

A Resource-Based View Framework for Knowledge Risk Management in SMEs

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Abstract: Small and Medium Enterprises (SMEs) face a significant challenge of knowledge loss due to their inability to implement Knowledge Risk Management (KRM) strategies effectively, which ultimately negatively affects their competitiveness and sustainability. The modern nature of work causes an over-reliance on technology to perform remote work, conduct organisational collaboration and exchange knowledge assets, which poses risks associated with knowledge exposure and loss for SMEs. Given that SMEs are resource constrained, they put little effort into risk management strategies that can potentially save them from losing their most critical knowledge. This study proposes a Resource-Based View framework (RBV) for SMEs to leverage internal resources and capabilities to mitigate the risks related to knowledge loss. A systematic literature review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) to analyse academic publications from the past ten years (2014–2024) in order to identify key trends, challenges and strategies related to KRM, RBV and SMEs. Thematic analysis was applied to analyse the selected articles, with three themes emerging, namely the role of intellectual capital in mitigating knowledge risks; technological interventions for knowledge protection; and organizational culture's impact on knowledge-sharing and security. SMEs struggle with managing intellectual capital, implementing technological interventions for knowledge retention, protection and sharing due to limited resources. Their approach to knowledge-sharing is unstructured and formal processes are less frequently implemented. However, organizations that integrate KRM effectively demonstrate greater resilience, sustainability and competitive advantage. The results underscore the need for SMEs to develop structured KRM frameworks aligned with their resource capabilities. This research bridges the gap between RBV and KRM, providing insights for SME managers to manage knowledge loss risks and enhance long-term sustainability. Future research should explore empirical case studies to validate the findings and proposed framework of this paper.

Key words: Resource-Based view, Knowledge risk management, SMEs, Systematic literature review

1. Introduction and Background

Knowledge plays a crucial role in the modern economy, often referred to as the "knowledge economy" (Oliveira and Matos, 2023). Unlike traditional economies that relied heavily on natural resources and physical labour, today's economies are driven by information, expertise and innovation. Knowledge allows businesses and industries to improve productivity, develop cutting-edge technologies and maintain a competitive advantage in a rapidly changing global market. It is a key driver of entrepreneurship and social mobility, enhancing the visibility of small and medium enterprises (SMEs) in global economies (Garzoni et al, 2020). SMEs are an important sector of the world economies, accounting for over 90% of employment creation and innovation (Al-Karkhi, 2024; Mugano, 2024). They are privately-owned organisations defined in terms of the number of permanently employed staff and the amount of revenue generated annually. In South Africa, a privately-owned organisation with a staff complement of not more than 500 and an annual turnover revenue of not more than 20 million rands is categorised under the SME sector (SEDA, 2019). However, the literature indicates that SMEs face significant risks of knowledge loss due to increased human resource mobility, compounded by underdeveloped tacit knowledge management (Adesina and Ocholla, 2024; Durst et al, 2023).

Furthermore, challenges such as limited access to finance are the biggest hurdles limiting the growth potential of SMEs in developing countries in Africa (Mugano, 2024). Despite these challenges, SMEs have significant opportunities for growth in the current digital economy. The culture of innovation and risk taking allows SMEs to rapidly adopt digital technology like e-commerce, artificial intelligence and smart systems to enhance their competitiveness (Raihan, 2024). According to Matchaba-Hove et al (2015), organisations that are quick to innovate and adopt digital technologies are more likely to gain a sustainable competitive advantage. Nowadays, the integration of digital technology is increasingly becoming a cornerstone of modern SME operations (Raihan, 2024). Indeed, SMEs have a flexible management mindset which serves as a strength for adopting new technologies with little bureaucracy.

Moreover, SMEs rely on knowledge for innovation, competitiveness and sustainability, which they use to optimize operations, make informed decisions and develop unique value propositions. Understanding industry trends, customer preferences and technological advancements helps them differentiate themselves. In

addition, knowledge of business management, financial planning and regulatory requirements helps them navigate challenges and expand (Ogujiuba et al, 2023). However, managing knowledge-related risks like loss, leakage and obsolescence remains a critical challenge for SMEs (Adesina and Ocholla, 2024). The increasing complexity of today's knowledge-intensive processes, reliance on digital technologies, remote work and inter-organizational collaborations exposes SMEs to various risks associated with knowledge leakage, cyber threats and intellectual property loss, leading to ineffective knowledge-sharing practices (Mamorobela, 2023).

Effective Knowledge Risk Management (KRM) is essential to mitigating these risks and ensuring that SMEs leverage their knowledge resources optimally (Massingham, 2010). Despite high knowledge loss vulnerabilities in SMEs, KRM is relatively underdeveloped. KRM is a process that involves identifying, analysing and responding to risks related to the creation, application and retention of organizational knowledge (Durst et al, 2020). The field of KRM emerged as a catalyst to apply knowledge management tools and techniques to the management of risks related to organisations' intellectual property (El Khatib et al, 2022a; El Khatib et al, 2022b). The lack of formalized risk management frameworks in SMEs leads to a reactive approach, exposing them to economic downturns, cybersecurity threats, supply chain disruptions and unforeseen crises. This lack of preparedness often results in business failures, stunted growth and inability to secure financing from risk-aware investors (Mamorobela, 2023). Hence, this paper explores the development of a resource-based view framework for SMEs to mitigate knowledge loss risks.

2. Research Problem

Despite the growing recognition of risk management as a critical business function, there is limited research on the barriers that SMEs face in adopting formalized risk management frameworks (Crovini et al, 2021). Arnaudova et al (2025) aver that existing risk management models tend to be tailored to larger enterprises dealing with finance, insurance and utilities, which comply in accordance with their specific industry regulations. Evidently, there is a significant gap in the literature to understand the levels of KRM in SMEs (La Torre and La Torre, 2020). As a result, knowledge as a strategic resource receives little attention and the mismanagement of risks associated with knowledge loss puts SMEs at a competitive disadvantage.

Due to the challenges highlighted, this paper asks the research question: *how can a resource-based view framework that provides guidelines for SMEs to address the risks related to knowledge loss be developed?* By adopting proactive risk management practices that focus on knowledge as a key intellectual property, SMEs can improve their resilience, enhance decision-making and secure their competitive advantage in an increasingly uncertain business environment. Most studies focus on knowledge management practices in SMEs with little evidence on mechanisms for SMEs to address knowledge-related risks (Arnaudova et al, 2025). A view of knowledge from the competitive resource perspective may expose SMEs to more opportunities for leveraging knowledge for their sustainability and putting more effort into knowledge protection mechanisms (Grimaldi et al, 2021). This paper proposes a resource-based view (RBV) framework for KRM in SMEs, aiming to leverage internal resources and capabilities to mitigate the risks related to knowledge loss.

3. Research Methodology

This study followed a ten-year systematic literature review (SLR) process between 2014 and 2024 using PRISMA to enquire about KRM from the RBV perspective in an attempt to develop a framework for leveraging internal resources and capabilities to mitigate the risks related to knowledge loss in SMEs. As stated in Snyder (2019), the SLR process is a qualitative method used to gather, compile, assess and identify gaps in research over time. It includes approaches like meta-analyses, mixed method reviews, scoping reviews, targeted literature reviews, rapid reviews and umbrella reviews.

PRISMA is a guideline used for reporting all types of SLRs to ensure consistency and transparency in the manner that the review process is reported (Hansen et al, 2022). The guidelines of PRISMA in this paper helped ensure that research bias was minimised by determining the inclusion and exclusion criteria for the selection of relevant literature sources; coding and analysis of selected literature sources; and the discussion and reporting of the findings from the sources included in the review. Being a qualitative study, the review of literature in this paper was informed by the research problem and questions. A review protocol was developed to find relevant sources aligned to the research topic, problem and question. Massaro et al (2015) emphasise the importance of preparing a review protocol that guides the search process and provides a basis for the inclusion and exclusion criteria of literature sources. Setting up a research protocol for this paper was helpful to the researchers because the protocol served as a tool for a rigorous and transparent process of making decisions about the literature sources selected in the study. The PRISMA process includes the identification of

the review protocol; searching for articles through various databases; determining the eligibility criteria for article selection; and defining the inclusion/exclusion criteria of articles (Hansen et al, 2022).

The initial search was conducted on Scopus, Web of Science and Google Scholar, which are popularly used in social sciences research to provide the most accurate bibliometrics of highly cited scholars in the field (Falagas et al, 2008). Each database has its own query for defining a combination of strings and Boolean operators for the search. The query used on Web of Science was: TI=(Resource-based view AND Knowledge risk Management AND SME) OR TI=(RBV AND KRM AND SME) OR TI=(Resource-based view AND Knowledge risk) OR TI=(Resource-based view AND Knowledge risk Management AND Small and Medium Enterprises) OR AB=(Resource-based view AND Knowledge risk Management AND SME) OR AB=(RBV AND KRM AND SME) OR AB=(Resource-based view AND Knowledge risk) OR AB=(Resource-based view AND Knowledge risk Management AND Small and Medium Enterprises) AND AK=(Knowledge Risk Management). As at January 2025, the Web of Science database returned 21 articles. The query used on Scopus was: TITLE-ABS-KEY ("Resource-based view") AND TITLE-ABS-KEY ("SME") AND TITLE-ABS-KEY ("Knowledge management") AND PUBYEAR > 2014 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "English")), which returned 2 articles as at January 2025. The search on Google scholar included all articles published between 2014 and 2024 with a search query: ("SME" AND "Knowledge Risk Management" AND "Resource-based view"). The search returned 95 articles as at January 2025.

The total number of articles from the initial search across all three databases was 118. Only peer-reviewed articles written in English were considered in the review because the authors did not have the financial resources to hire a language translator or bilingual team members. Ms Excel was used to check for duplicate articles. There were 23 duplicate articles between Google Scholar, Web of Science and Scopus. In essence, all articles found on Scopus and Web of Science were also duplicated in Google Scholar. The removal of duplicate articles brought the total number of articles down to 95. The titles, abstracts and keywords of all remaining articles were read to determine their relevance to the study objectives.

4. Data Analysis

The resultant 95 articles were categorised according to the keywords of the study title and the subject under investigation, namely: "knowledge risk management", "knowledge risk management and resource-based view", "resource-based view and SME", "knowledge risk management and SMEs", and "knowledge risk management and resource-based view and SMEs".

After reading all the articles and categorising them, a further 63 articles were found to be unrelated to the categories and were excluded from the list, leaving 32 articles that were read in full and were found to be highly relevant. A total of 14 articles were found to be only addressing "knowledge risk management" issues. Four articles were related to "knowledge risk management and resource-based view"; four articles address issues around "resource-based view and SME"; nine articles were about "knowledge risk management and SMEs"; and only one article was found to be about "knowledge risk management and resource-based view and SMEs".

Thematic analysis was applied following the guidance of Archer et al (2017). The process included steps such as text familiarisation, coding, revision, theme creation and lastly a revision of the final themes. To familiarise themselves with the text, the researchers read all 32 articles in order to understand their research objectives, methodologies and results. Coding involved the creation of tables on Ms Excel to capture articles under different categories based on their objectives and the subject under investigation. Important segments of the articles were noted as codes that were stored on a separate Excel sheet for further analysis. The list of all codes was then revised to ensure their relevance to the study and to ensure that none of the important code segments were missing from the analysis. The codes addressing similar ideas in relation to the research objectives were grouped together to formulate the initial set of themes. The themes were named accordingly to reflect the proposed RBV framework for KRM in SMEs. The process of naming themes was very rigorous to ensure that all generated themes capture specific aspects of the data with no overlap between themes. Finally, the themes were revised and some refinements were done where necessary to combine the themes with similar ideas, discarding those not sharing the central ideas of the research. The final set of themes were then used to propose a conceptual RBV framework for KRM in SMEs, shown in Figure 1.

5. Results and Discussions

The results of the thematic analysis revealed three themes that are pertinent to the development of the RBV framework for KRM in SMEs, namely, the role of intellectual capital in mitigating knowledge risks; technological interventions for knowledge protection; and organizational culture's impact on knowledge-sharing and security. These are discussed in the following sections.

5.1 The Role of Intellectual Capital in Mitigating Knowledge Risks

Intellectual capital serves as a dynamic capability that SMEs can use to manage knowledge risks and improve sustainability (El Hanchi and Kerzazi, 2020). The effective use of intellectual capital enables organisations to safeguard their knowledge assets and enhance resilience. Intellectual capital encompasses human capital, structural capital and relational capital as crucial factors for mitigating the risks associated with knowledge loss, leakage and obsolescence (Tsang, 2017). Human capital is the most important component of intellectual capital, which ensures that critical knowledge is retained within the organisation. Human capital uses knowledge-sharing approaches like mentorships and cross-functional teams to prevent the risk of losing organisational knowledge when employees leave (Phaladi, 2024). Human capital reflects on constructs like skills, expertise and the experiences of staff (Akinsola et al, 2023; Khatib and Abbas, 2023; Mutai, 2023; Chakabva et al, 2021; El Hanchi and Kerzazi, 2020; La Torre and La Torre, 2020; Shujahat et al, 2020; Chan et al, 2016). By investing in human capital through education and training, SMEs can build resilience against the risk of knowledge loss.

Structural capital is another important component of intellectual capital that focuses on the formalisation and documentation of knowledge (Alam et al, 2024; Alam et al, 2023). It uses mechanisms such as standard operating procedures, knowledge repositories and workflows to ensure that essential knowledge is retained within organisations. Structural capital also ensures that effective knowledge management systems are in place to enable the smooth access and distribution of knowledge that prevent knowledge silos (Zeiringer, 2023). Structural capital includes constructs like processes, databases and intellectual property (Magni, et al, 2022; Chakabva et al, 2021; Tsang, 2017; Brustbauer, 2016; Chan et al, 2016; Durst and Leyer, 2014; Abidin, 2014). SMEs need to pay particular attention to structural capital assets in order to enhance knowledge security, retention and adaptability to mitigate knowledge loss risks.

Relational capital is the third component of intellectual capital, which refers to the external relationships between organisations and third-party organisations, customers, suppliers and stakeholders (Lima Rua et al, 2023; Magni, et al, 2022). It focuses on knowledge exchange and collaborations to provide access to new knowledge and foster innovation. Relational capital includes constructs like external networks, customer relationships and partnerships (Tohānean et al, 2020; Ali et al, 2019; Multaharju et al, 2017; Chan et al, 2016; Cerrudo et al, 2014) to allow organisations to share best practices, co-develop solutions and stay up-to-date with changes in the industrial revolution. To manage knowledge risks, SMEs can leverage relational capital by building strong trust-based relationships with employees, industry partners, research institutions and professional networks to validate, refine and protect knowledge.

5.2 Technological Interventions for Knowledge Protection

In the contemporary milieu, technology plays a crucial role in protecting unauthorised access to knowledge assets within organisations (Zeiringer, 2023). Technological interventions like knowledge management systems (KMS), cybersecurity and digital collaboration tools allow organisations to safeguard knowledge assets and maintain long-term sustainability. KMS platforms provide organisations with the ability to create, store, organise, distribute and retrieve knowledge quickly to reduce the risk associated with knowledge loss when employees leave the organisation (Alam et al, 2024; Alam et al, 2023; Chan et al, 2016; Abidin, 2014). Cybersecurity is another important technological intervention that SMEs can use for the protection of knowledge assets (Zeiringer, 2023). Cybersecurity measures like encryption, access control and multi-factor authentication are there to ensure data security so that SMEs can mitigate knowledge-related risks. Additionally, technology interventions like advanced digital collaboration tools are there to offer communication platforms that are more secure, with version controls and audit trails for SMEs to enhance the level of KRM (Yuwono and Rachmawati, 2024; Magni, et al, 2022). Therefore, by leveraging technological interventions, SMEs can improve knowledge retention, security and adaptability to safeguard their knowledge assets, enhance innovation, and ensure long-term resilience in a dynamic business environment.

5.3 Organisational Culture’s Impact on Knowledge-Sharing and Security

The impact of organisational culture on knowledge-sharing and security also emerged as a theme of discussion. According to Hamzah et al (2022), culture that promotes knowledge-sharing has the potential to reduce the risk of knowledge loss. Constructs like security awareness and compliance, trust and open communication and incentives for knowledge-sharing are pertinent to influence KRM in SMEs. Trust and open communication foster collaboration, innovation and learning by creating an environment where employees constantly seek new knowledge, which ultimately mitigates the risk of knowledge obsolescence (Multaharju et al, 2017; Ali et al, 2019). A culture of openness is important to facilitate the efficient capture and transfer of critical knowledge by the KMS. Indeed, organisations that encourage employees to share expertise through mentorships, collaboration, cross-functional teams and open communication channels can potentially reduce the risk of knowledge loss. Additionally, the culture of security awareness and compliance ensures that employees understand the importance of safeguarding critical knowledge in the organisation, as well as adherence to best-practices around data and information security (Tsang, 2017; Chan et al, 2016). SMEs need to train employees to recognise the risks of unintentional knowledge leaks to better protect their intellectual assets. Incentives for knowledge-sharing are also important to ensure that employees are not hesitant to share valuable expertise due to concerns about job security (Magni, et al, 2022; Hamzah et al, 2022; Multaharju et al, 2017). Incentives for knowledge-sharing encourage employees to continuously update and refine knowledge as they participate in training programs and engage in innovative initiatives. Therefore, by strategically designing structures for incentives, SMEs can enhance knowledge-retention; keep updated knowledge; and ensure that sharing practices align with security measures to support long-term KRM.

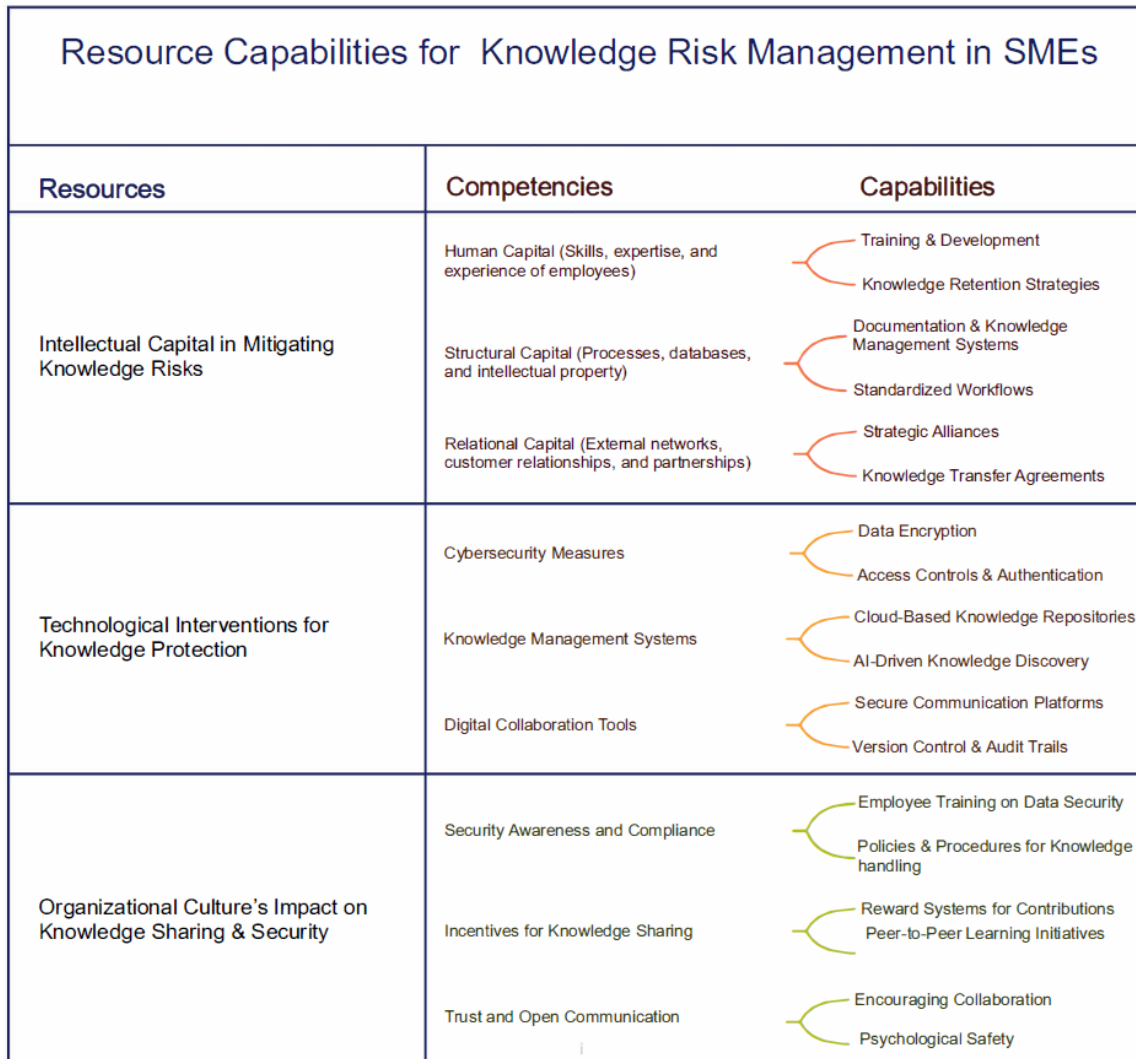


Figure 1: Proposed research framework

6. Conclusion

This study was triggered by the research gaps highlighting that SMEs put little effort into knowledge risk management strategies that can potentially save them from losing their most critical knowledge. The study reviewed academic literature in KRM for a period of 10 years since 2014 to 2024 using PRISMA to uncover trends, challenges and strategies related to KRM in SMEs. Not too many studies exist in this area, especially in the context of SMEs. It was discovered that KRM is an emergent area that is mostly explored in large organisations dealing with finance, insurance and utilities; to comply with their specific industry regulations. The PRISMA process resulted in 32 relevant articles that were thematically analysed. Three themes, namely the role of intellectual capital in mitigating knowledge risks; technological interventions for knowledge protection; and organizational culture's impact on knowledge-sharing and security, emerged from the analysis and were used to propose an RBV framework for KRM in SMEs. The study contributes to both theoretical and practical discussions by bridging the gap between RBV and KRM, offering insights for SME managers to proactively manage knowledge risks so that they can enhance the long-term sustainability of their SMEs. Given that the study is only limited to the literature search using the PRISMA methodology, future research should explore empirical case studies to validate the findings of this paper.

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