

DOCTORAL THESIS

Knowledge Hiding in Organizations: Integrative Framework for Bridging Hider and Seeker Perspectives

Talshyn Tokyzhanova

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Hereby I declare that this doctoral thesis, my original investigation and achievement, submitted for the doctoral degree at Tallinn University of Technology has not been submitted for doctoral or equivalent academic degree.

signature

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Teadmiste peitmine organisatsioonides: integreeriv raamistik peitja ja otsija perspektiivide ühendamiseks

TALSHYN TOKYZHANOVA



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List of Publications

The list of author's publications, on the basis of which the thesis has been prepared:

- **Tokyzhanova, T.** and Durst, S., 2023. Seeing knowledge hiding through a multi-level lens. *Prometheus*, 39(4), pp. 233–264.
- **Tokyzhanova, T.** and Durst, S., 2024. Insights into the use of theories in knowledge hiding studies: a systematic review. *VINE Journal of Information and Knowledge Management Systems*, 55(4), pp. 1002–1030.
- III **Tokyzhanova, T.** and Durst, S., 2025. Navigating knowledge hiding: perspectives from hiders and targets in group settings. *The Bottom Line*. Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/BL-11-2024-0191

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Carney, G., Gray, M., Satybaldieva, E., Nosworthy, M. O., **Tokyzhanova, T.**, Murtazashvili, J. B., Moriyama, H., Mishra, S., Thomé, P., Glass, F. C., Mannila, S., Khamkhun, A., Banomyong, P., Punthong, W., and Solovey, V. 2024. Ageing power. In A. Ledeneva, E. Teague, P. Matijevic, G. M. Moisé, P. Majda, and M. Toqmadi (Eds.), *The Global Encyclopaedia of Informality, Volume 3: A hitchhiker's guide to informal problem-solving in human life* (pp. 517–558). UCL Press.

Author's Contribution to the Publications

Contribution to the papers in this thesis are:

- Tokyzhanova, T. and Durst, S. (2023). Lead author: Problematization, literature review, data collection and analysis, discussion, and paper write-up.
- II Tokyzhanova, T. and Durst, S. (2024). Lead author: Problematization, literature review, data collection and analysis, discussion, and paper write-up.
- III Tokyzhanova, T. and Durst, S. (2025). Lead author: Problematization, literature review, data collection and analysis, discussion, and paper write-up.

Introduction

In today's globalized, technology-driven economy, knowledge has become essential for organizational competitiveness, innovation, and adaptability (Grant, 1996; Nonaka et al., 1996). Recognizing knowledge as more than mere information, organizations increasingly prioritize effective knowledge management (KM), which encompasses processes of knowledge creation, storage, transfer, and application (Alavi and Leidner, 2001; Nonaka and von Krogh, 2009). At the heart of effective KM is knowledge sharing (KS)—the intentional exchange of expertise and insights among organizational members (Wang and Noe, 2010). Extensive research confirms that KS significantly enhances organizational innovation, collaboration, and performance, mainly when supported by favorable cultural dynamics, leadership practices, and appropriate incentives (Cabrera and Cabrera, 2005; Davenport and Prusak, 1998; De Long and Fahey, 2000).

Despite widespread recognition of KS's benefits, significant barriers impede effective knowledge exchange. Among these, knowledge hiding (KH), defined as "an intentional attempt by an individual to withhold or conceal knowledge requested by another person" (Connelly et al., 2012, p. 65), has emerged as particularly problematic. Although early KM literature acknowledged behaviors resembling KH (Davenport, 1997; Davenport and Prusak, 1998), they remained overshadowed by positive knowledge practices until Connelly et al.'s (2012) pivotal work explicitly conceptualized KH as deliberate and individual-centric (Serenko and Bontis, 2016). This conceptual clarity facilitated rigorous empirical exploration and revealed that KH is widespread, affecting up to 76% of U.S. employees and 46% in China (Peng, 2013).

In their seminal work, Connelly et al. (2012) identified three prevalent strategies of KH: playing dumb, evasive hiding, and rationalized hiding. Playing dumb involves feigning ignorance or a lack of expertise, while evasive hiding entails providing partial or ambiguous knowledge to appear cooperative while withholding critical details. Conversely, rationalized hiding involves justifying non-disclosure through excuses, deferrals, or blame-shifting (e.g., citing confidentiality constraints). These strategies have been validated across various contexts, underscoring their robustness (Burmeister et al., 2019; Garg et al., 2021; Pan et al., 2024; Venz and Nesher Shoshan, 2022).

Over the past decade, a growing body of research has focused on understanding why individuals hide knowledge, how they do so, and what consequences arise from such behaviors. Extant research has also highlighted the drivers of KH operating at multiple levels. At the individual level, personality traits such as dark triad characteristics (Pan et al., 2018; Soral et al., 2022), neuroticism (Anaza and Nowlin, 2017), and cynicism (Nguyen et al., 2022), along with the perception of knowledge as personal property and resultant territoriality (Pereira and Mohiya, 2021; Shirahada and Zhang, 2022), foster KH. At the interpersonal level, relationship quality, perceived reciprocity, and power dynamics play significant roles, with low trust and poor communication increasing the likelihood of KH (Cheng et al., 2023; Connelly and Zweig, 2015; De Clercq et al., 2022a). At the organizational level, cultures that prioritize harmful leadership (Abdelmotaleb et al., 2022; Feng et al., 2022), promote intense intra-organizational competition (Sofyan et al., 2023), and engage in pervasive organizational politics (Kaur and Kang, 2023), foster an environment conducive to KH. The consequences of KH can be considerable, as it reduces in-role performance (Akhtar et al., 2022; Syed et al., 2021), diminish organizational citizenship behavior (Burmeister et al., 2019; Kaur and Kang, 2023), weakens employee identification (Abdelmotaleb et al., 2022), and stifles creativity (Černe et al., 2014; Feng et al., 2022). At the organizational level, KH is associated with reduced firm performance (Chatterjee et al., 2021; Haar et al., 2022), increased turnover intentions (Sheidaee et al., 2022; Zhang and Min, 2022), and overall diminished employee well-being (Agarwal et al., 2022; Jiang et al., 2019).

Despite substantial progress, the existing body of KH research remains predominantly hider-centric, focusing mainly on the motives and actions of those hiding knowledge. This hider-centric approach has made notable contributions by differentiating KH from related constructs such as knowledge hoarding and KS ignorance (Ford and Staples, 2010; Connelly et al., 2012). It provides conceptual clarity, allowing researchers to investigate KH behaviors and their underlying motivations rigorously. The development and validation of robust measurement tools, particularly Connelly et al.'s (2012) widely adopted 7-item KH scale, represent significant methodological advances. These instruments facilitated extensive cross-cultural research, confirming the prevalence of KH and delineating key strategies employed across various contexts (Burmeister et al., 2019; Peng, 2013). Thus, the hider-centric perspective has established essential foundational knowledge, setting the stage for more comprehensive explorations of KH from multiple perspectives.

Nevertheless, the hider-centric approach has notable limitations. By predominantly viewing KH as a unilateral decision made by the knowledge holder, this perspective overlooks the inherently interactive and relational nature of knowledge exchange. Specifically, it neglects how knowledge seekers interpret hiding behaviors, emotionally respond to them, and adjust their subsequent actions (Xiao, 2024). Subtle hiding often goes undetected because of its low intensity, minimal immediate consequences, and unclear intent (Arshad and Ismail, 2018). Since knowledge exchange involves both a hider and a seeker, disregarding the seeker's perspective or inability to detect subtle hiding can lead to oversimplified or flawed assessments of KH's impact (Chatterjee et al., 2021).

Additionally, methodological reliance on cross-sectional, self-reported data limits understanding of KH's evolving and dynamic characteristics, potentially introducing biases such as social desirability (Fauzi, 2022; Joo et al., 2024). Consequently, managerial recommendations drawn exclusively from the hider's perspective focus narrowly on correcting individual behaviors, neglecting the broader relational and organizational contexts that shape KH interactions.

A small yet growing body of literature has begun exploring these seeker's viewpoints. Evidence shows that seekers do not always perceive KH negatively (Connelly and Zweig, 2015); sometimes, it is interpreted as strategic discretion rather than harmful secrecy (Xiong et al., 2021). Furthermore, in specific contexts, such as sales environments, KH may even yield positive effects by motivating individuals to enhance their performance (Wang et al., 2019). Different forms of KH elicit distinct emotional and behavioral responses: evasive hiding and "playing dumb" often induce guilt or shame (Burmeister et al., 2019), whereas rationalized hiding, where non-disclosure is justified through excuses or blame-shifting, can appear less damaging. However, this emergent literature remains fragmented, lacking comprehensive measurement tools and integrated theoretical models that fully capture the interplay between hider and seeker perspectives.

Thus, this thesis argues for adopting an integrative approach that equally incorporates both the hider's and seeker's perspectives, recognizing KH as an inherently interactive phenomenon. Figure 1 illustrates the knowledge exchange process through two interconnected pathways to represent this approach visually. The first pathway focuses on the hider's decision-making process, including the assessment of the request, the choice

to share or hide knowledge, and the implementation of specific hiding strategies. The second pathway captures the seeker's perspective, detailing how they interpret the hider's response and how these interpretations lead to emotional and behavioral outcomes. Dashed lines highlight underexplored target-centric gaps, such as the interpretation of ambiguous delays and the emotional responses triggered by partial disclosures.

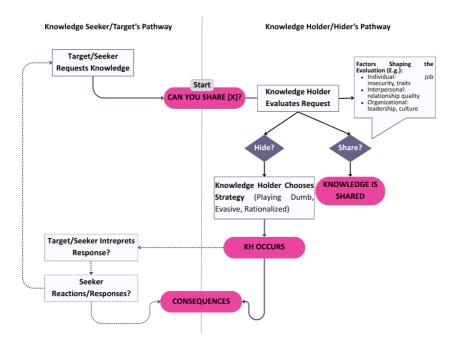


Figure 1. Flow Chart of Dual Pathways: Hider Actions vs. Seeker Interpretations. Source: Composed by the author.

Accordingly, the *primary aim of this thesis is to advance the understanding of KH by shifting the focus from a hider-centric perspective to an integrative approach that equally incorporates both the hider's and seeker's perspectives.* Specifically, this thesis investigates how KH is defined and recognized within an organizational context. By doing so, the thesis aims to refine theoretical frameworks and develop more balanced, contextually relevant strategies for mitigating the adverse effects of KH and fostering a genuinely open knowledge culture. This research aim is critical for three main reasons:

First, while existing research has primarily focused on the hider's motivations and behaviors, it has largely neglected the seeker's perspective. This omission constrains our understanding of KH as a dynamic, socially negotiated process. By incorporating both viewpoints, the thesis contributes to theoretical completeness by uncovering how seekers' interpretations and emotional reactions shape the unfolding of KH.

Second, organizations often struggle to manage hidden knowledge effectively when they overlook employees' interpretations of what constitutes hiding. Broadening the scope to include seeker perceptions can inform more detailed and context-sensitive interventions, enhancing organizational trust, collaboration, and performance. Recognizing how hiding is perceived can fundamentally alter a target's emotional and behavioral responses, highlighting the practical relevance of this broader perspective.

Finally, the existing literature on the seeker's perspective remains methodologically fragmented, with limited comprehensive measurement tools and few integrated theoretical models. This thesis addresses such methodological gaps by proposing a framework that unifies both the hider and seeker perspectives, advancing the study of KH. Combining qualitative and quantitative insights enables a more comprehensive investigation of hiding behaviors, ultimately providing theoretical and empirical clarity regarding how the dynamics of KH unfold.

To systematically address the aim mentioned above, the doctoral thesis is structured around a central research question, examining *how the perspectives of the hider and the seeker collectively shape KH*. This central question is divided into four sub-questions that align with specific research objectives (Figure 2) and are addressed in the series of publications presented in this thesis:

- Research question 1 (RQ1): What are the antecedents, outcomes, and boundary conditions of KH from both hider and target perspectives?
- Research question 2 (RQ2): What are the dominant theoretical perspectives on KH, and how do they frame the phenomenon from both hider and target perspectives?
- Research question 3 (RQ3): How does KH unfold in real time within group settings, as experienced by both hiders and targets?
- Research Question 4 (RQ4): What conceptual model can integrate hiders' and targets' perspectives to offer a more holistic understanding of KH?

The *primary objective of this thesis is to develop an integrative theoretical framework that captures both hider and seeker perspectives*. To achieve this, the study focuses on four specific objectives (Figure 2):

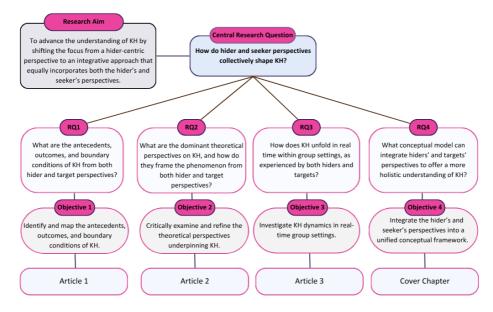


Figure 2. Overall Research Aim, Questions, and Objectives for Understanding KH from both the Hider and Target Perspectives.

Source: Composed by the author.

Objective 1: Identify and map the antecedents, outcomes, and boundary conditions of KH. This objective focuses on identifying the key individual, interpersonal, and organizational factors that trigger or mitigate KH, as well as the consequences of KH for both hiders and seekers. It is primarily addressed through the first SLR (Article 1). Drawing on peer-reviewed studies, Article 1 systematically synthesizes empirical findings to provide a comprehensive overview of how diverse contextual elements (e.g., personality traits, leadership styles, organizational cultures) shape KH. Additionally, Article 1 highlights areas where current research remains fragmented, indicating potential avenues for further investigation.

Objective 2: Critically examine and refine the theoretical perspectives underpinning KH. This objective is addressed through Article 2, which evaluates how dominant theories conceptualize KH and identify their conceptual limitations. By highlighting the hider-centric bias and the overlooked agency of targets, Article 2 calls for broader, context-sensitive models that move beyond narrowly transactional or defensive views. This foundation lays the groundwork for the integrative frameworks developed later in the thesis, highlighting how organizational actors, both hiders and targets, jointly shape knowledge flows.

Objective 3: Investigate KH dynamics in a simulated group setting. This objective aims to capture how KH behaviors manifest and evolve as multiple actors interact within a controlled environment. Article 3 examines both the hiders' actions and the targets' responses, and explores the continuous reinterpretation and renegotiation of hidden knowledge. Through these insights, the thesis emphasizes KH's fluid and socially constructed character, highlighting the importance of acknowledging seekers' perceptions and emotional reactions in dynamic group environments.

Objective 4: Integrate the hider's and seeker's perspectives into a unified conceptual framework. The final objective is to synthesize insights from three articles to offer propositions and propose a model of KH that accounts for both hider and seeker viewpoints. This integrative framework clarifies the interpretive, relational, and context-dependent dimensions of KH, offering theoretical refinement and practical guidance for designing interventions that reduce adverse outcomes.

This thesis examines KH through an exploratory lens, complemented by Process Theory (Langley, 1999), to address the limitations of dominant frameworks such as Social Exchange Theory (SET) and Conservation of Resources Theory (COR). While these theories frame KH as a rational, individual-level act, they fail to capture its interactive, fluid, and socially negotiated nature. Drawing on Sandberg and Alvesson's (2011) call for "problematization," the study challenges these static perspectives and reconceptualizes KH as a dynamic, contextually embedded process. The exploratory approach, rooted in Stebbins (2001) and Edmondson and McManus (2007), uncovers emergent patterns and relational dynamics, revealing KH as shaped by feedback loops and interpretive ambiguity. Process Theory is then employed to structure these insights, emphasizing the sequential, interactional, and evolving nature of KH behaviors. This integration moves beyond static, variance-based models, offering a temporally aware understanding of KH as a socially negotiated phenomenon.

This thesis adopts a multi-pronged methodology to investigate KH as a dynamic, socially negotiated phenomenon. Drawing on Post et al. (2020), this thesis combines integrative (gap-spotting) and generative (problematization) approaches in its SLRs, followed by an exploratory empirical study and a final phase of integration and theoretical

advancement. This multi-pronged, three-phase approach, illustrated in Figure 3, ensures that the thesis advances beyond summarizing prior research to make theoretical contributions, while addressing critical gaps and generating new insights.

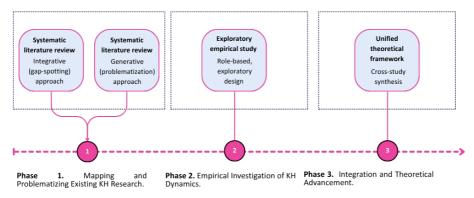


Figure 3. Overview of the Research Design.

Source: Composed by the author.

Phase 1: Mapping and Problematizing Existing KH Research. The first phase establishes the theoretical foundation through two SLRs, each adopting a distinct approach to address critical gaps in the KH literature. Article 1 employs an integrative (gap-spotting) approach to comprehensively map the antecedents, outcomes, and boundary conditions of KH (Torraco, 2016), identifying areas of consensus, disagreement, and underexplored gaps. Article 2 adopts a generative (problematization) approach, scrutinizing and challenging the taken-for-granted assumptions underlying dominant theoretical perspectives on KH (Gatrell and Breslin, 2017; Sandberg and Alvesson, 2011). By problematizing these frameworks, Article 2 reveals their limitations in capturing the relational and interpretive dimensions of KH and proposes new conceptual models that integrate the perspectives of both hider and seeker.

Phase 2: Empirical Investigation of KH Dynamics. Building on the insights from two SLRs, the second phase involves an exploratory empirical study investigating how KH unfolds in simulated group settings. Article 3 employs a role-based design involving 49 undergraduate business students in group problem-solving tasks. Participants are assigned roles as "knowledge hiders" or "seekers," allowing for real-time observation of KH behaviors and interpretations. Data collection includes pre- and post-task surveys, in-depth interviews, and direct observations, generating complementary quantitative and qualitative data. This approach captures the dynamic, interactive nature of KH, providing rich insights into how hiders and seekers negotiate knowledge exchange in simulated contexts.

Phase 3: Integration and Theoretical Advancement. The final phase consolidates insights from both literature reviews and the empirical study to create a unified theoretical framework that reflects how the perspectives of hiders and seekers jointly shape KH. This phase refines existing models to highlight KH's relational and interpretive nature by weaving together findings from gap-spotting and problematization.

The findings of this thesis provide significant contributions to both theoretical advancements and practical applications, addressing critical gaps in the understanding of KH.

Theoretically, the thesis shifts the dominant view of KH from a static, individual-level behavior to a fluid, socially constructed phenomenon. Integrating insights from two SLRs and an empirical study reveals that KH is not merely an act of hiding but a contested label shaped by interpretive processes, relational dynamics, and contextual contingencies. This processual framework challenges traditional theories, providing a more detailed understanding of how KH is defined and recognized in relational exchanges.

Methodologically, the research advances the field through its multi-pronged approach. The thesis first combines integrative and generative review strategies to map and challenge existing research systematically. Furthermore, the empirical study provides an important methodological contribution by developing a blueprint for a lab where KH can be studied systematically. This use of a role-based, immersive group task transcends the limitations of self-reported surveys by allowing for the direct observation of behaviors and interpretations, providing a more holistic view of how KH unfolds in dynamic, simulated settings.

Practically, the findings offer actionable insights for organizations, emphasizing the need to clarify communication protocols, foster trust, and engage in reflective discourse to mitigate the negative impacts of KH. By addressing the interpretive and relational dimensions of KH, this research provides a roadmap for cultivating healthier, more transparent KS environments.

The structure of this cover paper is organized into five key chapters. It begins with an Introduction that outlines the research problem, objectives, and significance of studying both seeker and hider perspectives of KH. This is followed by conceptual clarifications and distinctions, which define KH, differentiate it from related behaviors, and review relevant theoretical foundations. The Methodology section outlines the research paradigm, including its ontological and epistemological assumptions, and explains the methodological approach employed in the study. The Results section presents the findings from the three articles, highlighting their unique contributions to understanding KH. It also introduces the key propositions that further explain how KH is recognized and co-constructed by hiders and seekers. The Contributions chapter discusses the research's methodological, theoretical, and practical implications. Finally, the Conclusion section synthesizes the study's constraints, outlines avenues for future research, and summarizes the main insights.

Abbreviations

COR	Conservation of Resources Theory
KH	Knowledge Hiding
KM	Knowledge Management
KS	Knowledge Sharing
SET	Social Exchange Theory
SLR	Systematic Literature Review

1 Theoretical Foundations and Conceptual Distinctions in Knowledge Hiding

1.1 Conceptual Clarifications and Distinctions of Knowledge Hiding

KH has been widely defined in the literature, with a strong consensus coalescing around Connelly et al.'s (2012, p.65) formulation that describes it as "an intentional attempt by an individual to withhold or conceal knowledge that has been requested by another person." Multiple systematic reviews (Siachou et al., 2021; Anand et al., 2021) support this conception, positioning KH as a deliberate, individual-level behavior in which one consciously chooses not to share requested knowledge. Connelly et al. (2012) identified three distinct tactics that capture how individuals engage in KH: playing dumb (feigning ignorance), evasive hiding (offering partial or misleading details), and rationalized hiding (justifying hiding).

Although Connelly et al.'s definition dominates much of the empirical work, subsequent studies have refined or extended this core conception. Donate et al. (2022), for instance, emphasize "deceptive KH," focusing primarily on playing dumb and evasive tactics that involve deliberate misdirection. Sheidaee et al. (2022) and Haar et al. (2022) approach the phenomenon from a collective standpoint, highlighting the idea of a "KH climate" or "intra-organizational KH," where KH becomes normalized within a firm's cultural or structural practices. By contrast, Duan et al. (2022) suggest distinguishing between explicit and tacit KH, recognizing that the concealment of codified, documented knowledge differs from hiding experiential, hard-to-codify insights. Other scholars use terms like "knowledge withholding" or "counterproductive knowledge behavior," often retaining the same core idea of intentionally withholding requested knowledge (Shirahada and Zhang, 2022; Afshar-Jalili et al., 2020).

Contrasting KH's conceptual boundaries with adjacent knowledge-related behaviors (see Table 1) is essential to delineate them. One key contrast emerges with KS, which is generally defined as the voluntary provision of expertise and information, often in the interest of mutual learning and innovation (Wang and Noe, 2010; Foss et al., 2010). Because sharing need not hinge on a specific request (Van den Hooff and De Ridder, 2004), it differs from KH, which arises solely in a direct inquiry. Some scholars have equated a lack of KS with hiding, but these behaviors differ markedly in intent. If a person lacks the relevant know-how or forgets to share, that omission does not qualify as hiding; there is no intention to conceal (Peng, 2013). By contrast, KH involves possessing and refusing to disclose the requested knowledge (Hernaus et al., 2019). An employee may, for instance, knowingly withhold crucial project data by offering a deceptive promise to send it later or by citing confidentiality concerns (Connelly et al., 2012; Bogilović et al., 2017). This intentional element separates hiding from passive non-sharing that arises from time pressures or oversight (Černe et al., 2014). Furthermore, empirical evidence suggests that KH and KS can coexist, with individuals opting to share in some circumstances and conceal in others, depending on the organizational context and trust levels (Skerlava) et al., 2018; Jiang et al., 2019; Anand et al., 2021).

Partial KS, another relevant construct, can superficially resemble KH since both involve providing fragments of knowledge while withholding other details (Ford and Staples, 2010). However, partial sharing need not stem from an intention to deceive; it may reflect an incomplete understanding of a topic or limited communication time. In contrast, evasive hiding involves a calculated pretense of cooperation while deliberately concealing

key insights (Connelly et al., 2012). Similarly, some employees practice partial KS for self-serving reasons, such as protecting their competitive advantage or sustaining a distinct "expert" status within the organization (Ford and Staples, 2010). Although personal motives can drive such selective disclosure, it differs from hiding when it does not entail refusing a direct request.

 ${\it Table~1.~Comparative~Analysis~of~KH-Related~Constructs.}$

Source: Composed by the author.

Construct	Knowledge request	Key features	Communication Pattern
Knowledge Sharing (KS)	No	Proactive or voluntary sharing of relevant knowledge with others	Open and proactive exchange
Partial KS	No	Involves partial compliance (sharing some knowledge)	Selective disclosure
Disengagement from KS	No	Broader lack of initiative to share, even when knowledge is unrequested	Non-communication
Sharing Ignorance	No	Non-deliberate; stems from ignorance rather than intent to withhold	Procedural avoidance
Counter KS	No	Involves falsification (spreading incorrect knowledge)	Distorted propagation
Knowledge Hoarding	No	Focuses on stockpiling	Resource gatekeeping
Knowledge Hiding (KH)	Yes	Focuses on deliberate refusal to share requested knowledge	Evasive communication
Knowledge Sabotage	Yes	More extreme than KH; actively damages knowledge rather than withholding it	Malicious misinformation

Relatedly, KS ignorance (Israilidis et al., 2015) occurs when individuals fail to share knowledge because they do not recognize that someone needs it or remain unaware of the appropriate channels to exchange information (Serenko, 2019). This gap typically reflects procedural misunderstandings or a lack of situational awareness rather than intentionally refusing to collaborate (Peng, 2013). Disengagement from KS is another form of non-sharing behavior whereby individuals withdraw from voluntary communication, neither disseminating information nor safeguarding it as a strategic resource (Ford et al., 2015). Counter KS refers to the dissemination of inaccurate or misleading information, often due to inadequate verification or reliance on unreliable sources (Cegarra-Navarro et al., 2015; Martelo-Landroguez et al., 2019). Unlike KH, which involves explicitly withholding after a request, counter-KS typically arises from insufficient validation of facts rather than a calculated aim to deny another's needs.

Knowledge hoarding (Hislop, 2003) emphasizes a further boundary condition, as it involves storing knowledge without distributing it in response to any external prompt. Individuals engaging in hoarding may choose not to share what they know in hopes of retaining a positional advantage; however, hoarding does not always progress to hiding unless a colleague explicitly requests the withheld knowledge and the hoarder refuses to comply (Webster et al., 2008; Connelly et al., 2012). At the more extreme end, knowledge sabotage (Serenko, 2019) surpasses hiding as it deliberately seeks to harm performance by introducing false or damaging content. KH may occasionally be motivated by defensive or protective considerations (Siachou et al., 2021), but sabotage is marked by a specific intent to inflict damage on a coworker or the organization (Serenko and Choo, 2020; Perotti et al., 2022). A saboteur might intentionally falsify essential data, whereas a knowledge hider would merely withhold it, absent the active desire to cause harm.

1.2 Theoretical Foundations

1.2.1 Exploratory Approach as a Foundation for Studying Knowledge Hiding

The study of KH has traditionally been dominated by variance-based perspectives that treat the phenomenon as a set of variables with static relationships. Early studies, often grounded in theories like the SET and COR models, view KH as an individual's rational cost-benefit decision, linking measurable antecedents to outcomes in a linear fashion (De Clercq et al., 2022a; Donate et al., 2022; Haar et al., 2022). While such models have yielded important insights, they overlook the socially constructed and evolving nature of KH, especially how hiding unfolds through interactions between hiders and seekers. In other words, variance theories (Mohr, 1982) capture snapshots of *why* people hide knowledge, but struggle with understanding *how* these behaviors unfold. Recognizing this gap, the thesis adopts an exploratory research stance to study KH as an emergent, multi-actor phenomenon that cannot be fully explained by pre-defined variables alone.

Exploratory research is well-suited for domains where existing frameworks are fragmented or incomplete, as it enables the discovery of new patterns and constructs instead of forcing data into established molds (Stebbins, 2001; Edmondson and McManus, 2007). For example, Stebbins (2001, p. 12) defines exploratory research as a "broad-ranging, purposive, systematic, prearranged undertaking designed to maximize the discovery of generalizations leading to description and understanding," highlighting its role in uncovering novel insights. By adopting an exploratory stance, researchers can capture unexpected behaviors or contextual factors of KH that more rigid, confirmatory designs might overlook (Edmondson and McManus, 2007). Therefore, exploratory research provides the methodological flexibility to develop new theories in areas like KH, which lack integrated frameworks, ensuring that our theoretical foundations grow organically from empirical discovery.

At the same time, exploratory research has well-known limitations. Its qualitative, open-ended nature can introduce subjectivity in analysis, and insights derived from a specific context or small sample may lack immediate generalizability (Eisenhardt, 1989; Shah and Corley, 2006). There is a risk that findings reflect researcher bias or idiosyncratic conditions rather than broader regularities (Stebbins, 2001). Mitigating these concerns has been a key consideration in the design of the doctoral study. First, two SLRs were conducted to ground the inquiry in a comprehensive, methodical analysis of prior studies. The systematic review process, with its transparent protocols for search and inclusion, minimizes bias and enhances the reliability of insights (Tranfield et al., 2003).

Second, the empirical component (Article 3) utilizes multiple data sources, including observations, surveys, and in-depth interviews. By combining complementary data, this approach enables a more comprehensive understanding and enhances the study's overall rigor (Jick, 1979).

1.2.2 Adopting a Processual Perspective on Knowledge Hiding Dynamics

To address the limitations of variance-based accounts, the thesis turns to Process Theory as a lens for understanding KH. Process Theory conceptualizes organizations not as static configurations of variables but as ongoing processes - it directs attention to how phenomena emerge, develop, and change (Langley, 1999; Langley et al., 2013). Langley (1999, p. 691) suggests that to truly grasp "how and why events play out over time," one must examine them directly in their sequence and context, rather than only comparing variable correlations at fixed points. This perspective is especially pertinent to KH because it is not a one-off act but an unfolding social process between hiders and seekers (Chatterjee et al., 2021). Unlike traditional models grounded in SET and COR, a process view captures the iterative feedback loops and reinterpretations that occur. For instance, KH can set in motion a reciprocal distrust loop: an initial act of hiding may prompt mistrust in the knowledge seeker, who then responds in ways that further reinforce the hider's secretive behavior (Černe et al., 2014). Applying process theory to KH enables researchers to bracket episodes (e.g., one instance of hiding) and examine how they lead to subsequent reactions and evolving interpretations rather than viewing hiding as an isolated outcome.

By leveraging strategies such as temporal bracketing, event sequencing, and narrative analysis (Langley, 1999), scholars can construct process models that illustrate how KH behaviors emerge, escalate, or diminish under various conditions. Temporal bracketing involves dividing a process into distinct phases to examine how behaviors and outcomes shift over time. For example, in the context of KH, temporal bracketing can reveal how an initial act of hiding (e.g., evasive hiding) triggers a seeker's suspicion, which in turn escalates the hider's defensiveness, creating a feedback loop that perpetuates distrust.

Event sequencing, another key strategy, focuses on tracking the order and timing of interactions to identify patterns and turning points in a process (Langley, 1999). In KH research, event sequencing can illuminate how ambiguous behaviors (e.g., partial disclosures or delayed responses) lead to reinterpretations and behavioral adjustments. For instance, a seeker's initial interpretation of a hider's delay as a sign of incompetence may shift to perceived malice if the delay persists, altering the dynamics of the interaction.

Narrative analysis, the third strategy, involves constructing stories from event sequences to capture the subjective meanings and interpretations that actors attach to their experiences (Langley, 1999). This approach is particularly valuable for understanding KH, where the same act of hiding can be interpreted differently depending on relational history, power dynamics, and contextual cues. For example, a hider's rationalized KH (e.g., citing confidentiality constraints) may be perceived as justified discretion by a trusted colleague but as obstructive gatekeeping by a rival, highlighting the interpretive variability that shapes KH outcomes.

Despite its advantages, process theory has some challenges. One critique is the ambiguity in causal mechanisms that can arise in narrative-rich process accounts. Because process research often yields complex stories with numerous factors, it can be challenging to distill clear cause-and-effect relationships (Pentland, 1999). To address this, researchers can combine processual narratives with temporal bracketing (Langley,

1999) to isolate process phases (e.g., initiation, escalation, and resolution of KH interactions) and identify dominant causal patterns within each phase. Another issue is that process research often struggles with data overload due to the sheer volume of temporal and contextual details required (Langley, 1999). Researchers must simplify complex processes into manageable narratives, risking oversimplification or selective emphasis on certain events over others. For example, they can use visual mapping tools (e.g., process diagrams) to organize temporal data. Process theory is also challenged for its reliance on narrative construction, which is inherently interpretive (Tsoukas, 2017). Researchers' subjective biases may influence how events are framed, sequenced, or emphasized, potentially distorting the "true" process. Actively seeking and incorporating multiple perspectives from different individuals or data sources can help to provide a more comprehensive and less subjective account of the process (Edmondson and McManus, 2007).

2 Methodology

This section outlines the methodological foundation for investigating KH as a phenomenon co-constructed by both hider and seeker perspectives. It starts from a philosophical rationale that situates KH research within a relativist ontology and interpretivist epistemology, followed by an account of how axiological commitments inform ethical and reflexive considerations. The section then presents a multi-phase research design that blends SLRs with empirical inquiries conducted using surveys, interviews, and observations. It elaborates on the data collection procedures that draw on classical and contemporary scales. These analytical frameworks incorporate statistical and thematic techniques and strategies to address issues of validity, reliability, and generalizability.

2.1 Research Philosophy

When discussing the philosophical foundations of research, three core dimensions emerge: ontology, epistemology, and axiology (Saunders et al., 2009). Ontology probes the nature of reality (Berger and Luckmann, 1966; Burrell and Morgan, 1979), prompting scholars to ask whether KH exists as an objective, stable phenomenon or is instead a socially constructed process shaped by relational dynamics and interpretive practices. Epistemology addresses how we understand and acquire knowledge about these phenomena (Crotty, 1998; Guba and Lincoln, 1994). Researchers may pursue positivist methods, which seek objective truths through systematic observation and quantitative analysis (Phillips and Burbules, 2000), or adopt an interpretivist approach that privileges subjective meanings and qualitative insights derived from interviews and ethnographic studies (Denzin, 2001). Alternatively, a pragmatist perspective may combine both approaches to strike a balance between empirical rigor and rich contextual understanding (Creswell and Clark, 2017). Complementing these, axiology examines the role of values and ethics in research, raising questions about how researchers' beliefs, the ethical treatment of participants, and the potential impact of organizational sensitivities shape the methods of data collection and interpretation (Alvesson and Deetz, 2000; Bell and Bryman, 2007).

These three philosophical dimensions collectively shape every methodological decision in this doctoral study, shaping its design, execution, and interpretation. In the following subsections, I elaborate on the specific ontological, epistemological, and axiological stances adopted in the thesis, explaining how these foundational choices inform the methodologies deployed, the data collected, and the analytical strategies employed to advance an understanding of KH by shifting the focus from a hider-centric perspective to an integrative approach that equally incorporates both the hider's and seeker's perspectives.

2.1.1 Ontology

This thesis is grounded in a relativist ontology, positing that KH is not a fixed, universal behavior, but rather a socially constructed phenomenon that varies across contexts and relationships (Berger and Luckmann, 1966; Burrell and Morgan, 1979). Such a view rejects the assumption of a singular external reality and resonates with the notion that social facts acquire meaning within specific cultural and organizational contexts (Guba and Lincoln, 1994). In the case of KH, this implies that KH is a socially constructed process in which individuals continuously negotiate and redefine what counts as "hiding."

An action that one actor interprets as strategic discretion, perhaps aimed at protecting sensitive knowledge, can be perceived by another as a deliberate obstruction (Xiong et al., 2021).

This ontological stance directly influenced the methodological decisions and analytical strategies applied throughout the thesis. In Article 1, the gap-spotting approach does not simply aggregate or summarize existing work on KH; instead, it seeks out inconsistencies, unexplored topics, and diverse conceptualizations. This strategy reflects the relativist view that KH cannot be reduced to a single, universally measurable behavior. For example, Article 1 highlights how perceptions of withholding vary widely depending on cultural or professional norms, exposing the need to examine how subjective "construals" (e.g., fairness, strategic necessity) shape the co-construction of KH. Similarly, Article 2 deconstructs the theoretical assumptions prevailing in KH research, revealing how specific objectivist frameworks treat KH as universal and deterministic. In so doing, Article 2 reaffirms the thesis's relativist claim that KH is contested, contextual, and socially negotiated, necessitating theoretical pluralism to accommodate its fluidity and interpretive breadth. Article 3 extends this argument by demonstrating that participants' experiences and relationships critically inform their judgments about whether KH has occurred. Finally, the thesis's integrative framework, developed through abductive reasoning, draws these insights together into a model that treats KH as emergent and dynamically shaped by organizational actors. This conclusion aligns with the notion that methodological decisions should follow from and remain faithful to the thesis's underlying ontological commitments.

2.1.2 Epistemology

The epistemological foundation of this thesis is rooted in interpretivism, which posits that knowledge is not an objective reality but a subjective, context-bound construct shaped by human experiences and interactions (Schutz, 1967; Geertz, 1973). This stance rejects positivist claims of universal laws, instead prioritizing how individuals co-construct social reality through the intersubjective meaning-making process. Interpretivism directs attention to the motivations and justifications actors attach to concealment, such as retrospective reasoning ("because motives") or future-oriented intent ("in-order-to motives") (Schutz, 1967). Thus, interpretivism frames KH as a dynamic process shaped by iterative interactions rather than static events.

By engaging in reflexive observation and iterative analysis, Article 2 recognizes that the knowledge produced about KH is itself shaped by the researcher's interpretive acts (Alvesson and Sköldberg 2017). Building on these insights, Article 3 adopts an interpretivist approach that shapes both the selection and application of data collection methods. Rather than relying solely on structured instruments, Article 3 incorporates semi-structured interviews, participant observations, and open-ended questionnaires to capture the multi-layered motivations and interpretations surrounding hiding behaviors. By examining how participants discuss, frame, and justify their actions, the study moves beyond identifying fixed variables to reveal how actors co-construct and continuously renegotiate their understandings of KH. Further reinforcing this interpretivist stance is a strong processual focus, rooted in Process Theory (Langley 1999; Van de Ven and Poole, 1995), which views KH as emerging through iterative feedback loops. Each interaction or interpretation reshapes the evolving scenes of hiding, highlighting the dynamic, context-sensitive nature of KH within organizational life. By integrating these approaches, I aimed to produce a fuller, context-sensitive understanding of KH that moves beyond

narrow, static characterizations. This interpretivist stance aligns closely with my relativist ontology, ensuring that the research remains sensitive to the plurality of organizational realities in which KH takes form and meaning.

2.1.3 Axiology

Axiology addresses the values and ethical principles guiding research, influenced by one's ontological and epistemological positions (Lincoln et al., 2011). As an interpretivist who embraces a relativist ontology, I acknowledge that my personal background, scholarly interests, and assumptions about social reality inevitably shape the way I frame research questions, interpret data, and engage with participants (Ponterotto, 2005). In investigating KH, I aimed to remain transparent about these influences, maintaining reflexivity throughout the research process.

Given the socially negotiated nature of KH, ethical considerations are particularly important. For example, confidentiality and informed consent issues are essential: hiders may be reluctant to discuss specific instances of KH, and seekers may feel exposed when describing perceived KH by their colleagues. My axiology, therefore, involves minimizing risks to participants' well-being, ensuring honest disclosure of research aims, and preserving anonymity where necessary. Such commitments stem from my belief that scholarly inquiry must respect the individuals who co-create the knowledge we study.

Practical decisions, such as selecting participants or interpreting ambiguous data, are likewise shaped by the value-laden nature of my research (Lincoln et al., 2011). While striving for conceptual clarity, I remained open to alternative data readings, recognizing that "reality" is neither fully fixed nor monolithic but is partly constituted by the interpretive acts of researchers and respondents alike (Burrell and Morgan, 1979). This ethical stance resonates with my broader interpretive—processual perspective, reinforcing a commitment to understanding KH as a fluid, context-embedded phenomenon rather than a purely objective variable.

2.2 Research Design and Data Collection Methods

This thesis employed a multi-pronged, three-phase methodology to examine the phenomenon of KH. A multi-pronged methodology is a research strategy that systematically combines several distinct, complementary methods in sequential phases. The first phase involved two SLRs to map the existing KH research and identify its theoretical foundations. The second phase comprised an exploratory study to capture KH dynamics in a simulated group setting. The third phase focused on integrating findings from both prior phases and developing a theoretical framework that unifies the perspectives of both hiders and seekers. Figure 4 presents the choices underpinning each phase.

The first phase involved integrating two distinct but complementary review approaches: an integrative review (Torraco, 2016) and a generative review informed by problematization (Sandberg and Alvesson, 2011). The integrative review (Article 1) systematically synthesized empirical and conceptual studies to identify patterns, conflicts, and gaps in KH research. The second SLR (Article 2) adopted a generative, problematizing stance (Sandberg and Alvesson, 2011) and identified the assumptions underpinning the dominant theoretical perspective in KH research.

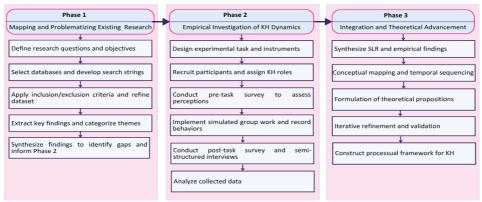


Figure 4. Detailed Three-Phase Research Process and Methodology. Source: Composed by the author.

The two SLRs followed the seminal guidelines by Tranfield et al. (2003) and integrated insights from Kraus et al. (2020) to ensure procedural rigor. A research plan was initially defined, which included specific research questions, selection of databases, relevant keywords, and inclusion and exclusion criteria. The Web of Science and Scopus databases were the primary sources, given their comprehensive coverage of business and management journals. To construct a robust search string, the key term "knowledge hiding" was combined with synonyms such as "knowledge withholding" and "counterproductive knowledge behavior," aligning with prior systematic reviews (e.g., Siachou et al., 2021). Only articles and reviews published in English, categorized under business and management, were retained, while grey literature and documents in other languages were excluded. Furthermore, a specific time period was not used as an exclusion criterion; this was a deliberate choice made to capture the entire breadth of the research field. The included studies consequently span from 2002 to 2024. Search outcomes underwent multiple screening steps, moving from a large initial sample to a final dataset containing only studies published in recognized peer-reviewed journals.

Building on the insights from the SLRs, the second phase involved an exploratory study designed to capture KH and explore how it unfolds from the perspectives of both hiders and targets (see Figure 5). The choice of this experimental, role-based methodology was a deliberate response to the limitations of dominant methods in KH research. While self-report surveys are useful for capturing broad perceptions, they often fail to reflect the dynamic, interactive nature of KH and can be subject to social desirability bias (Donaldson and Grant-Vallone, 2002; Podsakoff et al., 2003). Similarly, traditional qualitative interviews, where participants recall past KH incidents, offer distinct advantages. They are powerful for exploring the deep-seated "why" behind hiding: the organizational politics, personal histories, and complex justifications that motivate KH (Gioia et al., 2013). However, their reliance on memory is a notable limitation, as recall can be inaccurate or influenced by post-hoc rationalization (Golden, 1992). To address the need for direct observation of the "how", the moment-to-moment unfolding of KH interactions, this thesis employed a lab-based simulation. This approach enables the systematic observation of behaviors, emotional responses, and reciprocal dynamics in a controlled environment, thereby overcoming the issue of recall bias (Langley, 1999; Weick, 1989). While the controlled nature of this experimental design allows for clear and direct observation of the unfolding dynamics, it is acknowledged that a simulated setting cannot fully replicate the high stakes and deep context of a real organizational environment (Highhouse, 2009). Therefore, this method is not positioned as universally superior, but as a valuable approach specifically designed to illuminate the interactive processes that other methods cannot easily capture.

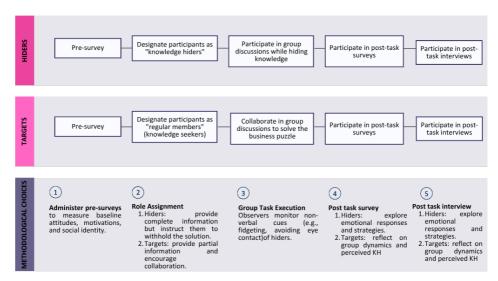


Figure 5. Parallel Pathways: Investigating KH Dynamics from Hiders' and Targets' Perspectives (Phase 2).

Source: Composed by the author.

To implement this experimental design, the study was conducted with an opportunistic convenience sample of 49 undergraduate business students in Almaty, Kazakhstan, with access facilitated through a past affiliation of one of the authors. The rationale for using a student sample was to observe the fundamental interpersonal and group dynamics of KH in a controlled setting for the purpose of theory development, rather than to generalize findings to a specific employee population. The participants' average age ranged from 20 to 23 years, and most had minimal work experience. Of the 49 students who completed the initial survey, 8 participants subsequently withdrew or did not attend the lab-based group task due to scheduling conflicts or other personal reasons, leaving a final sample of 41 participants for the group task.

The procedure began with all participants completing an online pre-survey to establish a baseline. This survey measured personality traits, social identity, expected rewards and associations, and prior engagement in KH, using established scales from Benet-Martínez and John (1998), Kwon and Wen (2009), Connelly et al. (2012), and Bock et al. (2005). The pre-survey results provided a valuable baseline, indicating that participants had a moderate sense of social identity (mean = 3.39), moderate expectations for rewards and associations (means = 3.58 and 3.48, respectively), and generally low prior engagement in KH (mean = 2.09), suggesting a cooperative classroom environment. Importantly, while hiders were selected based on a specific personality trait, t-tests confirmed there were no statistically significant differences between the hider and non-hider groups on these other key pre-task variables.

Following the survey, the 41 participants were assembled into 11 small groups for a collaborative puzzle task designed to elicit KH behavior. The task, which had a 30-minute

time limit to create reasonable pressure and ensure comparability across groups, was intended as a collaborative rather than competitive activity. This was a deliberate choice to investigate the social and emotional consequences of hiding where cooperation was the expected norm, thus isolating the effects of the hiding behavior itself. From the pool of participants, the 11 individuals who scored highest on the extroversion dimension of a Big Five personality test were assigned the role of "knowledge hider," with one hider placed in each of the 11 groups. The rationale for this purposive assignment was to heighten the internal person-role conflict for the hiders, as forcing a naturally extroverted individual into a role requiring concealment was expected to generate more pronounced and observable indicators of KH. To ensure procedural consistency and minimize experimenter bias, all participants received standardized, written instructions. Hiders were secretly given a separate instruction sheet with the puzzle's solution and were explicitly instructed to withhold this key knowledge, but were not told how to hide it, allowing their natural strategies to emerge organically. Trained observers monitored each group, recording non-verbal behaviors that might indicate discomfort. Participants were incentivized by receiving course credit for their participation; however, no additional performance-based rewards were given for successfully solving the puzzle, ensuring that motivation was driven primarily by the social dynamics.

After completing the task, participants were asked to fill out a second survey. A subset of 14 participants, including both hiders and targets, was then interviewed to gather deeper insights into their motives, emotional responses, and interpretations of the events.

The combination of observation, surveys, and interviews proved highly effective, generating a vast amount of rich, dual-perspective data that captured the complex subjective experiences of both hiders and targets. From the hiders' perspective, this included direct accounts of their emotional landscape, ranging from expressions of guilt ("I felt guilty because they kept asking me, and I knew the answer") and cognitive conflict ("It felt like I was betraying my team"), to feelings of perceived power and control ("I knew I had the upper hand by not sharing everything"). The methodology also captured a variety of observable hiding strategies, such as "playing dumb" by feigning ignorance, providing vague or partial information, and physical disengagement, including avoiding eye contact, alongside verbal tactics like misdirection.

From the targets' perspective, the data captured a spectrum of interpretations regarding the hiders' behavior. This ranged from direct suspicion of intentional withholding ("I could physically feel how he [. . .] was holding back") to alternative explanations where the same behaviors were attributed to harmless causes like shyness ("No one was hiding. But someone was afraid of discussion") or a lack of interest in the task. Collectively, this dataset provides a detailed, dual-perspective account of a KH episode, offering rich material for the full analysis presented in Section 3.

The doctoral study's final phase synthesized the SLRs' findings and the empirical article to propose a theoretical framework that captures KH as a dynamic and socially negotiated process. This phase was guided by an abductive theorizing approach, ensuring that the framework emerged from empirical observations while theoretically grounded (Timmermans and Tavory, 2012). The objective was to construct a processual model of KH that explains how KH is perceived and interpreted within organizational contexts, moving beyond static, event-based conceptualizations.

2.3 Data Analysis Techniques

The thesis adopts a multi-pronged approach to data analysis, integrating two SLRs and empirical qualitative research to explore the phenomenon of KH. Article 1 focuses on mapping antecedents, consequences, and boundary conditions of KH across 173 studies. The analysis followed grounded theory principles (Glaser and Strauss, 1967), beginning with open coding to categorize raw data into preliminary themes (e.g., individual traits and organizational politics). This stage involved extracting explicit textual references to KH predictors and outcomes. Subsequently, axial coding identified relationships between these categories, enabling the development of higher-order themes such as "attitudinal outcomes" (e.g., well-being) and "performance outcomes" (e.g., creativity). Finally, selective coding synthesized these themes into a coherent framework, visualized through thematic mapping. The mapping highlighted the research volume across domains, with line thickness denoting the frequency of studied relationships. Two authors independently coded the data to ensure reliability, resolving discrepancies through iterative discussions and third-party arbitration. This process facilitated a multi-level synthesis of KH dynamics, spanning individual, interpersonal, and organizational contexts.

Article 2 examines theoretical frameworks and assumptions underpinning KH research. The analysis began with theoretical coding, cataloging explicit references to theories (e.g., SET) within the sampled articles. Thematic analysis (Braun and Clarke, 2006) was then applied to identify recurring conceptual strands (e.g., power dynamics, trust) across studies sharing theoretical foundations. To critically interrogate implicit assumptions, the study drew on Alvesson and Sandberg's (2011) approach, analyzing how authors framed KH as an undisputed "fact" (e.g., its inherent negativity). This revealed biases, such as overlooking contextual factors that might legitimize KH. Methodological rigor was maintained through the use of standardized coding sheets and team discussions, with findings synthesized into tables and figures to enhance clarity.

Article 3 employs an inductive, exploratory approach to analyze the dynamics of KH in group settings. To build a holistic understanding of the phenomenon, the analysis drew upon complementary data from observations, surveys, and interviews. The qualitative data from observations and interviews were analyzed using the Gioia methodology (Gioia et al., 2013), which progressed through three stages. First, open coding identified first-order concepts (e.g., "guilt" or "avoiding eye contact") directly from participants' narratives and behaviors. For instance, statements like "I felt guilty because they kept asking me" were coded as emotional experiences, while observed nonverbal cues (e.g., fidgeting) were labeled as behavioral indicators. Next, axial coding grouped these codes into second-order themes (e.g., "Guilt and discomfort," "Strategies of KH"), revealing patterns such as the psychological toll on hiders or tactics like "playing dumb." Finally, aggregate dimensions (e.g., "Cognitive and emotional experiences of hiders") were derived, encapsulating broader theoretical insights. Parallel analysis of KH targets identified themes, such as "Perception of KH behaviors," based on codes like "intentional hiding," derived from interview transcripts. Visual mappings illustrated the progression from raw data to theoretical constructs, ensuring transparency and clarity. The iterative process and team discussions ensured emerging themes remained grounded in the data.

The integrative, processual framework developed in this thesis emerged through an iterative, abductive analytic process, systematically combining empirical evidence with insights derived from two SLRs. This approach involved iteratively comparing empirical observations with existing theoretical explanations, identifying discrepancies, and formulating novel theoretical propositions to resolve these anomalies, reflecting

a methodological orientation aligned with established process theorizing techniques (Langley, 1999; Gioia et al., 2013; Dubois and Gadde, 2002; Timmermans and Tavory, 2012).

The initial step involved synthesizing key concepts from qualitative data and theoretical literature. The qualitative empirical study followed rigorous coding procedures consistent with Gioia et al.'s (2013) inductive analytic approach, systematically moving from raw observations to first-order codes, second-order themes, and finally, aggregate theoretical dimensions. Concurrently, concepts extracted from the two systematic literature reviews served as sensitizing constructs (Bowen, 2006), guiding the analytical attention toward established theoretical variables, such as hider intent, seeker perceptions, KH tactics, organizational norms, and relational outcomes (Connelly et al., 2012; Černe et al., 2014; Burmeister et al., 2019). Overlaps and divergences were identified through continuous cross-comparison between these empirically derived codes and theoretically derived sensitizing concepts. For instance, the empirical findings repeatedly highlighted subtle hiding tactics, such as partial disclosures or delaying knowledge, which resonated with the existing literature (Arshad and Ismail, 2018; Offergelt et al., 2019). However, data also revealed novel insights, such as the concept of "misdirection," wherein hiders divert discussions from critical topics, circumventing direct disclosure or conflict.

Subsequently, the analysis transitioned toward systematically organizing these synthesized concepts to explicate their interrelationships and temporal sequences. Guided by Langley's (1999) process theorization techniques, particularly temporal bracketing and event sequencing, the empirical data were mapped chronologically to trace how KH interactions unfolded dynamically. This analytical step aimed to identify recurring patterns and mechanisms underlying KH episodes, examining how initial ambiguous withholding acts by knowledge hiders led to diverse interpretations among knowledge seekers, whose interpretations, in turn, influenced subsequent emotional responses and behavioral interactions. Patterns identified through process tracing and comparative pattern matching clarified sequential dynamics, highlighting iterative processes such as reciprocal feedback loops between emotional responses and relational outcomes.

Building upon this systematic mapping, explicit theoretical propositions were abstracted from the empirical and theoretical synthesis. Each proposition succinctly encapsulated key relationships observed within the empirical data, explicitly articulating the theoretical implications. For example, consistent evidence from interviews indicated frequent disagreements between knowledge hiders and seekers regarding the interpretation of ambiguous hiding acts. This prompted the formulation of Proposition 1, which states that KH constitutes a contested label, co-constructed through social interactions. Similarly, Proposition 2 emerged from empirical evidence revealing emotionally charged reciprocal dynamics between hiders and seekers, shaping the trajectory of interactions. These propositions were carefully supported by empirical evidence, including representative quotes and detailed examples, and theoretically grounded in literature such as Affective Events Theory (Weiss and Cropanzano, 1996). Thus, each proposition drew directly from the data and extended theoretical understanding by explicitly addressing previously unresolved ambiguities or theoretical gaps.

The analytical process then proceeded through iterative refinement to enhance the coherence, clarity, and robustness of the emergent theoretical propositions. Each proposition was revisited and critically evaluated against empirical evidence and alternative theoretical frameworks. Continuous refinement clarified overlapping or ambiguous constructs, and theoretical propositions were adjusted to ensure conceptual distinctiveness. For example, conceptual overlaps between emotional responses and relational consequences were delineated, ensuring each proposition represented a unique yet interconnected element of the theoretical narrative. This iterative refinement process strengthened internal consistency and reinforced the propositions' contributions relative to existing KH research, particularly highlighting the conditional nature of relational outcomes and the recursive, non-linear interactions underpinning KH dynamics.

Finally, the refined conceptual propositions and identified relational dynamics were visually encapsulated within a comprehensive, integrative framework (Figure 10). This visual representation conveys the sequential and recursive relationships among key theoretical constructs and propositions, clearly articulating the temporal dynamics and social interactions that characterize KH episodes.

2.4 Ethical Considerations

Ethical considerations are integrated into every stage of the research design to protect participant well-being, maintain academic integrity, and adhere to institutional and disciplinary standards. Because KH may involve socially sensitive or potentially stigmatizing behaviors, the study carefully delineates informed consent procedures so that participants understand the nature of their involvement, the data being collected, and the purpose of the investigation (Diener and Crandall, 1978; Bryman and Bell, 2007). Confidentiality measures, including secure data storage and anonymous responses, are employed to minimize any risks associated with disclosing organizational or personal details. Participants are assured that they retain the right to withdraw from the study without penalty, aligning with established norms in ethical research practices (Saunders et al., 2009). Where role-playing or simulated hiding scenarios are used, participants are fully debriefed afterward, ensuring transparency about the study's aims and the researcher's need to capture authentic behaviors. These ethical safeguards are not mere formalities but integral components of a methodological framework that recognizes the emotional and reputational vulnerabilities that can arise when individuals speak candidly about KH. By maintaining clear communication and protective protocols, the doctoral study strikes a balance between the imperative for academic insight and the responsibility to conduct research in a respectful and equitable manner.

3 Results

This section aligns with the thesis's primary objective of developing an integrative theoretical framework that captures both hider and seeker perspectives, guided by the central question of how these viewpoints collectively shape KH. Section 3.1 examines the key antecedents, outcomes, and boundary conditions of KH from both the hiders' and targets' perspectives. Section 3.2 examines predominant theoretical frameworks, highlighting the imbalance between hider-centric and target-centric views. Section 3.3 then examines simulated group interactions, illuminating the emotional and behavioral dynamics that shape perceptions of KH. Finally, Section 3.4 proposes an integrative, process-oriented framework that reconciles these multiple dimensions.

3.1 Antecedents, Outcomes, and Boundary Conditions of Knowledge Hiding

This section provides a comprehensive understanding of KH by integrating perspectives from both the hider and the target. It incorporates antecedents, outcomes, and boundary conditions at individual, interpersonal, team, and organizational dimensions, thus offering insights into KH dynamics (Figure 6).

At the individual level, hiders' personality traits, such as the dark triad (narcissism, Machiavellianism, psychopathy), neuroticism, and cynicism, significantly predict KH (Pan et al., 2018; Soral et al., 2022; Nguyen et al., 2022). Psychological entitlement and unmet recognition further exacerbate these tendencies, as individuals may withhold knowledge to assert dominance or avoid perceived threats to their status (Khalid et al., 2020; Alnaimi and Rjoub, 2021). Career-related insecurities, such as fear of losing competitive advantages, indispensability, or negative evaluation, as well as psychological ownership of knowledge, incentivize concealment (Butt and Ahmad, 2019; Shirahada and Zhang, 2022; Hilliard et al., 2022). Employees in early- or late-career stages are particularly prone to KH due to job insecurity or strategic career preservation (Issac et al., 2020). Additionally, a lack of confidence in one's knowledge or fear of exposing incompetence drives evasive hiding (Kumar and Varkkey, 2018; Škerlavaj et al., 2018).

At the team level, structural factors such as team faultlines (e.g., cultural, linguistic, or professional divides), complex projects, and ineffective coordination create environments conducive to KH (Ma et al., 2022; Zhang et al., 2022; Zhang and Min, 2022). Power imbalances, such as hierarchical disparities or perceived overqualification, further entrench hiding behaviors (Hays et al., 2022; Li et al., 2022).

At the organizational level, abusive, unethical, or exploitative leadership styles normalize KH as a survival tactic (Wang et al., 2021; Qin et al., 2023; Feng et al., 2022). Job design elements, including time pressure, role overload, and job insecurity, prompt employees to utilize KH as a resource-conservation strategy (Škerlavaj et al., 2018; Shoss et al., 2023; Kmieciak, 2023). Paradoxically, high job engagement or task interdependence can also lead to KH if employees perceive knowledge as a bargaining chip (Gagné et al., 2019). Reward systems prioritize individual performance over collective goals, and organizational hypocrisy or a toxic political climate can reinforce territorial behaviors (Stenius et al., 2016; Zhao and Liu, 2022). Conversely, supportive HR practices (e.g., trust-building initiatives, non-financial rewards) and procedural justice weaken KH tendencies (El-Kassar et al., 2022; Wang et al., 2022).

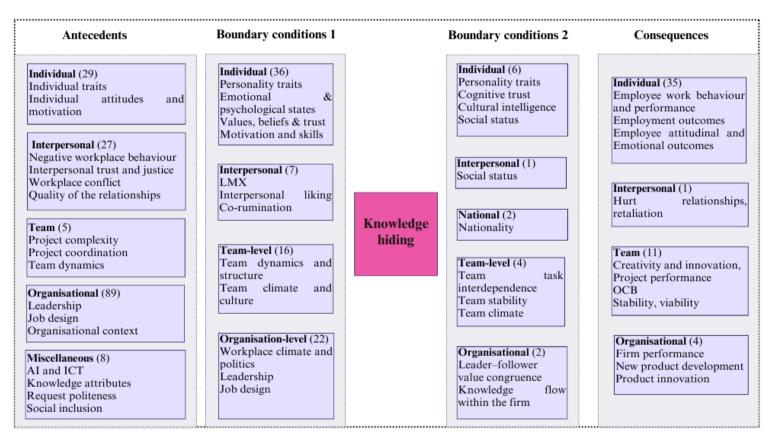


Figure 6. Key thematic areas of research in KH. Source: Composed by the author.

From the target perspective, antecedents revolve significantly around interpersonal dynamics. Request characteristics such as politeness influence the likelihood of becoming a KH target (Xia et al., 2022). Employees subjected to negative interpersonal dynamics, including gossip or relational conflicts, experience a higher incidence of being targeted for KH (Cheng et al., 2023; Khan et al., 2021). Hierarchical power imbalances increase the risk that lower-status employees will become targets, as they are more likely to have knowledge withheld by colleagues aiming to preserve their status (Issac et al., 2023).

KH generates short-term advantages for hiders, such as temporary workload reduction or perceived indispensability, particularly when employing tactics like "playing dumb" to avoid immediate demands (Khoreva and Wechtler, 2020). However, these fleeting benefits are counterbalanced by significant long-term repercussions. Persistent KH erodes interpersonal trust, damages professional relationships, and diminishes promotability, as hiders are increasingly perceived as uncooperative or self-serving (De Clercq et al., 2022b; Offergelt et al., 2019). Psychologically, hiders may grapple with guilt or cognitive dissonance, particularly when concealment conflicts with personal or organizational values, exacerbating emotional strain (Burmeister et al., 2019). At the organizational level, habitual KH stifles innovation by fragmenting knowledge flows and escalating conflicts, fostering secrecy climates that hinder collaborative problem-solving (Zhang and Min, 2019; Duan et al., 2022). For instance, teams led by leaders who hide knowledge exhibit reduced citizenship behaviors, undermining collective efficacy (Arain et al., 2022).

Targets of KH endure profound individual and collective costs. Individually, KH directly impairs creativity, task performance, and organizational citizenship behavior, as targets lack critical knowledge to execute roles effectively (Černe et al., 2017; Garg et al., 2021). Emotionally, targets report heightened frustration, psychological strain, and diminished job satisfaction, particularly when evasive hiding or rationalized excuses obstruct their workflow (Jiang et al., 2019; Offergelt et al., 2019). Repeated exposure to KH is associated with increased turnover intentions, particularly in roles that rely on collaboration, such as project management or research and development (Zhang and Min, 2022). Interpersonally, targets' distrust toward hiders often triggers reciprocal withholding, perpetuating cycles of disengagement and eroding team cohesion (Connelly and Zweig, 2015). For example, in cross-functional teams, KH diminishes stability and viability as members withdraw from knowledge exchanges to protect their interests (Ma et al., 2022).

Boundary conditions at individual, team, and organizational levels critically moderate KH. Factors such as narcissistic rivalry (De Clercq et al., 2022a), self-esteem (Agarwal et al., 2022), benevolence (Jahanzeb et al., 2021), neuroticism (Arshad and Ismail, 2018), fear of negative evaluation (Syed et al., 2021), and competitiveness (Peng et al., 2021) significantly influence individuals' responses to negative workplace behaviors and their tendency toward KH. At the team level, relational dynamics such as leader-member exchange quality and relational social capital significantly affect KH behaviors among team members (Babič et al., 2019; Banagou et al., 2021). Organizational policies and practices, including various leadership styles (Nguyen et al., 2022; Anand et al., 2023), significantly moderate the influence of various behaviors on KH.

3.2 Theoretical Perspectives on Knowledge Hiding

Article 2 reveals KH as a multilevel phenomenon shaped by interconnected individual, relational, team, and organizational forces. However, despite this complexity, the theoretical landscape remains dominated by two theories: SET and COR. The dominance of these theories stems from their explanatory power in addressing the transactional and resource conservation aspects of KH, making them convenient frameworks for operationalization and empirical validation. However, their prevalence also highlights a significant gap: these frameworks primarily emphasize the hider's perspective, often neglecting targets' experiences and active roles.

SET (Blau, 1964) conceptualizes KH as a transactional behavior driven by reciprocity norms. From the hider's perspective, KH emerges as a reactive response to perceived inequities, such as abusive supervision, exploitative leadership, or negative coworker interactions (Offergelt and Venz, 2023; Khalid et al., 2020). Conversely, positive exchanges, including supportive supervision and high-quality leader-member relationships, foster reciprocal trust and reduce KH (He et al., 2022; Feng et al., 2022; Lin et al., 2020). However, SET inadequately theorizes the roles of targets, typically depicting them as passive recipients of hidden knowledge who suffer from trust erosion (Guo et al., 2022; Donate et al., 2022). The active agency of targets, such as the aggressive pursuit of withheld knowledge or retaliation through counter-hiding, remains significantly underexplored.

COR (Hobfoll, 1989) conceptualizes KH as a defensive mechanism whereby individuals conserve psychological and emotional resources in response to stressors such as workplace ostracism, emotional exhaustion, and job insecurity (Nguyen et al., 2022; De Clercq et al., 2022a). While COR implies that targets experience resource depletion (e.g., missed learning opportunities, emotional strain) that may prompt defensive reactions, such as counter-hiding (Kmieciak, 2022), targets' resource conservation strategies, including seeking alternative knowledge sources or forming supportive alliances, are rarely theorized, demonstrating a pronounced hider-centric bias.

Minority theoretical lenses, such as psychological ownership theory and social identity theory, enrich the understanding but also maintain hider-centric biases. Psychological ownership theory (Pierce et al., 2001), for example, emphasizes territorial behaviors by highlighting how hiders protect knowledge perceived as proprietary, particularly to safeguard expertise-based status (Wu and Liu, 2023; Singh, 2019; Peng, 2013). Yet, psychological ownership theory seldom addresses targets' experiences, such as their responses to territorial guarding or efforts to negotiate access. Social identity theory (Tajfel and Turner, 1979) explores how strong organizational identification reduces interdepartmental concealment, positioning KH as a tool to assert group distinctiveness (Zhao et al., 2019; Strik et al., 2021). However, it often overlooks the targets' strategies for bridging these divisions, such as fostering cross-team collaboration or trust-building.

Additional theories, such as self-determination (Deci and Ryan, 2012) and affective events theories (Weiss and Cropanzano, 1996), further diversify conceptualizations. The former identifies unmet psychological needs (autonomy deficits) as key drivers (Shirahada and Zhang, 2022), while the latter explores the emotional responses that shape targets' reactions to key drivers of KH (Xia et al., 2022). Despite recognizing the importance of emotional and motivational factors, empirical exploration of these theoretical applications remains limited.

In summary, we can conclude that the existing literature predominantly conceptualizes KH through four hider-centric lenses: as a social behavior governed by

reciprocity norms (e.g., Lin et al., 2020; Offergelt and Venz, 2023), a defensive mechanism against resource depletion (e.g., Kmieciak, 2022), an individual-driven act motivated by intrinsic factors (e.g., Shirahada and Zhang, 2022; Zhang and Min, 2021) and behavior driven by other factors such as job design (Qin and Cooke, 2023) and psychological contract breaches (Kmieciak, 2023). Targets' roles in these conceptualizations, whether in shaping reciprocity norms, experiencing resource losses, or responding strategically, are rarely explicitly theorized.

Four dominant assumptions, namely, that KH is negative, objective, reactive, and relational, dominate much of the current literature; yet, these assumptions restrict the field in several ways. First, KH is predominantly portrayed as negative, emphasizing its detrimental effects on trust, innovation, and performance (e.g., Černe et al., 2017; Garg et al., 2021); however, recent studies suggest KH may occasionally serve adaptive ends, such as offering short-term stress relief (Venz and Nesher Shoshan, 2022) or protecting unique knowledge for competitive advantage (Khoreva and Wechtler, 2020). Second, KH is often treated as objective and quantifiable, focusing on observable acts such as evasive tactics or "playing dumb" (e.g., Offergelt et al., 2019; Wu and Liu, 2023). This focus underplays the subjective experiences of both hiders and targets, overlooking how individuals may interpret, rationalize, or appraise hidden knowledge (Connelly and Zweig, 2015). Third, KH is often framed as reactive, triggered primarily by negative stimuli (e.g., abusive supervision, workplace ostracism); while this lens is valid, it neglects how KH can also be employed proactively as a calculated strategy for future leverage or reputation management (Hernaus and Černe, 2022). Finally, KH is conceptualized as relational, arising from interpersonal exchanges within teams or between leaders and members. Still, such a view risks overshadowing broader contextual pressures, like disruptive technologies, market competition, or organizational restructuring, that also shape individuals' decisions to hide or share knowledge (Arias-Pérez and Vélez-Jaramillo, 2022).

These four assumptions tend to foster a hider-centric bias that neglects the targets' active roles. Rather than merely being recipients of hidden knowledge, targets can engage in counter-hiding, negotiate for improved access, or form strategic alliances, thereby significantly influencing the dynamic and reciprocal interactions that shape organizational knowledge flows. Moving beyond these limiting assumptions requires balancing objective, stress-based, and relational explanations with deeper explorations of subjective, future-oriented, and context-specific perspectives.

3.3 Observing Knowledge Hiding Dynamics: An Exploratory Study of Hider-Target Interactions in a Simulated Group Setting

Article 3 demonstrates that KH is not merely a straightforward act of KH but involves a range of emotional responses, strategic maneuvers, and often misinterpreted behaviors. As illustrated in Figure 7, hiders face substantial emotional and cognitive conflict when engaging in KH, navigating complex experiences that range from guilt and internal discomfort to perceived power and control. Many hiders reported experiencing guilt, internal conflict, and discomfort due to the inherent contradiction between their role as hiders and their natural inclination to collaborate and support their peers. The emotional discomfort was notably pronounced among hiders with stronger social connections to their group members, indicating that the quality of interpersonal relationships moderates the emotional experiences of KH.

For instance, some participants described their emotional discomfort vividly, reporting feelings of guilt when directly confronted with requests for knowledge that they possessed but intentionally withheld. This emotional distress is frequently translated into observable nonverbal behaviors, such as avoiding eye contact, fidgeting, physical withdrawal, and hesitations in speech. These manifestations provided real-time evidence of the psychological strain associated with KH, revealing an ongoing cognitive conflict in balancing their role-defined objectives with their instinctive cooperative behaviors. Interestingly, not all knowledge hiders experienced emotional discomfort to the same extent; some participants reported minimal emotional repercussions, particularly when they perceived their social ties within the group as relatively weak. In such cases, the lack of strong interpersonal bonds appeared to mitigate feelings of guilt or internal conflict, thereby facilitating the KH process with less emotional friction.

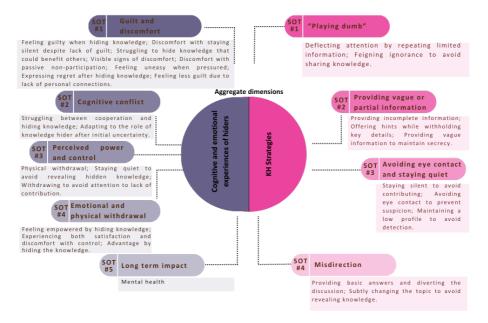


Figure 7. Data structure: Cognitive and emotional experiences of hiders and their KH strategies. Source: Composed by the author.

Note: SOT = Second Order Theme.

Hiders employ diverse behavioral strategies to manage these internal tensions effectively in real-time settings, including evasive hiding, playing dumb, misdirection, and physical or verbal withdrawal. Evasive hiding involves providing incomplete or ambiguous knowledge without explicitly rejecting requests. Similarly, "playing dumb" represents a strategy in which hiders feign ignorance or confusion to minimize contribution expectations. Misdirection further allows hiders to steer conversations away from sensitive or crucial topics, enabling them to avoid confrontation or disclosure. Physical and verbal withdrawal, characterized by reduced interaction, avoiding eye contact, or minimizing participation, additionally serves as a passive yet assertive method of preventing suspicion and maintaining the appearance of neutrality. The strategic implementation of these behaviors further underlines the contextually adaptive nature of KH within dynamic social environments.

Interestingly, while hiders experience pronounced emotional and cognitive struggles, targets frequently struggle to detect or interpret KH behaviors. Figure 8 illustrates the complex relationship between observed nonverbal discomfort cues exhibited by hiders and the degree of suspicion among targets. Targets often misattribute overt signs of discomfort, such as hesitation, nervous gestures, fidgeting, or physical withdrawal, to harmless causes, such as shyness, disinterest, or general social anxiety. This misinterpretation is particularly evident in groups that exhibited high emotional and physical discomfort cues yet reported low suspicion from the targets, who rationalized these behaviors as harmless or unintentional. Conversely, moderate levels of discomfort elicited higher suspicion, demonstrating a non-linear and context-dependent interpretative process among targets. Such findings indicate that targets' suspicions are not directly proportional to the explicitness of behavioral cues but rather mediated through subjective interpretive frameworks shaped by contextual and interpersonal dynamics.

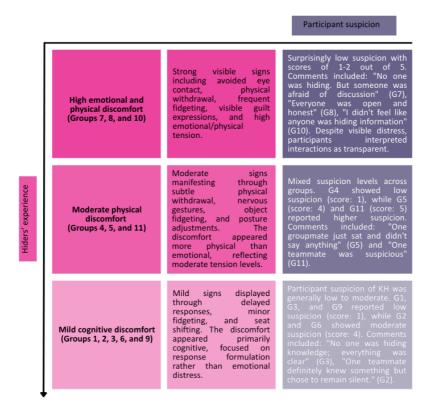


Figure 8. Participant suspicion of KH compared to observed discomfort levels. Source: Composed by the author.

Further examination of participant perceptions, as presented in Figure 9, reveals thematic patterns in how targets interpret KH behaviors during interactions. Nonverbal behaviors, notably body language and facial expressions, emerge as crucial signals for detecting KH. Targets who perceived intentional withholding often relied upon observing inconsistencies between verbal statements and nonverbal cues, such as tension in

posture, reluctance in eye contact, or observable hesitation during conversation. Nevertheless, targets also frequently misread these signs, attributing them instead to personal characteristics such as discomfort, a lack of confidence, or a mere absence of relevant knowledge. Some participants adopted empathetic interpretations, perceiving silence or reluctance as indicative of situational or emotional constraints rather than deliberate KH. This empathetic stance further illustrates how the interpretative process by targets significantly shapes the perceived severity and consequences of KH within group settings.

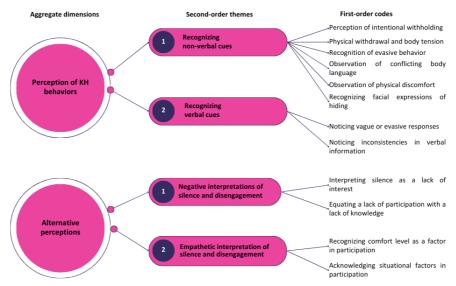


Figure 9. Thematic insights into participant perceptions of KH. Source: Composed by the author.

Collectively, these findings emphasize that KH, as observed in the simulated group interactions of this study, is a contextual, emotionally charged, and socially embedded phenomenon. Hiders consistently grapple with internal emotional tensions, cognitive conflicts, and psychological stress. Simultaneously, targets navigate ambiguous and often conflicting cues, frequently misinterpreting or failing to accurately identify KH behaviors. The dynamic and reciprocal relationship between hiders' internal states, observable behaviors, and targets' interpretative processes thus highlights KH not simply as a conscious strategic choice but as a social process deeply intertwined with interpersonal perceptions, emotional sensitivities, and contextual details (Tokyzhanova and Durst, 2025).

3.4 Toward an Integrative, Processual Framework of Knowledge Hiding

Based on the findings detailed in Articles 1–3, addressing research questions RQ1–RQ3, this section synthesizes critical insights into the interplay between hider and seeker perspectives, capturing the complexity that characterizes KH behaviors in organizational contexts. Building on these insights, an integrative processual framework will be developed that conceptualizes KH as a dynamic, interpretively negotiated process unfolding through distinct yet interrelated stages.

Although prior research predominantly conceptualizes KH from a hider-centric perspective, characterized by explicit and deliberate withholding actions, the findings across these studies illuminate significant gaps and anomalies that arise when integrating the relatively overlooked seeker perspective. Empirical evidence consistently underscores that KH is not merely a straightforward, objective act of hiding but rather involves considerable interpretative ambiguity and variability, depending on the seeker's perceptions, relational contexts, and organizational narratives. Such variability challenges existing theoretical assumptions, which typically posit clarity of intent, linearity of outcomes, and unilateral agency on the part of the hider. Thus, integrating seeker-centric insights broadens our conceptual lens, allowing us to appreciate the socially constructed, relationally contingent, and contextually dynamic nature of KH. To systematically articulate and bridge these divergent perspectives, I constructed Table 2, which delineates key dimensions, including behavioral ambiguity, outcome determinism, legitimacy dynamics, and methodological focus, comparing how the dominant hider-centric and emergent seeker-centric frameworks distinctly conceptualize each.

Table 2. Key Dimensions Bridging Hider-Centric and Seeker-Centric Perspectives on KH. Source: Composed by the author.

Dimension	Hider-Centric Perspective	Seeker-Centric Perspective	
Nature of KH	Objective act: Defined by deliberate withholding (e.g., evasive hiding, playing dumb).	Subjective interpretation: Labeled based on cues.	
Behavioral Ambiguity	Emphasizes explicit strategies; assumes clarity in intent.	Highlights ambiguity and misinterpretations (e.g., attributing evasion to shyness or incompetence).	
Outcome Determinism	Assumes linear causality; KH leads to predefined negative outcomes (e.g., distrust, reduced innovation).	Consequences are relationally dependent, varying with seekers' interpretations and reactions.	
Legitimacy Dynamics	Framed as self-defense, legitimacy derived from the hider's motives and contextual justifications.	Framed as a betrayal, legitimacy is contested through power dynamics, interpretations, and social narratives.	
Agency and Interaction	The hider is the active agent making unilateral withholding decisions.	Seekers actively interpret and respond to behaviors; emphasize dyadic and interactive dynamics.	
Methodological Focus	This view uses self-reports and experimental and cross-sectional designs to isolate hider behavior.	This view uses dyadic methods, qualitative interviews, and observational approaches to capture relational and interpretive complexity.	

The comparative dimensions presented in Table 2 demonstrate that existing KH research predominantly adopts a hider-centric lens, emphasizing objective withholding behaviors, deliberate intentions, and linear outcomes. However, empirical evidence strongly indicates that KH is far more ambiguous, contextually variable, and interpretatively complex than previously assumed. These empirical anomalies, discrepancies between objective descriptions by researchers and subjective interpretations by organizational actors, prompted the abductive theorizing that guides the integrative framework developed in this doctoral study.

Addressing these complexities, I propose an integrative framework that treats KH as a dynamic social process involving continuous interactions and interpretations between hiders and seekers. Rather than viewing KH as a singular event, the framework recognizes sequential stages: from initial hiding to labeling the behavior to the emotional and relational sensemaking by those involved, and ultimately to the relational and organizational outcomes. This process-oriented framework systematically groups interactions into discrete, analytically meaningful phases based on Langley's (1999) process theorization strategies, particularly temporal bracketing and event sequencing. Such an approach clarifies how early interactions and interpretations influence later developments, revealing feedback loops and emergent outcomes often overlooked by static, linear models.

In the following sub-sections, I present these sequential stages in detail and specify how each contributes to the evolving KH process. At each stage, I offer propositions to capture the dynamics between hiders and seekers, culminating in the integrative framework presented in Figure 10, which illustrates how their ongoing exchanges continuously reshape the trajectory and consequences of KH over time.

Stage 1: Initial Hiding – The Triggering Act

Every episode of KH begins with an initial trigger: a situation in which a person hides knowledge that someone else has requested. This triggering act may be overt (an outright refusal) or, more frequently, subtle and ambiguous. Research shows that knowledge hiders often rely on indirect strategies, for instance, giving partial answers, playing dumb, or providing misdirection (Connelly et al., 2012; Černe et al., 2014). Such behaviors create ambiguity around the hider's true intent. From the seeker's perspective, it may not be immediately apparent whether the hiding is intentional or due to other reasons (e.g., the hider lacking the answer, misunderstanding the question, or being momentarily busy) (Arshad and Ismail, 2018). This interpretive uncertainty is crucial, as it influences whether the seeker even labels the act as KH. The initial stage is, therefore, characterized by perceptual gaps: the hider knows their intent, but the seeker can only observe the behavior and infer meaning (Connelly and Zweig, 2015).

Notably, the initial act of hiding is often closely tied to context and motive. Hiders might be driven by self-protection (e.g., guarding job security or confidential data) or situational factors (e.g., time pressure, interpersonal distrust), which influence how the act is carried out (Rhee and Choi, 2017). For instance, a hider concerned about maintaining a cooperative image may mask hiding as forgetfulness or delay. Likewise, seekers enter the situation with a prior relationship history and expectations. A seeker who trusts the knowledge holder might initially give the benefit of the doubt ("Perhaps they genuinely don't have the information right now"), whereas a seeker already suspicious or under pressure might immediately view the withholding as problematic. Thus, Stage 1

provides the raw event, knowledge that is not shared when requested, which serves as the seed for later sensemaking. The key point is that this trigger is inherently social and context-dependent, containing ambiguity that will be interpreted in the next stage rather than a self-evident instance of KH to all involved.

Stage 2: Labeling and Sensemaking – Interpreting the Hiding

In the second stage, both the knowledge hider and seeker try to interpret and make sense of the initial act of KH. Prior research highlights that many KH tactics, such as evasive answers, delaying responses, or "playing dumb," do not necessarily make the hider's intentions transparent (Connelly et al., 2012; Arshad and Ismail, 2018). These actions often seem minor and are difficult to distinguish from ordinary workplace distractions, such as forgetfulness, lack of focus, or inadequate knowledge (Wen et al., 2022).

From the seeker's perspective, this creates a dilemma: Was knowledge intentionally withheld, or was the behavior innocent? Studies suggest that in ambiguous situations, seekers frequently offer the benefit of the doubt and find harmless reasons for the behavior, attributing it to workload, stress, or confusion rather than deliberate concealment (Connelly and Zweig, 2015; Burmeister et al., 2019). Arshad and Ismail (2018) show that such subtle KH forms often go unnoticed precisely because they lack clear intent. Particularly when the seeker trusts the hider or contextual cues suggest a reasonable explanation, the act may never be labeled as KH. This pattern is supported by Tokyzhanova and Durst (2025), who found that even when hiders displayed nonverbal behaviors, such as hesitation, physical withdrawal, or vague speech, seekers rarely interpreted these cues as intentional hiding. Instead, they attributed the behavior to personal discomfort or low confidence, mainly when the hider appeared nervous or socially anxious.

Moreover, the tendency to downplay ambiguous KH is magnified when trust is high. Seekers who perceived the hider as generally cooperative or well-intentioned often rationalized the behavior as situational (Tokyzhanova and Durst, 2025). However, when relational cues, such as past conflict, strategic competition, or perceived arrogance, were present, seekers were more likely to frame the same behavior as deliberate hiding (Serenko and Bontis, 2016; Tokyzhanova and Durst, 2025). Thus, the perception of hiding is not solely based on what was done but on how it is framed and situated within the relational and organizational context.

The hider's perspective is equally shaped by interpretation. Hiders rarely perceive themselves as unethical actors; instead, they justify their behavior through internal rationalizations (Connelly et al., 2012). Common justifications include confidentiality requirements, protection of sensitive knowledge, fear of being exploited, or a lack of confidence in the knowledge to be shared (Kumar Jha and Varkkey, 2018; Serenko and Bontis, 2016). These rationalizations help the hider manage potential cognitive dissonance and maintain a positive self-concept, even while engaging in behaviors that could be interpreted as withholding. Notably, some hiders report feelings of guilt or discomfort, suggesting a tacit recognition that their actions may not be universally accepted, even if they believe the behavior was justifiable (Offergelt et al., 2019).

This interpretive variability reveals an important insight: an action is not automatically KH. It becomes KH only when it is interpreted and labeled as such through social interaction between the involved parties. The act of hiding knowledge, especially when ambiguous, may not carry the label of KH until a seeker attributes harmful intent, a hider

acknowledges wrongdoing, or both parties come to share a narrative that the behavior breached expectations. In this sense, KH is not a fixed property of the act but an emergent meaning negotiated between actors. Thus, I propose:

Proposition 1: Knowledge hiding is a contested label co-constructed by hiders and seekers.

Whether an act is defined as KH depends on how both parties interpret it; hiders may rationalize or downplay the behavior, while seekers may accept or reject alternative explanations depending on their expectations, trust, and relational context. The same act of withholding can be labeled in conflicting ways, and relational cues, contextual factors, and individual sensemaking processes often shape this divergence. Therefore, the label KH is not inherent in the act but arises through the interpretive dialogue between actors.

Stage 3: Emotional and Behavioral Responses - Dynamics of Interaction

The third stage captures the emotional dynamics that unfold after the initial sensemaking process. Once hiders and seekers have interpreted and labeled the incident, they react emotionally and behaviorally. These reactions are not isolated but interact in a reciprocal loop. What each party does next is shaped by their interpretation of the event and, in turn, influences the other's ongoing response. This stage represents a critical inflection point where private interpretations collide in the dyadic interaction, generating relational consequences and potentially shifting the trajectory of the episode.

From the seeker's side, perceiving KH can prompt various emotional and behavioral responses, though the intensity and outcome may vary across contexts. If the seeker interprets the act as intentional concealment, they may experience anger, frustration, or betrayal, emotions that stem from the perceived breach of trust and cooperative norms (Connelly and Zweig, 2015; Lin et al., 2023). These negative affective responses frequently translate into retaliatory or avoidant behaviors. For instance, the seeker might confront the hider, withdraw from collaboration, or initiate reciprocal withholding in future interactions. Research grounded in SET supports this tit-for-tat logic: individuals who feel denied or excluded from valuable knowledge resources tend to reciprocate with similarly defensive or punitive actions (Arain et al., 2020; Cerne et al., 2014). The degree of emotional intensity also depends on the type of hiding involved: evasive hiding, which is more deceptive, often leads to stronger anger than more ambiguous tactics, such as playing dumb (Burmeister et al., 2019).

Conversely, the emotional impact may be minimal if the seeker perceives the incident as harmless, attributing the KH to factors such as workload, stress, or forgetfulness. In such cases, the seeker might feel mild confusion or disappointment but not personal offense. Particularly in high-trust relationships, the seeker may extend the benefit of the doubt and maintain cooperation (Tokyzhanova and Durst, 2025; Wen et al., 2021).

Simultaneously, the knowledge hider undergoes their emotional trajectory. If the hider engages in deliberate concealment, they may feel guilt, anxiety, or fear of discovery, especially when relational norms of reciprocity and cooperation are violated (Lin et al., 2023). These moral emotions can prompt corrective behaviors. Hiders who feel guilty may later attempt to "make it right" by offering assistance or disclosing withheld knowledge (Islam et al., 2022; Pan et al., 2024). On the other hand, hiders who feel justified, particularly in cases of rationalized hiding, may not experience guilt at all and may instead adopt a defensive posture if questioned (Islam et al., 2022). Their emotional

stance will influence whether they escalate the concealment or move toward reconciliation.

Significantly, emotional responses are powerfully shaped by the other party's behavior. A diary study by Xia et al. (2022) found that knowledge hiders' emotions are directly influenced by the tone of the seeker's request. Polite, respectful requests tended to evoke positive emotions in hiders, reducing the likelihood of hiding. In contrast, aggressive or rude requests triggered anger, increasing the possibility of concealment. This demonstrates the interdependent nature of emotional regulation in KH episodes: the seeker's approach can either de-escalate or exacerbate the hider's defensive impulses.

Taken together, these patterns generate a feedback loop. The seeker's negative emotion and confrontational behavior may provoke defensiveness or further hiding by the hider, reinforcing the initial distrust. Conversely, a calm and tolerant response from the seeker may trigger a conciliatory response from the hider, potentially resolving the incident. Over time, these reciprocal exchanges can stabilize into ongoing, cooperative, or adversarial relational patterns (Cerne et al., 2014; Jahanzeb et al., 2019).

Insights from broader interpersonal literature reinforce this view. Affective events theory suggests that initial violations (such as denied knowledge) trigger emotions that shape subsequent interpersonal behavior, leading to cycles of interaction (Weiss and Cropanzano, 1996; Wen et al., 2021). Moreover, workplace studies show that guilt following relational transgressions often leads to restorative behaviors, while perceived injustice results in retaliation (Pan et al., 2024; Islam et al., 2022). In the context of KH, these dynamics reveal how micro-interactions between hiders and seekers determine whether the situation escalates into conflict or dissolves into mutual understanding. Thus, I propose:

Proposition 2: The hider's and seeker's emotional reactions and behaviors intertwine to shape the trajectory of the knowledge hiding episode.

In particular, perceived intentional hiding by the seeker triggers defensive or retaliatory responses, while perceived harmless withholding leads to more neutral or forgiving reactions. At the same time, the hider's emotions (e.g., guilt, anxiety, defensiveness) influence whether they attempt to de-escalate or further justify the withholding. Therefore, the episode's course is not determined by the hider alone but is co-constructed through the ongoing emotional and behavioral exchanges between actors.

Stage 4: Relational Consequences – Outcomes of the Episode

In the fourth stage, the hider-seeker interaction culminates in a relational outcome — an emergent consequence shaped by the sequence of preceding interpretations, emotions, and behaviors. A core insight of this model is that KH outcomes are not deterministic. Rather than being an automatic result of the act, they depend on how both parties interpret and respond to the event. This interactional perspective challenges traditional assumptions that KH invariably damages trust and undermines collaboration. One common outcome is relational degradation, especially when the interaction spirals into suspicion and retaliation. If the seeker interprets the act as intentional hiding and the hider remains defensive, mutual distrust often follows. This relational damage manifests behaviorally: future knowledge exchange becomes strained, and both parties may disengage from collaboration. Trust, a key enabler of KS, is particularly vulnerable

once deception is perceived. This breakdown in interpersonal trust can spread to other team members and often leads to tangible performance issues. Černe et al. (2014) identified a "reciprocal distrust loop," where an initial act of hiding triggers retaliatory withholding, creating a cycle of relational and cognitive withdrawal that can damage both individual and team creativity. Likewise, research indicates that KH contributes to a loss of psychological safety, particularly in competitive environments (Jahanzeb et al., 2019; Arain et al., 2020).

However, negative consequences are not inevitable. The fallout may be minimal when the earlier stages are navigated with interpretive flexibility or emotional regulation. Tokyzhanova and Durst (2025) showed that ambiguous KH is often misperceived or reframed as circumstantial, meaning that many incidents do not escalate into conflict. If the seeker offers a generous interpretation or the hider provides a valid justification after the fact, the situation may be resolved without long-term harm. Similarly, when rationalized hiding is perceived as necessary (such as protecting sensitive knowledge or complying with policy), it may be seen as legitimate rather than obstructive (Sofka et al., 2018; Xiong et al., 2021; Di Vaio et al., 2021). The relationship can remain stable or improve if the episode prompts open dialogue or mutual clarification.

In some cases, relational consequences are asymmetric. One party may believe the incident was resolved, while the other silently harbors doubt or frustration. For instance, the hider might feel justified and assume no damage occurred, while the seeker withdraws emotionally or avoids future collaboration. These mismatches, where parties differ in how they frame the same incident, can lead to subtle breakdowns in trust and cooperation, even when overt conflict is absent (Khoreva and Wechtler, 2020; Bari et al., 2019).

Notably, the relational context moderates the effects of KH. In high-trust environments, a single instance of hiding may be viewed as a harmless deviation; in low-trust settings, it may confirm preexisting suspicions and catalyze a relational rift. Research shows that supportive climates, fairness norms, and psychological safety can buffer the negative impact of KH (Wen et al., 2021; Burmeister et al., 2019). Conversely, environments marked by rivalry or unclear norms about sharing exacerbate the consequences of ambiguous or contested withholding.

In sum, the aftermath of KH is not an automatic effect of hiding but the result of a dynamic co-construction between the hider and seeker. The consequences are shaped by the emotional and behavioral exchanges across prior stages, the meaning both actors assign to the event, and the broader organizational context.

Proposition 3: The consequences of a knowledge hiding episode are an emergent, relational outcome of the hider—seeker interaction.

An adverse outcome (e.g., reduced trust, reciprocal hiding, impaired collaboration) is likely when both parties converge on a hostile interpretation: the seeker believes they were deliberately wronged, and the hider maintains a defensive stance. In contrast, the negative trajectory may be avoided or mitigated if the interaction is interpreted more generously, e.g., the hider justifies their behavior, or the seeker does not perceive harm. KH outcomes are thus not inherent to the act but result from how the actors involved co-construct and respond to the incident over time.

Stage 5: Feedback and Evolution – Toward Ongoing Cycles

No single episode of KH exists in isolation. The final stage of the proposed framework highlights how each KH incident feeds into future relational dynamics between the hider and seeker through its interpretation and consequences. Rather than marking an endpoint, the outcome of one episode becomes the starting point for subsequent interactions. Over time, repeated exchanges can establish stable behavioral patterns, either escalating into cycles of continued hiding and mistrust or stabilizing into mutual understanding and cooperation.

If the outcome of a KH episode in Stage 4 involved unresolved tension or damaged trust, this often sets the stage for further defensiveness or concealment. The seeker, now wary, may avoid direct requests, approach the hider with skepticism, or engage in preemptive withholding. Likewise, the hider may respond to perceived suspicion with renewed evasiveness or justification for non-sharing. This interactional dynamic creates a feedback loop in which prior behavior becomes self-reinforcing. Černe et al. (2014) conceptualize this as a reciprocal distrust loop, where each party's past actions inform and justify their future withholding, making knowledge exchange increasingly rare.

Empirical evidence suggests initial KH incidents can trigger retaliation or defensive hiding cycles. Bogilović et al. (2017) found that KH can diminish the hider's performance outcomes due to retaliatory responses, seekers withhold in return, creating a downward spiral of non-cooperation. Similarly, Arain et al. (2024) highlight how KH initiates affective and behavioral responses that persist over time, often leading to entrenched non-sharing norms. This cycle can expand beyond the original dyad in team settings, influencing group dynamics and creating climates where secrecy becomes the norm rather than the exception.

However, these cycles are not inevitable. The absence of escalation, or the development of a stable understanding, is also possible. When initial KH is perceived as rationalized (e.g., due to confidentiality or timing constraints), and when actors maintain perspective, the episode may be resolved without long-term damage. Burmeister et al. (2019) showed that rationalized hiding, where an apparent and acceptable reason is provided, does not provoke retaliation and often preserves trust. In such cases, the hider and seeker return to a baseline of everyday interaction. Moreover, if a hider later offers an explanation or shares knowledge, and the seeker responds without suspicion, the relationship may grow more resilient through conflict resolution (Khoreva and Wechtler, 2020).

Research on organizational and interpersonal dynamics supports this possibility. Longitudinal and process studies increasingly suggest early interactions between colleagues set trajectories that spiral or stabilize (Fauzi, 2022; Zhang et al., 2023). If early exchanges are characterized by openness, tolerance, or clarification, even amid a KH incident, the cycle may be short-circuited before it becomes entrenched. A single act of generosity, transparency, or emotional repair can alter the relationship path, reducing the likelihood of future concealment.

This stage also highlights the meaning of path dependence: once a pattern is set in motion, it often repeats unless deliberately disrupted. Over multiple encounters, these interactions form either a vicious cycle of escalating secrecy or a virtuous cycle of restored and sustained trust. The hider and seeker are active agents in reinforcing or transforming these patterns. This insight extends the classic SET by emphasizing temporality and sequence, early moves matter, and trajectories are shaped by what happens and how the sequence unfolds and is interpreted over time.

Proposition 4: Knowledge hiding interactions evolve into reinforcing cycles of continued hiding or resolve into stable understanding, depending on the patterns established in the initial episode.

When early interactions are marked by defensiveness, suspicion, or retaliation, they tend to lock into a self-confirming loop; future knowledge exchanges are then interpreted through the lens of past withholding, reinforcing secrecy and mistrust (Černe et al., 2014; Bogilović et al., 2017; Arain et al., 2024). Conversely, when actors adopt forgiving interpretations or clarify their motives, the cycle may be interrupted, restoring the relational baseline or fostering a new, more open equilibrium (Burmeister et al., 2019; Khoreva and Wechtler, 2020). Proposition 4 emphasizes that KH is not merely a one-off incident, but a relational trajectory — an evolving social pattern shaped by initial behaviors and their recursive consequences.

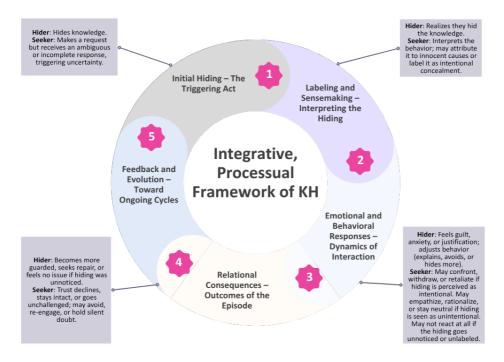


Figure 10. Integrative, processual framework of KH. Source: Composed by the author.

Figure 10 illustrates the integrative, processual framework of KH, synthesizing the sequential, relational, and interpretive dimensions of KH as they emerge across five distinct stages. Drawing on empirical findings from Articles 1–3 and informed by process theorization, the framework conceptualizes KH not as a discrete, objectively observable act but as a socially co-constructed phenomenon shaped by ongoing interactions between the knowledge hider and seeker.

The framework maps the temporal flow of a typical KH episode, from the initial act of withholding (Stage 1) through interpretive labeling and sensemaking (Stage 2), emotional and behavioral responses (Stage 3), and relational consequences (Stage 4), culminating

in the longer-term feedback loops and emergent patterns that may stabilize or escalate (Stage 5). At each stage, the figure distinguishes between both actors' perspectives and possible reactions. This dual focus reveals how meaning, judgment, and outcome are contingent on interpretive alignment or misalignment between the hider and the seeker.

4 Contributions

This section outlines the thesis's methodological, theoretical, and practical contributions.

4.1 Methodological Contributions

The thesis contributes methodologically by integrating two complementary review strategies and employing a role-based, immersive group task to capture KH in action systematically. The first contribution lies in the synergistic combination of integrative (Article 1) and generative (Article 2) literature review methodologies. Following Torraco (2016), the integrative review systematically mapped the KH literature across 173 studies to identify patterns, conflicts, and gaps. Integrative synthesis alone risks reinforcing established assumptions (Post et al., 2020). In response, Article 2 incorporates a generative, problematizing approach (Alvesson and Sandberg, 2011), explicitly challenging the implicit assumptions embedded within dominant KH theories.

Together, these review strategies offer methodological value that exceeds what either could accomplish alone (Post et al., 2020; Wittenberg et al., 2024). The integrative review revealed a narrow framing of KH as uniformly negative (e.g., reduced innovation and turnover intentions). In contrast, the generative review attributed this bias to an overreliance on theories like SET and COR, which both treat KH as a transactional loss or defensive act. By dissecting such assumptions, the reviews expanded the conceptual boundaries of KH, highlighting contexts where hiding knowledge may be proactive or strategically beneficial.

The second significant methodological contribution is the development of a blueprint for a lab-based study of KH, based on the immersive, role-based group task detailed in Article 3. This addresses key limitations of traditional KH research methodologies. Previous studies on KH primarily rely on self-reported surveys, capturing static perceptions rather than dynamic interactions (Fauzi, 2022; Joo et al., 2024). Such methods do not adequately reflect the interactive and evolving nature of KH in organizational settings. To overcome this, Article 3 introduces a novel experimental design wherein participants assume predefined roles of "knowledge hiders" or "seekers" during a collaborative task. Specifically, participants tasked with KH possess complete knowledge required for a joint activity but are instructed to hide it from team members deliberately. This experimental setup enables the direct observation of KH behaviors such as hesitation, incomplete KS, diversion tactics, and subtle nonverbal cues. Unlike traditional retrospective self-report approaches, this design captures KH interactions as they unfold, providing detailed insights into the interpersonal and emotional dynamics that shape KH episodes. Combining observations, immediate post-task surveys, and follow-up interviews provides complementary quantitative and qualitative data, strengthening methodological rigor and reducing potential biases associated with single-source data collection. Consequently, this immersive, role-based methodology advances KH research by offering an approach that captures the complexity inherent in KH interactions.

4.2 Theoretical Contributions

Synthesizing the insights from Articles 1–3, this thesis develops a comprehensive processual framework reconceptualizing KH as an emergent phenomenon shaped through ongoing social interaction, relational negotiation, and discursive processes. This integrative framework conceptualizes KH not as a static, discrete act but as unfolding

through a series of interconnected and temporally sequenced stages: initial hiding, interpretive labeling, sensemaking, emotional and relational reactions, relational outcomes, and subsequent feedback loops. The thesis significantly broadens existing scholarship, which has traditionally emphasized KH as an isolated, negatively charged behavior primarily explained by individual motives or resource constraints (Connelly and Zweig, 2015; Černe et al., 2014).

More precisely, the proposed framework reconceptualizes KH as a socially constructed and contested label rather than an objectively identifiable behavior. Instead of assuming that the hiding of knowledge inherently constitutes KH, this thesis demonstrates that the meaning of any specific withholding behavior arises through interpretive negotiation among involved actors. Employees, managers, and peers may disagree significantly on whether particular actions, such as delayed responses or partial disclosures, represent intentional concealment or merely reflect situational constraints like workload or knowledge sensitivity (Arshad and Ismail, 2018; Wen et al., 2022). This interpretive ambiguity means that the categorization of KH itself becomes a contested and relationally negotiated outcome. The same act might be framed positively as justified discretion under specific organizational contexts, while under alternative relational or power structures, the identical act might be cast as selfish hiding or unethical withholding (Serenko and Bontis, 2016; Kumar Jha and Varkkey, 2018). Thus, this integrative perspective underscores that KH's definition is inherently relational and discursively situated, deeply influenced by broader organizational narratives, cultural schemas, and interpretive processes.

The framework also highlights the emergent and relationally contingent nature of KH's consequences. Contrary to conventional assumptions in the literature that consistently depict KH as universally detrimental, eroding trust, reducing collaboration, and undermining performance, this thesis illustrates that the outcomes of KH incidents depend critically on the interactive sensemaking and emotional dynamics between hiders and seekers (Tokyzhanova and Durst, 2025; Lin et al., 2023). Whether hiding behaviors lead to relationship deterioration, stable tolerance, or even relational improvement hinges substantially on the reciprocal emotional and behavioral reactions of both parties. For example, if seekers interpret knowledge withholding as intentionally malicious, they often respond negatively, triggering a defensive response from the hider and fostering mutual distrust (Černe et al., 2014; Jahanzeb et al., 2019). Conversely, when seekers attribute withholding to situational pressures or recognize valid justifications provided by hiders, the emotional impact is reduced, and relational outcomes remain neutral or constructive (Burmeister et al., 2019; Serenko and Bontis, 2016). Hence, this integrative contribution significantly expands existing theoretical explanations by demonstrating that KH's consequences are not fixed but actively constructed through relational interactions and reciprocal emotional processes, aligning closely with affective events theory (Weiss and Cropanzano, 1996) and SET frameworks.

Finally, the integrative framework contributes to existing theoretical dialogues by emphasizing the temporal and cyclical dynamics inherent in KH interactions. KH episodes do not occur in isolation; each incident creates conditions that shape subsequent interactions. Initial relational exchanges around KH often establish interpretive and behavioral patterns that may become entrenched, evolving into either reinforcing cycles of mutual concealment and reciprocal distrust or stabilizing into cycles of restored trust and mutual understanding (Černe et al., 2014; Bogilović et al., 2017; Arain et al., 2024). For instance, early interactions characterized by defensive or retaliatory responses tend

to foster sustained cycles of non-sharing and suspicion, progressively eroding the quality of the relationship and organizational cohesion. Conversely, when early interactions include transparency, explicit justifications, or emotional repair, these interactions can effectively break or prevent negative cycles, leading to more stable relational equilibria characterized by cooperative knowledge exchanges (Burmeister et al., 2019; Khoreva and Wechtler, 2020). The thesis enriches traditional SET perspectives by highlighting this temporal dimension and the associated path dependency of KH behaviors. It aligns with Langley's (1999) call for explicitly processual theorizing, emphasizing how early events and exchanges shape long-term organizational behaviors.

4.3 Practical Contributions

This framework advances practical understanding by reconceptualizing KH as a negotiated process rather than a static act. Managers can use this understanding to recognize better that KH often occurs subtly, through unclear or indirect behaviors, such as giving incomplete answers or delaying responses. Instead of automatically treating these actions as negative, organizations should encourage open conversations to clarify intentions and reasons behind hiding. Regular meetings or team discussions about KS can reduce misunderstandings and unnecessary tensions. Additionally, since people often justify hiding as necessary or appropriate, fostering a psychologically safe environment is essential. Employees should feel comfortable discussing their concerns or fears about KS without worrying about negative consequences, which reduces the urge to hide knowledge defensively.

The framework also emphasizes how emotional responses and relational dynamics shape KH interactions. Organizations can apply this insight by providing training in emotional intelligence and conflict management. Such training helps employees manage complicated feelings and address conflicts effectively, preventing misunderstandings from escalating. For instance, if knowledge seekers respond calmly and respectfully when they sense withholding, knowledge hiders are less likely to become defensive or continue hiding knowledge. Finally, acknowledging the cyclical nature of KH suggests that early detection and timely interventions by managers are vital to preventing entrenched cycles of KH. Instead of automatically framing hiding as harmful, managers trained to discern contextual details can more effectively mediate and navigate these situations, potentially reframing hiding episodes as opportunities for relational growth, clarification of organizational norms, or strategic protection of sensitive knowledge.

5 Conclusion: Synthesis, Limitations, and Future Directions

This doctoral thesis advances the conceptual understanding of KH by reframing it as a dynamic, interpretive, and socially negotiated phenomenon involving both hiders' and seekers' perspectives. Recognizing KH as a contested rather than objective construct allows a detailed exploration of the interpretative and relational dynamics that shape its emergence and outcomes within organizations (Xiong et al., 2021; Connelly and Zweig, 2015). The processual framework developed here provides a comprehensive model capturing the complexity of KH, underscoring how organizational narratives, interpersonal perceptions, and contextual contingencies determine whether and how KH is recognized, defined, or contested. Specifically, by shifting away from the dominant hider-centric perspective toward an integrative approach that equally emphasizes both hiders' and seekers' roles, the thesis demonstrates that KH is not merely a unilateral act performed by individuals. It is an interactive process that is continuously shaped through mutual interpretations and reactions.

Moreover, the thesis illustrates that labeling behaviors as KH is contingent on organizational cultures, power structures, and interpersonal relationships, reflecting a complex interplay of social, emotional, and strategic considerations. Such interpretive processes imply that KH behaviors can simultaneously be viewed as strategic discretion by one group of organizational members and harmful secrecy by another, depending heavily on the context and relational histories involved. By incorporating this dual-perspective approach, the thesis enriches theoretical conceptualizations. It reveals critical insights into how organizational actors negotiate the meanings and legitimacy of knowledge behaviors in their daily interactions. This reconceptualization further emphasizes that managerial interventions aimed at mitigating the negative impacts of KH must consider broader relational contexts, organizational narratives, and interpretative frameworks that guide employee perceptions and actions.

Ultimately, by positioning KH as a socially embedded and interpretatively flexible phenomenon, this thesis opens new avenues for understanding the conditions under which KH occurs, its diverse forms of manifestation, and its complex consequences for individuals, teams, and organizations. It highlights the necessity for organizations to adopt holistic and contextually sensitive approaches to KM that acknowledge and address the underlying relational tensions, interpretative ambiguities, and narrative complexities that foster or inhibit effective knowledge exchange. Through its integrative and processual lens, the thesis makes both theoretical and practical contributions by clarifying the complex nature of KH and providing a foundation for more comprehensive, dynamic, and effective organizational KM strategies.

Several limitations inherent in this thesis should be acknowledged. First, the empirical investigation utilized undergraduate students in a controlled, experimental setting, which may not entirely capture all dimensions of actual organizational contexts, such as the complex power dynamics, long-term relational histories, and high-stakes consequences that characterize professional environments. This methodological choice was deliberate and considered optimal due to the significant logistical and ethical challenges associated with simulating real-world withholding behaviors in authentic workplace environments. The experimental setup enabled the precise manipulation of roles for both hiders and seekers, ensuring consistent observation of KH behaviors and interpretations, which is challenging to replicate reliably in naturalistic organizational studies.

Second, the study's cross-sectional design prevents an in-depth exploration of longitudinal dynamics and causal relationships between KH behaviors and their evolving impacts. A longitudinal approach was not feasible within this research's timeframe and resource constraints, making it impossible to track how KH behaviors, perceptions, and relational outcomes change over extended periods.

Third, the research context was geographically and culturally limited to Kazakhstan, which may have affected the external validity of the findings. While selecting a specific cultural context provided depth in understanding localized relational dynamics, it inevitably restricted insights into how diverse cultural backgrounds influence KH behaviors and interpretations.

Lastly, despite employing multiple methods, including observations, interviews, and surveys, relying on participants' self-reports and interpretations introduces potential biases such as social desirability and retrospective rationalization. Although the combination of these complementary methods aimed to mitigate such biases, eliminating them was impossible due to the inherently subjective nature of the research topic.

Building on these limitations, future studies should adopt longitudinal designs to capture the evolving nature of KH. Continuous observations, repeated interviews, or diary methods could reveal how hiders' and seekers' perceptions shift over time, clarifying the feedback loops and relational processes that sustain or mitigate withholding (Venz and Nesher Shoshan, 2022). To address the limitations of self-reporting, researchers may employ advanced observational methods in real-world workplace settings and extend data collection to diverse organizational contexts to validate the framework proposed here.

Furthermore, extending data collection to diverse cultural and organizational contexts would further validate the applicability of these findings to settings with different norms, power structures, and collaborative patterns (Peng, 2012; Bogilović et al., 2017). Specifically, cross-cultural comparative studies are needed to investigate the role of national culture in shaping KH dynamics. For example, researchers could compare how KH is interpreted in high-context cultures, where meaning is often implicit and relational, versus low-context cultures, where communication is more explicit and direct. Such research could address key questions: Are evasive hiding strategies more socially acceptable in certain cultures? Do seekers in low-context cultures perceive ambiguous responses more negatively? Answering these questions would provide crucial insights into the cultural contingency of the framework proposed in this thesis.

To enhance the framework's practical relevance, future research could also focus on demonstrating its application more concretely. As the primary focus of this thesis was theory development, a valuable next step would be to apply the five-stage model using detailed case studies or vignettes drawn from specific organizational scenarios. This would help validate the framework's utility as a diagnostic tool for managers and practitioners.

A significant avenue for the future development of the integrative framework presented in this thesis is to expand its conceptual boundaries to create a more comprehensive typology of knowledge exchange behaviors. This expanded model would move beyond the current focus on intentional hiding to also account for other forms of non-sharing. Crucially, it would incorporate forms of unintentional non-sharing, where an individual is unable to articulate tacit knowledge or when linguistic barriers impede effective communication. Such a typology would also provide a richer lens for analyzing

the "gray area" where hiders' and seekers' perceptions diverge, leading to a contested understanding of the event. By developing this model, future research can move beyond a simple binary view, offering a more holistic and realistic understanding of the full range of dynamics that characterize knowledge flow in organizations.

Moreover, future research could further develop the thesis's focus on the interactive and interpretive nature of KH by examining in greater depth how hiders and seekers co-construct the meaning of withholding over multiple time points or episodes (Sandberg and Alvesson, 2011). For instance, organizations' ethnographic or action research designs could elucidate the micro-level sensemaking processes through which ambiguous delays or partial disclosures become labeled as hiding. Such designs could also uncover potential "tipping points" in relational dynamics, particularly by investigating cognitive stereotyping as a key mechanism through which marginal withholding escalates into pervasive distrust. Future studies could explore how an initial negative interaction leads a seeker to permanently label a colleague as a 'hider,' and how this stereotype becomes entrenched, shaping all subsequent interactions and creating path-dependent, self-reinforcing cycles of distrust.

Additionally, scholars might explore the thesis's assertion that organizational contexts play a decisive role in shaping KH recognition and legitimacy by investigating how specific leadership styles, reward structures, or organizational subcultures reinforce or challenge the labeling of withholding (Xiong et al., 2021; Černe et al., 2014). Future research could focus on how managers and team leaders interpret and respond to suspected KH. Building on this, future work should also consider the role of organizational and job stability as critical contextual factors. For instance, in environments characterized by high job insecurity due to layoffs or restructuring, employees may be more inclined to hide knowledge as a form of self-protection to safeguard their value to the organization. Similarly, broader organizational instability, such as economic distress or a hostile takeover, could foster a climate of uncertainty and fear that stifles psychological safety and encourages widespread hiding behaviors.

A further compelling direction for future research lies in exploring how communication media, virtual versus face-to-face, moderate KH dynamics. Virtual environments present a unique tension. On one hand, the lack of rich non-verbal cues and the challenges in establishing robust interpersonal trust may increase the propensity for KH (Xiao et al., 2024). Theories such as social presence theory suggest that less personal media can increase psychological distance, potentially reducing the social cost of hiding (Short et al., 1976). On the other hand, the persistence of text-based communication (e.g., emails) and the directness of synchronous video calls may make it more difficult for individuals to ignore or refuse knowledge requests. This paradox raises important questions about the effectiveness of various hiding strategies in online settings and how targets interpret ambiguous digital cues. Adapting the experimental design of this thesis to a virtual environment offers a valuable blueprint for systematically investigating these dynamics.

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Abstract

Knowledge hiding in organizations: Integrative framework for bridging hider and seeker perspectives

Effective knowledge sharing (KS) is critical for organizational innovation and competitiveness in today's knowledge-driven economy. Yet, barriers such as knowledge hiding (KH), the intentional withholding of requested knowledge, undermine these efforts. While extant research has predominantly focused on the hider's motivations and behaviors, this thesis argues that KH is a socially negotiated process shaped by both hiders and seekers. This study advances a dynamic, processual understanding of KH, challenging static, hider-centric frameworks by integrating these dual perspectives through a multi-pronged approach. Through systematic literature reviews (SLRs), empirical investigations, and theoretical synthesis, the research reveals how interpretations, relational dynamics, and contextual factors co-construct KH.

Building on early knowledge management (KM) discussions, the thesis challenges the longstanding hider-centric focus by emphasizing how seekers' interpretations, emotional reactions, and subsequent behaviors are integral to KH dynamics. The research questions center on (1) mapping the multi-level drivers and consequences of KH, (2) evaluating current theoretical frameworks, (3) capturing KH as it unfolds in a simulated group setting, and (4) constructing a unified model that accounts for both hider and seeker viewpoints. By introducing an exploratory and process-based lens, the study reveals that KH emerges from iterative feedback loops between hiders and seekers. Findings demonstrate that seemingly identical acts of withholding knowledge can be perceived differently, depending on how seekers interpret motives and justifications.

Methodologically, the thesis employs a multi-pronged, three-phase methodology. In Phase 1, integrative and problematization-oriented SLRs trace conceptual developments and highlight theoretical limitations. Phase 2 features a role-based empirical study with group tasks, in which participants are designated as either "hiders" or "seekers" and engage in knowledge exchanges within a simulated setting. This design captures the dynamic, relational character of KH more vividly than standard cross-sectional surveys. Qualitative interviews and observational data complement quantitative measures, uncovering detailed micro-level processes and emotional triggers. Phase 3 integrates insights from the reviews and empirical findings to formulate a unified framework, clarifying how KH is co-constructed and recognized through interpretive processes.

The thesis offers theoretical, methodological, and practical contributions. The integrative framework shifts the scholarly conversation from viewing KH as a unidirectional, static behavior to recognizing it as an ongoing negotiation process between the hider and the seeker. This refined perspective expands prevailing theories by foregrounding dynamic, context-sensitive feedback loops and addressing interpretive ambiguities. Methodologically, the study's multi-pronged approach illustrates how combining systematic reviews with direct observation and qualitative study can yield a richer understanding of KH. Practically, the research highlights the importance of clear communication protocols and trust-building interventions in preventing or mitigating the negative impact of KH. It underscores that organizational policies targeting individual hiders alone may be insufficient; meaningful interventions must also consider how seekers interpret partial disclosures, justifications, or delayed responses.

Lühikokkuvõte

Teadmiste peitmine organisatsioonides: integreeriv raamistik peitja ja otsija perspektiivide ühendamiseks

teadmistepõhises Tõhus teadmiste jagamine on tänapäeva majanduses organisatsioonilise innovatsiooni ja konkurentsivõime jaoks kriitilise tähtsusega. Ometi õõnestavad neid pingutusi sellised takistused nagu teadmiste varjamine ja nõutud teadmiste tahtlik varjamine. Kuigi olemasolevad uuringud on keskendunud peamiselt varjajate motivatsioonile ja käitumisele, väidab see väitekiri, et teadmiste varjamine on sotsiaalselt läbiräägitud protsess, mida kujundavad nii varjajad kui ka otsijad. See uuring edendab teadmiste varjamise dünaamilist ja protsessilist mõistmist, seades kahtluse alla staatilised, varjaja-kesksed raamistikud, integreerides need kahetised perspektiivid mitmetahulise lähenemisviisi kaudu. Süstemaatiliste kirjandusülevaadete, empiiriliste uuringute ja teoreetilise sünteesi kaudu paljastab uuring, kuidas tõlgendused, suhteline dünaamika ja kontekstuaalsed tegurid koos teadmiste varjamist konstrueerivad.

Varastele teadmushalduse aruteludele tuginedes seab väitekiri kahtluse alla pikaajalise varjaja-keskse fookuse, rõhutades, kuidas otsijate tõlgendused, emotsionaalsed reaktsioonid ja sellele järgnev käitumine on teadmiste varjamise dünaamika lahutamatu osa. Uurimisküsimused keskenduvad (1) teadmiste varjamise mitmetasandiliste ajendite ja tagajärgede kaardistamisele, (2) praeguste teoreetiliste raamistike hindamisele, (3) teadmiste varjamise tabamisele simuleeritud grupikeskkonnas ja (4) ühtse mudeli loomisele, mis arvestab nii varjajate kui ka otsijate vaatenurki. Uurimusliku ja protsessipõhise vaatenurga abil näitab uuring, et teadmiste varjamine tuleneb varjajate ja otsijate vahelistest iteratiivsetest tagasisideahelatest. Tulemused näitavad, et näiliselt identseid teadmiste varjamise akte võib tajuda erinevalt, olenevalt sellest, kuidas otsijad motiive ja õigustusi tõlgendavad.

Metodoloogiliselt kasutab väitekiri mitmeharulist kolmefaasilist metoodikat. 1. etapis jälgivad integreerivad ja problematiseerimisele orienteeritud süstemaatilised kirjanduse ülevaated kontseptuaalseid arenguid ja toovad esile teoreetilisi piiranguid. 2. etapis toimub rollipõhine empiiriline uuring rühmaülesannetega, kus osalejad määratakse kas "varjajateks" või "otsijateks" ja osalevad teadmiste vahetamises simuleeritud keskkonnas. See ülesehitus tabab teadmiste varjamise dünaamilist ja relatsioonilist iseloomu selgemini kui tavalised läbilõikeuuringud. Kvalitatiivsed intervjuud ja vaatlusandmed täiendavad kvantitatiivseid mõõdikuid, paljastades detailseid mikrotasandi protsesse ja emotsionaalseid käivitajaid. 3. faas integreerib ülevaadetest ja empiirilistest leidudest saadud teadmised, et luua ühtne raamistik, selgitades, kuidas teadmiste varjamist tõlgendatakse ja tunnustatakse interpretatiivsete protsesside kaudu.

Väitekiri pakub teoreetilisi, metodoloogilisi ja praktilisi panuseid. Integratiivne raamistik nihutab teaduslikku vestlust teadmiste varjamise vaatlemiselt ühesuunalise, staatilise käitumisena selle tunnustamisele kui pidevale läbirääkimisprotsessile varjaja ja otsija vahel. See täpsustatud perspektiiv laiendab valitsevaid teooriaid, tuues esile dünaamilised, kontekstipõhised tagasisideahelad ja käsitledes interpretatiivseid ebaselgusi. Metodoloogiliselt illustreerib uuringu mitmetahuline lähenemisviis, kuidas süstemaatiliste ülevaadete kombineerimine otsese vaatluse ja kvalitatiivse uuringuga võib anda teadmiste varjamisest rikkama arusaama. Praktikas rõhutab uuring selgete suhtlusprotokollide ja usaldust loovate sekkumiste olulisust teadmiste varjamise negatiivse mõju ennetamisel või leevendamisel. See rõhutab, et ainult üksikutele

varjajatele suunatud organisatsioonilised poliitikad võivad olla ebapiisavad; sisukad sekkumised peavad arvestama ka sellega, kuidas otsijad tõlgendavad osalisi avalikustamisi, õigustusi või hilinenud vastuseid.

Appendix 1

Publication I

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RESEARCH PAPER

Seeing knowledge hiding through a multi-level lens

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ABSTRACT

This study investigates knowledge hiding (KH), a growing research area of increasing importance across multiple organisational levels. The rapid expansion of KH research runs the risk that existing knowledge is not accumulated but constantly re-invented. Therefore, this study aims to enhance our understanding by systematically reviewing the antecedents, boundary conditions and outcomes of KH. We develop a thematic mapping of 173 papers, identifying key antecedents, boundary conditions and outcomes of KH alongside emerging knowledge gaps and pertinent research questions. Leveraging these insights, we construct a multi-level framework that categorises KH at the micro, meso and macro levels, integrating findings from our thematic analysis. This study provides a consolidated view of KH literature and is a valuable guide for scholars seeking to advance this domain.

KEYWORDS

knowledge, knowledge hiding, systematic review, KH mapping, boundary conditions

Introduction

Organisations' effective use of knowledge as the key to competitive advantage in dynamic business environments is widely recognised (Del Giudice and Maggioni, 2014; Mahdi *et al.*, 2019). In an era when knowledge has become more important than ever, knowledge hiding (KH) has emerged as a critical area of interest in contemporary management research, reflecting its growing relevance in diverse work environments (Hernaus *et al.*, 2019; Almeida *et al.*, 2022; Shirahada and Zhang, 2022; Khelladi *et al.*, 2022). KH influences the flow of information and knowledge within organisations and impacts creativity (Chatterjee *et al.*, 2021; Feng *et al.*, 2022), organisational performance (Zhang, Z. *et al.*, 2022; Moin *et al.*, 2024) and innovative behaviour (Chen *et al.*, 2022; Donate *et al.*, 2022).

The surge in interest is mirrored by a substantial body of literature investigating various facets of KH, ranging from its antecedents and consequences to its broader organisational implications. Furthermore, there are continuous calls for more studies investigating KH in various organisational settings (e.g., Agarwal *et al.*, 2022a; Chen *et al.*, 2022). The recent rapid expansion

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of KH research runs the risk that existing knowledge is not accumulated but instead continuously re-invented. Scholars have attempted to review the available literature and summarise the current body of knowledge. For example, Fauzi (2023) and Zutshi *et al.* (2021) systematically reviewed KH in higher education, while Xiao and Cooke (2019) examined KH from a Chinese context. Anand *et al.* (2022) contributed significantly to KH research by identifying key research streams and focusing on the geographical distribution, company size and level of analysis in KH studies. However, while informative, their approach predominantly focuses on cataloguing and compiling a list of selected antecedents, mediators and moderators within the KH literature. On the other hand, Siachou *et al.* (2021) examined the antecedents and consequences of KH; however, the study is based on only a small sample of 39 papers published between 1998 and 2020. This restricted selection could compromise the robustness of their findings, as it may not fully capture the diversity and complexity of KH.

Given these limitations, we propose conducting a systematic analysis of the literature on KH to map its antecedents, outcomes and boundary conditions in order to identify knowledge gaps that could form the basis for promising new research areas. Based on this aim, our central research questions are: RQ1 - What are the antecedents, outcomes and boundary conditions of KH, as identified in the literature? And RQ2 - What are the key knowledge gaps in the literature, and what potential research avenues remain unexplored? A rigorous approach was taken to answer these two questions (Tranfield et al., 2003; Kraus et al., 2020), which included the specification of keywords, inclusion and exclusion criteria, and extensive searches in wellknown academic databases. This resulted in a thorough analysis of 173 peer-reviewed papers on KH. In response to RQ1, we mapped the final sample of papers to learn about the antecedents, boundary conditions and consequences of KH using the content analysis method. To answer RQ2, we highlighted research gaps in the current body of knowledge and suggested future research questions for each category. Based on the thematic mapping and identified gaps, we propose a multi-level framework categorising KH at various levels. Such a multi-level perspective is instrumental in advancing theoretical constructs, as it decomposes concepts into basic elements and links them across different levels of analysis (Salvato and Rerup, 2011). The framework is the main contribution of our study, providing a structured approach to understanding KH and outlining promising directions for future research.

The paper is organised as follows. It begins by defining KH and distinguishing it from other constructs, such as knowledge hoarding, knowledge withholding and disengagement from knowledge sharing. Then it summarises the method used in selecting and reviewing the literature and details our search strategy, analysis and evaluation of the studies reviewed. Following this, the findings of our content analysis are presented, gaps in the extant research are highlighted and potential research directions for each category are suggested. A conceptual framework is then present. The paper concludes by summarising the key insights and discussing the limitations of the study.

Knowledge hiding and related constructs

Scholars in the field appear to have reached a consensus on the definition of KH, as evidenced by previous systematic reviews (Siachou *et al.*, 2021; Anand *et al.*, 2022). The prevailing definition is that of Connelly *et al.* (2012, p.65), who view KH as 'an intentional attempt by an individual to withhold or conceal task information, ideas, and know-how that another person has requested'. Existing research suggests that KH is not necessarily intended to harm a person or organisation, but is a response to a specific situation (Connelly and Zweig, 2015; Xiong *et al.*, 2021; Koay and Lim, 2022). According to Connelly *et al.* (2012), the knowledge hider may pretend they do not possess the knowledge requested (playing dumb), provide incomplete or incorrect information with the promise of complete information in the future (evasive hiding), or offer an explanation for failing to provide information or blame another party (rationalised hiding).

Table 1. Comparing the concepts related to knowledge hiding

Concepts	Knowledge request	Knowledge scope	Intention/behaviour
Disengagement from knowledge sharing	No	Broad (any knowledge)	Low, passive
Knowledge hoarding	No	Broad (any knowledge)	Medium, passive
Knowledge hiding	Yes	Specific	High, active
Knowledge sabotage	Yes	Specific	High, active

Organisations consider KH as counter-productive knowledge behaviour, as they do with disengagement from knowledge sharing, knowledge hoarding, knowledge sabotage and knowledge withholding (Serenko and Bontis, 2016; Rhee and Choi, 2017; Singh, 2019; Serenko, 2019; Afshar-Jalili *et al.*, 2021; Shirahada and Zhang, 2022). Disengagement from knowledge sharing happens when individuals do not actively exchange knowledge with each other, despite having no motivation to withhold it (Ford and Staples, 2008). Knowledge is not shared, not because it is being protected, but simply because it is not being communicated. Knowledge hoarding refers to the intentional gathering of knowledge by employees while hiding that they have relevant knowledge or information at their disposal (Evans *et al.*, 2015; Holten *et al.*, 2016). Compared with KH, knowledge hoarding emphasises that accumulated knowledge may not necessarily be requested by another (Connelly *et al.*, 2012; Zhao and Xia, 2017; Scuotto *et al.*, 2022). Knowledge sabotage is characterised by employees purposely providing incorrect or withholding the right documents, being fully aware of the importance of the knowledge, and understanding that the requester cannot effectively perform job-related tasks without it (Serenko, 2019).

A detailed overview of these related concepts is given in Table 1. Here, the intention/behaviour column denotes the degree of deliberate action taken to conceal knowledge and whether the behaviour involves active effort or is more passive. High intention, active behaviour involves the individual's clear, observable actions, such as deliberately withholding requested information (KH) or intentionally providing misleading information (knowledge sabotage). Low intention, passive behaviour involves less obvious actions or possibly inactions, such as not offering information unless specifically asked (knowledge hoarding) or disengaging from knowledge-sharing activities. Knowledge request refers to whether a request has been received. The scope refers to the breadth of the involved knowledge. For example, in the case of KH, we focus on specific pieces of knowledge and specific requests. Knowledge hoarding has a wider scope than KH: it is a systematic and strategic accumulation and concealment of knowledge. It involves a broad range of knowledge and is not usually tied to specific requests.

In conceptual terms, both KH and hoarding have been characterised as knowledge withholding (Connelly *et al.*, 2012; Kmieciak, 2023). Serenko and Bontis (2016, p.1201) define knowledge withholding as 'intentional concealment and unintentional hoarding of knowledge for personal gain or contributing less knowledge than is needed'. On the other hand, in some papers, knowledge withholding is treated as KH. It is understood to be the denial of requested information (Evans *et al.*, 2015) or an intentional attempt by an individual to conceal knowledge (Peng and Pierce, 2015; Stenius *et al.*, 2016; Anaza and Nowlin, 2017). In these instances, such behaviours are in direct alignment with our operational definition of KH; thus, we treat these actions as KH.

Methodology

For this study, a systematic literature review method was adopted. In order to gather relevant papers for a particular topic and to avoid bias, this systematic review followed a set of predetermined procedures as proposed by Tranfield *et al.* (2003) and Kraus *et al.* (2020). This ensures that the review is reliable, comprehensive and rigorous (Rousseau *et al.*, 2008). The procedure consisted of three

Search terms

TITLE-ABS-KEY (knowledge hiding OR hiding knowledge OR knowledge hoarding OR knowledge withholding OR knowledge detention OR knowledge concealment OR non-sharing knowledge OR knowledge sharing barrier OR knowledge sharing resistance OR knowledge sharing disengagement OR knowledge sharing obstruction OR knowledge sharing hostility OR knowledge sharing blockage OR counterproductive knowledge behav*

steps: (1) planning the review, (2) carrying out the review, and (3) reporting the review. The first two are detailed in this section. The final phase is presented separately.

Planning the review

Initially, a research plan was outlined by listing the research questions, database selection, relevant keywords, and the study's inclusion and exclusion criteria. The present systematic literature review aims to map antecedents, outcomes and boundary conditions of KH to identify knowledge gaps that could form the basis for new promising areas of research.

The two most widespread databases, Scopus and Web of Science, were selected to search the KH literature. A thorough overview of the Web of Science and Scopus databases may be found in Birkle *et al.* (2020) and Thelwall and Sud (2022). The main search string consisted of the keyword 'knowledge hiding'. Keywords such as 'knowledge withholding', 'knowledge hoarding' and 'counterproductive knowledge behaviour' were also included to make the initial sample as complete as possible. The final list of keywords was inspired by previous systematic reviews (Siachou *et al.*, 2021; Anand *et al.*, 2022), and a combined keyword search strategy has been performed employing the 'OR' operator to include a range of relevant terms (Table 2).

For further analysis, we included documents such as papers and early access reviews that were published in English, fell into the business and management categories, and were featured in peer-reviewed journals rated 2, 3, and 4 stars according to the Association of Business Schools' *Academic Journal Quality Guide*, 2021. Conversely, we excluded papers published in journals rated 1 star or without a star rating, grey literature such as reports, non-academic research, and documents in languages other than English.

Conducting the review

Some 476 papers were identified from the Web of Science and 643 from the Scopus databases based on abstract, title and keywords. In the second step, the results were narrowed to only the business and management research areas. This yielded 284 papers in the Web of Science and 373 in Scopus databases. In step three, papers not published in scholarly journals were eliminated. As a result, 271 papers were identified in Web of Science and 345 in Scopus. In step four, papers published in languages other than English were removed leaving 271 papers from Web of Science and 343 from Scopus. In step five, only papers published in peer-reviewed journals and graded 2, 3, and 4 stars by the Association of Business Schools were selected for further examination. This reduced the Web of Science dataset to 175 papers and the Scopus dataset to 204 papers. In step six, 170 duplicate papers (i.e., those indexed in both databases) were excluded from consideration, leaving 209 papers. In step seven, the titles, keywords and abstracts of all remaining papers were screened and those that did not deal with KH despite prior filtering were excluded. As a result, after the screening process, the sample consisted of 173 peer-reviewed papers published in 44 leading scientific journals. Figure 1 displays the search and selection processes performed in December 2022.

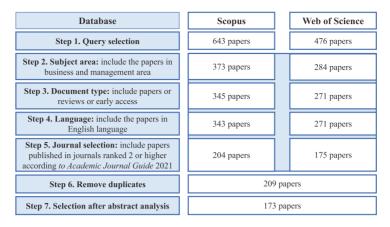


Figure 1. Search and selection processes

Methods

The selected papers (N = 173) were analysed to understand better the various antecedents, consequences and boundary conditions of KH. This synthesis involved a detailed review and content analysis of each paper, drawing upon the methodologies employed in recent systematic literature reviews, such as those by Hassan *et al.* (2023) and Schilke *et al.* (2018). The process involved the two authors independently analysing the studies and then collaboratively discussing their findings to establish agreement on the emerging research themes. In instances of disagreement, a third individual was consulted to provide additional insights, ensuring a unanimous conclusion was reached.

The authors used established coding procedures of open, axial and selective coding procedures to derive the core themes from the accumulated research outlined by Glaser and Strauss (1967). Open coding was used to extract and categorise data from the reviewed studies, while axial coding helped to explore the connections and relationships between the initial categories to develop broader, more encompassing themes. Then, following the established research patterns in KH (Siachou *et al.*, 2021; Anand *et al.*, 2022), the emergent thematic areas were placed into broad categories.

Thematic mapping: summary of findings and discussion

This section presents a thematic mapping of research on KH, as detailed in Figure 2. This includes antecedents of KH (Figure 2, Path A), consequences of KH (Figure 2, Path B) and boundary conditions that influence both the antecedents and consequences of KH (Figure 2, Paths C1 and C2). For example, in Path A, it was observed that many studies examined individual factors (e.g., individual traits, such as a dark triad of personality), interpersonal relationships (e.g., leader–member exchange (LMX), negative workplace gossip, co-worker support), and other organisational factors (e.g., organisational politics, organisational knowledge culture) as focal predictors. In Path B studies, the following were identified: higher-order categories of performance and behavioural outcomes (e.g., innovative behaviour, task performance, creativity), attitudinal outcomes (e.g., well-being, thriving), and employment (e.g., turnover intention, promotability) outcomes. Then, based on the findings, a thematic mapping of KH across the different levels of analysis was carried out. The width of the lines in Figure 2 represents the approximate volume of research in those domains, with thicker lines representing more frequently-studied relationships (the number of studies mentioned in the parentheses). In the following section, an overview is provided of the current state of the art in each area. Possible knowledge gaps in these directions are identified and detailed presentations of each area of research are highlighted in Figure 2.

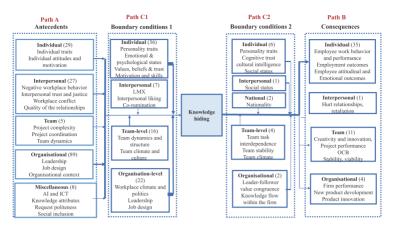


Figure 2. Key thematic areas of research in KH

Path A: antecedents of KH

Appendix 1, A1: individual-level factors

Research findings highlight the significant role of personality traits and individual characteristics. Dark triad traits, such as those identified by Pan *et al.* (2018) and Soral *et al.* (2022), along with a supervisor's bottom-line mentality (Chen *et al.*, 2023), neuroticism (Anaza and Nowlin, 2017), and cynicism (Nguyen *et al.*, 2022), have been shown to promote KH. Conversely, traits like conscientiousness and agreeableness are not significantly correlated with KH (Anaza and Nowlin, 2017; Banagou *et al.*, 2021). Other factors, such as competitiveness, goal orientation and psychological entitlement, also influence the propensity towards KH, as do career stages, with individuals at the beginning or end of their careers showing a higher tendency for KH (Issac *et al.*, 2020). On the other hand, employees' perception of knowledge ownership and motivation significantly influences their tendency towards KH. For instance, employees who perceive knowledge as their own are more likely to hide it, with studies linking this perception to territorial behaviour and counterproductive work outcomes (Pereira and Mohiya, 2021; Shirahada and Zhang, 2022). Career-driven motives, such as indispensability and fear of negative evaluation, drive KH (Butt and Ahmad, 2019; Butt, 2021).

The current literature, thus far, has examined the role of individual characteristics in KH in isolation. The influence of trait combinations, attitudes towards knowledge, and individual motivations on KH are promising areas of study. For instance, the interaction of agreeableness with territoriality could be studied to identify whether this trait buffers or amplifies the relationship between territoriality and KH, or if individuals high in Machiavellianism and a performance-proven goal orientation may show varied KH behaviour. While their manipulative nature might prompt them to hide knowledge for personal advantage, a strong desire to prove competence could also discourage KH, hindering their performance appraisal. Furthermore, incorporating the concept of hostile attribution bias into this analysis could reveal how individuals' predispositions to interpret ambiguous situations, such as KH, as hostile or aggressive might influence their reactions to KH (Connelly and Zweig, 2015). Another area of debate is how individuals perceive KH. Anaza and Nowlin (2017) suggested that salespeople might not view KH as antisocial behaviour, but as a common practice in their field. This perspective contrasts with the general view of KH as detrimental behaviour. More research is needed to understand how individuals perceive KH and their subjective interpretations or 'construals'. These construals might include various dimensions, such as the perceived fairness of knowledge-request rejection, the frequency of KH, the perceived costs associated with KH and the availability of alternative sources of knowledge. Table 3 presents questions for future research.

Table 3. Individual antecedents: knowledge gaps and proposed research questions

Knowledge gaps	Proposed research questions
The influences of trait combinations, attitudes towards knowledge, and individual motivations on knowledge hiding (KH)	RQ1. How does the combination of various personality traits influence the propensity for KH? RQ2. How does the interaction of personality traits (such as agreeableness and territoriality) influence KH behaviour?
	RQ3. What role does motivation, specifically in individuals with high Machiavellianism and performance-proven goal orientation, play in KH behaviour?
Perceptions of knowledge hiding (KH)	RQ4. How do individuals perceive and interpret KH events?
	RQ5. How does the perception of KH vary across different professional fields, and how does this influence KH behaviour?
	RQ6. How do personal values and traits, such as openness and competitiveness, influence an individual's perception of KH?

Appendix 1, A2: interpersonal factors

Uncivil treatment, bullying (e.g., Anand *et al.*, 2023; Venz and Mohr, 2023), negative gossip (e.g., Khan, A. *et al.*, 2022; Cheng *et al.*, 2023), and ostracism (Bhatti *et al.*, 2023) have been linked to increased KH behaviours. Distrust and a lack of interpersonal trust are also key triggers for KH (e.g., Hadjielias *et al.*, 2021; Jafari-Sadeghi *et al.*, 2022). Workplace conflicts, both task-related and relational, can provoke KH as retaliation or a defence mechanism (e.g., Boz Semerci, 2019; Donate *et al.*, 2022; De Clercq *et al.*, 2022a). Positive dynamics in LMX, co-worker support and social communication are influential in diminishing KH (e.g., Babič *et al.*, 2019; He *et al.*, 2022; Batistič and Poell, 2022).

While much research has delved into the correlation between negative workplace behaviours and KH, less attention has been given to how positive interpersonal dynamics might alleviate such behaviours. For example, the role of workplace friendships in mitigating KH has been relatively unexplored. Studies could investigate whether strong interpersonal connections and friendships at work discourage employees from hiding knowledge from each other, as the influence of peer recognition on KH could be an intriguing area for future research. Employees who feel appreciated and recognised by their peers might be less likely to engage in KH. Researchers could examine whether the frequency and quality of peer recognition affect KH tendencies. Current research primarily focuses on the presence or absence of interpersonal trust and justice. Moreover, the role of interpersonal helping in this context is significant. Acts of assistance and support among colleagues could foster an environment where KH is less prevalent. These aspects and the nuances of interpersonal trust and justice, as detailed in Table 4, offer a broad canvas for future research.

Table 4. Interpersonal antecedents: knowledge gaps and proposed research questions

Knowledge gaps	Proposed research questions	
Positive interpersonal dynamics	RQ1. How do positive interpersonal dynamics influence KH behaviours in the workplace?	
Peer recognition	RQ2. How does peer recognition affect employees' tendencies to engage in KH?	
Interpersonal helping	RQ3. How can interpersonal helping within teams mitigate the tendency to engage in KH?	
Interpersonal trust	RQ4. How do varying degrees of interpersonal trust influence KH behaviours in an organisation?	

Table 5. Team-level antecedents: knowledge gaps and proposed research questions

Knowledge gaps	Proposed research questions
Contextual aspects	RQ1. How do various team dynamics, such as team culture, project deadlines, team size, and team faultiness or diversity, influence the propensity for KH in teams?
Team faultiness	RQ2. What impact do internal team faultlines, particularly those resulting from cultural or linguistic differences and distinct professional experiences, have on KH?
The interplay between individual and team-level antecedents	RQ3. How do individual characteristics interact with broader team dynamics and collectively influence KH?

Appendix 1, A3: team-level factors

The number of works examining team-level antecedents of KH is relatively scarce. Complex projects increase KH (Zhang, Z. et al., 2022), while effective coordination reduces it (Zhang and Min, 2022b). Leadership style (Lin et al., 2020), team faultlines (Ma et al., 2022) and power dynamics (Hays et al., 2022) significantly impact KH behaviours within teams. However, many contextual aspects and team dynamics still need to be explored, such as team culture, identification, project deadlines, team size and team diversity. For example, building upon the study by Ma et al. (2022) on team faultiness, the researchers can study cultural or linguistic differences that could contribute to social faultlines, while distinct professional experiences or skill sets may lead to complex informational faultlines, influencing KH differently. The interaction of these faultlines and their combined effects on KH within teams may also be examined. Beyond the mere presence of faultlines, investigating the strength and specific configuration of these faultlines could also offer deeper insights. Furthermore, the interplay between individual and team-level antecedents in fostering or mitigating KH within teams is an uncharted study area. For instance, exploring how individual traits like openness to experience or assertiveness interact with team dynamics like team identification or faultiness could yield nuanced insights into KH behaviours. Table 5 asks several questions to guide future research.

Appendix 1, A: organisational-level factors

Looking at organisational-level factors, it becomes evident that leadership, job design and the organisational context as antecedents have been the focus of much of the existing research on KH. Negative leadership behaviours, such as abusive (e.g., Wang et al., 2021; Hao et al., 2022), unethical (Almeida et al., 2022; Qin et al., 2023), and exploitative styles (Feng et al., 2022; Moin et al., 2024), are linked to increased KH. In contrast, positive leadership styles like ethical (e.g., Anser et al., 2021; Agarwal et al., 2022b), empowering (Lin et al., 2020), and transformational leadership (Scuotto et al., 2022) tend to reduce KH. Observing supervisors engaging in KH can also encourage similar behaviours among employees (e.g., Offergelt et al., 2019; Arain et al., 2022a). Work-related pressures, including time pressure (Škerlavaj et al., 2018; Zhang, X. et al., 2022) and job insecurity (e.g., Chhabra and Pandey, 2023; Shoss et al., 2023), are significant factors contributing to KH. Job autonomy often decreases KH (Gagné et al., 2019; Peng et al., 2022), while task interdependence shows varied impacts (Gagné et al., 2019; Jafari-Sadeghi et al., 2022). Paradoxically, both work alienation (Guo, L. et al., 2022) and high job engagement (Wang et al., 2019) are associated with increased KH. Organisational politics (e.g., Arain et al., 2022b; De Clercq et al., 2022b), hypocrisy (Zhao and Liu, 2022), and dehumanisation (Muhammad and Sarwar, 2021) are identified as contributors to KH. However, individuals with high political skills are less impacted (Modem et al., 2023). Effective human resource (HR) practices and a culture of trust can mitigate KH (e.g., Haar et al., 2022; El-Kassar et al., 2022), though the effectiveness of HR practices varies depending on the workplace environment (Oubrich et al., 2021). Reward systems also influence KH; often, financial rewards increase KH (Stenius et al., 2016; Zhang and Min, 2021). Internal competition

Table 6. Organisational antecedents: knowledge gaps and proposed research questions

Knowledge gaps	Proposed research questions
Leadership orientation and intensity	RQ1. How do varying intensities and orientations of different leadership behaviours impact KH?
Organisational culture	RQ2. In what ways do specific cultural elements like risk-taking and openness to change affect KH tendencies?
Organisational structure	RQ3. What is the impact of various organisational structures on the propensity for KH?
Organisational change	RQ4. How does organisational change, such as mergers and acquisitions, influence KH behaviours among employees?

generally increases KH (Caputo *et al.*, 2021; Sofyan *et al.*, 2023b), while a positive knowledge culture (Serenko and Bontis, 2016; Chatterjee *et al.*, 2021) and supportive environments (e.g., Tan *et al.*, 2022) can reduce it. However, organisational support's impact on KH can differ, based on cultural contexts (Alnaimi and Rjoub, 2021).

Organisational antecedents of KH, while well-studied, present opportunities for more in-depth exploration, particularly in understanding the complex dynamics of leadership styles and their influences on KH. The traditional binary view of leadership as either positive or negative oversimplifies its diverse range of styles, intensities and orientations, each with unique implications for KH. Delving into these nuances can provide more precise guidance for leaders in managing KH. In addition, the role of specific elements of organisational culture in KH, such as risk-taking, openness to change and collaboration, warrants further investigation. Similarly, how various organisational structures impact KH – flat vs. hierarchical, centralised vs. decentralised, formalised vs. informal – is an area that needs more research. These elements may significantly influence knowledge flow, accessibility and perceptions around hiding knowledge. Another critical research avenue is understanding how organisational transformation – through mergers, acquisitions, restructurings or strategic shifts – affects KH. Such changes might either exacerbate or mitigate KH, depending on the ensuing uncertainty and insecurity or the creation of new knowledge-sharing norms (see Table 6).

Path B: consequences of KH

Appendix 2, B1: individual-level consequences

At the individual level, KH negatively affects in-role performance (e.g., Singh, 2019; Garg et al., 2021; Akhtar et al., 2022), organisational citizenship behaviour (Burmeister et al., 2019; Kaur and Kang, 2023), employee identification (Abdelmotaleb et al., 2022), creativity (e.g., Černe et al., 2017; Zhu et al., 2019; Feng et al., 2022), and hampers innovation (e.g., Chen et al., 2022; Donate et al., 2022). However, certain forms of KH, such as playing dumb, may have mixed effects on short-term innovation performance (Khoreva and Wechtler, 2020). KH also correlates with increased turnover intentions, highlighting its potential influence on employee retention (Zhang and Min, 2022a; Sheidaee et al., 2022). Additionally, KH generally undermines employee well-being and satisfaction (Jiang et al., 2019; Agarwal et al., 2022b), although its specific forms, such as evasive hiding and playing dumb, can vary in their impact on job satisfaction and empowerment (Offergelt et al., 2019).

While the connection between KH and turnover intentions is relatively well-researched, other significant employment outcomes still need to be adequately studied. Future research could delve into the implications of KH on such outcomes as career progression, role transitions and commitment. The long-term effects of KH on an individual's career path and professional development also present a promising avenue for exploration. Second, research regarding the attitudinal and emotional consequences of KH could be more extensive. KH's behaviour might trigger various responses, ranging from resistance to change to lowered job satisfaction and self-efficacy. Potential questions are asked in Table 7.

Table 7. Individual consequences: knowledge gaps and proposed research questions

Knowledge gaps	Proposed research questions
Career path and professional	RQ1. What are the implications of KH on employment outcomes such as career progression, role transitions and job commitment?
development	RQ2. Can KH lead to stagnation in career progression or hinder role transitions within an organisation?
Attitudinal consequences	RQ3. What are the attitudinal consequences of KH, and how do they affect an individual's professional life?
Emotional consequences	RQ4. What emotional responses can KH trigger in individuals, and how do these responses influence their job performance and satisfaction?

Table 8. Interpersonal consequences: knowledge gaps and proposed research questions

Knowledge gaps	Proposed research questions
Interpersonal trust	RQ1. How does the practice of different types of KH (e.g., evasive hiding, playing dumb, rationalised hiding) impact interpersonal trust, and do they affect willingness to collaborate on future projects?
Status	RQ2. How does the perception of a coworker engaging in KH (e.g., playing dumb) influence their perceived competence and credibility?
Working relationship	RQ3. How does this perception affect the working relationship?

Appendix 2, B2: interpersonal consequences

We encountered only one study from the selected papers that examined the impact of KH on interpersonal relationships. Connelly and Zweig (2015) suggest that not all forms of KH are equally damaging to interpersonal relationships: evasive hiding and playing dumb negatively affect relationships, with the former encouraging future knowledge withholding. More extensive research is needed to understand the impact of different types of KH on various aspects of interpersonal relationships. For example, different types of KH might impact trust, cooperation or even the propensity to engage in other counterproductive work behaviours. Accordingly, we propose the following potential research questions in Table 8.

Appendix 2, B3: team-level consequences

At the team level, KH notably undermines creativity (Bogilović et al., 2017; Fong et al., 2018; Peng et al., 2019), innovation (Zhang and Min, 2022b), project performance (Zhang and Min, 2019; Chatterjee et al., 2021; Zhang, Z. et al., 2022), team stability (Ma et al., 2022) and viability (Wang et al., 2018). When a leader hides knowledge, it harms team citizenship (Arain et al., 2022a). This understanding, while comprehensive, points to gaps in current research, particularly in exploring the impact of KH on team performance. While current literature primarily focuses on project performance, future research could broaden this scope to include in- and extra-role behaviours. In-role behaviours could involve task-specific performances, whereas extra-role behaviours may capture helping behaviours, which can be influenced by KH dynamics within the team. Secondly, there is a need to delve deeper into how KH influences team stability and viability, particularly in dynamic or uncertain environments. For example, the impact of KH in remote teams or teams in crises needs to be studied more (see Table 9).

Table 9. Team-level consequences: knowledge gaps and proposed research questions

Knowledge gaps	Proposed research questions
Team-level in- and extra-role behaviours	RQ1. How does KH impact team performance, specifically concerning in- and extra-role behaviours?
Team stability and viability	RQ2. How does KH influence team stability and viability, especially in dynamic environments or remote teams?

Table 10. Organisational consequences: knowledge gaps and proposed research questions

Knowledge gaps	Proposed research questions
Objective firm performance	RQ1. What is the impact of KH on objective performance metrics like firm value, profitability, market share and return on investment?
Organisational culture, employee retention and organisational learning	RQ2. How does KH affect key organisational outcomes such as organisational culture, employee retention and organisational learning?
Differences across sectors, firm sizes	RQ3. Does the effect of KH on organisational outcomes differ across sectors and firm sizes?

Appendix 2, B4: organisational-level consequences

Fewer studies examine the organizational-level consequences of KH, such as firm performance (Chatterjee *et al.*, 2021; Xiong *et al.*, 2021; Haar *et al.*, 2022) and innovation (Haar *et al.*, 2022; Duan *et al.*, 2022). However, the studies on firm performance focus on perceptual measures rather than objective performance metrics. More investigation is needed of the effect of KH on objective performance metrics such as firm value, profitability, market share and return on investment. Future research might explore the relationship between KH and other crucial organisational outcomes, such as organisational culture, employee retention and organisational learning. Exploring how KH impacts these organisational outcomes across different sectors and firm sizes could provide critical insights (see Table 10).

Path C: boundary conditions of KH

Appendix 3, C1: boundary conditions influencing KH

Individual factors, such as personality traits, skills, values, beliefs and motivation, significantly influence KH. Narcissistic rivalry (De Clercq *et al.*, 2022a), self-esteem (Agarwal *et al.*, 2022a), benevolence (Jahanzeb *et al.*, 2021), and neuroticism (Arshad and Ismail, 2018) influence KH in response to negative workplace behaviours. Similarly, emotional and psychological states, such as self-efficacy (Han *et al.*, 2022) and harmony enhancement (De Clercq *et al.*, 2022b), significantly impact KH. Furthermore, negative reciprocity beliefs (Jahanzeb *et al.*, 2019; Moin *et al.*, 2024) and moral disengagement (Ayub *et al.*, 2021) under abusive leadership heighten KH tendencies. High political skills mitigate the effects of negative leadership on KH (Offergelt and Venz, 2023; Kaur and Kang, 2023), but proactivity can increase KH in competitive settings (Sofyan *et al.*, 2023b). Prosocial motivation decreases KH in low trust (Hernaus and Černe, 2022) and high time-pressure environments (Škerlavaj *et al.*, 2018). At the interpersonal level, such factors as co-rumination (Agarwal *et al.*, 2022a) increase the impact of abusive supervision on KH, but positive affectivity reduces it (Kmieciak, 2022). Strong leader–member relationships can increase KH in response to exploitative leadership (Feng *et al.*, 2022), while weaker relationships amplify the effect of a supervisor's bottom-line mentality on promoting KH (Chen *et al.*, 2022).

In team settings, task interdependence mitigates the impact of self-serving leadership on KH (Peng et al., 2019), while team-based rewards reduce KH's adverse effects on team viability (Wang et al., 2018). Power dynamics (Hays et al., 2022) and team efficacy, especially in trust contexts (Yuan et al., 2021), significantly influence KH. Perceived over-qualification and varying abusive supervision alter KH in teams (Wu et al., 2023). Team climate plays a crucial role: high compliance HR systems promote KH (Batistič and Poell, 2022), but mastery climates reduce it (Men et al., 2020). Social exchanges, collective motivation (Babič et al., 2019), and organisational justice (Huo et al., 2016) also moderate KH, alongside affect-based trust (Guo, M. et al., 2022) and team affective tone (Ma and Zhang, 2022). Team collectivism and relational conflict shape how faultlines and gossip relate to KH (Khan et al., 2021).

Organisational factors, such as procedural justice (Wang *et al.*, 2022) and organisational politics (Arain *et al.*, 2022a), affect KH, while competitive climates under work overload intensify KH (Sofyan *et al.*, 2023a). Forgiving climates (Yao *et al.*, 2020a) and organisational justice (Khan, A. *et al.*, 2022) mitigate the negative impacts of gossip and bullying on KH. The influence of abusive supervision on KH varies with workplace climate (Feng and Wang, 2019). Low organisational psychological ownership weakens the KH-territoriality link (Peng, 2013), and environmental dynamism lessens the adverse effects of KH on customer interactions (Chaker *et al.*, 2021). Evasive KH correlates with pushover managers (Chaker *et al.*, 2021), and various leadership styles, including transformational, ethical and benevolent, affect KH in response to work incivility and job insecurity (Nguyen *et al.*, 2022; Anand *et al.*, 2023; Chhabra and Pandey, 2023). The absence of leader rewards affects the job autonomy–KH relationship (Peng *et al.*, 2022). Job complexity (Qin *et al.*, 2023), task interdependence (Hernaus *et al.*, 2019; Zhang and Min, 2021), job engagement (Ma *et al.*, 2020), and competitive goal interdependence (Zhang and Ji, 2023) influence KH. Job mobility (Guo, L. *et al.*, 2022) and feedback methods (Zhu *et al.*, 2019) also shape KH and its consequences.

The boundary conditions influencing KH have been a focal point of numerous studies. Nevertheless, there remain avenues for exploration that can further enrich this area of research. At the individual level, in challenging or adverse work environments, factors such as individual adaptability and resilience, emotional intelligence, and trait self-esteem can play crucial roles in influencing KH behaviours. These elements, acting as potential moderators, may buffer against or exacerbate the propensity to hide knowledge in response to such stressors as job insecurity or workplace conflict. At the team level, the quality of LMX and the level of relational social capital within teams can significantly affect the tendency for KH among team members. Similarly, at the organisational level, examining how leadership styles such as transactional and inclusive leadership moderate KH could yield novel insights. Additionally, it is particularly interesting to examine whether leadership style (e.g., transformational or transactional) alters how employees perceive and

Table 11. Boundary conditions influencing KH: knowledge gaps and proposed research questions

Knowledge gaps	Proposed research questions
Individual boundary	RQ1. How do individual adaptability and resilience influence KH behaviours in response to workplace stressors like job insecurity or conflicts?
conditions	RQ2. In what ways do emotional intelligence and trait self-esteem moderate the relationship between interpersonal conflicts and KH?
Team-level boundary conditions	RQ3. How do LMX quality and relational social capital within teams affect the propensity for KH among team members?
Organisational boundary	RQ4. How do organisational policies and practices moderate the impact of leadership behaviours on KH?
conditions	RQ5. How do different leadership styles interact with job characteristics to impact KH? How does the influence of leadership styles on KH differ across various industries or organisational contexts?
	RQ6. In what ways do different job design factors moderate the relationship between work pressure and KH?

respond to KH initiated by their supervisors. Furthermore, the role of leadership in KH could be influenced by various factors, such as job characteristics and organisational culture. The effects of such moderating variables remain less studied. Moving from leadership research to job design, we encounter a more complex debate. Some studies associate high work pressure with increased KH as a resource conservation strategy, and others suggest that the fear of negative consequences discourages KH despite work overload. Future research may consider potential moderating variables that might influence this relationship, such as task complexity and performance pressure (see Table 11).

Appendix 3, C2: boundary conditions influencing the consequences of KH

At the individual level, agreeableness influences KH's effect on organisational identification (Abdelmotaleb et al., 2022), the chief executive officer's trust in the chief technology officer effects KH's impact on product development (Xiong et al., 2021), and cultural intelligence modulates KH's effect on creativity (Bogilović et al., 2017). Organisational cynicism (Jiang et al., 2019) and Zhongyong thinking (Chen et al., 2022) also affect KH's impact on psychological safety and innovation. Interpersonally, employee social status intensifies KH's negative effect on creativity (Rhee and Choi, 2017). In teams, task interdependence (Fong et al., 2018), team stability (Zhang and Min, 2019), and climate (Černe et al., 2014, 2017) influence KH's effect on team outcomes. Organizationally, internal knowledge flow moderates KH's relationship with innovation quality (Duan et al., 2022), and leader-follower value congruence affects the consequences of leader KH on various outcomes (Akhtar et al., 2022).

However, the current body of research on boundary conditions influencing KH outcomes remains limited; there is a clear need for more studies, especially those focusing on intervention strategies. First, at the individual level, career stage and cognitive style influence individual responses to KH. Early-career employees, for instance, might be more susceptible to the alienating effects of KH, highlighting the need for targeted support and development opportunities for these individuals. How individuals process information and solve problems could also affect their response to KH. Those with adaptive cognitive styles may find alternative knowledge sources or navigate KH barriers. At the team level, the diversity of expertise and communication norms influences how KH affects team dynamics and outcomes. Teams with a broad range of expertise and open communication channels may experience less disruption from KH, suggesting that team composition and interaction norms are crucial areas for organisational focus and intervention. Finally, such factors as learning orientation play a crucial role at the organisational level. Organisations prioritising learning and development may counter KH's adverse outcomes by fostering environments conducive to alternative knowledge sources and growth. This observation points to the potential effectiveness of organisational policies and practices in shaping the consequences of KH (see Table 12).

Table 12. Boundary conditions influencing the consequences of KH: knowledge gaps and proposed research questions

Knowledge gaps	Proposed research questions
Individual boundary conditions	RQ1. How does an individual's career stage influence their perception and response to KH, particularly among early-career employees?
	RQ2. How do different cognitive styles, particularly adaptive problem-solving approaches, affect an individual's ability to navigate KH and identify alternative knowledge sources?
Team-level boundary conditions	RQ3. How does the diversity of expertise within a team impact the team's resilience to the disruptive effects of KH?
Organisational boundary conditions	RQ4. What organisational policies and practices can be developed to create an environment that offsets the negative consequences of KH?

Conceptual framework

To understand the academic discourse surrounding KH, the reviewed papers have been organised by theme. Based on this thematic categorisation, we have identified several areas where our understanding is (still) underdeveloped. Building on this understanding and employing inductive logic, a multi-level framework of KH was constructed (Figure 3). This framework incorporates elements that were missing in earlier research and structures existing research within a multi-level framework. A multi-level perspective is crucial for advancing theoretical concepts as it divides them into multiple component elements and then draws relationships between them at different levels of analysis (Salvato and Rerup, 2011). While there are different interpersonal-, team-, and organisational-level sources that individuals can independently draw on to engage KH, it is the congruence between personal attributes and environmental factors that impacts the KH (Babič *et al.*, 2019; Banagou *et al.*, 2021; Arain *et al.*, 2022b). This framework highlights the joined influences of personal and environmental factors on KH and thus increases our understanding of how these factors interact within a dynamic system.

Following this logic, we developed a framework that categorises antecedents, boundary conditions and outcomes of KH across micro, meso, and macro levels, ensuring a holistic view of the phenomenon. The dashed lines in Figure 3 represent areas that have scarcely been studied or not studied, with equal or fewer than five existing works dedicated to these topics.

In this framework, KH operates on multiple interconnected levels: micro (individual and interpersonal), meso (group and team), and macro (organisational and national). At the macro level, we focus on organisational factors (such as internal environment and processes) alongside external factors (such as national culture and country-level economic conditions). These elements are pivotal in shaping KH dynamics, influencing how knowledge is concealed or shared in diverse organisational, cultural and national contexts. We also analyse how KH manifests in different macro-level settings, exploring its impact on innovation and economic performance at the national level. The meso level focuses on the dynamics within groups and teams, highlighting how their characteristics and norms serve as catalysts or deterrents for KH, thus shaping knowledge flow. At the micro level, our focus shifts to individual traits, attitudes and interpersonal interactions that drive KH and its subsequent effects.

In exploring KH, we anticipate intricate, cross-level interactions among micro, meso, and macro factors. For example, at the micro level, individual perceptions and interpretations are critical in shaping responses to KH events. When an individual perceives a KH event as unfair or as a

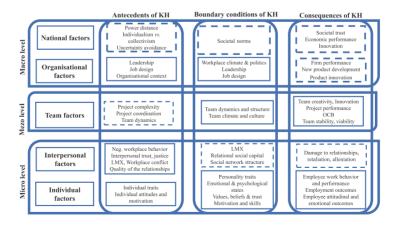


Figure 3. Multi-level Framework of KH

recurrent issue, this can lead to further instances of KH and influence meso-level dynamics, including team cohesion and collective efficacy, which over time can escalate to impact macro-level organisational outcomes such as innovation capability and organisational culture. Simultaneously, group dynamics at the meso level play a pivotal role in mediating the relationship between individual behaviours and organisational outcomes. Such factors as group norms, cohesion and the psychological safety perceived within teams can either mitigate or exacerbate the tendency towards KH. At the macro level, organisational structures, policies and cultures set the stage for managing knowledge. These factors can either promote transparency and sharing or foster an environment conducive to KH, responding rationally to organisational demands and expectations. Such external factors as industry norms and national culture further influence organisational approaches to knowledge management, thereby shaping individual and group behaviours. This suggests that a micro-level investigation is incomplete without incorporating macro- and meso- level interventions.

Conclusion

In systematically reviewing 173 peer-reviewed papers, this research has mapped the key antecedents, boundary conditions and outcomes of research on KH, identified critical knowledge gaps and posed pertinent research questions. The outcomes of our work have led to the development of a multi-level framework that categorises KH at micro, meso and macro levels and integrates the findings from our thematic mapping. This framework consolidates current knowledge in the field of KH and lays the groundwork for future investigations.

The systematic literature review's findings advance our understanding of KH in general and the complex dynamics of KH in particular. The consolidated view of the existing KH literature developed and presented in this paper offers not only a structured approach for future research, but, we also hope, reduces the reinvention of existing knowledge and instead builds upon it to further the understanding and management of KH in various organisational contexts. The proposed dynamic framework highlights the importance of being aware of these multi-level interactions. Interventions at one level will inevitably have ripple effects across others, influencing overall knowledge dynamics within organisations.

It is important to acknowledge some weaknesses. Despite the rigorous approach, relevant papers may still have been omitted. For instance, papers published in journals rated as 1 star or unranked (according to the Association of Business Schools' *Academic Journal Quality Guide*, 2021) were not included. Finally, while systematic reviews are a valuable research method, they have inherent limitations. Future research could perform meta-analyses to offer stronger statistical support of our findings and address one limitation.

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Appendices

Appendix 1. Antecedents of KH

Level

Main findings

A1. Individual Individual traits (A1.1), individual attitudes and motivation (A1.2)

A1.1 Traits such as dark triad traits (Pan et al., 2018; Soral et al., 2022), supervisor's bottom-line mentality (Chen et al., 2023), neuroticism (Anaza and Nowlin, 2017) and cynicism (Nguyen et al., 2022) promote KH. Traits such as conscientiousness and agreeableness do not significantly correlate with KH (Anaza and Nowlin, 2017; Banagou et al., 2021). Competitiveness and goal orientation (Hernaus and Černe, 2022; Zhu et al., 2019; Rhee and Choi, 2017), lack of confidence in the possessed knowledge (Kumar and Varkkey, 2018), psychological entitlement and unmet recognition (Khalid et al., 2020; Alnaimi and Rjoub, 2021) may drive individuals towards KH. Educated, experienced and emotionally intelligent individuals tend to use rationalised KH as a strategic approach (Zhang et al., 2023). The tendency of KH is more prevalent at the beginning and end of one's career, indicating the impact of career trajectory on KH behaviour (Issac et al., 2020).

A1.2 Employees who perceive knowledge as personal property tend to engage more in KH (Pereira and Mohiya, 2021). This ownership, which fosters territoriality, is associated with counterproductive knowledge behaviours, including KH (Shirahada and Zhang, 2022; Huo et al., 2016; Peng, 2013; Guo, M. et al., 2022; Jafari-Sadeghi et al., 2022; Singh, 2019). Motivational factors are also pivotal in KH dynamics. Garg et al. (2021) found a correlation between performance motivation, territoriality, and KH. Xiong et al. (2021) argued KH can provide personal satisfaction and time-saving benefits. Studies by Butt (2021) and Butt and Ahmad (2019) highlight that career-driven motives like indispensability and fear of negative evaluation drive KH. Additionally, Hilliard et al. (2022) observed that certain professionals, like senior staff or R&D engineers, may potentially resort to KH to benefit their organisations.

A2. Interpersonal

Negative workplace behaviour (A2.1), trust and justice (A2.2), conflict (A2.3), relationship quality (A2.4) A2.1 Employees may hide knowledge when treated in an uncivil manner or bullied (Anand et al., 2023; Venz and Mohr, 2023; Bari et al., 2023; Chaker et al., 2021; Yao et al., 2020b; Arshad and Ismail, 2018). Negative workplace gossip (Cheng et al., 2023; Khan, A. et al., 2021, 2022; Yao et al., 2020a) and workplace ostracism (Bhatti et al., 2023) can also trigger KH behaviour.

A2.2 Distrust and lack of interpersonal trust can trigger KH behaviour (Jafari-Sadeghi *et al.*, 2022; Hadjielias *et al.*, 2021; Issac *et al.*, 2020; Kumar Jha and Varkkey, 2018; Connelly *et al.*, 2012). Trustworthy colleagues who treat employees with justice are less likely to face KH (Su, 2021).

A2.3 Task (Donate et al., 2022; Boz Semerci, 2019) and relational conflicts (Boz Semerci, 2019; Venz and Nesher Shoshan, 2022) may impact employees' tendency to retaliate and lead to KH. KH can also be a defence mechanism resulting from role (De Clercq et al., 2022a) and relational conflicts (Nguyen et al., 2022; Peng et al., 2021).

A2.4 High-quality leader–member exchange (He *et al.*, 2022; Babič *et al.*, 2019), co-worker support (Batistič and Poell, 2022) and social communication (Su, 2021) result in less KH. However, Zhao *et al.* (2019) discovered that leader–member exchange quality is negatively related to evasive hiding and playing dumb but not to rationalised hiding. Stronger personal power boosts knowledge sharing, while expected power losses were linked with increased KH (Issac *et al.*, 2023). Workplace status can either foster an obligation to share knowledge or induce envy, leading to increased KH (Liu *et al.*, 2020).

A3. Team

Complex projects, particularly in new product development, tend to increase KH (Zhang, Z. et al., 2022). In contrast, effective coordination can lead to more knowledge sharing over hiding (Zhang and Min, 2022b). Empowering leadership influences KH through group relational conflicts (Lin et al., 2020). Team social (e.g., age, gender, race, nationality) faultiness promote KH, but informational (e.g., tasks, information, knowledge) faultiness reduces KH (Ma et al., 2022), and power dynamics within teams also play a role in KH behaviours (Hays et al., 2022).

Level

A4. Organizational

Leadership styles (A4.1), job design (A4.2), organizational context factors (A4.3)

Main findings

A4.1 Negative leadership behaviours such as abusive (Hao et al., 2022; Agarwal et al., 2022a; Wang et al., 2021; Pradhan et al., 2020; Feng and Wang, 2019; Jahanzeb et al., 2019), unethical (Almeida et al., 2022; Qin et al., 2023), punitive (Sarwar et al., 2021), exploitative (Feng et al., 2022; Moin et al., 2024), and self-serving (Peng et al., 2019) leadership style can lead to KH. Contrarily, employees working under ethical (Agarwal et al., 2022b; Koay and Lim, 2022; Anser et al., 2021; Men et al., 2020), individual-focused empowering (Lin et al., 2020), transformational (Scuotto et al., 2022), servant (Usman et al., 2024), and humble (Al Hawamdeh, 2023) leaders are less likely to hide knowledge from colleagues. Employees who observe their supervisors deliberately hiding knowledge perceive KH as accepted and engage in KH themselves (Arain et al., 2022a; Offergelt and Venz, 2023; Kmieciak, 2022; Offergelt et al., 2019).

A4.2 Excessive time pressure (Zhang, X. et al., 2022; Škerlavaj et al., 2018) and significant work pressures (Sofyan et al., 2023a) could promote KH as a resource conservation behaviour. However, fear of reprisal or task delay might deter KH despite work overload (Kmieciak, 2023). Job insecurity can also cause employees to hide knowledge (Chhabra and Pandey, 2023; Kmieciak, 2023; Shoss et al., 2023; Nguyen et al., 2022; Serenko and Bontis, 2016). Similarly, overqualification may engender negative emotions, leading to increased KH (Shafique et al., 2023; Yeşiltaş et al., 2023; Ma and Zhang, 2022; Li et al., 2022). High job autonomy reduces KH (Peng et al., 2022; Gagné et al., 2019), while task interdependence shows mixed results in its impact on KH (Gagné et al., 2019; Jafari-Sadeghi et al., 2022). Paradoxically, both work alienation (Guo, L. et al., 2022) and high job engagement (Wang et al., 2019) are associated with increased KH.

A4.3 Organisational politics (Kaur and Kang, 2023; De Clercq et al.., 2022b; Arain et al., 2022b), corporate hypocrisy (Zhao and Liu, 2022), and organisational dehumanisation (Muhammad and Sarwar, 2021) can contribute to KH. However, individuals with high political skills are less impacted (Modem et al., 2023). HR practices shape the KH climate, where trust in leadership and effective practices reduce KH (Haar et al., 2022; El-Kassar et al., 2022; Good et al., 2023), but the effectiveness of HRM practices in managing KH varies depending on workplace conditions (Oubrich et al., 2021). The presence or absence of rewards influences KH, with financial rewards increasing it and non-financial rewards decreasing it (Zhang and Min, 2021; Stenius et al., 2016; Shrivastava et al., 2021). A positive knowledge culture affects KH negatively (Chatterjee et al., 2021; Serenko and Bontis, 2016), but its effectiveness against specific types of KH varies (Connelly et al., 2012). Feedback for knowledgesharing prevents withholding (Anaza and Nowlin, 2017), while the knowledge-sharing climate does not significantly impact counterproductive knowledge behaviour (Shirahada and Zhang, 2022). Although Jafari-Sadeghi et al. (2022) discover that a competitive work environment may not significantly contribute to KH in specific contexts, internal competition typically raises KH (Shirahada and Zhang, 2022; Sofyan et al., 2023b; Caputo et al., 2021; Chaker et al., 2021; Butt, 2021; Butt and Ahmad, 2019; Kumar and Varkkey, 2018; Anaza and Nowlin, 2017). Functional bias (Shrivastava et al., 2021) and perceived organisational injustice (Jahanzeb et al., 2021; Abubakar et al., 2019) can trigger KH. Organisational design can mitigate KH only when organisational justice is properly developed (Oubrich et al., 2021). Supportive environments can mitigate KH (Pereira and Mohiya, 2021; Tan et al., 2022), but their impact may vary depending on cultural orientation (Alnaimi and Rjoub, 2021).

A5. Miscellaneous

Technological turbulence and employees' AI and robotics awareness can influence KH (Arias-Pérez and Vélez-Jaramillo, 2022), while high information and communication technology (ICT) use is linked to increased KH due to reduced empathy (Zhang and Ji, 2023). Different social media usage patterns affect KH differently (Ma *et al.*, 2020). Politeness in requests (Xia *et al.*, 2022), counter-knowledge (Cegarra-Navarro *et al.*, 2022), social inclusion (Che *et al.*, 2022), and the adoption of blockchain technology (Chang *et al.*, 2020) also play roles in KH behaviours.

B4. Organization-

level

Level	Main findings
B1. Individual-level B1.1 Employee work behaviour and performance B1.2 Employment outcomes B1.3 Employee attitudinal and emotional outcomes	B1.1 KH negatively affects in-role performance (Akhtar et al., 2022; Syed et al., 2021; Moin et al., 2024; Garg et al., 2021; Chaker et al., 2021; Singh, 2019), though playing dumb might positively impact job performance (Khoreva and Wechtler, 2020). KH also reduces organisational citizenship behaviour (Kaur and Kang, 2023; Burmeister et al., 2019), employee identification (Abdelmotaleb et al., 2022), creativity (Feng et al., 2022; Akhtar et al., 2022; Chatterjee et al., 2021; Syed et al., 2021; Zhu et al., 2019; Jahanzeb et al., 2019; Černe et al., 2017), and hampers innovation (Chen et al., 2022; Guo, M. et al., 2022; Donate et al., 2022; Arain et al., 2020b; Cerne et al., 2017). It can lead to workplace deviance and silence (Bari et al., 2020; Singh, 2019). However, Khoreva and Wechtler (2020) found that evasive KH can enhance short-term innovation performance as knowledge becomes more valuable and relevant to individual employees.
	B1.2 KH has been linked to increased turnover intentions (Zhang and Min, 2022a; Sheidaee et al., 2022; Syed et al., 2021; Offergelt et al., 2019) and promotability (De Clercq et al., 2022b). Studying the dimensions of KH in isolation, Offergelt et al. (2019) did not find a similar pattern for rationalised hiding.
	B1.3 KH generally undermines well-being and thriving (Agarwal et al., 2022b; Jiang et al., 2019). However, playing dumb can lower end-of-work psychological strain, reducing stress immediately (Venz and Nesher Shoshan, 2022). Evasive hiding and playing dumb are negatively related to job satisfaction and empowerment, while rationalised hiding positively affects empowerment (Offergelt et al., 2019).
B2. Interpersonal	Rationalized KH does not harm relationships or future knowledge withholding, while evasive hiding and playing dumb negatively affect relationships, with the former encouraging future knowledge withholding (Connelly and Zweig, 2015).
B3. Team-level	KH diminishes team creativity (Peng et al., 2019; Fong et al., 2018; Bogilović et al., 2017), innovation (Zhang and Min, 2022b), project performance (Zhang, Z. et al., 2022; Chatterjee et al., 2021; Zhang and Min, 2019), team stability (Ma et al., 2022) and viability (Wang et al. 2018). When a leader hides knowledge, it harms team citizenship (Arain et al., 2020a).

et al., 2022) impacts noted in different studies.

KH can negatively impact firm performance (Haar et al., 2022; Chatterjee et al., 2021), but

strategic KH might benefit certain contexts (Xiong et al., 2021). The relationship between KH and innovation varies, with both negative (Haar et al., 2022) and U-shaped relationship (Duan

Level	C1. Boundary conditions influencing KH	C2. Boundary conditions influencing the consequences of KH
Individual-level	C1.1 Personality traits such as narcissistic rivalry (De Clercq et al., 2022a), self-esteem (Agarwal et al., 2022a), benevolence (Jahanzeb et al., 2021), neuroticism (Arshad and Ismail, 2018), fear of negative evaluation (Syed et al., 2021), and competitiveness (Peng et al., 2021) influence KH in response to negative workplace behaviours, with high entitlement and low self-control exacerbating KH in incivility (Venz and Mohr, 2023). C1.2 Emotional and psychological states like self-efficacy (Han et al., 2022), harmony enhancement (De Clercq et al., 2022b), psychological safety (Lin et al., 2020), and psychological capital (Muhammad and Sarwar, 2021) affect KH, with ego depletion intensifying KH in overqualified individuals (Yeşiltaş et al., 2023). C1.3 Values and beliefs such as negative reciprocity (Jahanzeb et al., 2019; Moin et al., 2024), trust (Nadeem et al., 2021), justice orientation (Usman et al., 2022b), and organisational commitment (Koay and Lim, 2022) self-enhancement and job involvement (Agarwal et al., 2022b), modify how leadership styles relate to KH. In some works, negative reciprocity beliefs and moral disengagement increase evasive hiding and proximity do not affect job insecurity's relationship with KH (Shoss et al., 2023). Hostile attribution bias intensifies the effect of psychological entitlement on KH (Khalid et al., 2020), while collectivistic values reduce and individualistic values increase KH in task conflicts (Boz Semerci, 2019).	Agreeableness can modify the effect of KH on organizational identification (Abdelmotaleb et al., 2022), the CEO's trust in the chief technology officer (CTO) can alter how KH impacts product development (Xiong et al., 2021), and cultural intelligence can reduce KH's adverse effect on creativity (Bogilović et al., 2017). Also, organizational cynicism (Jiang et al., 2019) and Zhongyong thinking (Chen et al., 2022) influence KH's effects on psychological safety and innovative behaviour, respectively.
Interpersonal- level	Kang, 2023), but proactivity can increase KH in competitive settings (Sofyan <i>et al.</i> , 2023b). Prosocial motivation decreases KH in low trust (Hernaus and Černe, 2022) and high-time-pressure environments (Škerlavaj <i>et al.</i> , 2018). Intrinsic motivation for social activities and harmonious work passion lower KH, especially with ethical leadership (Good <i>et al.</i> , 2023; Anser <i>et al.</i> , 2021) and perceived overqualification (Khan, J. <i>et al.</i> , 2022). A high need for affiliation strengthens the relationship between negative workplace gossip and KH (Cheng <i>et al.</i> , 2023). Co-rumination increases the impact of abusive supervision on KH (Agarwal <i>et al.</i> , 2022), but positive affectivity reduces it (Kmieciak, 2022). Overqualification may lead to more KH (Li <i>et al.</i> , 2022), as can low interpersonal liking towards different coworkers (Shafique <i>et al.</i> , 2023). Strong leader-member relationships can increase KH in response to exploitative leadership (Feng <i>et al.</i> , 2022), while weaker relationships amplify the effect of a supervisor's bottomline mentality on promoting KH (Chen <i>et al.</i> , 2022). Relative leader-member exchange can also influence certain KH types (Zhao <i>et al.</i> , 2019).	Employee social status strengthens the negative impact of KH on creativity (Rhee and Choi, 2017).

(Continued)

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Appendix 5. (Conunued)	ontinea)	
Level	C1. Boundary conditions influencing KH	C2. Boundary conditions influencing the consequences of KH
Team-level	C1.3a. Task interdependence lessens the negative impact of self-serving leadership on KH (Peng et al., 2019), while team-based rewards reduce KH's adverse effects on team viability (Wang et al., 2018). Power and status differences within teams influence KH and performance (Hays et al., 2022), and team efficacy can either reduce or amplify specific types of KH depending on interpersonal trust (Yuan et al., 2021). Perceived overqualification and differences in abusive supervision also affect KH in teams (Wu et al., 2023). C1.3b. Climate impacts KH more than personality, regardless of cultural context (Banagou et al., 2021). High	Task interdependence (Fong et al., 2018), team stability (Zhang and Min, 2019), and climate (Černe et al., 2014, 2017) can influence KH's impact on team learning, project performance, and creativity,
	compliance HR systems and market pricing environments increase KH (Batistič and Poell, 2022), while a mastery climate diminishes the impact of ethical leadership on KH (Men <i>et al.</i> , 2020). Social leader-member exchanges and collective prosocial motivation are key factors (Babič <i>et al.</i> , 2019), and organisational justice moderates territoriality's influence on KH (Huo <i>et al.</i> , 2016). Affect-based trust affects the relationship between territorial feelings and KH, impacting innovation (Guo, M. <i>et al.</i> , 2022), and high trust can lessen the negative effects of project complexity on performance (Zhang, Z. <i>et al.</i> , 2022). A positive team affective tone mitigates the link between negative emotions and KH (Ma and Zhang, 2022), and team collectivism and relational conflict influence the relation between faultlines, gossip and KH (Khan <i>et al.</i> , 2021).	respectively. The negative relationship between KH and creativity in a high-performance climate becomes more pronounced (Černe et al., 2014).
Organisational- level	C1.4a Procedural justice (Wang et al., 2022) and organisational politics (Arain et al., 2022a) significantly influence KH, with competitive climates exacerbating KH under work overload (Sofyan et al., 2023a). Forgiving climates (Yao et al., 2020a) and organisational justice (Khan et al., 2022) can reduce the adverse effects of gossip and bullying on KH, respectively. The impact of abusive supervision on KH varies with different workplace climates (Feng and Wang, 2019), and lower psychological ownership within the organisation weakens the link between KH and territoriality (Peng, 2013). Environmental dynamism reduces the negative effects of evasive KH on customer interactions (Chaker et al., 2021).	Internal knowledge flow can moderate the relationship between KH and innovation quality (Duan et al., 2022), and leader-follower value congruence can intensify the effects of leader KH on feedback avoidance, creativity and job
	C1.4b Evasive KH is linked with pushover managers (Chaker et al., 2021), while transformational, ethical and benevolent leadership styles moderate KH in the face of work incivility and job insecurity (Anand et al., 2023; Chhabra and Pandey, 2023; Nguyen et al., 2022). The absence of leader rewards influences the relationship between job autonomy and KH (Peng et al., 2022).	performance (Akhtar <i>et al.</i> , 2022).
	C1.4c Job complexity can lessen the impact of unethical leadership on KH (Qin et al., 2023), and task interdependence influences the relationship between rewards and KH (Zhang and Min, 2021; Hernaus et al., 2019). High job engagement moderates the impact of social media use on KH (Ma et al., 2020), while competitive goal interdependence strengthens the negative effects of ICT use on empathy and KH (Zhang and Ji, 2023). Job mobility (Guo, L. et al., 2022) and feedback methods (Zhu et al., 2019) are also crucial in shaping KH and its outcomes.	

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Appendix 2

Publication II

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Insights into the use of theories in knowledge hiding studies: a systematic review

VINE Journal of Information and Knowledge Management Systems

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Abstract

Purpose — The purpose of this systematic literature review (SLR) is to examine the theoretical landscape of knowledge hiding (KH) research, identifies prevailing theories, the different ways KH is understood within these theories and the underlying assumptions that shape these views. Based on this, ideas for further research are derived to advance the theoretical basis of KH studies.

Design/methodology/approach — Using a theory-based SLR, the authors analysed 170 scientific papers from Scopus and Web of Science. This involved thematic analysis to categorise theories frequently applied in KH research and a detailed examination to link core assumptions to these theoretical perspectives.

Findings — The analysis revealed a reliance on 86 distinct theories, with a notable emphasis on social exchange theory and conservation of resources theory. KH is predominantly conceptualised as a negative, objective, reactive and relational behaviour rooted in social reciprocity and resource conservation. The review uncovers the multifaceted nature of KH, challenging the field to incorporate broader theoretical views that encompass positive aspects, subjective experiences, strategic intentions and non-relational determinants of KH.

Originality/value — To the best of the authors' knowledge, this is the first study to systematically map and analyse the theoretical underpinnings of KH research. It offers a unique contribution by categorising the diverse theories applied in KH studies and explicitly linking these theories to their inherent assumptions about KH. This approach provides a comprehensive overview that not only identifies gaps in the current research landscape but also proposes alternative theoretical perspectives for exploring KH, thereby setting a new direction for future studies in this field.

Keywords Knowledge hiding, Knowledge management, Theories, Systematic literature review **Paper type** Research paper

1. Introduction

Organisations' effective use of knowledge as a key competitive advantage in dynamic business environments is widely recognised (Mahdi *et al.*, 2019; Grant, 1996). In light of this



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understanding, knowledge hiding (KH) has emerged as a critical area in contemporary management research. Due to its impact on organisational creativity (Feng *et al.*, 2022), performance (Zhang *et al.*, 2022; Moin *et al.*, 2022) and innovation (Chen *et al.*, 2022a), it is increasingly relevant thus attracting the interest of scholars and practitioners alike (Duan *et al.*, 2022; Xiong *et al.*, 2021; Fong *et al.*, 2018).

Despite the field's promising development and the increasing calls for more research to deepen our understanding (Haar *et al.*, 2022; Donate *et al.*, 2022), the rapid expansion of KH studies (Bernatović *et al.*, 2022; He *et al.*, 2021) also harbours a danger. This expansion, without adequate synthesis and consolidation, raises concerns about the quality and coherence of knowledge being generated in this area. To address this, we propose a systematic literature review (SLR) on KH's theoretical underpinnings, acknowledging that theories provide the foundation for most research endeavours, from question formulation to data interpretation (Rocco and Plakhotnik, 2009).

While recognising the valuable contributions of existing SLRs in KH, which have provided insights into KH in specific contexts (Fauzi, 2023; Zutshi et al., 2021; Xiao and Cooke, 2019) and identified key research streams (Anand et al., 2022; Siachou et al., 2021), we note that these studies predominantly focused on cataloguing theories without a deeper analytical synthesis. These studies have identified or constructed gaps in existing KH literature that need to be filled. These works, although valuable for mapping the landscape of KH research, often remain on the surface, focusing on visible aspects and thus, as Alvesson and Sandberg (2013, p. 45) argue, tend to "reproduce rather than challenge the assumptions that underlie existing theories and studies". According to these authors, this traditional analysis risks neglecting the deeper underlying assumptions that fundamentally shape a field. These dominant assumptions, as Post et al. (2020) highlight, influence all stages of research, from the formulation of research questions to the design, analysis and interpretation of findings. Therefore, a systematic review and analysis of the theoretical bases underpinning KH research appear imperative. By doing so, we can uncover the assumptions guiding existing studies, thereby illuminating potential biases and paving the way for new directions in KH research. This refined focus could enhance our understanding of KH and challenge us to reconsider and potentially redefine our theories better to capture the complexities of knowledge dynamics within organisations.

Against this background, this SLR aims to examine the theories used in existing KH research, identify their underlying assumptions and conceptualisations and propose future research avenues that enhance and broaden the theoretical understanding of KH in business and management studies. Thus, we pose the following research questions:

- *RQ1.* What theories are currently used in research on KH?
- *RQ2.* How has KH been conceptualised in these theoretical perspectives?
- *RQ3.* What are the dominant assumptions in KH literature and how have they influenced the field's development?

In response to RQ1, we systematically review KH literature to identify and catalogue the theories in use. To address RQ2, we use content analysis to examine how KH is conceptualised within these theoretical perspectives, identifying the core assumptions that shape these conceptualisations. In answering RQ3, we synthesise the dominant assumptions across KH literature overall.

The paper is organised as follows. Firstly, in Section 2, we provide a short introduction to KH and its possible definition to set the frame of this paper. Then, in Section 3, we present the SLR approach used in this paper. Following that, we present the SLR results (Section 4).

After this, we synthesise these findings, which form the basis for proposing future directions for further advancing KH as a field of study (Section 5). Section 6 ends this paper with a conclusion.

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2. Knowledge hiding a short introduction to the term

To avoid confusion, it is essential that we clearly explain to an interested reader what they mean by their key concepts and constructs (Gourlay, 2006). In the following, we will briefly present our understanding of KH. A detailed discussion of the term is not part of this paper; however, this could be aimed for in future research.

Previously published reviews (Anand *et al.*, 2022; Siachou *et al.*, 2021) suggest that scholars studying KH have reached a consensus on the definition of KH. It seems as if the definition of Connelly *et al.* (2012) has prevailed. These authors defined KH as "an intentional attempt by an individual to withhold or conceal task information, ideas, and know-how that another person has requested" (p. 65). As far as the perception of KH is concerned, it has been argued that it is not necessarily intended to harm a person or an organisation, but it is rather a response to a specific situation (Connelly and Zweig, 2015; Koay and Lim, 2022; Xiong *et al.*, 2021). According to Connelly *et al.* (2012), knowledge hiders may pretend that they do not possess the knowledge that is requested (playing dumb), provide incomplete or incorrect information with the promise of complete information in the future (evasive hiding) or explain failing to provide information or blame another party (rationalised hiding). Existing research also reports that KH is considered as a counterproductive knowledge behaviour in organisations (Shirahada and Zhang, 2022; Afshar-Jalili *et al.*, 2021; Singh, 2019; Serenko, 2019; Rhee and Choi, 2017; Serenko and Bontis, 2016).

This study will follow the definition proposed by Connelly *et al.* (2012).

3. Methodology

Following our study purpose, we adopted a SLR method, which facilitates the systematic identification, selection and analysis of relevant literature, ensuring a comprehensive synthesis of existing knowledge in the field (Hiebl, 2023; Williams *et al.*, 2021). The approach chosen followed a set of predetermined procedures as proposed by Tranfield *et al.* (2003) and Kraus *et al.* (2020). We applied Tranfield *et al.* (2003)'s approach to ensure our review was transparent and replicable, enhancing the quality and reliability of our findings (Crossan and Apaydin, 2010). Kraus *et al.*'s methodology complements this by offering a more recent perspective on conducting SLRs in business and management fields, by providing an updated blueprint for executing SLRs. Our review followed a structured three-step procedure:

- (1) planning the review;
- (2) carrying out the review; and
- (3) reporting the review.

The first two steps are detailed in the following subsections. The final step is presented in Section 4.

3.1 Planning the review

Initially, we outlined a research plan by listing the research questions, the selected databases, the relevant keywords and the studies' inclusion and exclusion criteria.

To answer our research questions: What theories are currently used in research on KH? And how has the use of theories changed over the years, if at all? The two most widespread databases, Scopus and Web of Science (WoS) were selected to search relevant KH literature.

A thorough overview of the WoS and Scopus databases and their content has been produced by Birkle *et al.* (2020) for WoS and Thelwall and Sud (2022) for Scopus.

The main search string consisted of the keyword "knowledge hiding". We also used keywords such as "knowledge withholding", "knowledge hoarding" or "counterproductive knowledge behaviour", as we wanted our initial sample to be as complete as possible, i.e. the majority of relevant papers should be covered (*Search syntax in KH*).

Search syntax in KH

Search terms

TITLE-ABS-KEY ("Knowledge Hiding" OR "Hiding Knowledge" OR "Knowledge Hoarding" OR "Knowledge Withholding" OR "counterproductive knowledge behav*")

Source: Table by authors

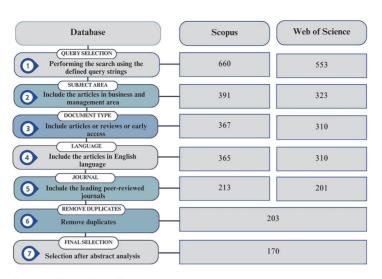
As for the inclusion criteria, we included documents such as articles and early access reviews that were published in English, fell under the business and management categories and were featured in leading peer-reviewed journals, particularly in leading knowledge management (KM) journals. Conversely, we excluded articles published in journals, grey literature such as reports, non-academic research and documents in languages other than English.

3.2 Conducting the review

Firstly, we found 553 articles from WoS and 660 from Scopus based on the abstract, title and keywords. In the second step, we narrowed the results to only the business and management research areas. It yielded 323 papers published in the WoS and 391 in Scopus databases. In Step 3, we only included articles published in scholarly journals to focus on research of high quality. As a result, 310 publications were identified in WoS and 367 in Scopus. In Step 4, articles published in languages other than English have been removed, leaving 310 papers from WoS and 365 in Scopus. In Step 5, only articles published in leading peer-reviewed journals were selected for further examination. Thus, the WoS data set was reduced to 201 and Scopus to 213 articles. In Step 6, 211 duplicate articles (i.e. those indexed in both databases) were excluded from consideration, leaving 203 articles. In Step 7, we screened the titles, keywords and abstracts of all remaining papers and excluded those that did not deal with KH despite prior filtering. As a result, after the screening process, the sample consisted of 170 articles. Figure 1 displays the search and selection processes performed on the 10 October 2023.

3.3 Methods

We applied several research methods to answer the research questions. Firstly, we identified and examined the theories or theoretical perspectives that underpin KH studies. Our theoretical coding was based solely on the explicit text provided in each article to ensure that our interpretations were as objective as possible. Following the identification of relevant theories we conducted a thematic analysis for theories mentioned in at least two studies, following Braun and Clarke's (2006) guidelines. This approach enabled us to systematically uncover, analyse and document recurring themes within the data, providing insights into how KH is conceptualised across various theoretical frameworks. To ensure rigour and comprehensiveness in our analysis, each article was thoroughly examined for instances of the theoretical application to KH. Codes were generated for segments of text that directly contributed to our understanding of how KH is framed within each theoretical context. These codes were then aggregated into themes, each representing a significant conceptual strand across the data set. This iterative process of coding, theme identification and synthesis culminated in a coherent mapping of the theoretical landscape surrounding KH, shedding



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Source: Figure by authors

Figure 1. Search and selection processes

light on its dynamic and varied conceptualisation within scholarly research. To address the identification of core assumptions in KH research, we incorporated an analytical approach informed by Alvesson and Sandberg (2011). This involved careful reading and analysis of how authors discuss KH – its antecedents and outcomes – within the theoretical framework they uded. These assumptions often appear as undisputed "facts" or "truths" about KH, its impact and its nature within organisational settings. Therefore, this perspective was aimed at uncovering potential biases and blind spots in existing research prompted by uncritical adherence to these assumptions.

The methodological rigour applied in our SLR was maintained through standardised coding sheets and iterative research team discussions to resolve discrepancies. The synthesis of our findings was supported by quantitative data extracted from the articles, summarised and presented in various visual formats such as tables and figures to enhance clarity and facilitate comprehension.

4. Results

Section 4 presents a comprehensive analysis of the theoretical foundations of KH research. We begin in Section 4.1 by detailing the variety of theories applied in the study of KH, identifying 86 distinct theories across 170 articles. Subsequently, in Section 4.2, we identify the four different ways KH is understood within these theoretical perspectives. Finally, in Section 4.3, we undertake an examination of the dominant assumptions underpinning KH research.

4.1 Theories used in knowledge hiding research

We have identified 86 distinct theories used across 170 articles. Social exchange theory (SET) is the most frequently used theory, with 49 articles. This theory serves as a basis for understanding the reciprocal nature of social interactions, possibly explaining why people

may engage in KH to balance social reciprocity. The conservation of resources (COR) theory closely follows, which appears in 38 articles. This theory contributes by framing knowledge as a finite resource that individuals might strive to conserve, manifesting KH tendencies. Social learning theory (SLT) is another theoretical lens used in 13 studies, which offers insights into how KH behaviours may be socially learned and perpetuated within organisational settings. Psychological ownership theory (POT) has been invoked in ten articles, suggesting that a sense of ownership over knowledge can significantly influence an individual's decision to withhold it. Social cognitive theory (SCT), featured in nine articles, explores the cognitive processes that could mediate KH within social contexts. Furthermore, social comparison theory and self-determination theory (SDT), each employed in seven articles, provide avenues for investigating the emotional and motivational aspects underpinning KH. Social information processing (SIP) theory and social identity theory (SIT) are less frequent; they have been used in six and five articles, respectively. These theories examine how social contexts shape knowledge-processing behaviours and how ingroup versus out-group dynamics might contribute to KH. Table 1 provides an overview of the theories.

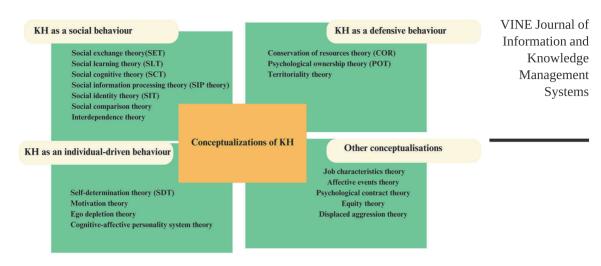
4.2 Conceptualisations of knowledge hiding

This section presents the findings of our review reflecting the four conceptualisations of KH that emerged from the data. Figure 2 provides an overview of our findings. Next, the articles reviewed are discussed under the four main categories.

4.2.1 Category 1: knowledge hiding as a social behaviour (N = 99). The majority of articles view KH as social behaviour characterised by a reciprocal interchange where the causes or effects of an action are influenced by or directly involve the behaviour of others (Baum, 2017). This exploration draws heavily on the reciprocity highlighted in SET (Blau, 1964),

Table 1. Frequently used theories in KH research

Theories	Count	Articles (examples)
Social exchange theory	49	Bari <i>et al.</i> (2023b), Donate <i>et al.</i> (2022), Haar <i>et al.</i> (2022), Feng <i>et al.</i> (2022), Al Hawamdeh (2023), Chaker <i>et al.</i> (2021), Lin <i>et al.</i> (2020), Arain <i>et al.</i> (2020), Jiang and Xu (2020)
Conservation of resources theory	38	Agarwal et al. (2023), Khan et al. (2023c), Zhang et al. (2022), De Clercq et al. (2022a), Nguyen et al. (2022), Chatterjee et al. (2021), Qin et al. (2023), Feng and Wang (2019)
Social learning theory	13	Ali <i>et al.</i> (2023), Arain <i>et al.</i> (2022c), Koay and Lim (2022), Offergelt and Venz (2023), Peng <i>et al.</i> (2019)
Psychological ownership theory	10	Wu et al. (2023), Guo et al. (2022b), Duan et al. (2022), Oubrich et al. (2021), Singh (2019)
Social cognitive theory	9	Zhao et al. (2023), Akhtar et al. (2022), Wang et al. (2022)
Social comparison theory	7	Li et al. (2022), Pandey et al. (2021), Peng et al. (2020)
Self-determination theory	6	Shirahada and Zhang (2022), Peng <i>et al.</i> (2021), Zhang and Min (2021), Gagné <i>et al.</i> (2019)
Social information processing theory	6	Usman et al. (2023), Liao et al. (2023), Abdelmotaleb et al. (2022)
Social identity theory	5	Pandey et al. (2021), Strik et al. (2021), Zhao et al. (2019)
Source: Table by author	S	



Source: Figure by authors

Figure 2. Used theories and KH conceptualisations

where relationships among colleagues are built based on interpersonal transactions in the workplace. For instance, positive leader/supervisor behaviour, e.g. leader-member exchange (He et al., 2022; Babič et al., 2019), supervisor support (Kmieciak, 2023), humble leadership (Al Hawamdeh, 2023) and empowering leadership (Lin et al., 2020) motivates followers/ supervisees to reciprocate positive behaviour by decreasing their KH until a perceived balance of exchange is reached. Employers who invest more in their employees' development by offering superior high-performance work systems (Haar et al., 2022), promoting shared goals (Nadeem et al., 2020) and organisational support (Alnaimi and Rjoub, 2021) encourage more positive behaviours and lower KH climate. Interactions with co-workers are also crucial, e.g. team-member exchange (Tan *et al.*, 2022) and perceived co-worker support (Batistič and Poell, 2022) are negatively related to KH. However, individuals may reciprocate not only positive actions but also negative ones. Following the SET, reviewed research suggests that negative leader/supervisor behaviour, such as exploitative leadership (Moin et al., 2022) and abusive supervision (Offergelt and Venz, 2023; Khalid et al., 2020; Pradhan et al., 2020), encourage followers to negatively reciprocate by decreasing their KH behaviour. When employees experience uncivil treatment or bullying, the social exchange process assumes that both parties further exchange in a mutually hostile manner by exhibiting negative behaviour, such as KH (Anand et al., 2023; Venz and Mohr, 2023; Bari et al., 2023a; Chaker et al., 2021; Arshad and Ismail, 2018).

The second conceptualisation in Category 1 assumes that KH is a learnt behaviour from the social environment, drawing from SLT, SCT and SIP theory. According to SLT, the behaviour of individuals within an organisation, including practices around KH, is largely learned through observation of others, particularly those in leadership positions (Bandura, 1977, 1986). For instance, ethical leadership (Xie *et al.*, 2023; Ali *et al.*, 2023; Koay and Lim, 2022; Men *et al.*, 2020) and empowering leadership (Lin *et al.*, 2020) are modelled as exemplary behaviours, promoting a culture of openness and knowledge sharing. Conversely, witnessing knowledge withholding by supervisors (Zulfiqar *et al.*, 2023; Offergelt and Venz, 2023; Arain *et al.*, 2022a, 2020;

Offergelt *et al.*, 2019) or engaging in self-serving leadership (Peng *et al.*, 2019) can signal to employees that KH is an acceptable, or even strategic, behaviour under certain conditions.

Building upon SLT, SCT emphasises the reciprocal relationship and interaction among the environment, personal characteristics and behaviours (Bandura, 1986). Environmental cues, such as a mastery climate (Wang et al., 2022), can positively impact perceived status within an organisation, whereas corporate hypocrisy (Zhao and Liu, 2022) can affect moral identity, both of which can then affect employee KH. Negative workplace behaviours, such as leader KH (Zhao et al., 2023), perception of organisational politics (Arain et al., 2022b) and negative workplace gossip (Khan et al., 2021) initiate moral disengagement by lowering the moral self-standard and increasing KH. SIP theory (Salancik and Pfeffer, 1978) further elucidates the process by which individuals interpret and respond to the social cues in their environment, influencing their KH behaviours. Leaders and those with high levels of power influence employees' perceptions of the workplace. If employees perceive their supervisors to practise self-serving leadership (Peng et al., 2019), treat them unfairly in a team setting (Liao et al., 2023), or withhold knowledge (Abdelmotaleb et al., 2022), they may interpret this as a negative signal and engage in KH behaviours. Conversely, when employees feel valued and appreciated through servant leadership (Usman et al., 2022), supervisor support (Usman *et al.*, 2023) and appropriate HR practices (El-Kassar *et al.*, 2022), they may be less likely to engage in KH behaviours.

The third conceptualisation in Category 1 refers to the impact of the social environment on self-concept. SIT unveils that employees with a strong identification with their team or organisation display a diminished inclination towards KH (Strik *et al.*, 2021; Zhao *et al.*, 2019). In cases where employees disagree with prevailing practices, such as organisational injustice, they may intentionally withhold requested knowledge from their colleagues to assert the distinctiveness of their identity (Jahanzeb *et al.*, 2021). This discourse is further enriched by social comparison (Festinger, 1954) and relative deprivation theories, which suggest that employees' perceptions of their qualifications and relative standing within the organisation can catalyse KH (Wu *et al.*, 2023; Li *et al.*, 2022; Khan *et al.*, 2023a; Yeşiltaş *et al.*, 2023). The differentiation in leader–member relationships, traversing the spectrum from empowering to abusive supervision, shapes interpersonal dynamics and fosters environments ripe for KH as individuals navigate the treacherous waters of "self versus others" comparisons (Weng *et al.*, 2020; Lin *et al.*, 2020; Wang *et al.*, 2021). This differentiation fosters negative "self versus others" comparisons, which results in engaging in acts such as KH.

4.2.2 Category 2: knowledge hiding as a defensive behaviour (N = 52). COR theory is the second most frequently used theory, used in 38 articles. This research shows that when employees are subjected to abusive and unethical leadership, they can experience emotional exhaustion (Hao et al., 2022; Wang et al., 2021), psychological unsafety (Agarwal et al., 2022a), a lack of respect (Sarwar et al., 2021), feel insecure about their job (Feng and Wang, 2019) and have relational identification issues and psychological distress (Qin et al., 2023) in the workplace. The COR theory suggests this can trigger self-protective behaviours like KH to conserve resources. Targets who experience social stressors such as negative workplace gossip (Cheng et al., 2023; Khan et al., 2023b; Yao et al., 2020a), workplace ostracism (Bhatti et al., 2023) and bullying (Yao et al., 2020b) may engage in KH to protect their remaining resources. Similarly, KH can also serve as a defence mechanism against emotional resource depletion (De Clercq et al., 2022a) and relational conflicts (Nguyen et al., 2022). Other factors like organisational justice (Khan et al., 2023c), dysfunctional organisational politics (De Clercq et al., 2022b; Kaur and Kang, 2023), excessive time pressure (Zhang et al., 2022; Škerlavaj et al., 2018) and significant work pressures (Sofyan et al., 2023a, 2023b) may also promote KH

as a resource conservation behaviour. However, fear of reprisal or task delay may deter KH despite work overload.

POT (n = 10) postulates that individuals are possessive towards something they consider their own (Pierce *et al.*, 2001). This sense of ownership is particularly strong when it comes to knowledge. Accordingly, they will proactively establish a protection mechanism to hide that knowledge (Wu and Liu, 2023; Guo *et al.*, 2022a; Duan *et al.*, 2022; Singh, 2019; Abubakar *et al.*, 2019; Huo *et al.*, 2016; Peng and Pierce, 2015; Peng, 2013). However, if employees view the organisation as a target of ownership, they may perceive that the knowledge is common to the organisation. This could weaken the KH behaviours in the organisation (Wu and Liu, 2023). Territoriality theory (n = 4) suggests that an individual's psychological ownership of an object can lead them to treat it as their own territory, resulting in a desire to defend and protect it (Brown *et al.*, 2005). From such a viewpoint, KH is a behavioural expression of territoriality that motivates the holder to engage in territorial guarding to maintain their advantageous position (David and Shih, 2023; Gustina and Sitalaksmi, 2023; Chen *et al.*, 2022b; Peng, 2013).

4.2.3 Category 3: knowledge hiding as an individual-driven behaviour (N = 15). This category, representing the smaller subset of the literature, focuses on KH as behaviour driven by individual factors. At the core of this exploration is SDT (Deci and Ryan, 1985), which frames KH within the context of unmet psychological needs. SDT suggests that when individuals feel disconnected from their work, dissatisfied with their performance, or deprived of job autonomy, they might resort to KH as a means to navigate these deficits (Shirahada and Zhang, 2022; Peng et al., 2022). Similarly, motivation theory delineates the dual role of motivation in shaping KH. It posits that while financial incentives might inadvertently encourage KH by fostering controlled motivation, intrinsic motivations tied to social aspects of work could deter such behaviour (Zhang and Min, 2021; Gagné et al., 2019; Stenius et al., 2016; Ma et al., 2020).

Complementing the insights from SDT, the theory of planned behaviour provides a basis for understanding KH through the lenses of attitudes, subjective norms and perceived behavioural control. This approach underscores the complexity of KH as influenced by individual attitudes and the normative pressures of the organisational environment, explored across varied settings such as international entrepreneurial firms and R&D teams (Jafari-Sadeghi *et al.*, 2022; Xiong *et al.*, 2021; Shirahada and Zhang, 2022; Chang *et al.*, 2020).

The narrative then shifts to the ego depletion theory, which posits that self-control and willpower draw upon a limited pool of mental resources that can be depleted over time (Baumeister *et al.*, 1998). When individuals face demanding or stressful situations, they consume these resources and their capacity for self-control diminishes. This potentially leads to behaviours they might otherwise resist, such as KH (Yeşiltaş *et al.*, 2023; Khan *et al.*, 2023c). Continuing on the internal state of the individual, the cognitive-affective personality system theory shows how individuals' unique cognitive and emotional patterns interact with specific situations to produce consistent behaviours over time (Mischel and Shoda, 1995). Building upon this perspective, the cognitive pathways that exist between time pressure (Zhang *et al.*, 2022), negative workplace gossip (Yao *et al.*, 2020a), workplace bullying (Yao *et al.*, 2020b) and KH are studied.

4.2.4 Category 4: other conceptualisations (N = 14). Job characteristics theory suggests that job complexity and task interdependence can motivate employees to hide knowledge, impacting organisational outcomes (Chatterjee *et al.*, 2021; Qin *et al.*, 2023; Černe *et al.*, 2017; Zhang and Min, 2019). Affective events theory indicates that workplace events trigger emotions that mediate behaviours like KH, where positive events may reduce KH, whereas negative events increase it (Xia *et al.*, 2022; Good *et al.*, 2023; Lin *et al.*, 2023; Peng *et al.*, 2020).

Contextual theory highlights how organisational settings and factors such as HR systems and relational climates moderate KH's occurrence and its antecedents (Batistič and Poell, 2022; Banagou *et al.*, 2021). Psychological contract theory posits that breaches in perceived organisational obligations can lead to KH, influenced by individual personality traits and work motivations (Rousseau, 1989; Kmieciak, 2023; Pan *et al.*, 2018). Finally, equity theory explains how imbalances in perceived inputs and outcomes lead to negative emotions and increased KH, with equity sensitivity influencing individual responses to these imbalances (Adams, 1965; Khan *et al.*, 2023b; Jahanzeb *et al.*, 2019).

4.3 Identifying dominating assumptions

In this section, we delve into the dominant assumptions underpinning KH research, drawing on an analytical approach informed by Alvesson and Sandberg (2011). This analysis focuses on unveiling the underlying premises that have shaped the trajectory and focus of KH studies. By examining how assumptions linked to various theoretical lenses influence the conceptualisation of KH, we aim to provide a clearer understanding of the foundational beliefs guiding this field. This endeavour not only highlights the implicit "facts" or "truths" accepted within the KH discourse but also sets the stage for exploring how these assumptions affect the development and direction of KH research.

4.3.1 Knowledge hiding is negative. One of the most prevailing assumptions in the reviewed papers is that KH is detrimental to individuals and organisations. This perspective is bolstered by a substantial body of research indicating that KH negatively affects individual in-role performance (Akhtar *et al.*, 2022; Garg *et al.*, 2021; Singh, 2019), organisational citizenship behaviour (Burmeister *et al.*, 2019), employee identification (Abdelmotaleb *et al.*, 2022), creativity (Feng *et al.*, 2022; Černe *et al.*, 2017) and innovative behaviour (Chen *et al.*, 2022b; Donate *et al.*, 2022). At the team and firm levels, KH is associated with impeding innovation (Zhang and Min, 2022; Haar *et al.*, 2022) and overall performance (Haar *et al.*, 2022; Zhang and Min, 2019). Thus, conventional wisdom seems to be that managers should actively discourage KH and foster an environment conducive to knowledge sharing (Liao *et al.*, 2023; Nadeem *et al.*, 2020; Zhu *et al.*, 2019).

However, some studies suggest that KH can also have positive implications. For instance, evasive KH can enhance short-term innovation performance as knowledge becomes more valuable and relevant to individual employees (Khoreva and Wechtler, 2020). Similarly, the act of playing dumb, a form of KH, can alleviate psychological strain at the end of the workday, offering immediate stress relief (Venz and Nesher Shoshan, 2022). Moreover, rationalised hiding has been linked to increased feelings of empowerment among employees (Offergelt *et al.*, 2019).

The negative view of KH may arise from a managerial perspective where knowledge is viewed as a key resource that should circulate freely among individuals. These views are deeply rooted in theories such as SET and COR theory. SET suggests that healthy organisational dynamics rely on reciprocal exchanges of knowledge. In this light, KH is seen as a breach of the norm of reciprocity (Guo *et al.*, 2022b; Donate *et al.*, 2022). By hiding knowledge, individuals disrupt the balance of give and take, eroding trust and collaboration and thus is considered detrimental to effective organisational exchange (Chaker *et al.*, 2021; Bari *et al.*, 2020). COR theory contributes to the negative perception of KH by illustrating how efforts to hide knowledge can initiate negative resource spirals, as Hobfoll (2001) outlined. The logic of negative resource spirals suggests that the act of concealing knowledge (a resource) can lead to further losses, such as missed opportunities for career advancement (De Clercq *et al.*, 2022b) and decreased well-being (Agarwal *et al.*, 2022b).

4.3.2 Knowledge hiding is objective. KH is generally recognised as a behaviour identifiable through specific actions within organisational settings, a view supported by an objectivist epistemology. This perspective treats KH as a phenomenon that can be quantified and observed systematically. Commonly employed theories such as SET, COR theory and SDT suggest that rational, measurable decisions in diverse organisational contexts drive KH.

SET, for instance, offers a structured basis for predicting KH by suggesting that the principles of reciprocity and interpersonal transactions influence individuals' decisions to hide or share knowledge. Similarly, the POT suggests that KH actions are rational responses to the sense of ownership individuals feel over their knowledge, with empirical studies by Wu and Liu (2023) and Duan *et al.* (2022) supporting that personal ownership leads to protective KH behaviours. SDT adds to this by indicating that KH stems from deliberate decisions when basic psychological needs are unmet (Shirahada and Zhang, 2022; Peng *et al.*, 2022). These theories frame knowledge as a valuable commodity which can be "acquired, modelled, and expressed most accurately in the most objective and explicit terms possible" (Cook and Brown, 1999, p. 384). In these cases, individuals are seen to exert control over their knowledge, deciding when and with whom to share.

This predominant focus on KH as an objective behaviour is contrasted by a relatively sparse body of empirical research exploring the subjective experiences of individuals involved in KH scenarios. Using a construal lens, Connelly and Zweig (2015) revealed that targets of KH do not always view the behaviour as detrimental or warranting retaliation. Xiong *et al.* (2021) examined knowledge hiders' attitudes, subjective norms and perceived behavioural control over KH within the cultural contexts of international R&D teams by using a constructivist approach.

4.3.3 Knowledge hiding is immediate reactive. KH is predominantly assumed as a reactive behaviour, frequently informed by social-based and defensive mode-based theories. The reliance on these theories underscores a prevailing assumption within KH research: hiding knowledge is often an immediate, reflexive action triggered in response to various social stimuli or stressors. For example, leader behaviour (Offergelt and Venz, 2023; Usman et al., 2023; Khalid et al., 2020), peer dynamics (Cheng et al., 2023; Batistič and Poell, 2022) or organisational culture (Khan et al., 2023a; El-Kassar et al., 2022; Chatterjee et al., 2021) can trigger individuals to hide knowledge as a protective or retaliatory measure, aiming to safeguard their interests. This interpretation is supported by most studies highlighting how KH serves as a mechanism to counteract detrimental cues, reinforcing the view of KH as predominantly reactive.

A few studies suggest that KH behaviour emerges from a complex interplay of individual traits, motivations and perceptions, challenging the simplistic view of it as a defensive reaction to negative stimuli or a protective mechanism. Drawing on mixed motives and trait-activation theory, Hernaus and Černe (2022) underscore the significance of individual traits like competitiveness and prosocial motivation in KH. Garg *et al.* (2021), using the theory of reasoned action, demonstrate that performance motivation and territoriality can motivate KH as a strategic pursuit of academic excellence, suggesting that individual ambitions can drive KH beyond social or defensive contexts.

It is also imperative not to confine SET's applicability to understanding only immediate, reactive behaviours within KH research, as the theory's versatility extends to actions taken in anticipation of future outcomes. For instance, using SET, Issac *et al.* (2023) explore how personal power dynamics, including potential losses and gains, can strategically motivate KH. This approach suggests that individuals engage in KH not solely as a reflexive mechanism to immediate exchanges but as part of a broader strategy to secure future positional advantages within the organisational hierarchy.

4.3.4 Knowledge hiding is mostly relational. KH is frequently conceived as an informal, relational dynamic that unfolds within the interpersonal spaces of organisational life. At its core, this view acknowledges that the quality of interpersonal relationships and the social climate within the organisation significantly influence the decision to hide or share knowledge. For instance, studies have shown that positive leader—member exchanges and supervisor support significantly decrease KH behaviours by fostering a culture of reciprocity and trust within the organisation (He *et al.*, 2022; Babič *et al.*, 2019; Kmieciak, 2023). Conversely, negative leadership behaviours, such as exploitative or abusive supervision, have been found to encourage KH as employees reciprocate negatively to such treatment (Moin *et al.*, 2022; Offergelt and Venz, 2023; Khalid *et al.*, 2020; Pradhan *et al.*, 2020).

Although not many studies have expanded the investigation of KH beyond relational dynamics, those that do highlight the significant role of non-relational factors. For instance, Arias-Pérez and Vélez-Jaramillo (2022) use transaction cost theory to illustrate how technological turbulence and awareness of AI and robotics influence KH, proposing that the costs associated with transactions in knowledge exchanges are affected by technological advancements. Zhang and Ji (2023) draw on the appraisal theory of empathy to connect increased information and communication technology use with a rise in KH, suggesting that digital communication's lack of empathetic exchanges fosters an environment conducive to KH.

Xia et al. (2022) use both affective events theory and emotion appraisal theory to explore how politeness in knowledge requests impacts KH, implying that emotional reactions to events in the workplace can influence KH behaviours. Ma et al. (2020), through the lens of motivation theory, investigate different corporate social media usage patterns and their effects on KH, highlighting how intrinsic and extrinsic motivations shape individuals' knowledge behaviours. The effectiveness of reward systems on KH is analysed by Zhang and Min (2021) and Stenius et al. (2016) using SDT, indicating that the type of rewards (financial vs non-financial) can fulfil or thwart employees' intrinsic motivations to share or hide knowledge. El-Kassar et al. (2022) apply SIP theory to understand the impact of HR practices on KH, suggesting that individuals adapt their knowledge-sharing behaviours based on the social cues and information available in their work environment.

5. Discussion and future research directions

Our review of the theories used in KH research (RQ1) demonstrates a predominant reliance on theories such as SET and COR, contrasted by the less frequent application of SDT and POT. Furthermore, our investigation into how KH has been conceptualised across these theories (RQ2) underscores the varied interpretations of KH – from a defensive mechanism triggered by resource conservation needs to a learned behaviour influenced by social interactions and individual perceptions. However, we should note that KH is mostly seen as a response to imbalances in social reciprocity or as a defensive mechanism to conserve personal resources, underpinning the bulk of the research in this field. Building on the insights from the first two research questions, our analysis then delves into the core assumptions underpinning KH research, as identified in RQ3. This exploration highlights the prevailing view of KH as negative, objective, reactive and relational. By acknowledging the underlying assumptions, we pave the way for exploring and expanding upon future research directions, offering new perspectives on KH within organisations. Table 2 presents key areas for further exploration in KH research, presenting potential research questions and suggesting relevant theories for each area.

The primary conceptualisation of KH as a negative phenomenon has been instrumental in understanding its detrimental effects. Although the adverse effects on performance,

 Table 2. Areas for further exploration in KH research

Research focus	Potential research questions	Potential theories
Expanding understanding of KH's effects	 Under what conditions does KH contribute to individual or organisational innovation? In what ways does KH serve as a coping mechanism for employees, potentially leading to improved well-being or stress reduction? In what scenarios does KH contribute to building an individual's reputation or perceived expertise within an organisation? Can KH facilitate the protection of sensitive or proprietary information, enhancing organisational security and intellectual property protection? What role does KH play in managing interpersonal dynamics and conflicts within teams? 	Expectancy theory, impression management theory, information gap theory, boundary spanning theory, intellectual capital theory
Exploring subjective experiences of KH	 How do personal values and beliefs influence an individual's decision to hide knowledge? In what ways does the perception of KH vary among different cultures or organisational contexts? How do individuals rationalise or justify KH to themselves, and what subjective processes are involved in these rationalisations? Can the subjective value or perceived uniqueness of the knowledge influence the decision to hide it? 	Construal level theory, narrative identity theory, self-categorisation theory, action identification theory
Investigating strategic aspects of KH	How do individuals use KH as a strategy for career advancement or protecting intellectual assets? What are the long-term outcomes of strategic KH for both the individual and the organisation? How do individuals assess the risks and benefits of KH in strategic decision-making processes?	Game theory, prospect theory, competence motivation theory, expectancy theory
Understanding non- relational influences on KH	 How do technological advancements and digital work environments influence employees' propensity to engage in KH? Can physical workspace design contribute to the occurrence of KH among employees? To what extent do external pressures, such as market competition or regulatory changes, drive KH behaviours in organisations? Are there industry-specific determinants that significantly influence the prevalence of KH practices? 	Socio-technical systems theory, cultural schema theory, contingency theory, institutional theory
Source: Table by authors	N	

innovation, and organisational climate are well-documented, emerging evidence suggests potential positive aspects, such as stress relief and short-term innovation boosts. Empirical studies focusing on the positive aspects and strategic use of KH can provide a counternarrative to the dominant view of KH as detrimental, thereby enriching the discourse with a more balanced understanding of its role within organisations. Research questions could delve into the conditions under which KH fosters innovation, both at individual and organisational levels, and investigate KH as a mechanism for employee stress relief and well-being enhancement. In addition, understanding the role of KH in building personal reputation and expertise, as well as its contribution to safeguarding sensitive information, could provide insights into its strategic use.

The characterisation of KH as an objective behaviour, readily observable and quantifiable, has directed much of the empirical research in the field. Shifting the focus towards understanding KH as a subjective behaviour introduces a complementary perspective. This shift in perspective calls for a deeper exploration into the individualised reasons behind KH, moving beyond mere quantification to understanding the lived experiences, personal motivations and the emotional and cognitive underpinnings that lead individuals to hide knowledge. Future research could explore the subjective experiences that lead individuals to engage in KH, focusing on the personal motivations and emotional states that drive these actions. By exploring the subjective nature of KH, scholars can uncover the complex psychological processes involved, such as the role of emotions and trust, and how individuals' perception of the uniqueness or value of knowledge influences their decision to hide it. This approach allows for a richer, more comprehensive exploration of KH, highlighting the diversity of individual experiences and the various factors that influence this behaviour.

Similarly, the conventional understanding often frames KH as a reactive behaviour primarily influenced by immediate external stimuli or organisational dynamics. This viewpoint may limit our grasp of KH's strategic dimensions, where individuals deliberately use KH for personal career advancement or to protect intellectual assets. Recognising KH as a strategic behaviour necessitates exploring the long-term impacts of such actions on both the individual and the organisation. Future inquiries could investigate the decision-making processes behind strategic KH, examining how individuals weigh the potential risks and benefits. This exploration would shed light on KH as a calculated, strategic choice rather than merely an impulsive reaction, offering new insights into its implications for personal growth and organisational outcomes.

Finally, although KH is often seen through the lens of relational dynamics within organisations, expanding the focus to include non-relational determinants can provide a more comprehensive understanding of why and how KH occurs. This broader perspective acknowledges that factors such as technological advances, workspace design and external pressures like market competition and regulatory changes can significantly influence KH behaviours. By exploring these non-relational aspects, research would illuminate the varied and complex environments in which KH takes place, offering insights into the multifaceted nature of this phenomenon. This shift could lead to more targeted strategies for managing KH, taking into account a wider array of influences beyond interpersonal relationships.

6. Conclusion

In this review, we have systematically analysed the theories underpinning KH research, delving into the range of theoretical perspectives used (RQ1) and how KH has been conceptualised within these theories (RQ2). This foundational analysis extends into addressing the core assumptions identified through RQ3, uncovering prevalent perceptions

of KH as predominantly negative, objective, reactive and relational. By revisiting these assumptions, we open up avenues for future research to explore the positive, subjective, strategic and non-relational dimensions of KH, enriching both the academic and practical understanding of this complex phenomenon.

Scholars exploring KH are urged to extend beyond traditional views that predominantly focus on its negative impacts. Future research should also explore KH's potential positive outcomes, its strategic dimensions for career advancement or protection of intellectual assets, as well as the subjective experiences that drive individuals to engage in KH. In addition, considering non-relational determinants such as technological advances and external pressures could provide a fuller understanding of KH's multifaceted nature. Embracing a broader array of theories, including those less frequently applied, such as construal level theory and expectancy theory, could enrich the discourse and highlight the complex interplay between individual motivations and organisational dynamics in KH.

Practitioners, such as managers or entrepreneurs, are encouraged to develop and execute KM strategies that consider KH's complexities. These strategies include recognising legitimate reasons for KH while promoting an organisational culture that supports knowledge-sharing. By finding a balance between promoting knowledge sharing and respecting individual autonomy and privacy, organisations can reduce KH's detrimental impacts and capitalise on its potential advantages. In addition, embracing a broader understanding of the factors influencing KH can guide the development of targeted interventions that address specific drivers of KH within different organisational contexts.

This review acknowledges its limitations, including the scope of the literature search and the types of publications considered. Future studies could broaden this scope to capture a wider array of insights on KH. As the field progresses, it is essential to continue challenging and refining our understanding of KH, ensuring that both theoretical explorations and practical applications evolve to address the dynamic nature of KM in organisations.

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Appendix 3

Publication III

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Navigating knowledge hiding: perspectives from hiders and targets in group settings

The Bottom Line

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Abstract

Purpose — This study aims to investigate the dynamics of knowledge hiding (KH) within group settings, focusing on both the experiences of those who hide knowledge and the perceptions of their group members.

Design/methodology/approach — An exploratory study was conducted with 49 undergraduate business students who participated in group-based problem-solving tasks. Some participants were assigned the role of "knowledge hiders." Data were gathered through observations, pre- and posttask surveys and in-depth interviews. The analysis included quantitative and qualitative approaches, with thematic analysis applied to the qualitative data.

Findings – This study identified complex emotional responses among knowledge hiders, including guilt and cognitive conflict, moderated by social context. Hiders used various strategies, including evasive hiding, playing dumb and misdirection. Interestingly, targets often misinterpreted KH behaviors, attributing them to disinterest or discomfort rather than intentional withholding.

Research limitations/implications — The controlled setting and short-term interactions may limit generalizability to organizational contexts. Future research should explore the long-term consequences of KH and its occurrence in diverse environments.

Practical implications – Organizations may benefit from addressing the underlying causes of KH, such as communication issues and weak social connections, rather than solely focusing on eliminating KH behaviors. Understanding the subtle nature of KH could lead to more effective interventions in fostering open knowledge-sharing cultures.

Originality/value — The dual perspective — examining both the hiders' and targets' experiences — adds a novel dimension to the KH literature. The findings challenge the assumption that KH always leads to negative outcomes, like mistrust or group conflict, and emphasize how KH is often misperceived in group interactions.

Keywords Knowledge hiding, Knowledge hiding behavior, Knowledge sharing, Knowledge management. Dual perspective

Paper type Research paper



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1. Introduction

It is known that knowledge is a critical strategic resource for organizational functioning and sustainable organizational performance (Zack *et al.*, 2009; Bollinger and Smith, 2001; Shahzad *et al.*, 2020). Organizations often emphasize knowledge sharing (KS) as it fosters employee development and enhances overall success (Siachou *et al.*, 2021; Venz and Nesher Shoshan, 2022). However, despite the well-documented benefits of KS, recent research has drawn attention to the growing issue of knowledge hiding (KH), where individuals deliberately withhold or conceal information requested by others (Connelly *et al.*, 2012).

KH is not an uncommon behavior. Studies suggest that up to 76% of employees in the USA and 46% in China report engaging in KH (Connelly *et al.*, 2012; Peng, 2012). Although KH has been associated with reduced creativity and task performance (Singh, 2019; Syed *et al.*, 2021), some studies suggest that it may also serve protective functions for both individuals and organizations (Xiao and Cooke, 2019). For instance, employees might hide knowledge to protect confidential information (Xiong *et al.*, 2021) or for personal job security (Anand and Hassan, 2019; Serenko and Bontis, 2016).

Despite the prevalence and importance of KH, capturing and analyzing it in real-time interactions remains difficult (Connelly and Zweig, 2015; Khoreva and Wechtler, 2020). Current research heavily relies on retrospective self-report questionnaires (Anand *et al.*, 2022; Siachou *et al.*, 2021), which provide valuable insights but fall short of capturing the complex, real-time behavioral and emotional dynamics of KH. This suggests the need for alternative methodologies, such as experimental or qualitative approaches, which could provide richer insights into how KH functions (Khalid *et al.*, 2020; Strik *et al.*, 2021).

Furthermore, most research focuses on the motivations and behaviors of knowledge hiders (Batistič and Poell, 2022; Han *et al.*, 2022), with limited attention given to the targets – those on the receiving end of KH. Although some studies have started to explore how targets respond to KH (Connelly and Zweig, 2015; Xiao, 2024), these investigations remain scarce. Understanding both perspectives (i.e. the hider and the target) is crucial, as the consequences of KH may not always align with traditional assumptions. For instance, targets may rationalize or accept KH as a necessary part of organizational life rather than always viewing it as harmful (Connelly and Zweig, 2015).

Given the interpersonal nature of KH (Anand *et al.*, 2022), this study aims to fill the existing research gaps by investigating how KH unfolds in real-time interactions and how both hiders and targets experience and interpret KH. Specifically, the study addresses two key research questions:

- *RQ1*. How do individuals experience and manage KH?
- *RQ2*. How do the targets of KH perceive and interpret the act as it occurs?

To answer these questions, we conducted an exploratory study involving 49 undergraduate business students in Almaty, Kazakhstan. Participants were placed in groups and assigned collaborative tasks, with one individual designated as a "knowledge hider." This setup enabled the observation of real-time KH behaviors and group dynamics. Through observational data, posttask surveys and in-depth interviews, we analyzed both the experiences of knowledge hiders (RQ1) and the interpretations of their targets (RQ2).

This paper is organized as follows. Section 2 reviews relevant literature on KH. Section 3 outlines the research design, including the methodology and participant details. Section 4 presents the results, focusing on hiders – their emotional, cognitive and strategic dimensions of KH – and then on targets, exploring how they perceive and interpret KH behaviors.

Section 5 discusses the implications of the findings and proposes future research directions, whereas Section 6 concludes the study with key insights and limitations.

The Bottom Line

2. Background

KH is defined as the deliberate withholding or concealment of knowledge when requested by others (Connelly *et al.*, 2012). As an organizational phenomenon, KH has been linked to various outcomes. On an individual level, engaging in KH leads to diminished creativity (Feng *et al.*, 2022), reduced task performance (El-Kassar *et al.*, 2022) and increased interpersonal deviance, fostering a more toxic work environment (Arain *et al.*, 2022). At the organizational level, it can impair team creativity and collaboration, hindering group dynamics and overall performance (Černe *et al.*, 2014; Fong *et al.*, 2018). However, not all outcomes of KH are negative. For example, Khoreva and Wechtler (2020) found that certain forms of KH can enhance personal well-being. Similarly, Offergelt *et al.* (2019) argued that when employees justify their decision not to share knowledge, it may increase feelings of empowerment by allowing individuals to retain control over their knowledge.

In addition to examining its outcomes, recent research has identified key antecedents of KH, ranging from individual to broader organizational-level factors. Individual-level factors are crucial in KH, with traits such as narcissism (Soral *et al.*, 2022) and prosocial motivation (Hernaus and Černe, 2022) associated with a greater tendency to hide knowledge. Leadership dynamics, including leader–member exchange quality (He *et al.*, 2022) and leadership style (Hao *et al.*, 2022; Koay and Lim, 2022), significantly influence KH behaviors.

Despite insights into antecedents and outcomes, there remains a limited understanding of how KH unfolds in real time. Most studies focus on before or after the KH event, examining what leads individuals to hide knowledge or the consequences of their actions. The moment-by-moment decisions, emotional responses and strategies hiders use during the act remain largely unexplored. For instance, Connelly and Zweig (2015) identified that individuals often anticipate harm to their relationships and fear retaliation when engaging in KH. Yet, their work focuses on anticipatory emotions rather than actual experiences during the act. Similarly, Burmeister *et al.* (2019) and Islam *et al.* (2022) explored the emotional consequences of KH – such as guilt and shame – through vignettes and surveys, yet emphasizing only postevent reflections.

A crucial element of this real-time understanding is how individuals choose and adapt their strategies when engaging in KH. Previous research has established three main strategies for engaging in KH: evasive hiding, playing dumb and rationalized hiding (Connelly *et al.*, 2012; Černe *et al.*, 2014; Serenko and Bontis, 2016). Evasive hiding involves avoiding knowledge requests by offering incomplete or misleading details, delaying responses or failing to follow up. Playing dumb involves feigning ignorance or lack of expertise, whereas rationalized hiding refers to offering seemingly valid reasons – such as company policies or confidentiality requirements – to justify KH. However, recent studies suggest that KH strategies may be more varied than initially understood. For example, bullying hiding has emerged as a more aggressive tactic, where individuals actively undermine or intimidate the knowledge requester (Yuan *et al.*, 2021). These findings raise the possibility that additional, unexplored strategies may exist.

In addition, a commonly held assumption in the literature is that when knowledge is hidden, the relationship between the hider and the target will automatically deteriorate, leading to mistrust, reduced collaboration and potential retaliation (Peng, 2012; Serenko and Bontis, 2016; Černe *et al.*, 2014; Ford and Staples, 2010). Connelly and Zweig (2015) challenged this assumption, showing that KH targets do not always perceive the behavior as

harmful. Despite these findings, no study has yet simultaneously examined both hiders' actions and targets' real-time perceptions of KH as it unfolds. Most research focuses on hiders' intent or targets' reflections after the fact, taking for granted that KH always damages relationships. This situation suggests the need for research exploring how hiders' strategies and targets' interpretations evolve in real time to understand the complex dynamics of KH better.

3. Methodology

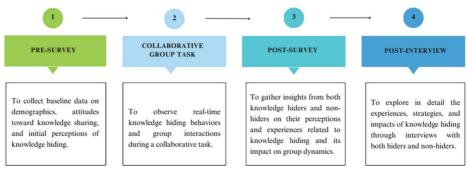
3.1 Research design

The study used an exploratory design to investigate the dynamics of KH in group settings, focusing on the experiences of both knowledge hiders and their targets. The sequence of activities is outlined in Figure 1.

The study involved 49 undergraduate students from a business school in Almaty, Kazakhstan. Access to the participants was facilitated through the past affiliation of one of the coauthors with the university. In total, 41 students participated in group tasks, with 30 acting as regular members and 11 assigned as "knowledge hiders." The average participant age was between 20 and 23 years, with most having minimal work experience.

An online presurvey was administered to all participants, collecting baseline data on demographics, attitudes toward KS and KH, social identity and motivations such as expected rewards and future associations. KH perceptions were measured using items from Connelly *et al.* (2012), whereas perceived social identity was evaluated using Kwon and Wen (2010) measure of participants' sense of belonging. Expected rewards and associations were assessed using items adapted from Bock *et al.* (2005). All survey items used a five-point Likert scale.

Participants were then divided into small groups to solve a business puzzle involving categorizing startups based on business models, target markets or revenue strategies. Each participant received an information card with partial details about relevant companies and was instructed to share insights verbally without revealing the card contents directly. One participant per group was secretly designated as the "knowledge hider," given complete information but instructed to hide the solution while participating in discussions. Observers were assigned to each group to monitor interactions, noting nonverbal cues that might indicate emotional and cognitive discomfort of knowledge hiders.



Source: Authors' own work

Figure 1. Study design overview

The Bottom Line

After the task, all participants completed online posttask surveys. The regular participants reflected on group dynamics and potential KH behaviors, using items adapted from Connelly *et al.* (2012) to assess indicators of KH. On the contrary, knowledge hiders completed a separate survey focusing on their internal experiences, including emotions such as guilt and perceived advantages from hiding knowledge. These reflections addressed how hiders manage the act of hiding and their strategies (*RQ1*).

Finally, semistructured interviews were conducted with 14 participants, including both knowledge hiders and regular participants. The interviews with the hiders explored their emotional responses, cognitive conflicts and strategic behaviors during the task (*RQ1*). For the regular participants, the interviews focused on their interpretations of KH, assessing how they recognized or responded to KH behaviors (*RQ2*). Examples of interview questions for hiders include, "How did you feel while hiding knowledge?" and "What strategies did you use to avoid suspicion?" Regular participants were asked questions like, "Did you notice any signs of KH during the task?" and "How did hidden knowledge affect your group's performance?"

3.2 Data analysis

Following established methodologies for exploratory qualitative research (e.g. Yin, 2009; Gioia *et al.*, 2013), we used a multistage inductive data analysis process to comprehensively examine the dynamics of KH in group settings. By triangulating data from multiple sources – observations during the group task, posttask surveys and interviews – we ensured depth and accuracy in our findings. Table 1 provides a detailed overview of the data integration process at each research stage, outlining the data collection methods, analysis techniques and how the insights from each phase informed the subsequent stages.

Our data analysis proceeded in three main steps. We began by closely reading all collected data, i.e. the observational notes, pre- and postsurvey responses and interview transcripts. Using open coding, we identified and labeled key statements and behaviors that were significant to participants' experiences of KH. For example, knowledge hiders expressed sentiments like "I felt guilty because they kept asking me, and I knew the answer," which we coded as "feeling guilty when hiding knowledge." Observations of nonverbal cues such as fidgeting or avoiding eye contact were coded as "visible signs of discomfort" (see Figure 2 for the distribution of nonverbal signs and their intensity among hiders).

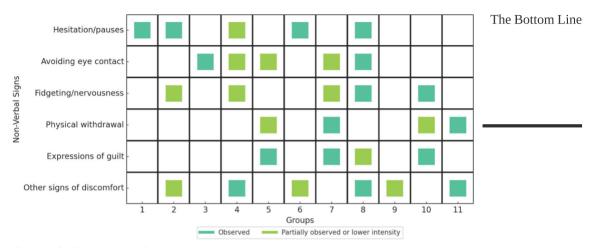
We then examined the first-order codes to identify patterns and relationships among them. By grouping similar codes, we developed broader conceptual themes that reflected underlying processes or experiences. For instance, codes related to guilt and internal conflict were integrated into the second-order theme of "Guilt and discomfort." Similarly, strategies used by hiders, such as "playing dumb" or "providing vague information," were grouped under "Strategies of knowledge hiding." This step involved iterative comparison and discussion among the research team to refine themes and ensure they accurately represented the data.

In the final stage, we aggregated the second-order themes into overarching theoretical dimensions that encapsulated the essence of participants' experiences. Themes like "Guilt and discomfort" and "Cognitive conflict" were combined into the aggregate dimension of "Cognitive and emotional experiences of hiders." The theme "Strategies of knowledge hiding" formed its aggregate dimension, highlighting the strategical aspects of how participants managed KH. The full structure of these codes, themes and aggregate dimensions related to knowledge hiders is illustrated in Figure 3.

For the KH targets, we applied the same analytical process. First-order codes from their observations - such as "He definitely knew something but kept quiet about it. I could

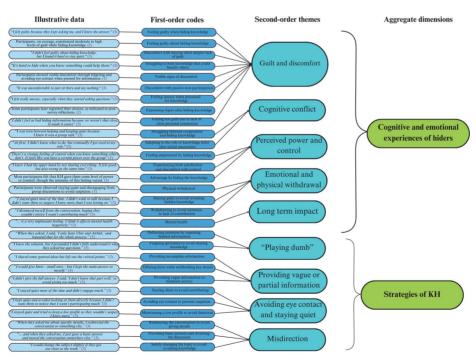
 Table 1. Detailed overview of study components and data integration

Research stage	Purpose	Data collected	Methods of data analysis	Data integration notes
Presurvey	To measure baseline attitudes using validated scales	Demographics, attitudes and motivations	Descriptive statistics	Provided a baseline for understanding subsequent behaviors
Group task – business puzzle	To observe real-time KH behaviors through designated	Observational data of group interactions and nonverbal	Coding of behavioral patterns and nonverbal	Observational data linked with posttask surveys and
Postsurvey	knowledge muers To assess regular participants' perceptions and knowledge	cues Group dynamics assessments, KH perceptions, emotional	inucators Thematic and statistical analyses	Interviews Postsurvey data linked to interviews and
Interviews	hiders' internal experiences To explore participants' detailed experiences and perspectives	responses and hiding strategies Detailed reflections on KH and group dynamics during the group work	Thematic analysis of interview data	observational data Used to explain quantitative findings and observed behaviors
Source: Authors' own work				



Source: Authors' own work

Figure 2. Presence and intensity of nonverbal signs among hiders



Source: Authors' own work

Figure 3. Data structure: cognitive and emotional experiences of hiders and their KH strategies

physically feel how he [...] was holding back" (coded as "perception of intentional withholding") and "It was as if he wanted to say something, but each time he stopped himself. He would look away, change the subject" (coded as "Observation of conflicting body language") – were grouped into the second-order theme "Recognizing nonverbal cues." This led to the aggregate dimension "Perception of KH behaviors," as presented in Figure 4, which summarizes how targets interpreted KH during group interactions.

Throughout the analysis, we remained open to emerging patterns, allowing the data to guide the development of themes and dimensions — a hallmark of exploratory qualitative research. By systematically moving from specific observations to broader theoretical insights, we were able to construct a nuanced understanding of KH from both the hiders' and targets' perspectives.

4. Results

This section presents the results in three key areas. Subsection 4.1 outlines the presurvey results, providing baseline insights into participants' demographics, social identity and attitudes toward KH. Subsection 4.2 explores the experiences and strategies used by knowledge hiders during the group task, examining their emotional and cognitive responses. Finally, subsection 4.3 discusses the perceptions and interpretations of KH from the perspective of the targets, highlighting how KH behaviors were observed and understood.

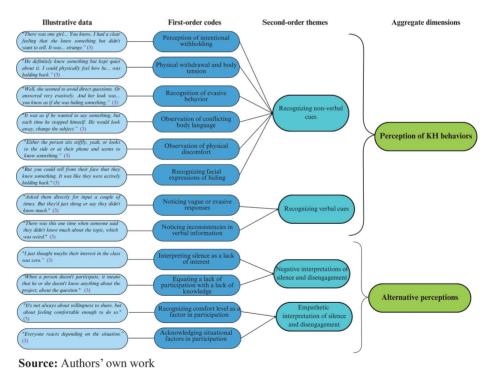


Figure 4. Thematic insights into participant perceptions of KH

4.1 Presurvey results

Table 2 compares the descriptive statistics between the overall sample, hiders and nonhiders, with corresponding t-values and p-values. Across the sample, social identity scores average 3.39 (± 0.86), indicating a moderate sense of belonging and engagement among participants. Similarly, expected rewards and associations show moderate levels (3.58 ± 0.96 and 3.48 ± 0.72 , respectively), reflecting a reasonably positive outlook on external incentives and potential future collaborations within the class. Interestingly, KH scores are lower overall (2.09 ± 0.73), suggesting that participants generally do not frequently engage in KH. This low level of reported KH may reflect the classroom environment, where students often feel obligated to share information and collaborate, particularly when grades and public feedback are involved.

When comparing hiders and nonhiders, we found no statistically significant differences across the key variables of social identity, expected rewards and associations and KH (all p-values > 0.05). Even though hiders reported slightly lower scores on social identity (3.27 \pm 0.99) and expected rewards (3.14 \pm 1.07) compared to nonhiders (3.43 \pm 0.83 and 3.73 \pm 0.88, respectively), these differences are not statistically significant.

Overall, the setting studied (i.e. a classroom environment) seems to foster a cooperative and collaborative dynamic, and the assigned roles as hiders introduce only minor variations in perceptions of social identity, rewards and KS.

4.2 Experiences and strategies of knowledge hiders

Figure 2 illustrates the different levels of nonverbal signs exhibited by hiders across the groups. The variation in signs such as hesitation/pauses, fidgeting and physical withdrawal reflects how hiders managed the tension of hiding knowledge.

By examining the combination and intensity of these signs across the groups, we grouped them into three categories:

- (1) *High emotional and physical discomfort*: Hiders in groups 7, 8 and 10 exhibited significant signs of discomfort, including avoiding eye contact and physically withdrawing from the group. The addition of frequent fidgeting and visible expressions of guilt suggests that the discomfort in these groups was both emotional and physical.
- (2) Moderate physical discomfort: In groups 4, 5 and 11, hiders showed moderate discomfort through subtle physical withdrawal and nervous gestures, such as playing with objects or adjusting their posture. These behaviors suggest that while hiders in these groups were uncomfortable, their distress was more physical than emotional.

Table 2. Comparison of descriptive statistics for the overall sample, hiders and nonhiders

Variable	Overall sample (mean ± SD)	Hiders (mean ± SD)	Non-hiders (mean ± SD)	<i>t</i> -value	<i>p</i> -value
Social identity Expected rewards Expected associations KH	3.39 ± 0.86 3.58 ± 0.96 3.48 ± 0.72 2.09 ± 0.73	3.27 ± 0.99 3.14 ± 1.07 3.42 ± 0.71 1.97 ± 0.64	3.43 ± 0.83 3.73 ± 0.88 3.50 ± 0.73 2.14 ± 0.77	-0.53 -1.82 -0.34 -0.65	0.60 0.08 0.74 0.52

Source: Authors' own work

(3) Mild cognitive discomfort: Hiders in groups 1, 2, 3, 6 and 9 often delayed their responses, indicating internal conflict, but did not exhibit strong signs of emotional or physical withdrawal. The addition of small nervous behaviors like fidgeting with objects or shifting in their seats suggests that the discomfort in these groups was more cognitive, focused on uncertainty about how to respond, rather than overt anxiety or distress.

Figure 3 expands on these findings by organizing the data into a structured format, capturing the hiders' observable behaviors, cognitive and emotional experiences and the strategies they employed during the KH process. This finding, derived from observations during the game, postgame surveys and interviews, allows us to explore the why behind the participants' actions.

- 4.2.1 Cognitive and emotional experiences of hiders. Participants experienced a range of feelings, including guilt, internal conflict and mental strain, alongside strategic perceptions of power and control.
- 4.2.1.1 Guilt and discomfort. Many participants experienced significant guilt and discomfort while hiding knowledge. Participants in Group 4 and Group 7 showed visible signs of discomfort, which aligned with their high self-reported guilt scores of 5/5 in postgame surveys. Group 4 hider reflected, "I felt guilty because they kept asking me, and I knew the answer," and "It was uncomfortable to just sit there and say nothing." Similarly, a Group 7 hider stated, "It's hard to hide when you know something could help them."

However, not all participants expressed guilt. The hider in Group 2 offered a different perspective, stating, "I didn't feel guilty about hiding knowledge, but I found it hard to stay quiet." Social distance also played a critical role in shaping how the participants experienced guilt and discomfort. For example, the hider in Group 4 reflected that "If this person were someone I really knew, I would feel bad. But if it's someone I don't know well, I would be okay with it." The hider did not display visible signs of guilt during the experiment, and the interview confirmed that weaker social ties made withholding information more manageable.

- 4.2.1.2 Cognitive conflict. Some participants struggled between their role of hiding knowledge and their natural inclination to cooperate with their group. In Group 10, the participant exhibited fidgeting and physical withdrawal, later reflecting, "I was torn between helping and keeping quiet because I knew it was a group task." In contrast, the hider in Group 4 displayed mild hesitation during the experiment but expressed deeper internal discomfort in the interview: "It felt like I was betraying my team" (Group 4). In addition, the hider in Group 1 felt conflicted about participating without revealing too much. This internal struggle was captured in her statement, "At first, I didn't know what to do, but eventually I got used to my role." (Group 1).
- 4.2.1.3 Perceived power and control. While guilt and conflict were common themes, some participants experienced a sense of control and power from hiding knowledge. One participant shared, "There's a strange feeling of control when you know something others don't. It feels like you have a certain power over the group" (Group 10). Similarly, a participant from Group 8 stated, "I knew I had the upper hand by not sharing everything. It felt good, but also wrong at the same time."
- 4.2.1.4 Emotional and physical withdrawal. Another common response to the discomfort of KH was emotional and physical withdrawal. Participants in Groups 7 and 10 distanced themselves from the conversation or contributed minimally, as observed during the experiment. One participant noted, "I stayed quiet most of the time. I didn't want to talk because I didn't want them to suspect I knew more than I was letting on" (Group 7). In the observations, this behavior was reflected in physical withdrawal, where participants leaned back or sat apart from the group, avoiding direct engagement.

- 4.2.1.5 Psychological toll. Beyond the immediate feelings of guilt and conflict, some participants reported experiencing a longer-term psychological toll from the KH task. While this aspect was not always visible during the experiment, the interviews revealed the underlying mental strain. For example, the hider in Group 10 expressed, "You know the truth, but the fact that you can't reveal it because something holds you back is a very unpleasant feeling. I think it affects mental health negatively" (Group 10).
- 4.2.2 Strategies used by knowledge hiders. During the game, participants employed several strategies to navigate the tension between concealing information and maintaining their roles within the group. These strategies, ranging from feigning ignorance to misdirection, allowed the participants to participate in the task without raising suspicion.
- 4.2.2.1 "Playing dumb". Several participants pretended not to know or understand key information, which helped them avoid contributing without appearing overtly deceptive. The hider in Group 4 adopted this approach, stating, "I didn't look at their cards or focus on what they were doing. When they asked, I said, 'I only have Uber and Airbnb,' and repeated that for the whole process." Similarly, the hider in Group 10 admitted, "I knew the solution, but I pretended I didn't fully understand it when they asked me questions." This strategy helped participants maintain a passive role in the group, as they were not expected to contribute when unfamiliar with the key details.
- 4.2.2.2 Providing vague or partial information. Another common strategy was to offer vague or incomplete answers, allowing participants to appear cooperative without fully disclosing the information they had. The hider in Group 1 admitted, "I shared some general ideas but left out the critical points." Similarly, the hider in Group 10 used vague responses, saying, "I would give hints—small ones—but I kept the main answer to myself." The hider in Group 4 echoed this approach, sharing, "I didn't give the full answer. I said, 'I don't know that part well,' to avoid giving too much."
- 4.2.2.3 Avoiding eye contact and staying quiet. Silence and physical withdrawal were also key strategies used by participants to avoid drawing attention or suspicion. The hider in Group 1 noted, "I stayed quiet most of the time and didn't engage much." The hider in Group 4 adopted a similar approach, stating, "I kept quiet and avoided looking at them directly because I didn't want them to notice that I wasn't participating much." This strategy allowed participants to manage the tension of withholding knowledge by remaining on the periphery of the group discussions.
- 4.2.2.4 Misdirection. Some participants actively steered conversations away from critical topics to prevent their peers from uncovering the knowledge they were hiding. The hider in Group 1 shared, "When they asked me about specific details, I redirected the conversation to something else." Similarly, the hider in Group 4 explained, "I didn't pay attention to what they were doing, and when they asked me, I just gave a basic answer and moved the conversation somewhere else." Through misdirection, participants could maintain control over the conversation and keep their knowledge hidden without outright refusal to engage.

4.3 Perceptions and interpretations of knowledge hiding by the targets

This section explores how participants perceived and interpreted potential KH among their teammates during the experiment. Without receiving explicit instructions to identify KH, participants shared their impressions of group dynamics and whether they sensed any KH. Their responses provide insights into the suspicion of KH, interpretations of group behavior and the perceived impact on teamwork and group dynamics.

4.3.1 Comparison of visual cues and participant suspicion of knowledge hiding. Table 3 compares the hiders' experience, visual observations of nonverbal cues during the game and

participant suspicion of KH across various groups. As mentioned, groups were categorized into three levels of discomfort – high emotional and physical discomfort, moderate physical discomfort and mild cognitive discomfort – based on nonverbal signs exhibited during the experiment. The table also includes insights from participant's open-ended responses to better understand the group dynamics and perceptions of KH.

Table 3 illustrates some important patterns. In groups with high emotional and physical discomfort (Groups 7, 8 and 10), despite visible nonverbal signs such as fidgeting and physical withdrawal, participant suspicion remained low. Most participants scored 1 or 2 on the Likert scale, and their open-ended responses reflected a lack of suspicion, with comments like, "No one was hiding, but someone was afraid of discussion" and "Everyone was open and honest."

In groups with moderate physical discomfort (Groups 4, 5 and 11), suspicion was more aligned with nonverbal cues. Subtle signs of physical withdrawal and nervous gestures led to moderate suspicion, reflected in Likert scale scores of 3–5. For example, one participant from Group 5 noted, "One groupmate just sat and didn't say anything until we asked for help" (Score: 4), and in Group 11, a participant said, "One teammate was suspicious because they weren't saying anything until later" (Score: 4–5). These responses show that even minor physical cues were linked to perceptions of KH.

For groups with mild cognitive discomfort (Groups 1, 2, 3, 6 and 9), participant suspicion was generally low, with exceptions in Groups 2 and 6, where moderate suspicion was raised. In Group 2, one participant commented, "One teammate definitely knew something but

Table 3. Participant suspicion of KH compared to observed discomfort levels

Hiders' experience	Visual observations	Participant suspicion
High emotional and physical discomfort (Groups 7, 8 and 10)	Strong visible signs including avoided eye contact, physical withdrawal, frequent fidgeting, visible guilt expressions and high emotional/physical tension. These behaviors indicated a significant internal struggle with hiding knowledge	Surprisingly low suspicion with scores of 1–2 out of 5. Comments included "No one was hiding. But someone was afraid of discussion" (G7), "Everyone was open and honest" (G8) and "I didn't feel like anyone was hiding information" (G10). Despite visible distress, participants interpreted interactions as transparent
Moderate physical discomfort (Groups 4, 5 and 11)	Moderate signs manifesting through subtle physical withdrawal, nervous gestures, object fidgeting and posture adjustments. The discomfort appeared more physical than emotional, reflecting moderate tension levels	Mixed suspicion levels across groups. G4 showed low suspicion (score: 1), whereas G5 (score: 4) and G11 (score: 5) reported higher suspicion. Comments included "One groupmate just sat and didn't say anything" (G5) and "One teammate was suspicious" (G11)
Mild cognitive discomfort (Groups 1, 2, 3, 6 and 9)	Mild signs displayed through delayed responses, minor fidgeting and seat shifting. The discomfort appeared primarily cognitive, focused on response formulation rather than emotional distress	Participant suspicion of KH was generally low to moderate. G1, G3 and G9 reported low suspicion (score: 1), whereas G2 and G6 showed moderate suspicion (score: 4). Comments included "No, there wasn't any withholding; I tried to share everything I knew" (G1), "No one was hiding knowledge; everything was clear" (G3) and "One teammate definitely knew something but chose to remain silent." (G2)
Source: Authors' own	work	

chose to remain silent" (Score: 4), showing that even mild cognitive discomfort, like hesitation or delayed responses, can raise suspicion if interpreted in context.

4.3.2 Participant interpretation of knowledge hiding through thematic insights. Figure 4 highlights how participants interpreted various behaviors during group interactions and their suspicions regarding KH. Nonverbal cues played a significant role in shaping perceptions of KH, with participants often attributing physical behaviors, such as body tension or withdrawal, to an individual's reluctance to share information. For instance, a participant from Group 2 stated that they could "physically feel how he was holding back," indicating that subtle physical cues, such as stiff body posture or avoiding direct interaction, raised suspicions of KH. Similarly, in Group 5, a participant observed evasive behavior in another team member, noting that their reluctance to answer direct questions or their evasive facial expressions gave the impression of intentional withholding.

In addition, the participants frequently identified inconsistencies between verbal and nonverbal communication as indicators of KH. A participant from Group 6 observed that, despite repeated requests for input, a teammate's facial expressions suggested they were "actively holding back" information, even when their verbal responses were vague or dismissive. This highlights the importance of facial expressions and nonverbal behaviors in signaling cognitive and emotional withholding during group interactions.

On the other hand, not all participants attributed silence or nonparticipation to KH. Some participants misinterpreted quietness as a lack of interest or disengagement from the task. For example, a participant from Group 11 remarked that they thought their teammate's silence indicated that they "didn't have much interest in the class," thus misreading the quiet behavior as disinterest rather than intentional withholding. Others equated nonparticipation with a lack of knowledge, assuming that individuals who refrained from contributing "didn't know anything about the project," as a participant in Group 4 noted.

In contrast, some participants adopted a more empathetic stance, recognizing that nonparticipation or silence might be due to feelings of discomfort rather than deliberate KH. For example, a participant from Group 7 noted that it's "not always about willingness to share but about feeling comfortable enough to do so," reflecting an understanding of how social dynamics and personal comfort levels can influence participation. Group 11 echoed this sentiment, acknowledging that "everyone reacts depending on the situation," suggesting that external factors, such as the group setting or individual confidence, may affect how and when participants engage.

5. Discussion and implications

This section discusses how our findings contribute to our understanding of KH by exploring how knowledge hiders experience and manage KH and how KH targets perceive and interpret these actions.

Consistent with Connelly *et al.* (2012), we identified playing dumb and evasive hiding as common strategies. Participants often pretended not to understand or downplayed their knowledge to avoid contributing while maintaining a cooperative appearance. Evasive hiding, where participants provided vague or partial information, was another frequently used tactic. By sharing only superficial ideas and withholding key details, participants gave the impression of being helpful without revealing critical knowledge. Our study highlights several new strategies. Some participants avoided eye contact and remained silent, using physical disengagement to dodge direct questioning. This passive strategy allowed them to conceal knowledge without drawing attention. Another strategy was misdirection, where participants redirected conversations away from critical topics or offered irrelevant information. This manipulation enabled them to control the discussion flow while keeping their hidden knowledge intact.

In line with previous studies, we observed that KH often triggers guilt and discomfort among hiders (Burmeister *et al.*, 2019; Islam *et al.*, 2022). Participants reported significant emotional tension, manifested through fidgeting, avoidance and visible discomfort, especially when hiding involved knowledge that could benefit their group. The experience of guilt was particularly pronounced in groups with high emotional and physical discomfort. However, our findings suggest that social context moderates emotional discomfort, particularly the strength of social ties within the group. When individuals are less familiar with group members, they tend to experience reduced guilt when concealing information. This aligns with previous research showing that stronger social relationships negatively correlate with KH (Su, 2021). Our study advances this understanding by highlighting how the strength of these social ties can influence not only KS but also the emotional burden of KH.

Interestingly, our findings suggest that even when individuals exhibit visible signs of emotional or physical discomfort due to KH, these cues are not always interpreted by peers as such. This challenges the common assumption that these behaviors are easily identifiable and typically lead to negative consequences (Connelly *et al.*, 2012; Černe *et al.*, 2014; Zhao *et al.*, 2016). Instead, our findings demonstrate that signs of discomfort were often misattributed to other factors, such as nervousness, shyness or general disengagement. This misinterpretation indicates that the negative effects of KH may not always manifest, as the act itself can go unrecognized.

Moreover, silence and nonparticipation in group settings are often misinterpreted, with participants frequently attributing these behaviors to disinterest or lack of knowledge rather than deliberate KH. Some participants also showed an empathetic tendency to view such withdrawal as resulting from discomfort or lack of confidence, rather than intentional refusal to share knowledge. These varying interpretations highlight the complexity of perceiving KH within groups, showing that the impact of KH on group dynamics is shaped not only by the hider's behavior but also by how others interpret and react to it.

Building on these findings, Table 4 outlines several key areas for future research that can further our understanding of the complexities surrounding KH.

One area involves nonverbal cues, particularly exploring whether different behaviors are used in virtual versus in-person environments and how cultural differences influence their interpretation. Research should investigate specific body language signs most closely associated with KH. Another promising area is verbal cues, understanding the strategies individuals commonly use to conceal knowledge and whether consistent patterns emerge across contexts.

The impact of social context demands attention, particularly the role of close social ties and hierarchical relationships. Future studies could investigate whether hiding knowledge from close colleagues generates more emotional conflict than from distant ones and how social hierarchies influence KH strategies. The long-term consequences of KH are also essential, particularly regarding the psychological impact on hiders. While our study touched on emotional tension, more research is needed to understand long-term effects like stress, anxiety or guilt from prolonged KH.

However, our findings also raise a broader concern: is KH truly a widespread organizational problem, or has its impact been overstated? While KH is often portrayed as a detrimental behavior that undermines trust and collaboration, our findings suggest that the issue may not be as severe as it appears. One key insight from our study is the subjectivity of interpretation — what one group member interprets as KH may, in reality, reflect another person's discomfort, lack of confidence or even shyness. Misinterpretations of behaviors like silence, disengagement or vague responses could lead to an inflated perception of KH, making it seem more prevalent and harmful than it truly is. This raises the possibility that KH

Future research area	Future research questions
Nonverbal cues of KH	Are there differences in nonverbal cues used to conceal knowledge in virtual versus in-person group settings? How do cultural differences affect the interpretation of nonverbal
	KH behaviors?3. What specific body language signs (e.g. crossed arms, lack of eye contact) are most associated with KH?
Verbal cues of KH	1. What verbal strategies do individuals commonly use to conceal knowledge?
	 What role do language and speech patterns play in detecting KH? How do group members typically interpret verbal signals of KH, and how does this affect team dynamics?
The impact of social context	 Does hiding knowledge from close colleagues generate more emotional discomfort than distant colleagues?
	2. How do social bonds like trust, respect and familiarity impact the frequency of KH?
	3. How do differences in rank or hierarchy within close social ties impact KH dynamics?
Long-term consequences of KH	 What are the long-term psychological impacts of consistently hiding knowledge on the hider, such as stress, anxiety or guilt? Does the emotional burden of KH lead to reduced performance and motivation in the long term?
Source: Authors' own work	

is being overemphasized as an organizational problem when, in fact, it may not always be intended or impactful.

In addition, although our study did not directly investigate this, KH might be more of a symptom of deeper organizational culture issues rather than an isolated behavioral problem. For example, environments with poor communication, lack of trust or misaligned incentives may foster conditions where KH naturally occurs. In these cases, KH could manifest underlying structural and cultural weaknesses within the organization. Rather than focusing solely on individual KH behaviors, it might be more productive to address these root causes.

6. Conclusion

To our knowledge, this is the first study to explore KH by examining both how hiders experience and manage KH and how KH targets perceive and interpret these actions within group settings. Our findings extend the work of Connelly *et al.* (2012) by identifying common strategies like playing dumb and evasive hiding and highlighting additional strategies such as physical disengagement and misdirection.

Moreover, our study sheds light on the emotional and psychological impacts of KH on hiders, showing that KH can trigger guilt and discomfort, particularly in contexts where strong social ties exist. At the same time, the emotional toll of KH is influenced by the social dynamics within groups, with weaker ties reducing the emotional burden for hiders. Interestingly, we also found that KH behaviors, such as silence or disengagement, are often misinterpreted by peers, challenging the assumption that KH is easily identifiable or consistently leads to negative outcomes like retaliation or distrust.

However, our findings also raise broader questions about whether KH is a critical organizational problem or whether its impact has been overstated. The subjectivity of

interpretation and the varying emotional responses suggest that the prevalence and harm of KH might be inflated. In addition, KH could be symptomatic of deeper organizational culture issues, such as poor communication or lack of trust. Addressing these underlying problems might be a more effective approach than focusing solely on eradicating KH behaviors.

While our study provides valuable insights, several limitations should be noted. The controlled group setting may not fully capture the complexities of KH in real-world organizational contexts, where long-term relationships, power dynamics and diverse incentives play a role. Furthermore, the sample size and composition, while sufficient for our exploratory goals, may limit the generalizability of our findings to all industries or organizational structures. Finally, the short-term nature of the group interactions prevents us from fully exploring the long-term psychological and performance-related consequences of KH, particularly its impact on motivation, team cohesion and individual well-being.

Despite these limitations, our research makes critical contributions by expanding the understanding of KH strategies and uncovering how others perceive KH in group settings. Future research can build on these findings by investigating KH in more naturalistic environments, exploring its long-term effects and assessing whether the organizational resources dedicated to managing KH are proportional to its actual impact. By doing so, organizations can develop more balanced, effective strategies for managing KH, ensuring that efforts to address it are justified and impactful.

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