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Enterprise social media in contemporary workplaces: a computational literature review

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Enterprise social media (ESM)—digital platforms that support internal communication, collaboration, and knowledge sharing—have revolutionized contemporary workplaces, particularly amid the growing prevalence of hybrid and remote work. Despite their growing significance, questions persist regarding the impacts of ESM on organizations and the conditions necessary for their effective implementation and management. To address this gap, we conducted a computational literature review of 320 peer-reviewed articles published from 2013 to 2024, utilizing the Latent Dirichlet Allocation (LDA) topic modeling algorithm to provide a comprehensive survey of ESM research. Our analysis pinpoints three central themes: ESM enactment process, micro-level impacts (e.g., job performance), and macro-level outcomes (e.g., strategic knowledge management). We also observe increasing scholarly attention to emerging ESM-mediated behaviors, digital competence, and the interplay between ESM and public social media. We propose an integrative framework that positions ESM enactment as a dynamic, multi-level process and outline a research agenda for future inquiry. By consolidating a decade of scholarship, this review provides timely insights and guidance for advancing theoretical understanding and effective use of ESM in today's digital workplaces.

KEYWORDS

enterprise social media, ESM, digital platforms, organizational communication, computational literature review

1 Introduction

Social media platforms have profoundly reshaped organizations and transformed the nature of work (Behrend et al., 2024). In response to this transformation, organizations have adopted enterprise social media (ESM) platforms (e.g., Slack, Yammer, Jive, and DingTalk) to enhance internal communication, enable seamless collaboration, and improve knowledge management practices (Leonardi and Vaast, 2017). Moreover, the market for digital collaboration tools is projected to reach US\$16.87 billion by 2030 (Statista, 2025), reflecting their growing importance. ESM platforms now serve as critical digital spaces for workplace social interaction (Leonardi et al., 2013; van Zoonen et al., 2025), providing employees with unprecedented access to organizational networks and real-time information (Kane, 2015). As hybrid and remote work become increasingly prevalent—estimated to encompass 25% of the global workforce by 2030 (Masterson, 2024)—digital communication and collaboration technologies also become indispensable for distributed teamwork and organizational agility (Bulgurcu et al., 2018; Sivunen et al., 2023). A recent survey from Microsoft (2023) also underscores this urgency, as 87% of employees reported on the importance of digital transformation for contemporary workplaces.

The rise of ESM platforms offers significant opportunities, including improved knowledge sharing, greater transparency, and more agile collaboration across geographical and departmental boundaries (Hong et al., 2025; Leonardi and Meyer, 2015). However, this digital transformation also brings new challenges and complexities. Despite the reliance on digital tools in hybrid and remote work, the value and effectiveness of ESM are still debated. For example, some high-profile executive decisions, such as Elon Musk's directive requiring employees at Tesla and X to return to the office, reflect ongoing skepticism and mistrust regarding productivity and cohesion in digital work environments (Bloom et al., 2023). Additionally, the proliferation of multiple digital platforms, including both enterprise and public social media (PSM) platforms, can result in fragmented attention, redundant tools, and isolated pockets of information, undermining the efficient communication and collaboration that ESM seek to promote (Hong et al., 2025). As ESM platforms increasingly integrate advanced features, such as artificial intelligence (AI), workflow automation, and data analytics, their impact on workplace dynamics becomes even more profound and multifaceted (Leonardi et al., 2024; Leonardi and Vaast, 2017). These developments raise urgent questions about how organizations can leverage ESM to enable high-performing teams, while also managing the potential negative aspects of digital work.

In response to the growing prominence of ESM in contemporary workplaces, academic research on ESM has expanded rapidly over the past decade. However, comprehensive and up-to-date reviews that take stock of this fast-evolving body of knowledge are still limited (Li et al., 2021). Much of the existing literature on the topic is often constrained in scope, typically focusing on specific aspects of the phenomenon like network positions or negative consequences (Schötteler et al., 2023; Sun et al., 2021a), and has struggled to keep pace with the rapid technological changes. The need for an integrated, up-to-date understanding of ESM's multifaceted roles has become even more critical. In particular, gaps remain in our understanding of ESM's ever-evolving nature, diverse mediated behaviors, and multi-level impacts, which are essential not only for evaluating its generative potential and maximizing its value of adoption, but also for enabling organizations and stakeholders at all levels to foster greater digital literacy and integrate ESM more effectively into daily work practices (Zhang et al., 2025). To address this gap, this study intends to offer an integrative conceptual framework and map key research directions, aiming to provide new insights and practical guidance for scholars and practitioners to navigate the dynamic landscape of ESM.

This study addresses critical gaps in existing reviews by providing a comprehensive synthesis of ESM research and charting a future research agenda for the field. The contributions of this review are multifold. First, it adopts a processual and multi-level perspective, offering a nuanced and context-sensitive understanding of how ESM both shapes and is shaped by organizational communication, structures, and practices. Second, by employing topic modeling, the review systematically maps the focal areas and thematic evolution of ESM scholarship, while also spotlighting emerging and previously underexplored issues—such as the interplay between ESM and PSM, emerging behaviors like cyberloafing, and the pivotal role of digital competence in ESM effectiveness. Third, the review introduces an integrative conceptual

framework that encapsulates the complex enactment processes and multi-level impacts of ESM within organizations. Finally, it articulates a forward-looking research agenda, identifying key issues in extant research and five high-potential directions for future inquiry. By consolidating a decade of scholarship and surfacing new research frontiers, this review provides a timely and robust foundation for advancing the understanding of ESM in contemporary workplaces amid ongoing technological and organizational transformations.

2 Theoretical background

2.1 Definition and evolution of ESM

ESM, also referred to as enterprise social networks or enterprise social software, are organizational digital platforms designed to facilitate communication, collaboration, and knowledge sharing among employees across the organization (Wehner et al., 2017). Their functions have become integral to the digital workplace, enhancing productivity and enabling knowledge workers to perform tasks effectively (Charbaji et al., 2025). The origins of ESM date back to early enterprise 2.0 technologies such as wikis, internal blogs, and messaging tools (McAfee, 2006). Over time, these platforms have evolved to incorporate a wide range of social media functionalities, including microblogging, instant messaging, document management, and social networking (Leonardi et al., 2013). As a result, ESM have become embedded in core organizational processes, transforming knowledge management, collaboration, and communication.

Although ESM may resemble PSM platforms in terms of features, their distinguishing characteristic is their use within organizational boundaries for internal communication and social interaction (Leonardi et al., 2013; van Zoonen and Treem, 2022). The widely cited definition by Leonardi et al. (2013, p. 2) describes ESM as "web-based platforms that allow workers to (1) communicate messages with specific coworkers or broadcast messages to everyone in the organization; (2) explicitly indicate or implicitly reveal particular coworkers as communication partners; (3) post, edit, and sort text and files linked to themselves or others; and (4) view the messages, connections, text, and files communicated, posted, edited and sorted by anyone else in the organization at any time of their choosing."

A unique advantage of ESM lies in their affordances of visibility and persistence, which earlier organizational communication technologies such as email or Q&A forums cannot offer (Leonardi et al., 2013). Visibility enables employees to observe interactions and content beyond their direct contacts, while persistence ensures communicative actions and digital traces remain accessible and searchable over time (Leonardi, 2015; Leonardi et al., 2013). These properties are critical for knowledge sharing and the strategic management of organizational knowledge, which is a key source of competitive advantage (Archer-Brown and Kietzmann, 2018; Boukef et al., 2024). Moreover, ESM provide a space for both work-related and non-work-related interactions. Non-work-related knowledge sharing on ESM can foster trust, engagement, and social capital,

which are beneficial to both employees and organizations when managed appropriately (Boukef et al., 2024).

2.2 Reviews on ESM research

The rapid expansion and strategic integration of ESM into contemporary workplaces have generated a surge of scholarly interest and a growing body of research (Li et al., 2021). In response, a series of literature reviews have emerged, mapping the field from varying perspectives. Foundational conceptual works, such as Leonardi et al. (2013) and Leonardi and Vaast (2017), have defined ESM, identified key affordances, and articulated organizational implications and research agendas that continue to shape the field. Subsequent systematic reviews have addressed a range of topics. For example, Wehner et al. (2017) mapped key themes and provided a research agenda. Alimam et al. (2017) utilized the ITIL framework to organize ESM research along the lifecycle of IT services. Veeravalli and Vijayalakshmi (2019) employed a morphological lens to classify organizational and individual-level factors influencing adoption. Other reviews have zoomed in on specific subdomains, such as the knowledge sharing mechanisms (Sun et al., 2019), impression management strategies (Sun et al., 2021b), the dark side of ESM use (Sun et al., 2021a), and the effects of network positions on employee outcomes (Schötteler et al., 2023).

Despite this rich array of reviews, most have focused on particular subtopics or theoretical perspectives and often draw on relatively modest samples of literature. While Li et al. (2021) provided the most comprehensive bibliometric mapping to date, analyzing 321 articles from 2005 to 2020 and visualizing major themes and research trajectories, this review does not offer deeper insights on emerging issues such as cyberloafing, the combined use of ESM and PSM, or the evolving complexity of ESM affordances and user behaviors. Similarly, although some reviews such as Wehner et al. (2017) called for more dynamic and multi-level perspectives, the majority of existing syntheses tend to emphasize micro-level outcomes and treat ESM individual use or organizational adoption as relatively static.

3 Methodology

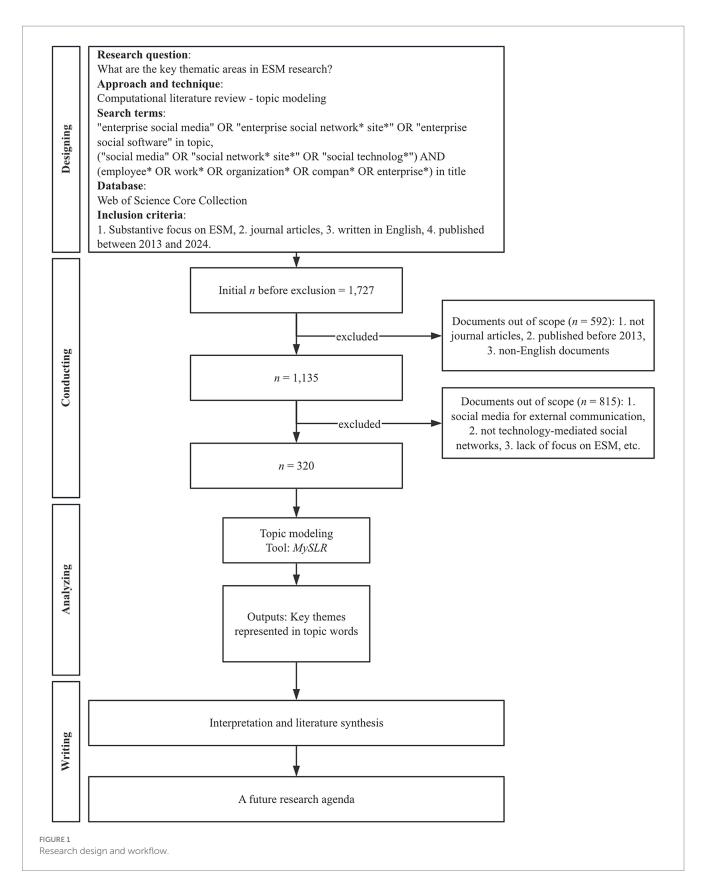
Text mining-enabled computational literature reviews (CLRs) can enhance the information processing capabilities of human researchers and synthesize a large body of literature (Antons et al., 2023). CLRs leverage computational algorithms to analyze the content of the selected literature corpus. Such an approach makes it possible to survey a large text corpus rigorously and efficiently (Antons et al., 2023). In order to explicate the topical areas of the body of literature, we chose topic modeling to induce hidden topic structures from the text corpus through the Latent Dirichlet Allocation (LDA) algorithm. As a widely used algorithm in text mining and natural language processing domains, the LDA algorithm uncovers hidden thematic structures by generating interpretable topics that connect the corpus of words and the collection of documents. Specifically, we used MySLR to conduct topic modeling analysis as this tool provides a clear

workflow, enabling collaborative and transparent CLR analyses (Ammirato et al., 2023a). The workflow of the systematic review (see Figure 1) follows the four phases proposed by Snyder (2019), namely, designing, conducting, analyzing, and writing. In implementing the CLR, we also follow methodological recommendations from Antons et al. (2023).

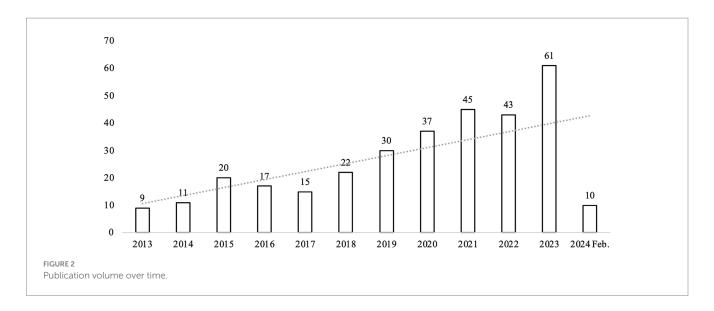
In the first phase, we defined the scope of the review and inclusion criteria for literature selection. To effectively retrieve the literature on the topic, we designed two search strings referring to previous reviews on ESM (e.g., Li et al., 2021; Schötteler et al., 2023; Sun et al., 2021b; Sun et al., 2021a). To filter relevant literature, we defined four inclusion criteria: (1) The publication should have a clear focus on ESM and align with the definition of ESM; (2) Only academic journal articles are considered (both empirical and non-empirical ones); (3) The included works should be written in English; and (4) The article should be published in or after 2013. We selected 2013 as the start of the timeframe: the year of Leonardi et al.'s (2013) seminal work on ESM. This allows a contemporary view on ESM research, and a seminal-work-driven approach in literature search is well-established in literature reviews (Hiebl, 2023).

In the second phase, we conducted the literature search with the two search strings in the Web of Science Core Collection in February 2024. The search returned 1,727 results. After excluding non-journal publications, articles published before 2013, and articles not written in English, 1,135 articles remained for further examination. Following the recommendation from Snyder (2019), the two authors examined the titles and abstracts together to select the articles that have a substantive focus on ESM and align with the definition of ESM (Leonardi et al., 2013; Li et al., 2021). All the articles selected were agreed upon by both authors, and any disagreement was resolved through discussion. In this way, the quality and reliability of the search protocol are assured (Snyder, 2019). In the end, the final selected collection of literature includes 320 articles from 133 journals, ranging from 2013 to 2024 (Feb.). Figure 2 illustrates the number of publications per year. The research on ESM continues to expand and peaked in 2023, with 61 articles published.

After obtaining the final collection of selected literature, we proceeded to analyze the literature corpus. We performed topic modeling using MySLR—a semi-automated CLR tool that employs the LDA algorithm to extract the hidden topic by mining the abstracts of the literature corpus (Ammirato et al., 2023a). Being an unsupervised machine learning model, the number of topics generated by the LDA algorithm is specified by the user. The generated topics are represented as a list of words. To obtain the optimal number of topics, we evaluated if the words of a generated topic were meaningfully related (Antons et al., 2023). After tuning the algorithms with different numbers of topics (from two to 10 topics), we decided that three was the optimal number because, in this case, the words in the topics were highly interpretable according to both authors' assessment, and the coherence score of the LDA algorithm was also high (Ammirato et al., 2023b). To mitigate interpretive bias in thematically labeling the topics, both authors engaged in extensive reading of representative ESM literature, including key conceptual and empirical works, to ensure a wellinformed interpretation of the topic outputs (Antons et al., 2023). During the literature analysis, the two researchers independently reviewed and assigned thematic labels to the generated topics, then compared and discussed their respective codes to identify and resolve



discrepancies. This triangulation process of independent coding followed by collaborative discussion enhances the reliability and interpretive rigor of the findings before finalizing the narrative synthesis. Based on the characterizing terms of each topic, we identified the three themes: ESM enactment process, micro-level impact, and macro-level impact, which are explicated in the following section. Appendix (Table A1) illustrates frequent words and example articles of each topic.



4 Mapping the landscape of ESM research

4.1 ESM enactment process

4.1.1 Affordances

Rooted in the theoretical foundations of sociomateriality, the concept of affordances posits that the social and material dimensions are fundamentally entangled (Leonardi, 2013), referring to the perceived action possibilities that an object or technology offers to actors, distinct from its inherent properties (Evans et al., 2017; Leonardi and Vaast, 2017). These possibilities are subjective in nature, as the same material features can yield multiple affordances depending on how actors perceive and appropriate them to achieve their goals (Evans et al., 2017). In the context of ESM, the affordance perspective provides a valuable lens for examining how digital platforms are enacted differently across organizations and work scenarios, and how their material properties combine with organizational settings to influence communication, collaboration, and knowledge work (Leonardi et al., 2013; Leonardi and Vaast, 2017).

Building on this theoretical foundation, Treem and Leonardi (2013) identified four key affordances of ESM—visibility, persistence, editability, and association—which have been widely adopted as a basis for subsequent research. Recent studies have also shed light on how specific functions enable affordances, providing a more nuanced understanding of the enactment and micro-foundations of affordances. For example, Treem et al. (2024) suggested that while ESM afford increased communication visibility (i.e., message transparency and network translucence), the realization of visibility also depends on specific functionalities. They found that Google Meet use has a stronger association with network translucence than message transparency while Google Drive use primarily supports message transparency.

Affordances have been shown as a pivotal lens in understanding the relationships between ESM use and organizational outcomes by enabling and shaping organizing processes. For instance, Chen et al. (2019) demonstrated that the affordances of association and editability strengthen expressive social network ties, which in turn enhance job performance. More recently, Hong et al. (2025) further showed that these affordances not only support knowledge sharing and collaboration but also help organizations adapt to digital change by fostering authentic connections and facilitating trust and engagement among employees. Together, these studies demonstrate that recent research continues to rely on the four foundational affordances to understand ESM's evolving role in the digital workplace.

4.1.2 Perceptions and motivations

Building on the sociomaterial perspective, both individual and sociocultural factors play a crucial role in shaping users' perceptions and engagement with ESM. At the individual level, factors such as personal goals, motivations, and prior experiences may strongly impact users' affective and cognitive orientations towards using ESM within organizational contexts, serving as antecedents that influence their behavioral responses (Ellison et al., 2015). For instance, employees' motives for adopting ESM are often shaped by their familiarity with PSM, as digital literacy and previous experience with social technologies shape how individuals perceive ESM's usefulness (Liu and Bakici, 2019). Along this line, Treem et al. (2015) revealed generational differences in ESM perceptions, as younger employees, who are often heavy users of PSM, expressed skepticism about ESM's usefulness, while older employees, with less prior exposure to social media, were more optimistic. This suggests that while the technical features of ESM remain consistent, their perceived usefulness varies across individuals and groups. Moreover, individual motivations also influence how users appropriate ESM affordances. Van Zoonen et al. (2022) illustrated how individual-level factors, such as personal fears towards ESM, influence the perception and appropriation of affordances. While fear of accountability and losing uniqueness increase the perceived costs of contributing to ESM, deterring active participation, fear of missing out acts as a motivating force for information gathering. This line of research underscores the complex ways in which cognitive and affective factors, rooted in personal motivations, shape employees' willingness to engage with ESM and the resulting organizational outcomes. Recent studies further support

this line, as for example, Liang et al. (2025) demonstrated that employee cognitive flexibility not only drives engagement with ESM, but also positively influences digital performance.

At a broader level, sociocultural factors also influence users' perceptions and patterns of ESM use. Emerging studies illustrate that the organizational context, including both formal structures and informal work norms, has been shown to shape not only employees' motivations but also the patterns of ESM appropriation (Hacker et al., 2024). For example, Sun et al. (2023) provided a cross-cultural comparison of ESM adoption using the innovative case studies of DingTalk (by Alibaba) and Workplace (by Facebook). The study illustrates how cultural and organizational normative differences shape ESM adoption and utilization. DingTalk's unique features, such as roster, intelligent sign in, and daily log, catered to specific organizational needs and entrepreneurial environment in China, reflecting how sociocultural factors influence the design, perception, and use of ESM across different regions. These findings emphasize the importance of considering macro-level factors, such as cultural norms (Abhari et al., 2023), in shaping the perception and enactment of ESM affordances within organizations.

4.1.3 ESM-mediated behaviors

As organizations increasingly adopt multiple ESM platforms, strategically leveraging their distinct affordances and managing boundaries have become crucial for effective internal communication. The varying levels of employee engagement and competence in navigating these platforms underscore the necessity for both individual adaptation and organizational support to optimize knowledge management and workflow integration. For example, Leidner et al. (2018) identified three patterns of new hires who demonstrate different ESM use behaviors: go-getters (active usage), work-players (moderate usage), and just-doers (minimal usage). Such behavioral distinctions reveal how individual capabilities shape strategic platform utilization, particularly regarding key knowledge management functions like information retrieval (Kane, 2015) and knowledge sharing (Jarrahi and Sawyer, 2013; Pee, 2018). ESM affordances significantly influence employees' willingness to share domain-specific expertise and complex knowledge, suggesting that information accessibility and exchange mechanisms fundamentally determine users' ESM usage intensity and ultimately shape their digital literacy.

While these designated practices of informational ESM use mainly yield positive outcomes, inconsistent engagement with ESM and disjunction in adoption across different activity systems can undermine coherence and create contradictions (Forsgren and Byström, 2018). This incompatibility becomes more pronounced when work-related and social-related features are combined on the same ESM platform, potentially leading to information and social overload (Chen and Wei, 2019). The blending of professional and personal activities on ESM disrupts routines by requiring frequent psychological transitions between work and non-work tasks, potentially contributing to workplace dissatisfaction. For instance, Zhang et al. (2023) showed that social-related ESM use during work hours can increase information overload and hinder collaboration, ultimately undermining work performance. However, their findings also indicate that the actualization of platform functionalities, such as attention regulation affordances, can help employees better manage incoming information and notifications, thereby mitigating these negative effects and supporting more productive ESM engagement. Similarly, recent studies also highlight that ESM use guidelines and rules can mitigate the impact of visibility on information and social load (Sun et al., 2025).

Along this line, increasing research in recent years further suggests that as a coping mechanism for stress and overload, employees may turn to non-work-related activities on ESM, such as cyberloafing, defined as the recreational browsing and non-task digital activities during work hours (Tandon et al., 2022). Notably, Nusrat et al. (2023) suggested that interruption overload, stemming from frequent ESM notifications and task switching, is a primary driver of cyberloafing. Employees reconfigure recreational online activities as a form of relief from work stressors and persistent uncertainty, further complicating the strategic and effective use of ESM within workplaces. Taken together, these emerging insights demonstrate that the strategic management of ESM-mediated behaviors requires attention not only to platform design and technical affordances, but also to patterns of use, individual differences, and contextual factors that can either facilitate or hinder effective knowledge work and individual wellbeing. For instance, it has been observed that user attitudes and engagement patterns, particularly forms of asymmetric engagement, in which employees selectively participate or observe, play a critical role in shaping both individual outcomes and broader organizational effectiveness (Safadi, 2024). While the balance between ESM features such as visibility and interactivity and potential drawbacks like digital interruptions has been acknowledged, increasing attention is being paid to how this divide in engagement styles ultimately influences the outcomes of ESM within organizations.

4.2 Micro-level impact

4.2.1 Job performance

Job performance remains a central concern in ESM research, although its relationship with ESM use remains nuanced and multifaceted, with studies reporting both positive and negative outcomes. On the positive side, ESM has been shown to enhance job performance through mechanisms such as accumulating social capital (Cao et al., 2016), accelerating knowledge exchange through decentralized information flows (Cao et al., 2016; Song et al., 2019), and promoting engagement and satisfaction through the integration of work and social features (Zhang et al., 2019). For instance, Kwahk and Park (2016) found that knowledge-sharing activities conducted via ESM serve as a key driver of individual job performance, with social interaction ties and reciprocity playing a particularly strong role. These benefits emerge especially when employees strategically leverage the complementary use of both work-oriented and socialization-oriented ESM platforms, suggesting the value of integrating work-and nonwork-related features (Boukef et al., 2024; Song et al., 2019; Zhang et al., 2019).

On the other hand, adverse effects of ESM use have also been documented, offering a more balanced understanding of its outcomes. Negative impacts often stem from interruptions, distractions, such as constant platform notifications (Moqbel and Kock, 2018); and information and social overload caused by excessive use (Chen and Wei, 2019). Consequently, research increasingly points to the significance of boundary conditions and behavioral patterns in shaping these ambivalent effects. The ability to regulate attention and manage cognitive resources is often a critical moderator. For example, Shang et al. (2023) found that high job autonomy can help transform

ESM-induced information overload into performance gains through selective attention control, whereas low autonomy may exacerbate stress. Similarly, Zhang et al. (2022) discovered that individual boundary-spanning behaviors on ESM can trigger both mindfulness and information overload, with mindfulness positively impacting job performance and information overload having an adverse impact.

Recent studies have also begun to unpack the effects of non-work-related ESM use on job performance, further revealing complex and sometimes paradoxical outcomes. For example, while cyberslacking is often viewed as harmful for effective job performance, Nusrat et al. (2023) found that cyberslacking on ESM, in some cases, is positively related to employee performance, possibly because cyberslacking provides a buffer against work-related stress. Extending this line of inquiry, Nusrat et al. (2024) demonstrated that the use of ESM can strengthen employees' mental toughness, which in turn reduces counterproductive cyberslacking behaviors and ultimately supports job performance. This research line underscores the need to consider the psychological mechanisms and contextual factors, such as communication quality and frequency, that might shape how ESM are experienced and enacted in daily work life.

4.2.2 Creativity, agility, and other individual outcomes

Besides job performance, a growing number of studies have examined other individual outcomes of ESM use, such as creativity and agility. Some studies have revealed that ESM can serve as both a stimulation and a constraint for creativity. For example, Sigala and Chalkiti (2015) found that engaging with ESM for knowledge processes can enhance employees' creativity. However, subsequent work by Luqman et al. (2021) highlighted that ESM use can also decrease creativity by increasing interruption overload and causing frequent psychological transitions between work and non-work roles, suggesting a potential curvilinear relationship between ESM use and creativity. Building on this, Pitafi et al. (2020) further revealed that ESM use may decrease task conflict, defined as disagreement over tasks, that typically foster creativity when kept at moderate levels. Notably, while ESM reduce task conflict (which can positively impact creativity up to a point), it does not mitigate relational conflict, which harms creativity by straining interpersonal relationships. The relationship between task conflict and creativity thus follows an inverted U-shape, where moderate levels of conflict are most conducive to creative outcomes, and the negative association between ESM use and task conflict is strengthened when task interdependence is high.

The other outcome, agility, defined as the ability of employees to rapidly adapt and respond to changes, is also increasingly recognized as a critical outcome of ESM engagement (Alavi et al., 2014). ESM use can support agility by fostering real-time communication, broadening access to information, and enhancing coordination (Cai et al., 2018). However, latest evidence provides a more nuanced understanding on the behavioral variation and technical features on employee agility. For example, work-related ESM usage strengthens the positive impact of knowledge sharing on agility (Pitafi et al., 2025c), while stress and overload from ESM use can increase the negative impact of knowledge hiding on employee agility (Pitafi et al., 2025b). Moreover, Pitafi et al. (2025a) found that driven by high levels of synchronicity, dialogic communication, and media richness, information and social overload can hinder employees' ability to adapt, especially under high

communication visibility. Thus, while these interactive features can foster agility, they may also undermine it if overload is not managed.

Some studies also looked into the impact of ESM usage across different cultures since these sociocultural factors can shape communicative practices and perceptions of ESM. Rasheed et al. (2023) confirmed the impact of ESM use on employee creativity, partially mediated by employee agility, in both Chinese and US samples. However, the moderating effect of communication visibility on these relationships differs across the two cultures. In China, communication visibility moderates the relationship between ESM use and both creativity and agility, whereas in the US, it only moderates the ESM-agility link. Similarly, Pitafi et al. (2023) explored that knowledge transfer and task interdependence further moderate the impact of communication visibility on agility, again revealing differences between the Chinese and US contexts.

4.3 Macro-level impact

Another central theme in ESM research is its role in transforming knowledge management practices, which serve as a critical macrolevel outcome of ESM enactment. As digital platforms increasingly structure organizational communication, ESM function as an infrastructure that enables and facilitates knowledge practices, integrating effectively into workflows (Archer-Brown and Kietzmann, 2018; Jarrahi and Sawyer, 2013). At the organizational level, ESM's affordances promote metaknowledge through communication visibility, enabling transparent messaging (knowledge of "who knows what") and network awareness (knowledge of "who knows whom") (Leonardi, 2014). This visibility breaks down barriers between locations and organizational units, improving innovation and efficiency. In the process, metaknowledge on ESM is gained through vicarious learning without direct interaction, which facilitates recombining existing ideas into new ideas and avoids duplicated work (Leonardi, 2014). However, recent studies challenge the overemphasis on visibility, showing that affordances like awareness (linking actors to ongoing information flows) and pervasiveness (enabling widespread, anytime-anywhere access) also hold greater explanatory power for knowledge-related outcomes, such as information-sharing quality (van Zoonen et al., 2025). Moreover, the effectiveness of ESM in enabling strategic knowledge practices depends not only on its affordances but also on the social networks and organizational contexts in which these tools are embedded, which requires strong managerial support and an organizational culture that encourages knowledge sharing and recognizes its value (Razmerita et al., 2016).

Unlike PSM, large-scale knowledge sharing often happens within organizations, especially in distributed multinational organizations (Ellison et al., 2015). ESM serve as the "social lubricant" that increases awareness and reduces ambiguity about the knowledge source and the knowledge itself, especially when the knowledge is complex and the relationship between the knowledge seeker and knowledge source is not strong (Leonardi and Meyer, 2015). In this sense, the success of these knowledge-sharing behaviors is deeply influenced by factors such as trust, managerial support, and recognition of knowledge sharing as a valued activity. Many studies have looked into the motivational factors that shape employees' knowledge sharing behavior. For example, Rode (2016) reported that extrinsic motivations, such as anticipated gains in reputation and reciprocal benefits, have been

shown to encourage knowledge sharing through ESM. Meanwhile, intrinsic motivations present more contradictory findings, as self-efficacy in knowledge sharing (being confident in the ability to provide valuable knowledge to others) seems to positively influence participation (Kwahk and Park, 2016). Contextual barriers, such as lack of trust, time constraints, psychological safety, and task complexity, can hinder sharing (Razmerita et al., 2016; Sun et al., 2019).

Besides enabling positive knowledge-sharing behaviors, some recent studies have also looked into alternative behaviors in knowledge management on ESM. For instance, employees may engage in knowledge hiding behaviors, where employees intentionally withhold knowledge due to reasons such as felt threatened to lose competitiveness or power (van Zoonen et al., 2022). Recent literature also highlights the need to consider the type of platform usage, as social-oriented use of both ESM and PSM may increase knowledge hiding, whereas workrelated use of PSM seems to reduce it (Ma et al., 2020). More recent studies such as Pitafi et al. (2025c) further clarify these dynamics indicating that work-related ESM usage strengthens the positive association between knowledge sharing and employee agility, meanwhile it is less effective at reducing knowledge-hiding behaviors unless accompanied by strong trust and alignment with employees' needs. This line of findings reaffirmed the need for organizations to foster a culture of trust and collaboration while aligning the design and use of ESM with employees' professional and social needs.

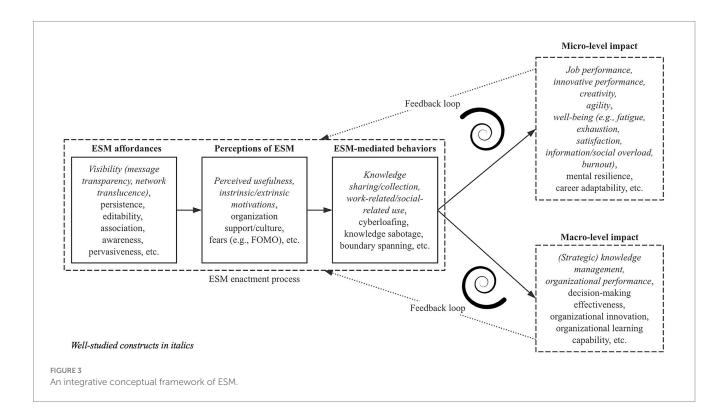
5 Discussion

5.1 An integrative conceptual framework

Drawing on a comprehensive analysis of the literature, this review introduces an integrative conceptual framework (Figure 3) that

positions ESM enactment as a dynamic and iterative communicative process. The framework theorizes the interplay among three core elements: the affordances of ESM platforms, users' evolving perceptions and motivations, and the diverse ESM-mediated behaviors spanning both work-related and nonwork-related activities. These elements are deeply interconnected: affordances shape user perceptions, perceptions influence behaviors, and enacted behaviors, in turn, reshape both perceptions and the organizational use of ESM features. By explicitly modeling these reciprocal relationships, the framework highlights ESM enactment as an evolving process, sensitive to both material and social dynamics within organizations. This process generates outcomes at multiple levels: at the micro level, ESM use affects job performance, creativity, agility, and other individual outcomes, while at the macro level, it drives strategic knowledge management and broader organizational outcomes. Feedback loops further underscore how experiences and outcomes inform and transform future ESM use, reinforcing the need for a nuanced, context-sensitive understanding of ESM's impact. This integrative view provides a robust foundation for future research on the complex and context-dependent consequences of ESM in contemporary workplaces.

A dynamic and integrated perspective is essential for understanding ESM in organizations, as its use and effects are shaped by—and help shape—an organization's formal and informal structures (Hacker et al., 2024). The dotted lines and feedback loops in our framework illustrate critical, underexplored relationships, signaling areas for future research in communication scholarship. While there is growing evidence that ESM can enhance workplace communication and collaboration, further empirical research is needed to clarify the direct and indirect pathways through which these systems influence organizational outcomes. Notably, most studies emphasize the unidirectional impacts, often overlooking the reciprocal feedback mechanisms through which individual and organizational factors reshape communication practices



over time. We advocate for a dynamic perspective that recognizes ESM not as a static tool, but as an evolving communicative ecosystem—one that both shapes and is shaped by organizational dynamics. This approach foregrounds the constitutive role of communication in organizations, positioning ESM as both a medium and a space for ongoing organizational meaning-making. The following section elaborates on promising directions for future research.

5.2 A research agenda

5.2.1 Expanding the understanding of ESM affordances

The evolution of ESM platforms requires expanding and reconceptualizing their affordances beyond Treem and Leonardi's (2013) initial framework. Two major technological shifts drive this need. First, the ongoing platformization has transformed ESMs into programmable, multi-sided infrastructures that integrate diverse functionalities and data flows, has led to the emergence of all-in-one platforms like DingTalk and Lark, which unify and consolidate multiple functions such as messaging, video conferencing, task management, document collaboration, project tracking, and more within a single seamless interface (Sun et al., 2023). This evolution is fundamentally reshaping how affordances are experienced and enacted in organizational contexts. Second, the integration of AI especially generative AI—into workplace platforms introduces new affordances through features such as multimodal knowledge retrieval, human-like conversational interaction, and workflow automation. These advancements address employees' needs for automation and allow employees to focus more on high-value work (Microsoft, 2023). These developments potentially create novel affordances related to workflow continuity, contextual switching, process integration, work augmentation, and new forms of control and constraint that remain underexplored in current ESM research. These technological advancements raise important questions about how new affordances and platform features reshape work practices, individual outcomes, and management processes.

5.2.2 Digital competence in ESM-mediated workplace

As digital technologies proliferate in contemporary workplaces, employees' digital competencies increasingly determine their effectiveness in leveraging ESM platforms. Digital competence, encompassing skills, knowledge, and attitudes toward digital tools (Khan and Vuopala, 2019), fundamentally shapes how employees perceive affordances, appropriate features, and engage in ESM-mediated behaviors. This competence becomes particularly crucial amid the growing prevalence of remote work and global virtual teams (Leonardi et al., 2024; Sivunen et al., 2023). Individual differences in demographics, personality traits, and past technological experiences create varying levels of digital competence, which in turn produce divergent outcomes from seemingly identical technologies. Organizations face the challenge of developing targeted interventions to enhance digital competence, promoting good practices while allowing for individual adaptation in the increasingly complex ESM ecosystems.

The proliferation of digital tools often leads to unintended consequences, including duplication of effort, information silos, attention fragmentation, and cognitive overload (Hinds et al., 2023). These challenges highlight the dual need for organizational orchestration of digital ecosystems and individual self-regulation strategies. At the organizational level, strategic integration and rationalization of digital platforms can mitigate confusion and enhance coordination. Moreover, fostering a supportive digital culture can further amplify the benefits of increased digital competence (Zhang et al., 2025). At the individual level, specific competencies in attention management and platform selection become crucial. For instance, Zhang et al. (2023) found that actualization of ESM attention regulation affordances (e.g., silent mode, notification management, status setting) can mitigate the negative effects of social-related ESM use on information overload and collaboration quality. This highlights how the ability to regulate attention and engagement represents a critical dimension of digital competence that deserves greater research attention.

Social dynamics of ESM-mediated workplaces also prompt the need for digital competence development. Luqman et al. (2021) revealed that proactive ESM use, while potentially beneficial for individual performance, can inadvertently trigger coworker envy by disrupting team-member exchange relationships. Similarly, van Zoonen et al. (2022) identified how employees' fears about misinterpretation or loss of competitive advantage can impede knowledge sharing on ESM platforms, undermining their potential benefits. These social challenges echo Fulk and Yuan's (2013) identification of three persistent barriers to organizational knowledge sharing through ESM: expertise location, sharing motivation, and social capitalization. Consequently, effective digital competence increasingly requires dynamic self-regulation of connectivity balancing proactive and reactive strategies—to maintain digital balance and prevent digital exhaustion in workplace (Huusko and Sivunen, 2025). Future research should investigate how digital competence can be conceptualized to include not only technical skills but also social awareness and strategic intentionality, helping employees to navigate both the functional and relational dimensions of ESM-mediated work environments for optimal individual and organizational outcomes.

5.2.3 From individual outcomes to organizational and multi-level impacts

While substantial research has explored individual-level effects of ESM use, a critical gap remains in understanding how these microlevel outcomes aggregate to organizational performance. The pathways connecting individual ESM use to macro-level outcomes remain undertheorized and empirically understudied. Archer-Brown and Kietzmann (2018) provided a conceptual foundation by exploring how ESM impact strategic knowledge management and organizational performance through three types of intellectual capital: facilitating access to knowledge (human capital), enhancing knowledge flow through relationships (social capital), and capturing collaborative knowledge developed through social interactions (structural capital). These interconnected mechanisms potentially drive tangible benefits that enhance organizational performance yet require further empirical validation across diverse contexts.

Recent studies have started exploring other mechanisms connecting ESM implementation to organizational effectiveness. Caya and Mosconi (2023) highlighted ESM's role in fostering organizational citizenship behaviors and developing social capital, while Dwivedi

et al. (2022) identified pathways through enhanced decision-making effectiveness, organizational agility, ESM infrastructure quality, and knowledge sharing practices. Building on these insights, Charbaji et al. (2025) provided experimental evidence showing that the design of ESM platforms, such as helping goals and badges, by leveraging intrinsic motivation and reducing barriers to engagement, can significantly increase individual helping behaviors and create positive feedback loops that scale from individual actions to collective gains in productivity. However, despite these theoretical advances, empirical evidence directly linking ESM adoption to organizational performance remains scarce. Future research should employ multi-level methodological approaches to trace how individual behaviors and outcomes aggregate into group and organizational performance. This line of research should investigate not only positive synergies but also potential contradictions—for instance, how practices that enhance individual productivity might simultaneously create coordination challenges at the team level, or how knowledge sharing that benefits the organization might create disadvantages for individuals.

The concept of organizational affordances offers a promising lens for investigating these multi-level dynamics. Ellison et al. (2015) argued that organizational affordances emerge collectively from the interaction between technical features and organizational factors such as processes, norms, and culture. For example, Hong et al. (2025) demonstrated that when technical features, such as identity visibility, association, and knowledge sharing, are embedded within organizational routines, they promote instrumental social capital by facilitating identity-based trustworthiness, mutual understanding, reciprocity, and professional reputation. This conceptualization invites investigation into how shared perceptions and practices around ESM use coalesce into distinctive organizational capabilities. Future research should explore how organizational affordances of ESM might differ from individual affordances, and how these differences influence organizational outcomes. Additionally, researchers should examine the dark sides of ESM at the organizational level, moving beyond knowledge sharing to investigate understudied phenomena such as knowledge withholding, hiding, and sabotage, and their impacts on organizational learning. By developing more sophisticated multi-level models of ESM impacts, scholars can provide organizations with evidence-based guidance for leveraging these platforms to enhance both individual and collective performance while mitigating potential negative consequences.

5.2.4 Contextualizing ESM research

Current ESM research often overlooks crucial contextual factors—cultural, national, and organizational characteristics—leading to overgeneralized findings with limited theoretical and practical value. Recent scholarship underscores that affordances arise from the dynamic interplay among technological, social, and contextual elements (Ronzhyn et al., 2023). While some cross-cultural studies exist (e.g., Pitafi et al., 2023; Rasheed et al., 2023), they typically test identical hypotheses across different settings without substantively theorizing how unique contextual characteristics influence ESM affordances, perceptions, and outcomes. Evidence demonstrates these contextual influences are significant. For example, Bulgurcu et al. (2018) found employees in Asian offices were less likely to create content on ESM than North American counterparts within the same organization, while Li et al. (2023) described how *context collapse* manifests distinctively in Chinese super-apps like WeChat that serve

both professional and personal communication needs. These findings suggest that cultural dimensions (e.g., power distance, collectivism, uncertainty avoidance) and context-specific concepts (like *guanxi*) likely moderate relationships between ESM implementation and outcomes (Hong et al., 2025).

Organizational characteristics provide another crucial contextual layer requiring greater research attention. Factors such as organizational structure, leadership styles, technological infrastructure, industry norms, and communication policies significantly influence how ESM platforms are implemented and utilized. Hamid et al. (2024) emphasized that leadership effectiveness, safety culture, and work engagement are critical antecedents shaping internal communication dynamics, which could similarly moderate how ESM are perceived and used across organizations. We advocate for a context-sensitive approach that explicitly incorporates these cultural and organizational dimensions as theoretical variables, rather than background conditions. Future research should employ comparative designs examining ESM implementations across diverse contexts, develop culturally sensitive measurement instruments capturing context-specific constructs, and use qualitative and mixedmethods approaches to illuminate the complex interplay between technology features, cultural norms, and organizational practices. By embracing this contextual complexity rather than controlling for it, ESM research can develop more robust theories and actionable insights for globally diverse workplaces.

5.2.5 Pluralizing research designs and consolidating findings

The ESM literature shows considerable methodological homogeneity, with a predominance of theory-testing studies using cross-sectional surveys focused on micro-level phenomena, limiting our understanding of ESM's complex impacts in organizational settings. Future research should embrace methodological pluralism by incorporating more phenomenon-driven, theory-building, and in-depth qualitative approaches. Researchers can leverage underutilized methodological tools such as discourse analysis, process analysis, and ethnographic approaches to understand the lived experiences of ESM users. For instance, studying how the ubiquity of digital platforms and growing behavioral visibility blur work-life boundaries could benefit from phenomenological approaches that capture employees' experiences with datafication and perpetual visibility (Leonardi and Treem, 2020). Longitudinal and mixedmethods designs would be particularly valuable for tracking how ESM implementation evolves over time, while quasi-experimental designs in real organizational settings could provide stronger causal evidence regarding ESM's impact on individual and organizational outcomes.

Existing studies have demonstrated inconsistent findings regarding ESM's impact on job performance, with studies reporting both positive effects through mechanisms such as knowledge sharing and social capital accumulation, and negative outcomes through mechanisms such as information overload and distraction. These contradictions stem from insufficient attention to platform differences, usage patterns, and contextual factors. Future research should develop more nuanced theoretical frameworks incorporating curvilinear relationships, moderating variables, and boundary conditions to explain these contradictions. Different platforms (e.g., WeChat, Slack, and Dingtalk) have distinct functionalities and cultural connotations that likely influence outcomes: WeChat often blurs the boundaries

TABLE 1 Directions for future ESM research.

Directions for future research	Example research questions	
Expanding the understanding of ESM affordances	 What novel affordances are introduced by integrative ESM platforms and AI, and how do they reshape work practices and organizational power dynamics? How do tensions between traditional and novel affordances impact agency, autonomy, trust, and employee well-being? 	
Digital competence in ESM-mediated workplace	 How do different dimensions and disparities in digital competence shape ESM use and its outcomes at individual and organizational levels? How do organizational interventions (e.g., training, digital governance) enhance digital competence and ESM effectiveness. 	
From individual outcomes to organizational and multi-level impacts	 How do individual ESM use and affordance actualization aggregate to influence team and organizational outcomes, and vice versa? Under what conditions do ESM practices that benefit individuals create unintended negative consequences for groups or organizations? How do "dark side" ESM phenomena (e.g., knowledge hiding, sabotage, cyberloafing) manifest and propagate at different levels? 	
Contextualizing ESM research	 How do cultural dimensions shape the enactment, actualization, and outcomes of ESM affordances across different national contexts? In what ways do organizational structure, leadership styles, and industry norms moderate the relationship between ESM use and organizational outcomes? How can we theorize the interplay between global digital platforms and differential local work practices in shaping ESM adoption, resistance, and transformation? 	
Pluralizing research designs and consolidating findings	ow do different methodological approaches yield distinct theoretical insights into ESM-mediated workplace? that are the temporal dynamics of ESM implementation and appropriation? And how do critical organizational changes are patterns of ESM use and outcomes over time? that theoretical models and perspectives can reconcile contradictory findings and provide boundary conditions for ESM and outcomes? ow can intersectional and phenomenon-driven approaches expand our understanding of ESM use among marginalized writers or those under alternative work arrangements?	

between work and personal life in China, while Slack's channel structure may better manage information flow. Additionally, behavioral nuances like active participation vs. passive lurking, or work-related use vs. cyberloafing, likely mediate the relationship between ESM use and performance outcomes.

ESM research should also expand its substantive focus to address important gaps in our understanding of diverse user experiences and complex impacts. The actual use of ESM extends beyond its designed purpose for work-related communication, involving emerging behaviors like cyberloafing and lurking that require investigation beyond utilitarian perspectives. Besides, more research is needed on how ESM affect marginalized groups or alternative employment arrangements (e.g., gig workers and freelancers), whose usage patterns may differ significantly from workers under traditional full-time employment. The perpetual digital connectivity afforded by ESM can trigger negative outcomes affecting employee well-being, as evidenced by studies on information overload and workplace anxiety. Research should investigate the tensions between ESM affordances and their potential dark sides, including surveillance concerns and work-life boundary violations. This includes understanding how employees navigate the tension between visibility benefits and perpetual monitoring (Huang et al., 2023; Leonardi and Treem, 2020). By incorporating intersectional perspectives, exploring unintended consequences, and investigating strategies to overcome challenges, researchers can develop a more comprehensive and balanced understanding of ESM's complex role in contemporary workplaces.

To inspire future research contributing to theoretical advancement and practical relevance of ESM, we put forward example research questions aligning with the five directions of the research agenda (see Table 1). These questions together with the thematic mapping and recommendations aim to help novice and seasoned researchers in ESM design impactful research and advance the field.

5.3 Theoretical implications

This review makes several novel contributions to ESM scholarship. First, it provides an up-to-date and systematic survey of the literature, delineating the key themes and emerging issues that define this rapidly evolving field. By adopting a processual and multi-level perspective, it offers a nuanced understanding of how ESM shape—and is shaped by—organizational communication, behavior, and structure. Second, it introduces an integrative conceptual framework that captures the dynamic interplay among ESM affordances, user perceptions, and mediated behaviors, and emphasizes the recursive nature of these processes at both individual and organizational levels. Third, the review articulates a forward-looking research agenda, highlighting high-potential directions for future inquiry: expanding the theorization of ESM affordances in light of platform evolution and AI integration; examining digital competence as a key mediator of ESM effectiveness; tracing multi-level impacts from individuals to organizations; incorporating contextual variables such as culture and organizational characteristics; and embracing methodological pluralism to resolve contradictory findings and address underexplored aspects of ESM use. By consolidating a decade of research and surfacing new questions, this review provides a robust foundation for

advancing both academic understanding and practical management of ESM amid rapid technological change.

5.4 Practical implications

This review offers actionable guidance for practitioners seeking to leverage ESM effectively. With the rise of distributed, hybrid, and remote work (Leonardi et al., 2024; Sivunen et al., 2023), ESM have become a fundamental structure for enabling critical work activities. However, organizations encounter several implementation challenges. ESM adoption must be closely aligned with business objectives to maximize return on investment (Kane, 2015), while also ensuring employee buy-in—often overlooked in adoption decisions (Microsoft, 2023). Poor coordination between organizational units and IT can lead to redundant tools, employee overload, and silos (Hinds et al., 2023; Leonardi and Vaast, 2017). Although ESM enhance knowledge sharing and job performance, excessive use can result in information and social overload, underscoring the need for nuanced policies that recognize possible curvilinear relationships between ESM use intensity and outcomes (Chen and Wei, 2019). Treating ESM as a dynamic communicative environment, rather than a static tool, will help organizations maximize benefits and mitigate drawbacks.

Beyond technology implementation, leadership plays a critical role in fostering ESM adoption and effective use, as well as establishing transparent communication norms that make expertise and knowledge visible (Leonardi, 2021). As Sandra Ma—the CEO and cofounder of Jovial—illustrated in a recent HBR podcast (HBR IdeaCast, 2024), clear norms regarding the use of various tools, such as using Slack for quick exchanges, email for important updates, and meetings for complex problem-solving, along with maintaining a single source of truth, are vital for reducing confusion and overload. Leadership reinforcement of these norms is essential for boosting team performance and satisfaction.

Furthermore, digital literacy and a supportive digital culture are pivotal in enhancing ESM-supported task performance, highlighting the importance of targeted training and cultural development to maximize digital platform benefits (Zhang et al., 2025). While ESM visibility can empower knowledge sharing and candid expression, it may also trigger information and social overload or facilitate widespread negativity (Sivunen et al., 2025; Sun et al., 2025). Thus, establishing clear communication norms and providing training on positive and effective ESM use are critical for realizing its full potential.

6 Conclusion

This review has synthesized and critically examined a decade of ESM research, mapping the field through computational topic modeling and an integrative conceptual framework. We identified three central themes: ESM enactment processes, micro-level impacts, and macro-level impacts, which collectively shape the current research landscape. Our framework highlights ESM as a recursive, multi-level communicative process shaped by the interplay of affordances, user perceptions, and behaviors within organizational contexts. Building on these insights, we proposed a forward-looking research agenda addressing emerging topics, methodological challenges, and the need for contextualized,

multi-level theorizing. Together, these contributions offer a timely foundation for advancing both scholarly understanding and practical management of ESM as organizations navigate rapid technological and workplace transformations.

This study has several limitations. The literature corpus was restricted to peer-reviewed journal articles indexed in Web of Science and published in English since 2013, which may exclude relevant studies from other databases, practitioner and gray literature, non-English sources, and earlier foundational work. The computational approach, while systematic and comprehensive, entails interpretive choices in topic modeling that may introduce bias, though efforts were made to triangulate findings and ensure rigor. As the ESM landscape continues to evolve with new technologies and work practices, periodic and broader reviews—including diverse data sources, languages, and methodological approaches—will be essential in the future. Despite these constraints, this review offers a holistic and up-to-date synthesis, providing a robust platform for future research and evidence-based practice in the evolving domain of ESM.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

SZ: Writing – original draft, Writing – review & editing. JY: Writing – original draft, Writing – review & editing.

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Appendix

TABLE A1 Frequent terms and examples articles per topic.

Topic	Theme	Frequent terms	Example articles
1	ESM enactment process (affordances,	employee, esm, relationship, work, affordance, team, organization,	Leonardi et al. (2013), Treem and Leonardi
	perceptions and motivations, and	theory, workplace, performance, medium, network, social_media,	(2013), Treem et al. (2015), Leidner et al.
	ESM-mediated behaviors)	esm_usage, behavior, effect, mediate, communication, individual,	(2018), and Liu and Bakici (2019)
		process	
2	Micro-level impact (job	employee, social_media, relationship, esm, work, job_performance,	Cao et al. (2016), Chen and Wei (2019),
	performance, creativity, agility, and	motivation, behavior, influence, workplace, use, significant,	Zhang et al. (2019), Pitafi et al. (2020), and
	other individual outcomes)	organization, work_performance, job, perceive, usage, social, job_	Luqman et al. (2021)
		satisfaction, esm_usage	
3	Macro-level impact (e.g., knowledge	social_media, employee, organization, communication, knowledge,	Leonardi (2014), Ellison et al. (2015),
	management, organizational	organizational, technology, social, knowledge_sharing, work,	Razmerita et al. (2016), Archer-Brown and
	performance)	information, user, group, platform, practice, process, management,	Kietzmann (2018), and Sun et al. (2019)
		innovation, system, digital	