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Ontological and Epistemological Transformations of Managerial Knowledge in SMEs in the Age of FinTech

ABSTRACT

This study explores the adoption of ¹⁶Financial Technology (FinTech) and how it affects the foundations of managerial knowledge in ¹⁵Small and Medium Enterprises (SMEs) from an ontological and epistemological perspective. Previous studies in this field have focused on the adoption of FinTech in the SME sector, the outcomes, performance, and financial inclusion; however, the broader implications and ⁶philosophy on how digital technologies affect managerial knowing have been neglected. Thus, a systematic literature review (SLR) following the PRISMA 2020 guidelines and management research theory building was conducted. The findings highlight three interconnected themes. SME environments of the past are dominated by practice-based, experiential, and contextual forms of managerial knowledge. Next, the rise of algorithms, machine learning, dashboards, and digital platforms fosters a new epistemology which is data-driven and technologised where knowledge is more and more embedded in technology. Finally, the combined presence of these two logics results in an epistemic tension and a hybridised epistemic structure in which managerial knowing becomes a collaborative process between human reasoning and technology. This study, using this synthesis, formulates an initial proposal of a conceptual framework that reconceptualises FinTech as an epistemic infrastructure, rather than a functional one. This perspective builds on theory by explaining how FinTech impacts managerial cognition, the legitimacy of knowledge, and epistemic power within SMEs. The study concludes with a call for future research that examines the cross-cognitive, philosophical, and ethical implications of digital transformation in the context of small businesses.

Keywords: FinTech; SMEs; managerial knowledge; ontology; epistemology

INTRODUCTION

While ¹Small and Medium Enterprises (SMEs) are a vital part of global economic development, employment generation, and innovation, they still struggle, especially in the areas of managing knowledge processes and accessing financial services, as they have limited resources, less developed managerial skills, and face institutional/organizational barriers. In developing economies, a lack of financing and poor management of existing finances are seen as major barriers to the growth and sustainability of SMEs (Asad et al., 2025). The last 10 years have seen a rapid rise and widespread adoption of financial technology (FinTech). This has allowed SMEs to circumvent traditional banking services when it comes to accessing financing, making payments, and managing finances (Abu et al., ¹¹2024; Pandey et al., 2023)

Recent empirical and bibliometric studies indicate that the intensification of FinTech adoption by SMEs is due the ability of FinTech to provide greater access to credit, lower

transaction costs, and improve operational efficiency (Halawa et al., 2025). Furthermore, Nagy et al., (2025) state that FinTech adoption manifests differently in varying socioeconomic contexts, particularly in regard to the techno, environmental and organizational structures that enable and/or decrease FinTech impact. Yet, in the majority of existing literature, FinTech is predominantly framed as a means of financial inclusion and/or improved performance through adoption; financing; and regulatory analysis, paying scant attention to the philosophical dimension of how FinTech alters the managerial cognition of SMEs.

From a management philosophy viewpoint, the discourse on managerial knowledge ‘commences’ with questions of an ontology of what managerial knowledge is, and an epistemology of how and in what ways do managers know what they know, and how do they justify what they know. In most classic SME contexts, managerial knowledge has been understood at the more tacit, experiential and contextual level, deriving mainly from the day-to-day activities, social interactions, and problem-solving of the bounded rationality (Simon, 1955). FinTech starts to trouble these traditional ways of knowing by elevating data, algorithms, and technology, suggesting a revolution in the most fundamental of the taken for granted aspects of managerial cognition and a rational approach to decision-making.

The volume of FinTech SME research is growing, yet there is an almost complete absence of research addressing how FinTech impacts the nature and the philosophical and practical validation of managerial knowledge. Existing systematic reviews overwhelmingly focus on the adoption of FinTech, the financing, and the techno economic outcomes, ignoring the more transformative potential with respect to the ontological and epistemological aspects of managerial knowledge, and the knowledge comprised of, and the knowledge generated by, FinTech, and how, or how not, SME managers come to know or utilize such knowledge.

The reliance on FinTech raises important questions in the area of learning and knowledge in SMEs, in addition to decision efficiency and performance outcomes. Algorithmic systems may lead SME managers to modify how they learn from their own experiences, interpret the feedback they receive, and develop their managerial capacity. Instead of trial and error learning allowing managers to develop reflective and sense-making knowledge, they may come to treat system-generated insights as knowledge. The shift may change decision criteria and the ways in which knowledge and understanding are constructed to develop managerial competence. The adoption of FinTech may lead to changes in how

SMEs understand, learn, and develop, the knowledge and managerial skills of their managers. Existing research has been largely silent on these changes and has not examined the research from an explicit philosophical lens. For a more complete theory of digitized SME management to emerge it is therefore important to understand FinTech as an epistemic infrastructure that poses constraints on learning and knowing.

In order to shed some light on the gap, the current article attempts to do the Systematic Literature Review (SLR) to identify the most recent developments in the area of research on FinTech, and the management knowledge within SMEs from a particular philosophical perspective. More specifically, this review attempts to achieve the following objectives: Ascertain the ontological changes concerning managerial knowledge owing to the adoption of FinTech; Discover the epistemological transformations in the knowledge of SME managers, especially the ways they acquire, justify and use knowledge in their decision-making processes; Establish the relations between tacit, experiential, data-driven, and technology-based knowledge; and Identify the changes and their impact on management theory and practice especially in the context of SMEs.

The current research attempts to combine the research on FinTech with philosophy of management to provide a new angle of looking at FinTech, not simply as a collection of tools, but also as an epistemological actor that has the potential to redefine managerial knowledge, and how such knowledge is understood within SMEs. This philosophical perspective is of great value to management theorists and provides a new theory to test in the future. Additionally, it sets a groundwork for further research to examine the relationship between technology and human cognition in small businesses.

Literature Review

Managerial Knowledge in SMEs: Ontological Perspectives

In management and organization studies, the role and nature of knowledge within firms has primarily revolved around the concept of knowledge of management. In mainstream management theory, knowledge of management is seen as an objective and transferable resource that managerial practitioners use, and manage, to gain competitive advantage through its storage, codification and exploitation. This tendency has strong links to positivist theory and the knowledge-based view (KBV) of the firm, which positions knowledge as the most valuable, strategic resource, akin to financial and physical assets (Durst & Zieba, 2020).

Yet, at least research on SMEs, has challenged this objectivist ontology. Because of their small size, and as a result, having informal organizational structures and a heavy reliance on the owner-manager, SMEs, in general, do not have integrated knowledge management systems. Hence, in SMEs, knowledge of management is predominantly a function of individual experience, operational routines, and personal interrelationships and not in any formal documents or procedures (Brunswick & Chesbrough, 2020). Some empirical studies show that it is mostly the managers of SMEs who use the tacit knowledge obtained from sustained relationships with the business, customers, and the surrounding community (Moustaghfir & Schiuma, 2021).

Literature reviews from an ontological perspective understand managerial knowledge as not an object, but rather an evolving practice. Knowledge as an outcome of managerial activity does not exist, but is constructed through action, interaction, and problem solving (Rouleau et al., 2020). The practice-based ontology is evident in SMEs, where the owner-manager's lived experiences and identity centralize the most decision-making power (Bouncken et al., 2021). Thus, in SMEs, managerial knowledge is wholly contextual, relational, and entrenched in day-to-day managerial activities.

Epistemological Foundations of Managerial Knowing in SMEs

An ontological perspective answers the questions related to the nature of the managerial knowledge being studied. In the case of SMEs, the perspective of SMEs diverges from the rationalist and analytical models, frameworks, and structures that dominate larger organizations. SME managers work with a high degree of uncertainty, time constraints, and limited available information that prevent them from doing any formal analysis and optimization (Elbanna et al., 2020).

The literature considers the experiential model as the predominant epistemological position for managerial knowing in SMEs. Trial and error, experiential learning and reflective practice are some of the key mechanisms through which SME managers acquire knowledge and build their judgment (Shepherd & Gruber, 2021). In this type of epistemology, knowledge is considered to be practically and contextually relevant and effective which is contrary to being derived from models or statistics. This is aligned with the principle of bounded rationality, where managers satisfice using a set of heuristics that are a function of their experiences (Elbanna et al., 2020).

The role of sensemaking in SME managerial knowing is also important. Managers deal with ambiguity by weaving together narratives that explain situational ambiguity by linking elements from the past and the present, guiding actions in the face of uncertainty (Rouleau & Cloutier, 2022). Social interactions with employees, customers, suppliers, and peers network the collective validation of knowledge, reiterating the interpretive and socially constructed epistemology within the context of SMEs (Garud et al., 2021). Thus, the acquired managerial knowledge in SMEs is relational and experiential and is socially constructed and negotiated.

FinTech and the Transformation of Managerial Knowledge in SMEs

The more widely accepted FinTech tools are changing the way SME management is viewed, as it integrates the use of digital tools and algorithms into the financial management of the integrated systems. The SME literature and FinTech, which began in 2020, is very quickly developing, and most of it examines the positive aspects of FinTech, including financial inclusivity, improved operational efficiency, and improved accessibility to funding (Gomber et al., 2020; Halawa et al., 2025a; Philippon, 2020). Most of the studies available are focused on the examination of the adoption of technology and the related implications, as well as the outcome of success or otherwise (A. Nagy et al., 2025).

The most recent studies, while recognizing the importance of the adoption, shift toward the more technology and data-based decision processes of the adoption. FinTech is the use of digital payment systems that provide immediate payment data, and the flexible and automated decision-making credit analytics systems that use algorithms to provide credit assessments and predictive analytics. The systems claim that the knowledge generated is more precise, controllable, and computed (Arner et al., 2023). As a result, more and more managerial decisions are based on system outputs, as opposed to experiential judgment alone.

What I have written provides what I believe to be valuable insights, but I appreciate that there is a need for a range of interpretations. It is natural to be challenged by the impression that the ideas presented here are somehow without merit. Examples of the impression that the ideas presented here are without merit is built on a dichotomy that, I believe, is open to question. What I have written provides what I believe to be valuable insights, but are speculative and need to be substantiated, as all ideas do, through a range of interpretations. Thank you for the opportunity to clarify the thinking that explains the range of interpretations. It is not my intention to lay down the law.

Most studies make mention of algorithmic decision-making and digital management but do not focus on SMEs. This means that there is no integrative synthesis that is philosophically robust which explains the ways in which FinTech changes the nature of managerial knowledge in SMEs. This gap indicates that a systematic literature review is needed which looks at FinTech as an epistemic force altering managerial knowing, not as a financial innovation or a technological innovation.

³ METHOD

This study uses a systematic literature review (SLR) with the help of Wase Uake software to understand how managerial knowledge in MSMEs is positioned, both in terms of existence (ontological) and understanding (epistemological), as well as how this framework changes with the integration of FinTech (Arner et al., 2023; Bouncken et al., 2021). The review aims to construct theory, and thus it is not merely descriptive, nor does it rely on bibliometrics. The review follows the methodology for management research based on evidence (Paul & Criado, 2020; Tranfield et al., 2003). The review process is documented according to the PRISMA 2020 guidelines Page et al., (2021) in the interest of transparency and rigor.

There are three research questions that guide this review, RQ1: In the existing literature, how is managerial knowledge in SMEs described in terms of existence (ontology)? RQ2: What are the epistemological assumptions regarding the knowing and decision-making of managers in SMEs? and RQ3: In what ways do ontological and epistemological presumptions change with the incorporation of FinTech and digital financial tools? The questions place this study in the domain of management research's philosophical and conceptual stream and warrant the choice of qualitative synthesis over statistical synthesis.

From January to March 2025, I conducted a literature review using two ⁴databases, Scopus and Web of Science. These databases were chosen because of their extensive coverage of reputable, peer-reviewed journals in the fields of management, entrepreneurship, information systems, and finance (Donthu et al., 2021). I reviewed literature published from 2020 to 2025 to capture the most pertinent and contemporary literature concerning FinTech and SME management (figure 1). The boolean search strategy I employed was as follows: ("SME*" OR "small business" OR "small firm") AND ("managerial knowledge" OR cognition OR "decision making" OR learning OR sensemaking) AND (FinTech OR "digital

finance" OR "financial technology" OR algorithm* OR platform*). The search was limited to articles published in the English language in peer-reviewed journals within the specific disciplines outlined above.

FINTECH

KEYWORD IDENTIFICATION

No	Keyword	Raw	ABS	x	Act	View	SNA	Tag
1	("SME" OR "small business" OR "small firm") AND ("managerial knowledge" OR cognition OR "decision making" OR learning OR sensemaking) AND (FinTech OR "digital finance" OR "financial technology" OR algorithm* OR platform*)	26	No	x	Get	View	SNA	Tag

+ Keyword [View Result](#)

RECORD LIMITATION

Criteria	Limitation
Year From	2016
Year To	2026
Tier (Q1,Q2,Q3,Q4)	Q1,Q2,Q3,Q4

[Synchronize Report](#) [Report Prisma](#)

Figure 1 Keyword Identification

The studies were selected according to the PRISMA 2020 guidelines, which include the processes of identification, screening, eligibility assessment, and inclusion. The first search resulted in 26 records from watase Uake software. After duplicates were removed, there were 4 unique records. Based upon title and abstract screening, 14 records were removed, as they were not related to SMEs, concerned only with large firms, or discussed FinTech in a purely technical manner with no management. The full text of 8 articles was assessed for eligibility, and as a result, 6 articles were selected for inclusion as they met the criteria for relevance and conceptual clarity in relation to the research questions. This was done to ensure transparency and repeatability, as required by the PRISMA guidelines.

Throughout the selection process, systematic inclusion and exclusion criteria were employed (Syahrudin, 2024). The studies that were included had to be relevant to the context of SMEs, theorize about SMEs, and discuss some aspect of managerial knowledge, cognition, learning, or decision-making, and when engaged with FinTech or digital technologies, it had to be relevant to management. Only journal articles that had been peer-reviewed and were indexed in Scopus or Web of Science were included. Studies were excluded if they were large corporation-centric, with no relevant conceptual relation to SMEs, if the addressed

FinTech from solely technical or engineering lenses, if they were a conference paper, book chapter, or editorial, and if they were not available in full-text. Quality assurance was in large part the result of selecting articles from journals ¹³ indexed in Scopus and Web of Science, which apply strict peer review guidelines. Additionally, the articles included had to pass conceptual clarity, theoretical flexibility, and methodological transparency, which is in line with the suggestions for theory-building SLRs in management (Paul & Criado, 2020).

To maintain consistency in analysis, data extraction was completed using a detailed coding scheme. For each article, the following was documented: bibliographic elements, the aims of the study, the framing of the study within a theory, the ontological positioning in relation to the knowledge of management, the epistemological positioning in relation to knowing about management, the role of FinTech or digital technologies, and the main contributions. Such an approach allows qualitative synthesis to be completed with a reasonable degree of analytic integrity and traceability (Donthu et al., 2021).

Both deductive and inductive thematic analysis was used in the study (Braun & Clarke, 2021; Thomas & Harden, 2020). For example, ontological, epistemological, and model frameworks such as tacit, algorithmic, and experiential knowledge suggested deductive coding. On the other hand, in a cross-case analysis of the studies included, inductive coding facilitated the emergence of certain themes. In contrast to a countable outcome approach, the synthesis lamented the lack of identifiable conceptual patterns, tensions, and transformations within the body of literature. This approach aligns nicely with management theory-driven systematic literature reviews (Paul & Criado, 2020).

As such, the final synthesis highlights the dominant ontological perspectives of managerial knowledge in relation to SMEs, the prevailing epistemological perspectives of managerial knowing, and the role of FinTech as an epistemic infrastructure. This identifies the value of the review beyond mere descriptive summarisations, as it offers a conceptual and theoretical integration of the topic within the frameworks of PRISMA 2020 guidelines, and more importantly, maintains a high degree of methodological clarity.

RESULTS AND DISCUSSION

Overview of Systematic Synthesis

This section will present the results of a systematic literature review, while also analyzing the results through the philosophical lens of the review. This analysis is the result of a literature review through synthesis. In addition to empirical and methodological results, synthesis, for this analysis, becomes the focus of the literature review through empirical results, while also reviewing the literature through the prism of epistemic, constructive, transformative, philosophical, and conceptual tensions.

Empirical literature analysis and criticism of the literature form three main conceptual themes that are nuanced but definable. First, for this synthesis, a review of the conceptual SME literature shows that, for the most part, the literature on SMEs implies that situational, social, and embedded managerial knowledge practices are constructed and conceptualized as social phenomena (par, social). Social relations (transactions or interactions) and social problems (practical problems or issues) form the basis for the construction of knowledge as a phenomenon, or social phenomenon, and social problems, or social issues, are from, and intra, actions, social agents to (doing) and from (relationships) to (through) problems and social systems. This shows (par, social) that knowledge exists, or does not exist, is present or stored (or deposited) in social systems and isolated problems or systems. This is exemplified (por and par) through the analysis of tacit/implicit knowledge, experiential learning, meaning formation, limited rationality, and/or rational indifference. Within the parameters of this conceptual articulation, the phenomenon of “doing,” or not “doing,” is the cause, or catalyst, for construction, reflexive, meta-level articulation, analytical, or even non-analytical systems.

This review also notes the dominant type of epistemological logic in the traditional SME context, namely experiential and interpretive knowledge. Managers, in comparative and SME contexts, rely on judgment, heuristics, social feedback, and contextual understanding of issues. The primary ways of learning are through trial and error, narrative meaning-making, and relational meaning-making with other stakeholders. This type of epistemology suggests that managerial knowledge is provisional, contextual, and negotiated, or, not validated through the formal mathematics of the problem.

This synthesis also notes that new literature, particularly that produced under the influence of digitalization and FinTech, points to the emergence of a new and different logic. A number of studies conclude that SME managers are increasingly relying on insights generated by systems, such as dashboards, algorithmic credit assessments, predictive

analytics tools, and other financial tools on platforms. Although most of these studies attempt to regulate FinTech tools instrumentally, that is, in terms of efficiency, cost, and access to finance, these fundamental assumptions actually construct a new and different ontology and epistemology of knowledge. Knowledge is constructed, represented, and defined in terms of data, numbers, transferability, and technocracy.

The literature reveals an interesting paradox. On the one hand, SMEs are environments where knowledge is embodied, experience-based, and relational. Conversely, FinTech seems to apply the logic that knowledge is mediated by technology and transferred to algorithms, with justification from systems rather than humans. Most of the literature identifies this paradox and reflects this shift. Most of the literature identifies changes in manager behavior and performance. Most of the literature fails to address the issue of how FinTech negatively impacts what is considered legitimate knowledge, and how managers can trust, justify, and act on that knowledge.

A synthesis of the literature identifies an important gap. Empirical literature documents the adoption of FinTech in SMEs. However, the literature documents the transformation of SMEs by FinTech as an epistemic transformation of managers, and ignores the epistemic dimension of FinTech. Most of the literature views FinTech as a simple tool, and does not view FinTech as an active agent that builds knowledge. We hope that the literature will discuss the knowledge construction dimension of FinTech as an epistemic instrument. In summary, it can be said that FinTech as a completely new category of innovation will require a redefinition beyond technological or financial innovation to become an epistemic infrastructure innovation that fundamentally changes the ontology and epistemology of managerial knowledge in SMEs. Most importantly, the movement from experimental knowledge to human-algorithm hybrid knowledge is the most significant contribution to the theory of this synthesis.

Here are 6 articles that have been selected from several stages of the PRISMA selection process:

Table 1 Selected Article

No	Author	Title	Journal	Citation
1	(Mahdiraji et al., 2023)	A synthesis of boundary conditions with adopting digital platforms in SMEs: an intuitionistic multi-layer decision-making framework	The Journal of Technology Transfer	22

No	Author	Title	Journal	Citation
2	(Salise & Rojo, 2025)	Optimizing internet bandwidth allocation and service prioritization in SME networks using machine learning algorithm	International Journal of Information Technology	2
3	(M. Nagy et al., 2023)	Machine Intelligence and Autonomous Robotic Technologies in the Corporate Context of SMEs: Deep Learning and Virtual Simulation Algorithms, Cyber-Physical Production Networks, and Industry 4.0-Based Manufacturing Systems	Applied Sciences (Switzerland)	140
4	(Soni et al., 2022)	A decision-making framework for Industry 4.0 technology implementation: The case of FinTech and sustainable supply chain finance for SMEs	Technological Forecasting and Social Change	237
5	(Met et al., 2024)	Product Recommendation System With Machine Learning Algorithms for SME Ranking	International Journal of Intelligent Systems	1
6	(Halawa et al., 2025)	Fintech Innovation: A Solution to Enhance the Sustainability of Micro, Small, and Medium Enterprises	KETIK: Jurnal Informatika	4

Visual Patterns and Knowledge Structure

Journal Citation

The citation analysis (table 1) from the selected studies sheds light on the emerging literature on FinTech, SMEs and managerial knowledge. The citation distribution on the reviewed articles shows a typical core-periphery structure of scholarly knowledge. A few publications comprise the majority of the total citations, and the recent studies have a lower citation number comparatively.

Two articles serve as the intellectual nucleus of the dataset. The article published in *Technological Forecasting and Social Change* from 2022 has received 237 citations, and the *Applied Sciences* article from 2023 has received 140 citations. Both of these journals are internationally recognised as high-impact scholarly journals; thus, these citations, and the influence they carry, help to situate the most significant contributions to this emerging domain. These studies are foundational to the emerging research area and contribute to the conceptual and legitimising structure of this research domain. From 2024 and 2025, articles show a citation count almost zero to four. Such a tendency should not be seen simply as a case of limited academic worth, but of ‘freshness’ of the publication. Numerous bibliometric studies show the need for a citation-laden review ‘to age’ a given publication. Hence, the new contributions to the field are more appropriately the ‘newer’ contributions to the field. Even though their contribution may be further and more valuable, from the literature, their ideas may simply not have had the time to be accepted by the scholarly community.

The existing citation pattern also speaks to an equally important area of the knowledge gap that still exists in this area of knowledge and how piecemeal it is across the various publications. Out of international ‘established’ journals, articles do attract more scholarly visibility. In contrast, ‘newer’ and ‘region-oriented’ journals have articles that impact visibility less. This still corroborates the observation that knowledge in this area is not simply a function of intellectual contribution and economy-dominated structural location of the journal.

The citation analysis indicates that research concerning FinTech and SMEs shows a pattern of a small number of influential core studies, and a large and growing body of peripheral research. This pattern suggests a field in the early stages of theoretical development, where the first guiding ideas are starting to gain some degree of permanence, while other new studies are still working to broaden the field’s conceptual frontiers. In this regard, this pattern reinforces the value of completing a systematic synthesis, as it seeks to bring together the more developed and less developed viewpoints into a cohesive theoretical framework.

Word Cloud Interpretation

The word cloud (figure 3) representation provides an overview of the dominant conceptual themes emerging from the body of literature on FinTech, SMEs and managerial knowledge. Here, the size of each word shows the relative frequency of its occurrence in the titles, abstracts, and keywords, and hence its conceptual importance in the field.

It is possible to isolate a number of important word clusters. The considerable occurrence of the terms, "FinTech," "Industry 4.0," "machine learning," "data analytics," and "technology" points to the literature having a considerable focus on technological and digital transformation. The keywords suggest the field is predominantly concerned with narratives of digital technologies, algorithmic innovations and technological infrastructures, thus reaffirming the dominant contemporary position in literature that views FinTech as primarily a technological enabler of business (organisational) transformation.

The prominence of the term "SMEs digitization," along with "financial barriers", "financial resources", and "supply chain finance," suggests a priority concern for the economic and structural barriers restricting the access of SMEs. Thus, the literature views FinTech as a viable means of overcoming practical barriers within the confines of finance and operational efficiency. This is a clear indication of the prevailing status of research being instrumental. This suggests a propensity of FinTech as a means of achieving performance objectives while failing to appreciate the deeper, more abstract, or philosophical consideration that phenomena may provide.

The use of such pragmatic expressions as "product recommendation system," "technology selection model," "hesitant fuzzy sets," and "sustainable supply chain finance" implies that a large number of studies lean towards the quantitative, model-driven, and optimisation approaches. Such concepts demonstrate a tendency for formalised modelling, algorithmic decision-making, and the application of computational methods. This, of course, reinforces the tendency of knowledge within a more operational sphere which may be formalised, computed, and optimised to achieve maximum efficiency through a system of technology.

What the word cloud shows us is just as important as what the word cloud shows us to be missing. Managerial cognition, tacit knowledge, experiential learning, ontology, and epistemology do not appear to be present as explainable keywords. This absence is, in and of itself, significant. It indicates that literature, as it documents technological and analytical advancements, begins to philosophise the phenomena of knowing and knowledge in the

context of SMEs less and less. In other words, the prevailing discourse centres on the data, models, and technology of the discourse, and pushes to the periphery the discourse focused on the manager's interpretation, the trust, the justification, the construct of knowledge, the knowledge, and the practice.

In sum, the word cloud shows a literature gap. It shows that the literature is heavily focused on technology, performance, and optimisation, while the literature is quiet about the cognitive and epistemological shifts that FinTech brings. This supports the main argument of the research: FinTech is not just a financial innovation or a technological innovation, it is also an epistemic innovation that changes the foundations of managerial knowledge in SMEs.



Figure 2 Word Cloud

Thematic Synthesis of the Literatur

The purpose of thematic analysis is to facilitate the integration of findings conceptually rather than remain within a purely descriptive realm of mapping the literature. Using a qualitative synthesis approach, the analysis utilised both deductive and inductive coding, which are guided by the study's ontological and epistemological frameworks. Through iterative study comparison, three themes were distilled: practice-oriented constructions of managerial knowledge within SMEs, the data-driven and technologised forms of knowing facilitated by FinTech, and the emergent tension between experiential judgement and algorithmic rationality.

The first theme reinforces the most prevalent conceptualisation of managerial knowledge as practice-based, situated, and experiential. Most literature portrays SMEs as having a sole decision-maker, the owner-manager. The owner-manager's lived experience and social network facilitate the managerial practice. Knowledge is built through experience with and in relation to individual customers, businesses, and situational obstacles rather than through formalised structures. This conceptualisation correlates with and reinforces

frameworks of tacit knowledge, bounded rationality, and learning-by-doing, thereby positioning relational knowing within SMEs as practice and embedding it relationally rather than externally.

The second theme describes the paradoxical and emerging shift that data-driven and technologised knowing, especially FinTech and other forms of digital technology, has generated in the literature. Numerous studies focus on dashboards, machine learning, algorithms for credit scoring, digital platforms, data-driven analytics, and the like, in support of (or even as leading) managerial choices. Here, knowledge is something that can be produced, verified, and refined by technological mechanisms. Managerial skill is viewed as the ability to understand system-generated outputs and insights and to use technology to aid decision-making (rather than relying on experience).

The third theme is the result of the interplay of the first two and it is characterised by the increasing epistemic tension in the literature. On the one hand, SMEs are described as domains in which knowledge is also seen as subjective, situated, and socially constructed. On the other hand, the studies focused on FinTech, implicitly advocate for the understanding of knowledge as objective, measurable, and verified through technology. Authors of the studies reviewed fail to describe this contradiction in most cases, but it can be seen in the synthesis. The literature describes a growing number of instances of changed behaviour in the decision-making process, but it has not sufficiently examined the consequences of this change in terms of how managers define and understand knowledge.

Most importantly, the synthesis shows the absence of a specific theme. While problems of technology, finance, and performance are widely described, very few studies touch upon the philosophical bases of knowledge and knowing. Discussions of ontology and epistemology, managerial cognition, or epistemic authority seem to be virtually non-existent. This absence is an important indicator, suggesting that the literature is still grappling with the more complex questions that the adoption of FinTech poses for the nature of managerial knowledge.

The thematic synthesis as a whole shows evidence of a conceptual shift in the field. Managerial knowing in SMEs is no longer a function of experience and situational judgement, but is also a product of interfacing with technological systems. This review therefore suggests that FinTech is more than an instrumental construct for enhancing access

to finance or operational efficiency. It is also an epistemic construct that transforms the very fabric of knowledge within the context of SMEs.

The thematic synthesis is grounded in all six studies (table 2). For example, study authors (Met et al., 2024; Salise & Rojo, 2025; Soni et al., 2022) pair machine learning and decision-support frameworks and view knowledge as generated, optimized, and validated through organizational systems. Such a view exhibits a form of technologized epistemology. In contrast, Mahdiraji et al., (2023) and Nagy et al., (2023) study socio-technical and organizational frameworks and emphasize managerial knowing of experiential, contextual, and situational dimensions. These differing perspectives represent the epistemic tension of the study and constitute the basis of the proposed integrative framework.

Table 2 Mapping of Included Studies to Themes and Theoretical Orientation

No	Article	Focus of the study	Theoretical / conceptual orientation	Contribution to thematic synthesis
1	Mahdiraji et al. (2023)	Digital platform adoption & decision framework for SMEs	Decision theory, digital capability, technology–organization interaction	Supports hybrid knowing: managerial judgment combined with structured technological decision frameworks
2	Salise & Rojo (2025)	Machine learning optimization in SME digital infrastructure	Algorithmic optimization, computational decision logic	Illustrates technologized epistemology where decisions are delegated to algorithmic systems
3	Nagy et al. (2023)	Industry 4.0, socio-technical context of SMEs	Socio-technical systems, contextual embeddedness	Supports contextual and situated knowing shaped by environment and organizational conditions
4	Soni et al. (2022)	FinTech & decision framework for SME finance	Decision-support systems, techno-rational logic	Strong evidence for externalization of managerial knowledge into technological systems
5	Met et al. (2024)	AI-based recommendation system for SME banking	Human–AI interaction, decision-support technology	Shows co-production of knowledge between human managers and intelligent systems
6	Halawa et al. (2025)	FinTech and sustainability of MSMEs	Financial inclusion, technology adoption	Supports instrumental framing of FinTech as tool for performance and access to resources

Toward an Integrative Framework: FinTech as Epistemic Infrastructure in SMEs

Following the results of citation analysis, keyword mapping, and thematic synthesis, this section will examine the integration of conceptual frameworks the author seeks to build upon to support the idea of FinTech reshaping the managerial knowledge foundations of SMEs. The author, however, will focus more on the integration of conceptual frameworks than on the integration of FinTech as the author hopes to position FinTech beyond its

conventional understanding as merely a technological or financial tool. Rather, the author will position FinTech more as an epistemic infrastructure, or, in this case, a socio-technical system that, in an active participatory role, influences the processes of knowledge construction, validation, and enactment in the practice of management.

The synthesis shows that traditional SME contexts operate on a practice-based SME context, whereby epistemology, in this case, managerial knowing, is a result of lived experience, contextual understanding, intuition, and relational sensemaking. Owner-managers tend to centralize decision-making authority to themselves, while the knowledge they possess gets generated through direct engagement with the ambiguity of the day-to-day operations, customers, and varying operational challenges the business presents. Within this type of logic, knowledge tends to be more tacit and provisional, and less formal and universally valid.

The increasing use and spread of FinTech provide a more singular form of knowing. Digital dashboards, algorithmic credit scoring, machine learning applications, and even analytics on platforms provide managers with system generated gap fillers of the real-world. These technologies do not.

CONCLUSION

This study sought to reconceptualise the interactions ¹ between small and medium-sized enterprises (SMEs), managerial knowledge, and FinTech (financial technology) using systematic literature reviews and the philosophies of ontology and epistemology. Unlike the dominant instrumental view of FinTech as a tool for efficiency or financial inclusion, the reviews show that FinTech increasingly serves the role of an epistemic infrastructure, which transforms how knowledge management is constructed, justified, and operationalised within SMEs.

The synthesis of the selected studies presents a clear conceptual transition. Traditional representations of SME managerial knowing emphasise experiential judgment, contextual knowledge, and practice-based learning, where knowledge is intertwined with managerial activities as a practice. However, the increasing employment of algorithmic systems, machine learning, digital platforms, and data-driven decision-support technologies presents competing logics of knowing. In this emergent knowledge ecosystem, knowledge is systemically externalised, algorithmically justified, and quantifiably legitimised. The combination of these two competing logics of knowing emerges what this study identifies as

a hybrid epistemic configuration whereby the managerial knowledge is integrated with human technological systems.

One of the main outcomes of the review is that although the literature on the adoption of FinTech in SMEs is rich in discussing the impacts on performance, efficiency, and other financial metrics, there is a considerable lack of literature on the adoption of FinTech and the broader, more abstract philosophical implications of the transformation. What is considered valid and legitimate knowledge? What consequences and outcomes shape managerial confidence in tech-driven systems? What are the mechanisms and processes that alter (or defy) human control and systems dominance? These and many other questions continue to remain largely absent in the literature. This study emphasises the importance of addressing these questions and proposes a theoretical viewpoint that suggests FinTech should not be treated merely as a technological advancement, but rather, a tool that fundamentally changes the very essence of what is known and understood by managers.

This review proposes that the literature on SMEs and FinTech should examine more conceptual and philosophical aspects, rather than continue the unproductive engagement with the assumptions of technology and knowledge, and focus on the relationship between technology and knowledge in a more abstract way. This is needed in order to formulate a more sophisticated perspective on the practice of management in a world dominated by algorithm-driven systems.

Theoretical Contributions

This systematic literature review makes important contributions to the intertwined fields of research on SMEs, FinTech, and managerial knowledge. This study does not examine FinTech adoption simply as a technological/economic phenomenon and proposes a conceptual repositioning of FinTech as an epistemic infrastructure that transforms the very essence of managerial knowing in SMEs. This aids in the development of theories in three interconnected spheres.

This review adds to the literature on FinTech and SMEs by disputing the predominantly instrumental characterizations of FinTech. The majority of studies reviewed treat FinTech mainly as a means to enhance performance, efficiency, or attain financial accessibility (e.g., Soni et al., 2022; Halawa et al., 2025). While this characterization has empirical merit, it misses the more profound consequences of digital systems on managerial cognition. This review combines evidence from research on algorithmic decision systems,

machine learning, and automation recommendations (e.g., Soni et al., 2022; Met et al., 2024; Salise & Rojo, 2025) and advances the idea that FinTech is more than a mere secondary tool. More so, it posits that FinTech is an epistemic actor in the construction and legitimization of managerial knowledge.

For a second time, this study addresses SME managerial knowledge by explicating the ontological and epistemological components of SME managerial knowledge in the existing literature. Most scholars, as in the case of Mahdiraji et al. (2023) and Nagy et al. (2023), have described managerial knowing/knowledge in SMEs as embedded, contextual, and experiential, and in a socio-technical framework. This literature review organizes such scattered and disparate observations and theorizes them as a practice-based epistemology of management. Additionally, it shows that the increasing presence of artificial intelligence (AI), algorithms, and digital platforms creates a competing logic of knowing. This competing logic views knowledge as data-driven, divorced from the socio-technical framework, and technologically justified. By spelling out such epistemological assumptions, this literature review theorizes managerial cognition in SMEs and shifts the discussion from implicit descriptions to provide a measure of conceptual clarity.

The review provides a unique conceptualization of what can be described as hybrid epistemic configurations of managerial knowing within SMEs. The unique synthesis of the seven studies under review demonstrates how contemporary SME managers traverse the unique field of experiential judgment constructed through algorithmic interactions. The studies focused on machine learning, decision-support, and recommendation systems (Soni et al., 2022; Met et al., 2024), and those that focus on contextual embeddedness and socio-organizational frameworks (Mahdiraji et al., 2023; Nagy et al., 2023), exemplify this constructive overlap. The hybrid epistemic condition is "knowing through and with technology" (or human and technology systems). The notion advances theories of technology adoption and provides insight into how technology is reshaping knowing rather than behaviors or outcomes.

This research also contributes to the methodology involved by showing that systematic literature reviews can go beyond capturing a finding as a summary to including an element of theory-building that is reflective and will speak to the higher realms of philosophy. This review joins PRISMA-inspired transparency and thematic synthesis grounded in a particular ontology and epistemology, and illustrates a different iteration of an

SLR model that seeks to go beyond mere aggregative description. This responds to the literature's calls to have management reviews steer closer to theory and opens a pathway for those who intend to use SLR as a means to push the frontiers of thinking.

Limitations and Future Research

This study, while having some valuable insights, also has some drawbacks that provide useful guidance for future studies. This framework was based on a limited number of studies. The corpus of studies created as a result of the Systematic Review process will always be limited, although this corpus of studies that created the Systematic Review is the result of the intersection of FinTech, SMEs, and managerial knowledge-- a largely unexplored area of study. Therefore, the proposed framework is more of a conceptual model than a definitive empirical framework.

The review was limited to ¹²peer-reviewed journal articles available on Scopus and Web of Science. While this improves the quality and credibility of the studies, it also eliminates some insights that may be contained in books, conference papers, practical papers, and some emerging or unpublished papers. In future reviews, some practical papers may be the only way to justify some unconventional views, and in this way, a more diverse range of views may be available than through books and journal articles.

The most recent phase of the review is the synthesis of the themes and the explanation of the findings at the level of the philosophy of management. The construction of narratives from the synthesis of themes and the explanation of findings could be defended as an exercise of the narrative building process for the purposes of theory construction as part of an SL review. Such an undertaking, while valuable in contributing to the theory of management, is considerably subjective. Constructing a narrative is highly subjective, and as a result, different authors may choose to explain the same themes from a different conceptual lens and construct different narratives from the same body of studies. In future studies, this could be supplemented with an ethnographic study, in the case of the managers of SMEs, or a quantitative study to assess the extent to which the frameworks proposed in this study.

The potential of the review is partially evidenced by the number of different paths to be explored in the future. How different SME managers deal with different FinTech tools and how they balance subjective views and hard data is the empirical question that needs to be answered. Digital tools integrated into the everyday operations of a business organisation become more and more a part of the organisational routines, and how this influences the

evolution of a manager's analytical thinking is an issue that longitudinal studies could shed light on. Such studies could be valuable in understanding the extent to which the regulatory frameworks and the social and economic conditions of a given country define the contours of the less flexible areas of FinTech.

Lastly, forthcoming conceptual research may be able to advance and fine-tune the understanding of FinTech as an epistemic infrastructure. Such work may look into the ethics of outsourcing epistemic authority to algorithms, the technological system power relations, and the impacts on managerial autonomy and responsibility in digitally mediated firms.

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