, rapidly expanding, and scattered across information systems, management, governance, workforce studies, and technical AI research. Prior studies have discussed AI agents, digital work, automation, or governance separately, but fewer reviews have integrated these streams to explain how autonomous AI agents are being conceptualized as organizational actors. This review therefore addresses a clear research gap by synthesizing evidence on where these agents are studied, how they are integrated into organizational settings, what technologies are involved, which theories are used, and which methods dominate the field.

The review focuses on studies published from 2023 to 2026 because this period corresponds to the rapid emergence of generative AI, agentic AI architectures, and organizational interest in digital employees. The objective is not only to count studies, but also to assess what the pattern of evidence suggests about the maturity of the field. The remainder of the paper is organized as follows. The next section reviews the conceptual foundations of autonomous AI agents, organizational design, governance, and workforce transformation. The methodology section explains the PRISMA-based search, screening, eligibility, and coding procedures. The results section presents descriptive patterns from the reviewed studies. The discussion then interprets the findings in relation to the research questions and highlights implications, limitations, and directions for future work.

Research Questions (RQ):

RQ1: In which disciplinary domains and organizational settings are autonomous AI agents most commonly studied as digital employees?

RQ2: What AI agent technologies and theoretical frameworks are used to explain the role of autonomous AI agents as digital employees?

RQ3: What research designs, methods, and major findings characterize the current literature on autonomous AI agents as digital employees?

Literature Review

Autonomous AI Agents as Digital Employees

Autonomous AI agents are software systems that can detect information in their environment, set goals for themselves, make decisions, and take steps to complete tasks with little or no human intervention. AI agents are especially important in the context of automating processes and workflows that traditionally required human intervention. Beyond the research that has been performed on AI automation tools in the past, the autonomous AI agents of the present day are capable of more than the automation tools of the past. Autonomous AI agents can make decisions for themselves, learn from their environments, and adjust their processes to complete specific goals that they are given, allowing them to function as digital employees within a company (Kumar, 2024; Ante, 2026; Bandi et al., 2025; Brohi et al., 2025; Bousetouane, 2025; Acharya et al., 2025; Hosseini & Seilani, 2025).

Organizational Design

The literature on organizational design discusses the impact that AI agents can have upon various factors within an organization. Currently, AI agents are mostly utilized within an organization as back-office systems. However, they can also become a part of the organization's structure. This will lead to the shift of the organization from a conventional hierarchical structure to one that involves the collaboration of both humans and AI agents. The debate within this area of study discusses whether AI agents within an organization should be considered tools, decision-support systems, or semi-autonomous actors within that organization (Burton et al., 2023; Holmström & Carroll, 2024; Humbert & Latham, 2025; Islam et al., 2025; Khera et al., 2025; Oluwamola & Longe, 2025; Oza, 2025; Thota, 2021; Van Esch, 2026).

Governance

As autonomous AI agents can exhibit a high degree of independence from their creators and operators, it is essential to have a theory of governance for such agents. The literature on AI governance discusses aspects of transparency, auditability, fairness, traceability, risk management, and human oversight of AI agents. More specifically, there are technical, legal and ethical, and organizational aspects of AI governance. The technical aspect of AI governance discusses monitoring AI agents' actions and decisions and implementing security measures to limit the actions of an AI agent and ensure that its actions are traceable. The legal and ethical aspect of AI governance discusses the legal and ethical responsibilities of each entity involved in an AI agent and the expectations of fairness and explainability from those AI agents. Lastly, the organizational aspect of AI governance discusses the policies that must be established within an organization regarding AI agents, who within the organization can make decisions for an AI agent, and what actions an AI agent can take within its area of operation. AI agents will require governance before their deployment and while they are operating after their deployment (Adabara et al., 2025; Allam et al., 2025; Bandi et al., 2025; Batool et al., 2025; Emery-Xu et al., 2024; Joshi, 2025a; Joshi, 2025b; Kolt, 2025; Kumar, 2025; Pervez et al., 2025; Schmitz et al., 2025; Shukla, 2025; Wang, Singhal, et al., 2025).

Workforce Transformation

The literature on workforce transformation discusses the impact of autonomous AI agents on the transformation of work. While there are numerous benefits to the incorporation of AI agents into the workplace, such as automation, augmentation, recruitment, and support of cognitive functions, there are also impacts upon reskilling, jobs, employees, and trust in those AI agents. Consequently, the transformation of the workforce is more than just a discussion of efficiency in the workplace. There are changes that must occur in employees and the culture of the organization as a result. The synthesis of the literature on each of these impacts indicates that autonomous AI agents will become effective digital employees only if the technology, governance, and workforce elements are all considered and transformed accordingly (Parker & Grote, 2019; Alla, 2025; Ismail et al., 2025; Martini et al., 2024; Palaniappan, 2025; Shenoj et al., 2024; Van Riel et al., 2024; Yadav & Thakre, 2025).

Conceptual Framework

The conceptual framework depicted in Figure 1 was developed from the reviewed conceptual literature streams rather than from any existing model. The figure depicts the relationship between AI agent technologies, organization integration, organizational mechanisms, and organizational outcomes. AI agent technologies, generative AI, conversational AI, collaborative AI agents, and multi-agent systems relate to the digital employee functions that can be performed by the AI agents. Those AI agents are integrated into the organization and workforce through the organization's structure and workforce transformation. The mechanisms that mediate the relationship between the AI agents and the organization's outcomes include human-AI collaboration, decision autonomy, accountability, transparency, trust, ethical AI, reskilling, and redesign of the workforce. These outcomes include increased efficiency in the organization, improved decision quality, increased innovation, increased adaptability, and redefined employee roles within the organization. This framework will be utilized to organize the conceptual literature reviewed in this paper rather than to test it for causation.

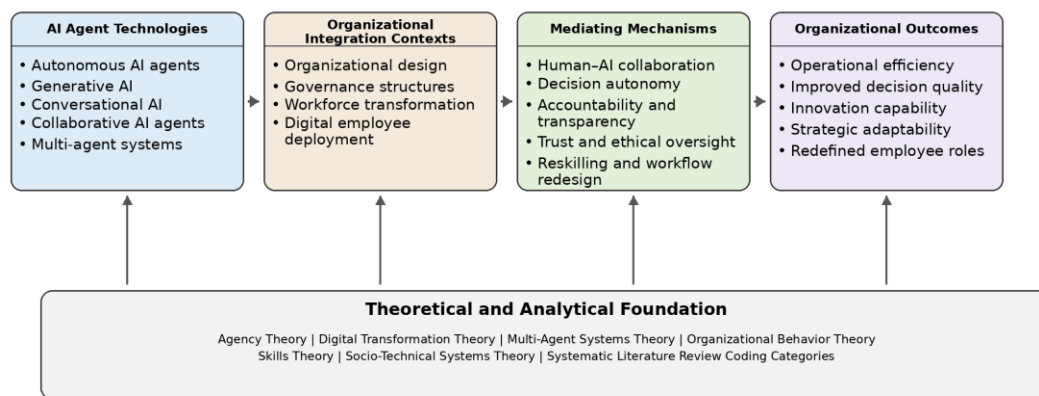


Figure 1. Conceptual framework of autonomous AI agents as digital employees in organizations.

Methodology

Research Design

This paper uses a systematic literature review to investigate the topic of autonomous AI agents as digital employees. The main reason for performing a systematic literature review is to survey a nascent field that encompasses several different areas of study. Systematic literature reviews follow specific guidelines to ensure that the process of finding, screening, eligibility, and inclusion of studies is as transparent and reproducible as possible. The guidelines used in this paper are the PRISMA 2020 guidelines by Page et al. (2021), Ardern et al. (2021), Sarkis-Onofre et al. (2021), and Sohrabi et al. (2021). While systematic literature reviews can be performed in a variety of ways, the PRISMA guidelines ensure that there is a systematic manner in which the initial records are narrowed to the studies that will be included in the study. The search was limited to the years 2023-2026 as autonomous AI agents and digital employees began to emerge as a topic of interest in these fields after major developments in AI between 2020 and 2023.

Initial Literature Search

The databases that were searched for relevant journal articles on autonomous AI agents and their impact upon organizational design and change included Google Scholar, Scopus, Web of Science, IEEE Xplore, ScienceDirect, SpringerLink, ResearchGate, and arXiv.org. Scholarly databases like Google Scholar, Scopus, Web of Science, ScienceDirect, and SpringerLink contain peer-reviewed articles on topics related to management and information systems. IEEE Xplore and arXiv.org contain technical articles on topics related to autonomous agents and AI. Finally, ResearchGate was searched as a way to find additional scholarly articles on the topic, many of which had full manuscripts available for review.

Within each of these databases, search terms related to autonomous AI agents and their impact upon organizational change were utilized. For instance, the following search terms were used within each database: (“autonomous AI agent” OR “agentic AI” OR “digital employee” OR “AI co-worker”) AND (“organizational design” OR “governance” OR “workforce transformation” OR “human-AI teaming” OR “organizational change”). Each of these terms relate to the topic of autonomous AI agents and their impact upon organizations, as the first group of terms relates to autonomous AI agents and digital employees, while the second group of terms ensures that the articles that are searched for relate to organizational design, governance, workforce transformation, and the changes to organizations that may occur as a result.

Using these search terms and keywords in these databases, 1,952 records were located. However, after removing any articles that were duplicated within these databases, 1,568 articles remained for review and

screening of their titles and abstracts. Figure 2 summarizes this identification and screening process and shows how the records were narrowed from the initial database search to the final set of studies included in the review.

Methodological Transparency and Quality Appraisal

In order to improve the methodological transparency of the research process, the search was performed in eight different databases: Google Scholar, Scopus, Web of Science, IEEE Xplore, ScienceDirect, SpringerLink, ResearchGate and arXiv.org. The same search string was used in each database; however, some databases have different search features that could be used to refine the search. Such terms included autonomous AI agents, agentic AI, digital employees, AI co-workers, organizational design, AI governance, workforce transformation, human-AI teaming and organizational change. As a result of the database search, 1,952 records were obtained. However, after removing the duplicates, 1,568 records remained for screening. Two different screening stages were used to determine the eligibility of these records for inclusion in the study. The first screening used the titles and abstracts of each study to determine if it met the criteria for inclusion. Following this initial screening, the full texts of the studies were read to perform a second screening to ensure that they met the eligibility criteria. Each of these steps was performed by the first reviewer; however, the second reviewer also reviewed the studies selected by the first reviewer to ensure that each study was appropriately selected. Additionally, a quality appraisal was performed on each of the studies to determine if they had a clear research purpose, relevance to organizations, appropriateness of the methods used in the study and the relevance of the research to autonomous AI agents as digital employees. The process used to select the studies follows the recommendations by Page et al. (2021) and Sarkis-Onofre et al. (2021) as part of the PRISMA 2020 guidelines that recommend for studies to provide details about the search strategy, screening and eligibility criteria and the process used to select the studies for inclusion in the research process.

Screening and Study Selection

The process of selecting studies for review followed a multi-stage PRISMA procedure. The titles and abstracts of the studies initially retrieved from the databases were screened to determine whether the study corresponded to the topic to be studied. Studies were to contain content that discussed the concept of autonomous AI agents, agentic AI, digital employees, AI co-workers, or related AI agent concepts and systems. Studies that covered topics related to the use of AI by consumers, automation that did not relate to AI agents, technical models of AI that did not relate to AI agents, or topics unrelated to AI agents altogether were excluded at this first stage. The full texts of the remaining studies were then reviewed to determine if they met other eligibility criteria. As presented in Figure 2, the review moved through identification, duplicate removal, title-and-abstract screening, report retrieval, full-text eligibility assessment, and final inclusion of 37 studies. Studies were to be published in English, published between 2023 and 2026, and to be relevant to the topic of AI agents in organizations. Additionally, as the field is still emerging, both peer-reviewed journals and preprint and working paper databases were searched, though the type of source was to be recorded in case a discussion of the quality of the evidence in the review paper was to be published.

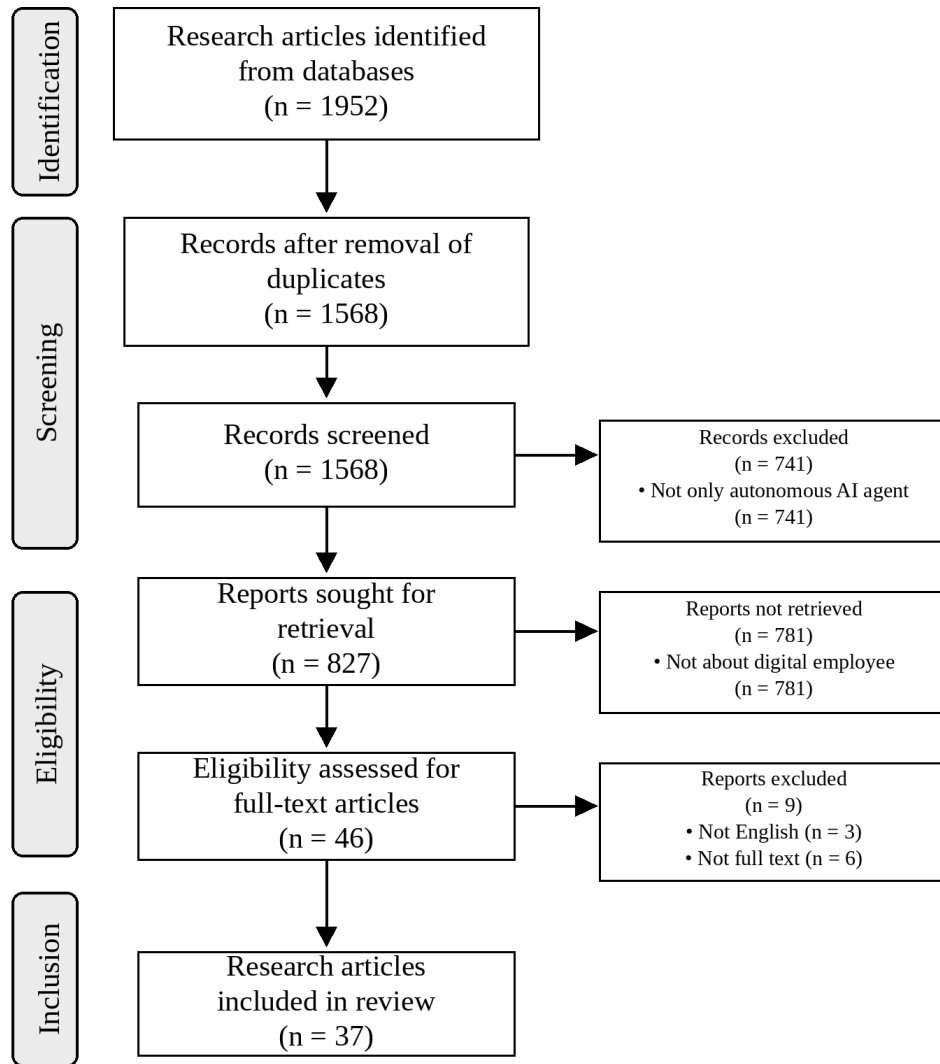


Figure 2. PRISMA flow chart for study screening and selection.

Application of Exclusion Decisions

During the screening of the titles and abstracts of the publications, any studies that did not relate to autonomous AI agents, agentic AI, digital employees, AI co-workers, or AI applications within organizations were excluded from the study. Additionally, studies that investigated topics related to general AI, consumer behavior, AI algorithms, robotics, or studies that did not relate to organizational aspects of AI were also excluded. For the remaining articles with potentially relevant studies, screening of the full texts was performed to ensure that the studies investigated autonomous and agentic AI within organizations and provided relevant information about any of the review dimensions. Any articles that did not meet these criteria or that did not contain the full text of their studies were excluded from the review. Additionally, any studies whose full text was unavailable for review were excluded from the review. Finally, the remaining studies were reviewed to ensure that they specifically matched the focus of the research study and met the criteria established for review. Consequently, these processes ensured that the 37 studies included were specifically related to the focus of the research and answering the research questions of the review paper (Page et al., 2021; Sarkis-Onofre et al., 2021).

Inclusion and Exclusion Criteria

Table 1 presents the inclusion and exclusion criteria used to determine which research studies would be included in the systematic literature review. The criteria help to ensure that the literature review remains focused upon the concept of autonomous AI agents as digital employees. Such a focus is achieved through the question of whether the article discusses concepts like agentic AI, autonomous agents, digital employees, AI co-workers, or related concepts concerning the use of AI agents in organizations or in the implementation of those agents within organizations.

Table 1. Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
English-language systematic reviews, conference papers, peer-reviewed articles, scholarly preprints, and working papers relevant to the topic.	Non-English records, non-scholarly sources, editorials without analysis, or records without sufficient scholarly content.
Full text available.	Only an abstract or bibliographic record available.
Mainly examines autonomous agentic AI, autonomous AI agents, digital employees, AI co-workers, or closely related AI agent systems in organizational contexts.	Lacks a clear focus on agentic AI, autonomous AI agents, digital employees, or closely related AI agent systems.
Published during 2023 to 2026.	Published before 2023.
Organizational-level analysis related to organizational design, governance, workforce transformation, human-AI teaming, or organizational change.	Studies focused only on individual consumers, purely technical model performance, or non-organizational contexts without relevance to the review questions.

Analytic Coding

After the final sample had been selected, each of the studies was coded using a coding framework. The coding framework included fields for metadata, disciplinary domain, organization, AI technology, theoretical framework, type of research, methodology, research method, and data analysis technique. These categories were derived from the research questions and the conceptual framework of the research. Cases that were deemed ambiguous were coded based upon the title, abstract, methods, and findings of each of the articles to ensure that they were appropriately categorized. Cases that potentially fit in more than one of the categories were coded according to the dominant focus of the article. This technique improved the consistency of the coding process, and contributed to the transparency of the research report based upon the coding results.

Framework Analysis and Quality Assessment

In order to improve the reliability of coding the articles, a framework analysis was performed during the data extraction process. Framework analysis is appropriate for structured reviews as it permits the use of predefined categories to assist in the review of the research articles (Dixon-Woods, 2011; Gale et al., 2013). The framework that was developed included categories based on the research questions such as metadata, domain, organization, AI technology, theoretical framework, research type, methodology, research method, and data analysis technique. All 37 studies were coded against these categories. Each category included within the framework was checked against the title, abstract, methods, findings, and conclusion of each article. Articles that included more than one domain, technology, or method were coded again to ensure that it was coded to the category that related most to the article. This form of framework analysis increased the reliability of the coding process and contributed to the trustworthiness of the structure of Table 2. Furthermore, the use of this form of analysis ensured that the review adhered to the guidelines of the PRISMA 2020 review statement (Page et al., 2021).

Table 2. Lists of codes for the analysis of selected articles

Category	Code	Description
Metadata	Title	Full title of the article
	Authors	Complete list of author names
	Year	Publication year
	Source	Information about the journal/book/URL
Domain	Specific fields (Application Area)	Organizational Behavior, Strategic Management, Human Resource Management, Operations Management, Knowledge Management, Project Management, Information Systems
Context	Organizational Setting	Organizational design, Organizational governance, and Organizational workforce transformation
Technology	AI agent	Autonomous AI agents, Generative AI, Conversational AI, collaborative AI agents
Theory	Theoretical framework	Agency Theory, Digital Transformation Theory, Multi-Agent Systems Theory, Organizational Behavior Theory, Skills Theory, Socio-technical Systems Theory
Research methodology	Research Type	Empirical/theoretical/synthesis
	Methodology	Quantitative/ Qualitative/Mixed
	Research Method	Survey/ Case Study/ Interview/ Observation/ Questionnaire/ Systematic Literature Review/ Systematic Literature Review (SLR) with PRISMA
	Data Analysis	Bibliometric Analysis, Thematic Analysis, Case Analysis, Conceptual Analysis, Descriptive Analysis, Structural Equation Modeling (SEM), Statistical Analysis

Results

Publishing Trends

Between 2023 and 2026, 37 studies on autonomous AI agents as digital employees in organizations were identified. Table 3 presents the rapid growth of such studies. Specifically, only one study was identified in 2023 (3%), three studies were published in 2024 (8%), 30 studies were published in 2025 (81%), and three studies were published in 2026 (8%). The significant growth of digital employee research in 2025 indicates that this is a relatively new research area that is developing at a rapid rate following the release and commercialization of generative AI and agentic AI systems. Thus, the research on autonomous AI agents as digital employees is still in its early stages of development.

Table 3. Publishing Trends

Year	Number of published papers	Percentage	Cumulative Percentage
2023	01	03	03
2024	03	08	11

Year	Number of published papers	Percentage	Cumulative Percentage
2025	30	81	92
2026	03	08	100
Total	37	100	

Disciplinary Domains of the Reviewed Studies

The reviewed studies belong to several domains. Table 4 presents the distribution of the studies according to their domains. The most represented domain included 10 studies belonging to the domain of Information Systems representing 27% of the total studies. The second and third most represented domains were Corporate Governance and Strategic Management with 7 studies each representing 19% of the total studies. Human Resource Management included 5 studies representing 13% of the total studies followed by the domain of Organizational Behavior with 4 studies representing 11% of the total studies. There were also studies that belonged to the domains of Operations Management, Industrial Management, and Blockchain with fewer number of studies published on each of these domains. Thus, the majority of the studies that have been published on autonomous AI agents as digital employees relate to the domains of Information Systems, Corporate Governance and Strategic Management, and Human Resource Management.

Table 4. Disciplinary Domains of the Reviewed Studies

Specific domain	Number of published papers	Percentage	Cumulative Percentage
Blockchain	01	03	03
Corporate Governance	07	19	22
Human Resource Management	05	13	35
Industrial Management	01	03	38
Information Systems	10	27	65
Operations Management	02	05	70
Organizational Behavior	04	11	81
Strategic Management	07	19	100
Total	37	100	

Organizational Settings of Autonomous AI Agent Adoption

Table 5 shows that the most common setting in which autonomous AI agent studies have been conducted was studies of the transformation of the workforce, with 16 studies including this topic (43%). Following most common was studies of organizational governance, which included 12 studies (33%), and studies of organizational design, which included nine studies (24%).

Table 5. Organizational Settings of Autonomous AI Agent Adoption

Organizational Setting	Number of published papers	Percentage	Cumulative Percentage
Organizational Design	09	24	24
Organizational Governance	12	33	57
Workforce transformation	16	43	100
Total	37	100	

AI Agent Technologies Used in the Reviewed Studies

The technological profile of the included studies is presented in Table 6. Autonomous AI agents were the most common technology identified in the studies, with 22 studies (59%) using these systems. 7 studies (19%) used collaborative AI agents, while 6 studies (16%) used generative AI technology. Only 2 studies

(6%) evaluated the use of multi-agent systems. Overall, then, the majority of the studies utilized autonomous AI agents that could be used independently within the organization to complete certain tasks.

Table 6. AI Agent Technologies Used in the Reviewed Studies

AI agent technology used	Number of published papers	Percentage	Cumulative Percentage
Generative AI	06	16	16
Autonomous AI agents	22	59	75
Collaborative AI agents	07	19	94
Multi-agent systems	02	06	100
Total	37	100	

Theoretical Frameworks Used in the Reviewed Studies

There is a limited use of theory in the existing studies. Table 7 shows that of the 37 studies included in the review, 21 studies (57%) did not use any theory at all. While the relatively low use of theory in this field is somewhat surprising, it is understandable given the young age of the field and the tendency of many of the studies to be exploratory in nature. The most common use of theory in the included studies was Multi-Agent Systems Theory, which was used in 5 studies (14%). Digital Transformation Theory and Skills Theory were each used in 3 studies (8%), while Agency Theory and Organizational Behavior Theory were each used in 2 studies (5%). Finally, Socio-technical Systems Theory was used in only 1 study (3%). Overall, then, it appears that the field has yet to develop a theory-based explanation for how autonomous AI agents can function as digital employees.

Table 7. Theoretical Frameworks Used in the Reviewed Studies

Theoretical framework	Number of published papers	Percentage	Cumulative Percentage
Agency Theory	02	05	05
Digital Transformation Theory	03	08	13
Multi-Agent Systems Theory	05	14	27
Organizational Behavior Theory	02	05	32
Skills Theory	03	08	40
Socio-technical Systems Theory	01	03	43
No explicit Theory	21	57	100
Total	37	100	

Methodological Profile of the Reviewed Studies

The methodological profile was analyzed in terms of research design, methodological approach, research method, and data analysis technique.

Types of Research Designs

As presented in Table 8, the largest category within the analysis is the studies of theoretical nature, which includes 18 studies (49%). Empirical studies include 10 studies (27%), while synthesis studies include 9 studies (24%). Thus, the majority of knowledge of the topic comes from theoretical studies, rather than from empirical investigations.

Table 8. Types of Research Designs

Research types	Number of published papers	Percentage	Cumulative Percentage
Empirical Study	10	27	27

Research types	Number of published papers	Percentage	Cumulative Percentage
Theoretical Study	18	49	76
Synthesis Study	09	24	100
Total	37	100	

Methodological Approaches Used

Table 9 shows that qualitative approaches were the predominant approaches to studying autonomous AI agents, with 26 studies using these methods (70%). Mixed methods were used in 6 studies (16%), while only 5 studies (14%) used quantitative methods. Thus, the majority of studies on autonomous AI agent as digital employees remain exploratory in nature.

Table 9. Methodological Approaches Used

Methodology used	Number of published papers	Percentage	Cumulative Percentage
Mixed	06	16	16
Qualitative	26	70	86
Quantitative	05	14	100
Total	37	100	

Research Methods Used in the Reviewed Studies

The specific research methods are reported in Table 10. Survey methods were the most common at 9 studies (25%). Systematic literature reviews accounted for 7 studies (19%). Case studies and interviews each included 6 studies (16%). However, 3 studies (8%) used PRISMA-based systematic reviews and another 3 studies (8%) used observation and questionnaire methods. Thus, a variety of methods were used, but the majority of methods were review-based or used qualitative analyses.

Table 10. Research Methods Used in the Reviewed Studies

Articles by Research Method	Number of published papers	Percentage	Cumulative Percentage
Survey	09	25	25
Case Study	06	16	41
Interview	06	16	57
Observation	03	08	65
Questionnaire	03	08	73
Systematic Literature Review	07	19	92
Systematic Literature Review (SLR) with PRISMA	03	08	100
Total	37	100	

Data Analysis Methods Used in the Reviewed Studies

The data analysis methods used in the reviewed studies are presented in Table 11. Thematic analysis was used in 14 studies (38%). Case analysis and descriptive analysis were used in 6 studies each (16%). Conceptual analysis was used in 4 studies (11%). Bibliometric analysis and structural equation modeling were used in 3 studies each (8%). Only in one study was statistical analysis used (3%). These methods indicate that the main analysis techniques used in the current literature are based on interpretive and descriptive techniques, with limited use of advanced statistical analyses.

Table 11. Data Analysis Methods Used in the Reviewed Studies

Articles by data analysis method	Total published papers	Percentage	Cumulative Percentage
Bibliometric analysis	03	08	08
Case Analysis	06	16	24
Conceptual Analysis	04	11	35
Descriptive Analysis	06	16	51
Statistical Analysis	01	03	54
Structural Equation Modeling (SEM)	03	08	62
Thematic Analysis	14	38	100
Total	37	100	

Discussion

The findings show that the existing literature on autonomous AI agents as digital employees is growing quickly. However, the increase in 2025 should be interpreted with caution. The growth in the number of scholarly research publications in this area follows the technological advances in generative AI and agentic AI. Many of the publications are still focused on the early stage of this developing technology. Thus, the literature is promising but not yet mature in reflecting the full extent of autonomous AI agents as digital employees.

In relation to RQ1, the most prominent disciplines are Information Systems, Corporate Governance, and Strategic Management, followed by Human Resource Management and Organizational Behavior. Information Systems is dominant due to the relationship between digital employees and Information Systems infrastructure. Corporate Governance is prominent due to the impact that autonomy has upon governance of the AI agents. Strategic Management is represented due to the interest of organizations in digital employees as a potential means of increasing efficiency or gaining a competitive advantage. Human Resource Management and Organizational Behavior are represented due to the impact of digital employees upon human roles, skills, and relationships with the AI agents.

The organizational settings identified in response to RQ1 also reveal where the literature on digital employees is concentrated. The most frequent finding is within the workforce transformation setting. This is intuitive as digital employees will have a direct effect on the workforce. The second most common finding is within the governance setting. This is primarily due to the need for autonomous agents to be governed by certain structures and responsibilities. The third setting, organizational design, has fewer studies but is still essential to consider how digital employees may impact an organization's structure. These three components will be essential to consider for organizations looking to adopt digital employees rather than just the digital employees' technical capabilities.

With respect to RQ2, the most common technology categories within the studies are autonomous AI agents, followed by collaborative AI agents, generative AI, and finally multi-agent systems. This reflects the focus of the current research on autonomous AI agents as digital employees. Additionally, generative AI was mainly found to relate to the creation of content, knowledge work, and communication tasks. Furthermore, collaborative AI agents were mainly found in the context of collaborative tasks and automation of those tasks. Multi-agent systems were the least common within the research studies, indicating a potential area for future research in this area.

RQ2 also reveals a weak theoretical base for the studies reviewed. More than half of the studies do not use a theory in their research. A theory could have been used to explain the reasons behind the outcomes of the research studies. Agency Theory could be used to explain issues related to accountability and delegation. Multi-Agent Systems Theory could be used to explain interactions between autonomous systems. Digital Transformation Theory could be used to explain organizational change. Skills Theory could be used to explain the development of workforce skills. Socio-technical Systems Theory could be used to explain how technical and human systems interact within an organization. Future research should use these theories, as well as develop frameworks for digital employees.

Regarding RQ3, the methodological profile of the studies indicates that the field is still formative. The majority of existing literature consists of theoretical, qualitative, and exploratory studies, with limited quantitative, longitudinal, and causal investigations. While the relatively undeveloped methodology within this field is understandable, it does limit the strength of the conclusions that can be drawn from the existing literature regarding the effectiveness, productivity, employee outcomes, and governance of autonomous AI agents. Future studies should utilize longitudinal designs, case study investigations, experiments, surveys, and performance data as indicators of the success of the governance and autonomous AI agent implementations. Additionally, strengthening the quality of the existing appraisals of the studies would be of great benefit to the field. While the findings of the studies reviewed in this paper do indicate that autonomous AI agents are becoming relevant to organizations, the findings are primarily from an emerging field of research. The main contribution of this research is to provide a centralization of the growing literature on autonomous AI agents, to demonstrate the different ways in which they have been studied to date, and to provide an overview of the future directions of the field.

Implications

The findings of this research study have a variety of implications for both the research and managerial perspectives of autonomous AI agents. From a managerial perspective, because the use of such agents will have an impact upon the organization's employees and their responsibilities, those employees must undergo training to effectively work alongside such digital employees to maximize their contributing abilities to the organization. Additionally, the organization must implement appropriate governing, monitoring, and ethical structures to ensure that the autonomous AI agents are deployed in an appropriate manner. From a theoretical perspective, the implications of autonomous AI agents are felt in that the field of study is currently only partially theorized. As a result, research must be performed into how to best theorize the nature of autonomous AI agents, which can incorporate theories like Agency Theory, Digital Transformation Theory, Multi-Agent Systems Theory, Skills Theory, and Socio-technical Systems Theory. Finally, the implications of this research also relate to policy and governmental regulations regarding autonomous AI agents. Implications for policies related to accountability, transparency, interoperability, upskilling of employees, and implementation of regulations internationally can help to ensure that the benefits of autonomous AI agents are realized while minimizing any risks to ethics, social systems, and regulations of those autonomous agents.

Limitations

The limitations of the reviewed studies include their predominantly conceptual and theoretical nature. Many studies in this field lack empirical validation. Moreover, the field is fragmented, especially concerning governance, accountability, and ethics of autonomous AI agents. The majority of the studies focus mainly on the technical aspects of autonomous AI agents while neglecting the sociotechnical aspects of such agents. Finally, as this field is emerging in the research world, the available studies on autonomous AI agents are

relatively recent. Future studies should employ empirical research methods to assess the long-term effects of autonomous AI agents as digital employees.

Conclusion

The results of this systematic literature review demonstrate that autonomous AI agents are an important organizational phenomenon. The majority of the studies included in this review indicate that digital employees are most associated with information systems, corporate governance, strategic management, and the transformation of the workforce. Autonomous AI agents dominate the literature in part because of their ability to have greater independence from human employees and to make decisions on the basis of pre-established criteria rather than human directives. Many of the studies included in this review demonstrate that the literature on digital employees is still developing. Most studies are exploratory rather than hypothesis-testing studies, and they use qualitative methods to gather data. Autonomous AI agents have the potential to greatly benefit organizations. Nevertheless, introducing such digital employees into organizations requires the establishment of governance procedures, organizational structures, and training for the employees in those organizations. Furthermore, future studies in this area should be based on theories of organizational behavior and utilize more empirical methods of data collection to determine how autonomous AI agents can create value for organizations.

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