

Mapping Underexplored Theoretical Frameworks for Social Media–Mediated Knowledge Dissemination: A Systematic Literature Review

Nabil Muttaqin¹, Dio Lingga Purwodani², Dwi Soca Baskara³

^{1,2,3} Universitas Negeri Malang, Indonesia

Email: ¹muttaqin.nabil@um.ac.id, ²dio.lingga@um.ac.id, ³dwi.soca@um.ac.id

Abstract

This study synthesizes findings from seven studies exploring the role of social media in knowledge dissemination across diverse domains. These studies reveal a heterogeneous theoretical landscape, with most employing well-established frameworks such as Knowledge Management, Theory of Complexity, Social Cognitive Theory, and sociomateriality in conjunction with structuration theory. Notably, two studies did not specify any theoretical framework, highlighting a gap and an opportunity for the application of alternative perspectives. The analysis identifies several underutilized theoretical approaches with significant potential: Complex Adaptive Systems for modeling non-linear and cross-platform knowledge flows; Actor-Network Theory for capturing the dynamics of human and non-human actors within socio-technical networks; Diffusion of Innovations for understanding patterns of knowledge spread and adoption; Boundary Object Theory for analyzing knowledge translation across social groups; and Institutional Theory for examining the organizational structures influencing social media usage. Each of these alternative approaches presents unique analytical advantages, although their application is often constrained by challenges such as intensive data requirements or methodological intricacies. The findings underscore that while current research tends to favor established and context-specific theories, the complexity of social media-mediated knowledge dissemination may be more effectively addressed through the integration of these underexplored theoretical lenses.

Keywords: Social Media, Knowledge Dissemination, Theoretical Frameworks, Knowledge Sharing, Social Media Platforms

INTRODUCTION

The proliferation of social media has fundamentally reshaped how higher education institutions communicate with learners, stakeholders, and the broader public. Short-form video content, disseminated through platforms such as TikTok, Instagram Reels, and YouTube Shorts, has emerged as a dominant mode of engagement, reflecting broader shifts in digital consumption behavior (Farhat et al., 2021; Meffe-Baccarella & Rempel, 2024). Across this evolving landscape, educational institutions have embraced diverse platforms, each with distinct affordances and user expectations. Notably, TikTok has gained prominence as a tool for institutional outreach, appearing in 11 of 22 recent studies, while YouTube and Instagram continue to play central roles in educational content dissemination (Ferreira et al., 2020).

Despite the growing adoption of social media in educational contexts, a critical gap persists in understanding how different content formats, particularly narrative-based versus traditional informational structures, affect audience engagement across these platforms. Existing literature often focuses on platform-specific trends or general content strategies but lacks an integrative framework that systematically compares how storytelling and informational modalities influence user interaction, retention, and learning within educational media. Moreover, while theories such as Narrative Transportation Theory, Social Cognitive Theory, and Constructivist Learning Theory offer valuable insights into why narrative formats might be more engaging, their application to social media-based education remains underexplored and fragmented across studies.

This systematic literature review addresses that gap by synthesizing empirical research comparing narrative-driven and traditional informational content in educational social media contexts. Drawing on evidence from 16 peer-reviewed studies, this review evaluates how content format influences engagement outcomes across platforms and identifies platform-specific patterns and optimization strategies. The original contribution of this study lies in its theory-informed, cross-platform synthesis of engagement data, offering educators, communicators, and designers evidence-based guidance for crafting effective educational content in the dynamic and participatory landscape of social media.

LITERATURE REVIEW

Theoretical approach in the context of social media communication

Theoretical frameworks in social media communication offer essential tools for understanding the multifaceted dynamics of knowledge dissemination in digital spaces (Lundby & Evolvi, 2021). These approaches, ranging from sociological paradigms to systems theory, serve to uncover how knowledge is constructed, negotiated, and circulated within and across social networks. As platforms mediate interactions in unique ways, theoretical lenses must be sensitive to platform-specific affordances that shape content visibility, interaction norms, and user behavior. Consequently, scholars must not only apply existing models but also adapt them to the evolving technological and social configurations of online media environments.

Platform-specific conditions significantly influence the nature and direction of knowledge flows in social media (Scolere et al., 2018). Open platforms such as Twitter (now X) or Reddit often foster rapid and wide dissemination of information, characterized by low entry barriers and viral dynamics, whereas closed platforms like Slack or WhatsApp emphasize localized, often hierarchical knowledge exchange within bounded groups. These differing conditions necessitate integrative theoretical models that span micro, meso, and macro levels of analysis. The intersection of organizational communication and informal, peer-driven social exchanges reveals the limitations of single-level models and underscores the importance of multilevel, context-sensitive approaches.

To account for the complexity of digital knowledge ecosystems, scholars are increasingly turning to hybrid theoretical frameworks that combine established and emergent perspectives (Alaba, 2009). Complex Adaptive Systems (CAS) theory enables the modeling of non-linear interactions and feedback loops that span multiple platforms and user communities. Actor–Network Theory (ANT) offers valuable insights into the socio-technical assemblages that drive digital knowledge production, highlighting the agency of both human and non-human actors. Diffusion of Innovations theory, meanwhile, remains instrumental in tracing the pathways of adoption and normalization of new ideas across diverse user groups. These theoretical syntheses not only enrich academic inquiry

but also offer practitioners actionable frameworks for enhancing user engagement and fostering socially impactful communication strategies.

Knowledge dissemination

In the realm of social media communication, knowledge dissemination is a multifaceted process shaped by contextual, organizational, and technological variables. The research report outlines several key domains where knowledge dissemination manifests, including external and internal exchanges in B2B settings, tourist decision-making processes (A. Baksi et al., 2022), academic collaboration in universities (Abed Jader, 2021), and informal knowledge sharing across organizational boundaries (Jarrahi, 2013). Additionally, emerging practices such as aesthetic content-based dissemination (Ranasinghe, 2022) and the preservation of organizational memory through enterprise platforms (Safadi, 2024) highlight the expanding terrain of knowledge work. Clinical contexts further exemplify this diversity, where platforms serve both rational, data-driven communication in open forums and relational, trust-based sharing in closed groups (Zhao et al., 2023)

Mechanistically, social media enables knowledge dissemination through both platform-specific strategies and distinct knowledge flow patterns. For instance, tourism sectors utilize social media analytics to identify decision clusters (A. Baksi et al., 2022) while aesthetic platforms like Instagram and TikTok rely heavily on visual and narrative cues to communicate knowledge (Ranasinghe, 2022). Within organizations, engagement is often asymmetric, with a few users driving most interactions (Safadi, 2024). These knowledge flows are further shaped by internal cultures and norms; organizational rules and expectations can either facilitate or constrain how knowledge is created, shared, and reused (Jarrahi, 2013).

Importantly, the effectiveness of knowledge dissemination is contingent upon various barriers and enablers. Management support or skepticism, environmental pressures, and the characteristics of social media platforms play pivotal roles in determining how and whether knowledge sharing occurs (Abed Jader, 2021). Trust in sources and accessibility to expertise also significantly affect whether knowledge is successfully disseminated and utilized (Zhao et al., 2023). Taken together, these findings emphasize that knowledge dissemination on social media is not uniform; it is deeply embedded in the interplay between platform affordances, organizational dynamics, and user engagement strategies, requiring a nuanced, context-sensitive approach to communication design and policy development.

METHOD

This study employs a systematic literature review (SLR) to investigate underutilized theoretical approaches in understanding the relationship between social media use and knowledge dissemination (A. Baksi et al., 2022). The SLR method was selected to enable a rigorous, transparent, and replicable synthesis of academic literature across disciplines, with the goal of mapping existing theoretical frameworks and identifying gaps in the current knowledge base. This methodological approach aligns directly with the study's aim: to surface overlooked theoretical contributions and generate recommendations for future theoretical development.

The review process consisted of three core stages, paper search, screening, and data extraction, as illustrated in Figure 1.

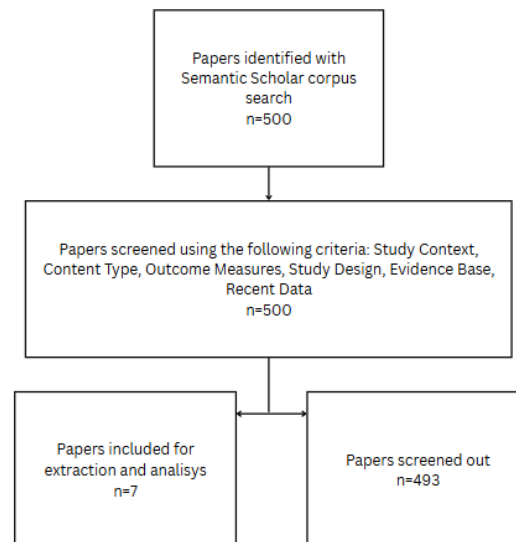


Figure 1. The Systematic Literature Review Workflow

1. Search Strategy and Screening Process

A comprehensive search was conducted using the Semantic Scholar database, which indexes over 126 million academic publications. The search query was derived directly from the research question and focused on retrieving the 500 most semantically relevant papers. Inclusion criteria were as follows: (1) the study must focus on at least one contemporary social media platform (e.g., Twitter, Facebook, Instagram, LinkedIn, TikTok); (2) the central topic must be knowledge dissemination, information sharing, or knowledge transfer; (3) the study must explicitly apply a theoretical framework related to knowledge dissemination; (4) acceptable study types included empirical research, systematic reviews, meta-analyses, or theoretically grounded conceptual analyses; (5) the study must address knowledge processes at the individual or organizational level, rather than solely user demographics or platform use patterns; (6) it must not be limited to marketing or commercial communication; (7) data must have been collected between 2000 and 2025; and (8) full-text availability was required.

2. Application of Holistic Judgment

Final inclusion decisions were made using holistic judgment, guided by an interpretive evaluation of how well each study met the combined inclusion criteria. This involved weighing each criterion within the context of the study's overall contribution to the research question. For example, a study with limited demographic detail but strong theoretical grounding and rich empirical findings related to knowledge sharing mechanisms might still be included. Conversely, a study with theoretical references but focused primarily on advertising metrics would be excluded. This evaluative process was based on a structured rubric that prioritized theoretical clarity, relevance to knowledge dissemination, and empirical rigor. To ensure consistency, two independent reviewers conducted the final screening, and discrepancies were resolved through discussion.

3. Data Extraction and Use of Large Language Model (LLM)

To systematically extract and organize data from the included studies, a large language model (LLM) was employed. The use of LLMs in systematic reviews represents an emerging methodological advancement, offering efficiency and consistency in data processing. The specific LLM used was configured via a standardized pipeline with

pre-defined prompts designed to extract targeted information. The LLM performed the following tasks:

- a. Identification of Theoretical Frameworks: Extracted from the introduction, theoretical background, or literature review sections. The LLM was instructed to distinguish between explicitly stated theories and inferred frameworks, which were labeled accordingly.
- b. Classification of Research Design: Using the methodology section, the LLM categorized studies as quantitative survey, qualitative interview, mixed methods, case study, systematic review, or theoretical analysis. Sub-methodological features were also tagged (e.g., experimental design, content analysis).
- c. Extraction of Sample Characteristics: The LLM parsed text for sample size, demographic data (where available), sampling method, and contextual settings (e.g., educational institutions, public health agencies, or workplace environments).
- d. Coding of Data Collection Methods: Information about data collection tools, timelines, and platforms was extracted to assess methodological rigor.
- e. Summarization of Key Findings: The LLM synthesized each study's conclusions about knowledge dissemination mechanisms, including enablers, barriers, and any conceptual models proposed.

These tasks were executed via structured prompts in a controlled environment to reduce variability in interpretation. Human verification was integrated at each stage to check for coherence, consistency, and accuracy of LLM outputs.

4. Mitigation of LLM Bias and Limitations

While the LLM accelerated the extraction process, its use introduces potential biases, particularly misclassification of theory or overgeneralization of nuanced findings. To address these risks, all outputs were manually reviewed and cross-validated by two researchers. Discrepancies were resolved through consensus. Moreover, prompts were iteratively tested and refined to minimize hallucinations and ensure alignment with the research objectives. A reflective log was maintained to document all prompt modifications and review decisions, enhancing transparency and reproducibility.

By integrating the methodological rigor of a systematic literature review with the efficiency of large language model technologies, this study offers a comprehensive and scalable approach to theory-mapping in the rapidly evolving field of social media and knowledge dissemination.

RESULT AND DISCUSSION

We found that the seven studies reviewed demonstrated a high degree of contextual diversity, with each study concentrating on a unique domain: Business-to-Business (B2B) companies, tourism, academia, consulting, subcultures, organizational knowledge work, and healthcare. The theoretical foundations employed in these studies varied considerably. Three studies applied well-established frameworks, Knowledge Management, the Theory of Complexity, and Social Cognitive Theory, each used in a single instance. Two studies integrated multiple theoretical approaches, while two others did not explicitly identify any theoretical framework. In terms of platform focus, three studies examined various or multiple social media platforms, while others focused specifically on Facebook, enterprise social media, or a combination of open and closed platforms. One study detailed its attention on a mix of Instagram, Pinterest, Tumblr, and TikTok. Regarding the types of knowledge dissemination, two studies explored

organizational knowledge sharing, while the remaining studies each focused on distinct areas such as internal and external knowledge exchange, tourist information sharing, academic dissemination, aesthetic content transmission, and clinical knowledge practices. Notably, there were no recurring patterns or dominant models, suggesting that research on social media’s role in knowledge dissemination is characterized by fragmented and context-specific approaches.

Tabel 1. Characteristic of included studies

| Study | Study Context | Primary Theory Used | Platform Focus | Knowledge Dissemination Type |
|-------------------------|-------------------------------|---|--|--|
| (Ammirato et al., 2020) | B2B companies in Finland | Knowledge management (inferred) | Various social media tools | External and internal knowledge sharing |
| (A. Baksi et al., 2022) | Tourism industry | Theory of Complexity | Facebook fan page | Tourist decision-making and information exchange |
| (Abed Jader, 2021) | Iraqi universities | Social Cognitive Theory | Various social media networks | Academic knowledge sharing |
| (Jarrahi, 2013) | Consulting firms | Sociomateriality, Structuration, Technological Frames | Various social technologies | Informal knowledge sharing within and across organizations |
| (Ranasinghe, 2022) | Dark Academia subculture | Literary Pedagogy and Digital Pedagogy | Instagram, Pinterest, Tumblr, TikTok | Knowledge dissemination through aesthetic content |
| (Safadi, 2024) | Organizational knowledge work | No mention found | Enterprise social media | Organizational memory and knowledge work |
| (Zhao et al., 2023) | Healthcare providers | No mention found | Open and closed social media platforms | Clinical knowledge use and dissemination |

This diversity in context, theory, and platform suggests that the field of social media and knowledge dissemination lacks a unified conceptual direction. Rather than coalescing around a few dominant theories or methods, the studies reflect a broad experimentation with conceptual lenses and social media settings. The absence of repeated use of specific theories indicates a potential gap in theoretical consolidation and suggests that researchers are either selecting frameworks idiosyncratically or adapting theories pragmatically to suit specific disciplinary needs. The varied platform choices and knowledge dissemination types further illustrate how researchers are engaging with the multifaceted

nature of social media environments, responding to platform affordances and audience behaviors differently depending on the field of study. This conceptual heterogeneity underscores the need for more integrative theoretical work that can capture the complex, cross-cutting dynamics of knowledge flows in social media ecosystems, possibly by drawing on underutilized or hybrid frameworks capable of bridging these disparate contexts.

Current Theoretical Landscape

The current theoretical landscape of social media knowledge dissemination highlights the importance of platform-specific mechanisms that shape how knowledge is shared and circulated. Several studies have shown that distinct social media affordances influence the way knowledge flows within particular domains. (A. Baksi et al., 2022), for instance, examined Facebook usage in tourism, identifying how social media analytics enable the formation of decision clusters and the emergence of influential members who drive knowledge exchange. (Ranasinghe, 2022) explored aesthetic-based dissemination, illustrating how the Dark Academia aesthetic on platforms such as Instagram and TikTok facilitates thematic and visual modes of knowledge sharing. In contrast, (Safadi, 2024) investigated enterprise social media, finding that asymmetric engagement, where few individuals contribute disproportionately to knowledge flow, plays a significant role in shaping organizational memory.

These platform-specific dynamics also reflect broader distinctions between organizational and social forms of knowledge dissemination. (Jarrahi, 2013) emphasized the role of social technologies not merely as communication tools but as components embedded within the organizational knowledge infrastructure, where institutional norms and routines critically shape how platforms are used for internal knowledge sharing. Building on this, (Zhao et al., 2023) identified two contrasting paradigms of knowledge flow: a rationality-driven model that prevails in open platforms and emphasizes information clarity, transparency, and reach; and a relationality-driven model more typical of closed platforms, where trust, relational ties, and contextual nuance guide how knowledge is exchanged. Together, these findings underscore the necessity of considering both technological affordances and institutional contexts when analyzing knowledge dissemination processes across different social media platforms.

To identify the current theoretical landscape that are employed in knowledge dissemination through social media, seven empirical and conceptual studies on social media and knowledge management were analyzed to assess their theoretical underpinnings, current applications, limitations, and suggested extensions (J. et al., 2012). These studies collectively employ five distinct theoretical frameworks, Knowledge Management, Theory of Complexity, Social Cognitive Theory, Sociomateriality coupled with Structuration, and Literary and Digital Pedagogy, and two additional studies utilize computational modeling and a realist review approach without explicitly naming a theoretical foundation. By examining how each framework has been applied, identifying its constraints, and considering possible avenues for expansion, this review aims to chart pathways toward a more integrated and versatile theoretical landscape for understanding knowledge dissemination via social media.

Table 2. Theoretical Landscape

| Theoretical Approach | Current Applications | Limitations | Potential Extensions |
|----------------------|-------------------------------------|---|---|
| Knowledge Management | Understanding social media adoption | Limited focus on social media specifics | Integration with social media social affordances theory |

| Theoretical Approach | Current Applications | Limitations | Potential Extensions |
|---|---|---|---|
| Theory of Complexity | Analyzing decision-making social media | tourist Focused on single platform (Facebook) | on Cross-platform complexity analysis |
| Social Theory | Cognitive Measuring knowledge social media | academic Limited on academic context | to Application to diverse organizational settings |
| Sociomateriality & Structuration | Examining knowledge consulting firms | informal Focused in knowledge workers | on Extension to diverse workforce demographics |
| Literary & Pedagogy | Digital Exploring dissemination Dark Academia | knowledge Niche focus through specific aesthetic subculture | on Broader application to digital culture studies |
| No mention found (Computational Modeling) | Modeling social media knowledge work | enterprise use for Limited real-world validation | Integration with empirical social media studies |
| No mention found (Realist Approach) | Review Identifying approaches to healthcare dissemination | healthcare knowledge Limited healthcare context | to Application to diverse professional fields |

Knowledge Management has been instrumental in explicating B2B social media adoption, illuminating how firms leverage platforms for buyer–seller interactions and relationship-building (Nelson, 2017). However, its traditional focus on organizational processes overlooks the affordances unique to social media environments, such as algorithmic curation and user-driven content creation. Integrating Knowledge Management with Social Media Affordances Theory could enrich its explanatory power by accounting for platform-specific dynamics that mediate knowledge flows (Pee, 2018). Similarly, the Theory of Complexity has successfully modeled tourist decision-making on Facebook, capturing emergent patterns and feedback loops, but remains constrained by its single-platform orientation. Expanding complexity analysis across multiple social media sites would allow researchers to trace non-linear interactions among diverse user communities and platform architectures, offering a more holistic account of knowledge emergence.

Social Cognitive Theory has provided valuable insights into academic knowledge sharing on social media by emphasizing observational learning, self-efficacy, and social norms. Its focus on university contexts, however, limits applicability to non-academic settings where motivational drivers and social influences may differ. Extending Social Cognitive Theory to corporate or cross-sectoral environments could reveal how professional identities and organizational cultures shape knowledge-sharing behaviors online. In a parallel vein, Sociomateriality and Structuration Theory have shed light on informal knowledge practices within consulting firms, highlighting how material artifacts and institutional structures co-produce shared understandings. Yet this research remains centered on “knowledge worker” populations, and broadening the demographic scope to include front-line employees or gig-economy participants could uncover how varying levels of digital literacy and work autonomy influence sociomaterial entanglements.

Literary and Digital Pedagogy, exemplified by studies of the Dark Academia aesthetic on Instagram and TikTok, demonstrates how subcultural styles can serve as powerful vehicles for conveying thematic knowledge. While this niche focus illuminates the role

of aesthetics in knowledge dissemination, its insights may generalize poorly to other cultural movements or genres. Applying literary and digital pedagogical principles to a wider array of digital cultures, such as fan fiction communities or educational meme networks, would test the theory's adaptability and shed light on the interplay between form, content, and pedagogy.

The two studies without an explicitly stated theoretical framework employed computational modeling to simulate enterprise social media use and a realist review to synthesize healthcare knowledge dissemination strategies. The computational models offer rigorous simulations of knowledge work but often lack empirical grounding, suggesting the need to integrate these models with real-world social media datasets to validate their assumptions. The realist review approach yields context-sensitive insights into clinical knowledge flows, yet its confinement to healthcare contexts limits cross-professional relevance. Extending this method to fields such as engineering, the arts, or public policy could test its generalizability and uncover domain-specific mechanisms of knowledge transfer.

Taken together, these findings highlight a fragmented theoretical landscape in which frameworks are applied in silos and often constrained by narrow contexts or methodological boundaries. Future research would benefit from hybridizing established theories with emergent perspectives, such as blending Social Cognitive Theory and Actor-Network Theory to capture both behavioral and material dimensions of online knowledge sharing, or from developing meta-theoretical models that bridge organizational, social, and aesthetic domains. Such integrative efforts promise a more comprehensive understanding of how social media mediates the creation, circulation, and transformation of knowledge across varied human and technological ecologies.

Emerging Theoretical Opportunities

Emerging theoretical opportunities in the study of social media and knowledge dissemination point to frameworks that can capture the dynamic, multi-layered interactions between users, content, and platforms. While existing research has illuminated key contexts, tourism decision-making, organizational knowledge work, and healthcare communication, there remains a need to integrate theories that address emergent complexity, socio-technical entanglements, and cross-platform dynamics. The following sections discuss how Complex Systems Theory, socio-technical frameworks, and knowledge flow analyses across platform types offer rich avenues for advancing both conceptual clarity and empirical rigor.

Complex Systems Theory has demonstrated considerable promise in modeling the intricate web of interactions that underlie knowledge sharing on social media. In their tourism study (A. Baksi et al., 2022) applied this approach to Facebook, revealing how decision-making clusters emerge from feedback loops between influencers and network participants. This perspective moves beyond linear diffusion models by emphasizing non-linear behavior, path dependency, and the capacity for sudden systemic shifts. By extending analysis to multiple platforms, researchers can better capture how disparate communities and algorithmic gatekeepers collectively shape knowledge trajectories, offering a more holistic view of social media ecosystems.

Socio-technical frameworks, particularly the combination of sociomateriality and structuration theory, foreground the co-constitution of social practices and technological affordances in organizational contexts. (Jarrahi, 2013) examined consulting firms to show how informal knowledge sharing is mediated by both the materiality of enterprise platforms and the institutional norms that govern employee interactions. This dual lens underscores that technology neither dictates nor merely facilitates action; rather, it

becomes entangled with organizational routines and power structures. Broadening this analysis to include diverse workforce demographics would shed light on how digital literacy, job roles, and organizational hierarchies influence knowledge mobilization in varied settings.

Understanding knowledge flows across open and closed platforms further enriches our grasp of dissemination processes. (Zhao et al., 2023) distinguished between rationality-driven approaches on open platforms, where transparency and reach are prioritized, and relationality-driven approaches on closed platforms, which emphasize trust, shared context, and peer validation. This distinction illustrates that platform architecture and community norms jointly determine not only what knowledge is shared, but also how it is framed, legitimized, and acted upon. By mapping these flow patterns, scholars can develop targeted strategies for enhancing both the efficiency and the equity of knowledge exchange.

Underutilized Theory

The exploration of underutilized theoretical frameworks reveals five promising approaches for advancing research on social media-mediated knowledge dissemination (Creamer, 2021). These frameworks, Complex Adaptive Systems, Actor-Network Theory, Diffusion of Innovations, Boundary Object Theory, and Institutional Theory, offer distinctive lenses for examining how knowledge emerges, circulates, and is sustained across digital platforms. Each theory brings particular strengths in modeling non-linear dynamics, integrating heterogeneous actors, tracing adoption processes, translating knowledge across communities, or situating sharing practices within organizational contexts. At the same time, their practical application is constrained by methodological demands and conceptual trade-offs, underscoring both the opportunities and challenges inherent in extending current research paradigms.

Table 2. Underutilized Theory

| Underutilized Theory | Potential Applications | Key Benefits | Implementation | Challenges |
|--------------------------|---|---|--|--|
| Complex Adaptive Systems | Modeling cross-platform knowledge flows | Captures emergent behaviors and non-linear interactions | Requires extensive data collection across platforms | Complex systems require robust analytical frameworks |
| Actor-Network Theory | Analyzing socio-technical aspects of social media knowledge sharing | Integrates human and non-human actors in knowledge networks | Mapping relationships among varied actors and technologies | Complex methodology and potential for overcomplication |
| Diffusion of Innovations | Studying adoption and spread of knowledge on social media | Provides framework for understanding knowledge propagation | Identify adopters, stages of diffusion, and innovation types | May oversimplify complex social media interactions |
| Boundary Object Theory | Examining knowledge translation | Helps understand how | Analyze shared symbols, language, or | Requires in-depth analysis of |

| | | | | | |
|-------------------------|---|--|---|---------------|--|
| | across different social media communities | knowledge is shared across diverse groups | tools groups | across | community interactions |
| Institutional Theory | Investigating organizational adoption and use of social media for knowledge sharing | Provides context for understanding organizational barriers and enablers | Study rules, pressures affecting adoption | norms, and | May underemphasize individual agency in social media use |

Complex Adaptive Systems theory promises to illuminate the emergent, non-linear interactions that characterize cross-platform knowledge flows, enabling researchers to capture how insights evolve through feedback loops and interdependent agents. Its key advantage lies in modeling the spontaneous patterns that arise when users, algorithms, and content co-evolve. However, deploying this approach requires extensive, often prohibitive data collection across multiple platforms, as well as the development of robust analytical frameworks capable of handling system complexity and ensuring valid inferences about emergent behaviors.

Actor-Network Theory emphasizes the socio-technical entanglements shaping social media knowledge sharing by treating human users, digital tools, and institutional processes as co-constitutive actors within a network. This integrative perspective can uncover how relationships between people and technologies facilitate or hinder knowledge circulation. Yet, ANT’s methodological richness can become a double-edged sword: its detailed mapping of associations risks overcomplicating analyses and may challenge researchers to maintain clarity and parsimony when tracing multifaceted actor-network assemblies.

Diffusion of Innovations offers a well-established scaffold for understanding how new ideas and practices spread through social networks, identifying adopter categories, stages of diffusion, and innovation attributes that accelerate or impede propagation (Collar, 2022). While its structured focus on adoption processes provides clear heuristics for investigating knowledge uptake on social media, the theory’s relative simplicity may gloss over the intricate social, cultural, and algorithmic forces at play in contemporary platforms, leading to oversimplified models of interaction.

Boundary Object Theory contributes by examining how shared symbols, genres, or tools function as translation mechanisms across diverse social media communities, enabling heterogeneous groups to coordinate meaning without full consensus. This approach is particularly valuable for analyzing interdisciplinary or cross-cultural collaborations online. The primary challenge lies in conducting the in-depth community analyses required to identify and interpret these boundary objects, which demands significant qualitative engagement with multiple user groups and contexts.

Institutional Theory focuses attention on the norms, rules, and pressures that influence organizational adoption and use of social media for knowledge sharing. By foregrounding institutional enablers and barriers, this framework helps explain why certain practices become routinized within firms, non-profits, or academic settings. However, its emphasis on macro-level structures may underplay the role of individual agency and micro-level interactions, potentially overlooking how personal motivations and peer influences shape the lived experience of knowledge dissemination.

Collectively, these five underutilized theories offer a rich palette for designing future research that can more fully account for the complexity of social media as a knowledge ecosystem. Their respective strengths and limitations suggest that hybridizing frameworks, combining the systemic insights of Complex Adaptive Systems with the actor-oriented granularity of ANT, or pairing Institutional Theory's organizational focus with the community-centered perspective of Boundary Object Theory, may yield more holistic models. Such integrative endeavors will inevitably require careful methodological calibration to balance depth with tractability, but they hold the promise of advancing our theoretical understanding of how knowledge truly travels in the digital age.

CONCLUSION

This systematic review provides a comprehensive synthesis of how knowledge dissemination is theorized across contemporary social media platforms, revealing both the dominance of established frameworks and the relative underutilization of others (A. Baksi et al., 2022). The findings carry significant theoretical implications: notably, they underscore the necessity of diversifying the conceptual tools used to examine knowledge exchange in digital spaces. While models such as the Diffusion of Innovations and the Theory of Planned Behavior remain prevalent, the limited application of network theory, socio-materiality, and cultural-historical activity theory suggests that current understandings may be overlooking key relational, technological, and contextual dynamics. Broadening the theoretical repertoire would not only enhance explanatory power but also foster interdisciplinary dialogue across fields such as education, communication, and organizational studies.

In terms of practical implications, this review highlights critical insights for institutions, educators, and knowledge professionals seeking to maximize the impact of social media as a tool for information dissemination. A more nuanced theoretical foundation allows practitioners to design communication strategies that are better aligned with how knowledge actually circulates and is received in various online ecosystems. For example, applying socio-material frameworks can guide the design of platform-specific strategies that account for both technological affordances and human behaviors.

Future research should move beyond simply identifying and applying isolated theories. Instead, scholars should explore the integration of underutilized frameworks into composite or hybrid models that can more holistically account for the complexity of social media ecosystems. For instance, how might socio-materiality and social network theory be combined to model knowledge flows in decentralized communities? Methodologically, this calls for innovative designs such as digital ethnography, longitudinal network analysis, and agent-based simulations, approaches capable of capturing dynamic, multi-level interactions over time. Additionally, future research questions might include: How do cultural and institutional contexts mediate the effectiveness of different dissemination strategies on social media? What are the implications of algorithmic filtering for equitable knowledge access across platforms? How can practitioners apply these theories to mitigate misinformation while enhancing credible knowledge transfer?

By mapping the current theoretical landscape and pointing to its blind spots, this review offers a foundational step toward developing a more comprehensive and effective framework for understanding knowledge dissemination in the digital age.

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