

Key organisational barriers to effective knowledge risk management in South African public sector enterprises

Malefetjane Phineas Phaladi 

Department of Information Systems, Durban University of Technology (South Africa)

MalefetjaneP@dut.ac.za

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Abstract

Purpose: The aim of this study was to delve into the obstacles preventing the effective management of tacit knowledge risks in South African public sector enterprises (PSEs) from the perspectives of human resource management (HRM) and knowledge management (KM). A perusal of the literature reveals that most South African PSEs are grappling with significant challenges related to potential tacit knowledge loss risks.

Design/methodology/approach: The research utilised a mixed methods exploratory sequential design, collecting qualitative data through interviews with 20 HR managers in 9 PSEs and survey data from 585 questionnaires. The reliability of the data was tested, and thematic analysis was performed using Atlas.ti software.

Findings: The study identified key barriers to effective tacit knowledge loss risk management in PSEs, including a silo mentality, organisational red-tape, knowledge as a power source, lack of recognition and rewards, KM awareness, cultures and structures, employment equity, fixed-term contracts, competing priorities for leadership, knowledge hoarding, HRM practices, and inadequate KM technologies and systems. These pressing issues need to be addressed to improve knowledge risk management (KRM) efforts in PSEs.

Research limitations/implications: The exploration of organisational barriers was only limited to the tacit knowledge loss risks category, induced by human resource turnover in country-specific PSEs. Future studies could explore the organisational barriers and factors affecting other types of knowledge risks in PSEs or similar knowledge-intensive business enterprises across the globe using different samples and populations. Other similar studies could include strategic sectors of the economy such as energy generation, civil aviation, defence, mining and rail. The study contributes to the knowledge-based view and knowledge stickiness theories, and proposes an interdisciplinarity approach using mixed methods for future research on tacit knowledge loss.

Practical implications: The research findings conclusively indicate that PSEs face the aforementioned barriers that hinder the effective implementation of the KRM system. This study identifies that key organisational barriers were mainly due to a lack of knowledge-driven HRM strategies in KM. To address these barriers, HR managers and other stakeholders must collaborate to ensure effective knowledge management and mitigate the negative impact of knowledge loss risks on organisational performance.

Social Implications: The study highlights the importance of removing key barriers for improved KRM in PSEs. The improved KRM can enhance public service delivery efficiency, transparency and the accountability of PSEs by addressing socio-economic developmental issues in developing economies.

Originality/value: Using South African PSEs as a case to address this challenge, the paper sought to explore key organisational barriers to effective knowledge loss risk management in organisations with a view to shaping discourse, policies, research, theories and practices in KM and HRM. Organisational barriers affecting the management of such risks remain unexplored in the extant body of knowledge and practice.

Keywords: Organisational barriers, Knowledge management, Knowledge risk management, Human resource management, State-owned enterprises, South Africa

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1. Introduction

Tacit knowledge loss remains a serious risk facing a number of private and public companies (small, medium and large enterprises) in the current complex, competitive global knowledge-based economy. This paper presents an interdisciplinary study exploring the organisational barriers affecting the effective management of tacit knowledge loss risks from the human resource management (HRM) and knowledge management (KM) standpoints, in particular the knowledge risk management (KRM) sub-domain, using South African public sector enterprises (PSEs) as a case. Tacit knowledge is the kind of knowledge that is deeply engrained in the minds of the knowers or firm-specific workers, which is difficult to manage. South African PSEs currently face a number of key organisational barriers that are rooted mainly in their organisational cultural and HRM practices, which hinder the effective management of tacit knowledge loss risks. Such barriers remain largely unexplored interdependently from HRM and KM in the current literature and praxis. This study is intended to fill this gap by providing an in-depth picture of the key organisational barriers adversely affecting the effective management of tacit knowledge loss in South African PSEs. The tacit nature of knowledge makes it difficult to mitigate against its potential loss and risks, mainly due to employee turnover and an ageing and retiring workforce (Jennex & Durcikova, 2020). The loss of tacit knowledge may create undesirable organisational productivity, sustainability and financial challenges if it is not well managed holistically and systematically within companies (Brătianu, Nesian, Tită, Vodă & Gută, 2020; Zieba & Durst, 2018). A few recent studies suggest that barriers to the effective mitigation of tacit knowledge loss risks arise in the organisational and cultural context of enterprises (Phaladi, 2022a, 2023a), and that HRM strategies play a critical role in knowledge (risk) management (Dalkir, 2020). This effectively means that in an ideal business environment, in order to effectively manage tacit knowledge to prevent its loss, enterprises would require changes in the organisational and cultural context. The role of HRM and its practices in creating and facilitating a knowledge-driven context and culture is inevitable to ensure effective knowledge loss risk management (Phaladi, 2022a).

Some studies have explored the organisational barriers and factors broadly affecting the management of knowledge, including its retention in private and public companies (Azaki & Rivett, 2022). Current studies (El Khatib & Ali, 2022; Durst, Hinteregger & Zieba, 2019; Massingham, 2018) on KRM appreciate the adverse impact of knowledge loss risks threatening the sustainability and viability of the companies operating in the modern complex knowledge-based competition, albeit doing so from either knowledge management, business management, risk management or economics perspectives. Furthermore, recent limited research explored how tacit knowledge loss risks affect the performance, productivity, innovation and sustainable competitive edge of public enterprises (Phaladi & Ngulube, 2024; Souto & Bruno-Faria, 2022; Phaladi, 2023a; Kumar, 2020). In addition, Azaki and Rivett (2022) explored the organisational factors adversely affecting knowledge retention in a South African public organization. However, none of these studies delved into the perplexing key organisational barriers affecting tacit knowledge loss and the management of risks associated with such loss interdependently

from HRM and knowledge management using a mixed methodology, which offers an integrated approach to solving perplexing risks.

PSEs, also commonly known as state-owned enterprises (SOEs), public enterprises or state-owned companies, are firms that are wholly or partly owned by the state (Kumar, 2020). PSEs are crucial for national economies, operating in sectors like transportation, energy, public water utilities, research and development, and finance. According to the research, PSEs have had a significant impact on the global economy over the past many years and are regarded as the cornerstone of the knowledge-based economy and competitiveness (Vlasov & Panikarova, 2015). They are highly valued as knowledge-intensive, knowledge creating explorers and distribution systems (Benassi & Landoni, 2019). In South Africa, PSEs are considered by the state as key instruments for growing the economy by driving public infrastructure investment, job creation and creating an enabling business climate (Gumede, 2018). Briefly, they are a key driver of the developmental mandate of the state. However, South African PSEs are facing a phenomenon of losing tacit knowledge when their employees depart for greener pastures elsewhere; through the retirement of their ageing workforce; and a lack of strategies to retain their mission-critical knowledge, skills and abilities, which complicates the landscape of knowledge loss. However, it is also believed that these challenges are further complicated by underlying organisational barriers contributing towards the ineffective management of tacit knowledge loss and related risks (Phaladi, 2021). These organisational barriers make the transfer and absorption of tacit knowledge difficult within enterprises, in the process contributing to knowledge stickiness. Knowledge stickiness is the term used by Szulanski (1995: page 437) to describe the challenge of knowledge transfer within an organization. People “stick” to their information, which is one of the key reasons that knowledge does not flow throughout organizations. Barriers to the transfer of knowledge have been identified as being a result of knowledge stickiness (Huan, Yongyuan, Sheng & Qincao, 2017: page 1561). The current research seeks to explore such barriers with a view to proposing an integrated management approach to mitigate such complex tacit knowledge loss risks in the context of South African PSEs. The study aims to identify the organisational barriers that hinder the effective management of the risks associated with the loss of tacit knowledge in South African public enterprises; explore how these barriers contribute to knowledge stickiness in publicly-owned enterprises; and propose strategies to effectively mitigate tacit knowledge loss in South African publicly-owned enterprises.

2. Literature Review

2.1. Knowledge-Based View

The proponents of the Knowledge-Based View (KBV) theory of the firm regard tacit knowledge as a critical firm-specific intangible resource and driver of superior organisational performance, competitiveness and a sustainable competitive edge (Drucker, 1999; Grant, 1996). Tacit knowledge, unlike explicit forms of knowledge, is an unspoken, unwritten aspect of an individual’s consciousness, derived from many years of observations, emotions, experiences, intuition and internal information. Tacit knowledge is acquired through relationships and shared activities, acting as the basis for explicit knowledge, and is sometimes referred to as informal knowledge given the fact that it is not captured in an explicit form (Polanyi, 1958). Knowledge workers are carriers and sources of such tacit knowledge in any organisational contextual setting. They use their knowledge, competences and skills to produce or deliver services and products to customers to ensure organisational competitiveness, viability and innovation. According to the KBV theory, knowledge is the only distinct resource and the key difference for maintaining a competitive advantage (Dalkir, 2023). Knowledge management, especially tacit knowledge, is crucial for ensuring sustainable organisational performance. It is for this reason that Peter Drucker placed great emphasis on the importance of knowledge as the key economic resource and dominant source of competitive advantage (Drucker, 1999). However, determining the most suitable approach for mitigating tacit knowledge loss risks and associated organisational barriers remains a challenging task for many South African PSEs (Phaladi, 2021). Therefore, understanding and focusing on tacit knowledge risk management is critical for boosting firm-specific performance and achieving a competitive edge in knowledge-based competition (Durst et al., 2019; Muthueloo, Shanmugam & Teoh, 2017).

2.2. Knowledge Risk Management

Knowledge risk management is an emerging research area within the broad discipline of knowledge management that is primarily concerned with the risks associated with the loss of tacit knowledge. Knowledge risk refers to the potential adverse effects of activities related to knowledge on an enterprise's functioning, quantifying the likelihood and impact of any activity that could negatively affect a company's capacity to operate at any level (Zieba & Durst, 2018; Durst & Zieba, 2019).

Knowledge risk is defined by Perrott (2007) as the possibility of any loss arising from the identification, management or preservation of knowledge that might reduce a company's operational or strategic advantage. Durst et al. (2019), Brătianu (2018) and Durst and Ferenhof (2014, 2016) posit that enterprises, regardless of their complexity, type and size or whether small, medium or large, are exposed to several risks related to knowledge, namely risks associated with human resources attrition factors; knowledge gaps; and organisational downsizing and outsourcing. Knowledge-intensive business enterprises such as PSEs across the globe have a high degree of vulnerability to human tacit knowledge loss (Souto & Bruno-Faria, 2022; Phaladi, 2021; Kumar, 2020; Sandelin, Hukka & Katko, 2019). PSEs often venture beyond their specific value-chains, access new technologies, acquire technical capabilities, and implement innovation in products and processes due to exploring unknown territories and their unique ability to match distant knowledge bases in novel combinations. As such, these attributes make PSEs knowledge-intensive and learning organisations (Benassi & Landoni, 2019). In other words, they rely heavily on their knowledge assets, such as the technical abilities, skills and expertise of their workers, and continuous learning and innovation capability to deliver on their developmental mandate. Hence, they are characterised as knowledge-intensive, learning and knowledge explorer agents. However, they are not immune to tacit knowledge risks given the fact that most are operating in the knowledge-based competition and economy. Furthermore, increased human resource mobility is a serious challenge causing knowledge loss risks in the current knowledge economy.

Durst and Zieba (2020) describe KRM as the process of applying methods and approaches systematically to identify, recognize, evaluate and address the risks related to the development, acquisition, use and protection of enterprise-specific knowledge. To emphasize the primary occurrence of knowledge risks, Durst and Zieba (2017) separate knowledge hazards into internal and external categories. While knowledge risks like knowledge loss, spill-over or leakage deal with an organization's contacts with its external environment, internal risks like knowledge hiding, waste or hoarding are mostly related to an organization's internal circumstances. More specifically, tacit knowledge loss caused mainly by voluntary and involuntary employee attrition factors and other organisational factors and barriers to effective management is knowledge risk, central to this current paper. Phaladi, Omarsaib, Mhlongo and Mpungose (2024) argue that tacit knowledge loss could lead to numerous adverse consequences and risks for PSEs if they are left unattended and not managed systematically. Phaladi and Ngulube (2024) also highlight the fact that the loss of tacit knowledge could threaten the sustainability of PSEs in executing their developmental mandate. These authors emphasise the centrality of HRM practices in enabling and creating the effective mitigation approach and knowledge-centric organisational structures and cultures to systematically lessen the risks associated with tacit knowledge loss. Using South African PSEs as a case to address this challenge, the paper seeks to explore organisational barriers to effective knowledge loss risk management in organisations with a view to shaping discourse, policies and practices in KM and HRM. Scholars emphasise that investment in knowledge risk management efforts and the elimination of organisational barriers to the management of knowledge will positively impact the enterprise's innovation capacity, agility and sustainability (Zieba, Durst & Hinteregger, 2022).

2.3. Knowledge-Driven Human Resource Management Practices

Extant literature appreciates the central role of human resource management and its practices for the reduction of enterprise tacit knowledge loss (Phaladi, 2023a) and the effective management of organisational knowledge (Gürlek, 2020). Several scholars assert that the effective management of enterprise-specific knowledge assets is contingent on human resources (people) and the management thereof (Dalkir, 2020). Hence, Phaladi et al. (2024) are of the view that human resource management practices (HRMPs) could play an important facilitation role for public and private companies to succeed in mitigating knowledge loss risks.

HRMPs are crucial in creating knowledge-driven behaviours, cultures and initiatives. Therefore, depending on whether these practices are knowledge-driven or not could act as barriers to the effective management of knowledge and related risks. Much of the firm-specific tacit knowledge loss is induced by employee turnover (Galan, 2023; Phaladi & Ngulube, 2024). Therefore, the manner in which companies, regardless of whether they are private or public, go about the sourcing (recruiting or hiring), developing, remunerating or rewarding and retaining of workers could influence the direction and pace of knowledge loss risk management. Scholars aver that HRMPs that help to facilitate and shape the required knowledge management behaviours and activities should be considered as knowledge-driven in nature and in their approach (Kianto, Sáenz & Aramburu, 2017). Similarly, HRMPs that do not facilitate and support the effective mitigation of organisational (tacit) knowledge to prevent its potential loss cannot be characterized as knowledge-driven (Phaladi, 2023b). Phaladi (2023c) observes that the approach that companies use to recruit employees could act either as a facilitator or barrier to the acquisition of the required knowledge behaviours. Andreeva, Vanhala, Sergeeva, Ritala and Kianto (2017) concur that knowledge-centric HRMPs such as compensation, rewards and appraisals, training and development have positive interaction effects on the desired knowledge behaviours in organisational innovation and performance. However, research undertaken by Phaladi and Ngulube (2022, 2024) established that HRMPs in South African public enterprises were not knowledge-driven in their approach, leading to serious tacit knowledge risks. Their research found that in addition to involuntary and voluntary turnover, a lack of retention strategies; fixed-term employment contracts; the absence of succession planning, information and communication technologies (which could capture tacit knowledge); and organisational cultures and structures that are not knowledge-friendly are other causes that contributed to the loss of tacit knowledge in public enterprises. In some public sector enterprises, most employees were on fixed-term contracts due to a lack of funding from the state. The prevailing circumstances are further complicated by a lack of succession planning. All these factors add to knowledge management complexity and risks in many public enterprises.

2.4. Knowledge-Driven Organisational Culture and Structures

Organisational culture and structure are crucial factors in the management of organisational tacit knowledge towards lessening the associated risks. Resource-based view theorists such as Barney, Wright and Ketchen (2001) consider institutional culture as a company-specific resource that provides companies with a competitive edge in the knowledge-based competitive economy. Organisational culture is the foundation of values and beliefs that influence the desired organisational and individual behaviours, encompassing fundamental assumptions and shared values (Ravasi & Schultz, 2006). Organisational culture could have a positive or negative impact on knowledge behaviours, initiatives and processes, according to the consensus in the literature on knowledge management (Matošková & Směšná, 2017). Organisational culture influences the working systems, attitudes and beliefs that either facilitate or impede the exchange and retention of knowledge. Gürlek and Tuna (2018) posit that a firm can gain a competitive edge over its rivals if its organisational culture is knowledge-centred since this makes it more difficult for rival firms to copy its knowledge strategies and innovation initiatives.

The firm-specific culture that serves to facilitate or enable the sharing of knowledge to avoid the risks of losing such knowledge could be characterised as a knowledge-driven organisational culture. Gürlek (2020) maintains that the culture within companies creates the social interaction context that dictates how knowledge is produced, disseminated and used under certain circumstances. Similarly, depending on how an organisation is structurally designed, the structural make-up of the organisation could positively or negatively shape how knowledge is created, shared, used and retained (Ayatollah & Zeraatkar, 2019). Phaladi (2022a) observes that PSEs are lagging behind in the key structures and roles to support the management of knowledge risks, and laments HRM departments for failing to facilitate knowledge-centric structural configurations. Therefore, PSEs need to examine their organisational culture and structures in order to identify the motives driving achievements or failures in knowledge loss risk management. The literature also notes other organisational factors such as silo mentalities, red-tape, a lack of trust, knowledge hoarding, lack of knowledge-driven incentives and recognition as other barriers within the cultural context of organisations that hinder the facilitation of knowledge risk management behaviours (Rutten, Blaas-Franken & Martin, 2016; Phaladi, 2021).

2.5. Knowledge-Driven Leadership

As with organisational culture, leadership can be the most crucial obstacle to the success of knowledge loss risk management. A different kind of leadership is required to effectively manage intangible knowledge assets and their inherent risks. Dalkir (2023: page 281) hypothesises that leadership and management in organisations may foster the required knowledge management behaviours or hinder the development of such behaviours. Donate and de Pablo (2015) argue that a new kind of leadership, labelled knowledge-driven leadership, is required for knowledge-intensive organisations operating in the current complex knowledge-based competition. To manage and lead knowledge workers requires a different kind of leadership mindset and style. The literature acknowledges that transformative and knowledge-driven leadership behaviours play a crucial role in facilitating a knowledge-centric organisational culture, knowledge management and knowledge-driven HRM practices (Naqshbandi & Jasimuddin, 2018; Nguyen & Mohamed, 2011). Knowledge-driven leadership is a complex variable required to manage complex knowledge loss risks which threaten the sustainability and innovation capacity of many companies around the world. Despite its difficulty, researchers have concluded that knowledge-based management and leadership is essential to an organization's success (Sadeghi & Rad, 2018). Equally, the absence of such leadership may create serious obstacles to effectively manage knowledge loss risks (Phaladi & Marutha, 2023). In an ideal environment, all businesses, including PSEs as knowledge-intensive enterprises, should be involved in the creation and execution of knowledge management, which is based on its guiding principles in order to boost the effectiveness of business operations, raise the price and calibre of services, and discover new goods and solutions for their clients. However, research carried out in South African PSEs investigating knowledge loss risks (Phaladi, 2022a) attributes a lack of knowledge-driven cultures, behaviours and structures to the absence of knowledge-driven leadership and management. Dalkir (2023: page 144-145) emphasises that knowledge-intensive organisations should appreciate the role of KM technologies and systems. In knowledge-intensive firms such as PSEs, leadership should also lead and drive investments in information technology infrastructure to facilitate the management of knowledge and flow of tacit and explicit knowledge.

3. Methodology

The study focuses on South African public sector businesses and uses the pragmatic paradigm, which combines positivism and interpretivism, to examine variables from various perspectives. This approach is ideal for studying intricate research variables or “wicked problems” in knowledge management and HRM (Phaladi, 2022b; Mertens, 2015; Ngulube, 2020). The researcher's observations on the challenges with studying barriers to knowledge tacit risk management to reduce the risks related to human resources turnover require an integrated and interdisciplinary approach. The study uses an exploratory sequential design and mixed methods research (MMR) methodology to collect primary data from HR managers and employees for empirical analysis and inferences. MMR is suitable for investigating complex scientific social research problems from various angles, and it was crucial for this study to use data and research methodologies from both qualitative and quantitative sources to produce comprehensive, trustworthy, balanced and diversified research findings (Creswell & Creswell, 2018). Given the complexity of managing tacit knowledge loss risk and the lack of a holistic understanding of key organisational factors adversely affecting effective knowledge risk management in South African PSEs, MMR was the most appropriate methodological strategy for unpacking such barriers interdependently from HRM and KM standpoints. By combining the qualitative and quantitative data to understand the complex phenomenon of tacit knowledge loss using the MMR approach, this research paper was able to unpack key organisational barriers affecting the effective management of tacit knowledge risks interdependently and comprehensively triangulated from the standpoint of HR Managers and employees in South African PSEs. The researcher was able to provide the most accurate and genuine image of the research problem at hand by investigating the major organisational barriers affecting effective tacit knowledge risk management from both the KM and HRM perspectives through interviews with HR managers and questionnaires with employees in the chosen PSEs. Problems in organisational knowledge management, tacit knowledge loss risks in particular and the key barriers affecting them are complex and multi-faceted. To effectively mitigate these, a multi/interdisciplinary approach is required. Thus, future research will benefit from exploring such complex phenomena using MMR and a multi/interdisciplinary approach in order to produce balanced research perspectives and findings.

In the qualitative phase of the study, twenty HR managers from nine selected PSEs were interviewed in order to learn more about their opinions on the organisational barriers affecting knowledge risk management. Using Atlas.ti, the qualitative data was subjected to thematic analysis. The findings were then utilized to create a survey instrument that would be tested as part of the project's quantitative strand. Using the questionnaire instrument, the study findings from the qualitative component were further tested in the quantitative phase of the project with bigger samples. A 25% (145) response rate was obtained from the 585 randomly chosen employees of three publicly-owned enterprises that agreed to participate in the survey. These three selected public enterprises are involved in the businesses of development finance, water utility, and the regulatory and compliance sector. During the uncomfortable COVID-19 tight lockdown and directive phase in 2020, the survey questionnaire was sent via Microsoft Forms. The five Likert scale items on the questionnaire included five possible answers, ranging from strongly agree to strongly disagree. SAS and exploratory factor analysis (EFA) were used to analyse the quantitative data obtained from the survey instrument. A Cronbach alpha of 0.94 was noted during the reliability test of the instrument. Moreover, 145 responses were received, and the response rate was considered sufficient for the EFA.

4. Research Findings

4.1. Findings of the Qualitative Research Strand

The impediments to efficient knowledge risk management are examined in this sub-section from an HRM perspective in order to answer the study question on *what human resource managers perceive to be obstacles to the efficient management of tacit knowledge loss from an HRM standpoint*. Key barriers include a silo mentality, bureaucracy, lack of awareness and education on KM and related risks, recruitment practices, employment equity, tacit knowledge character, fixed-term appointments, competing priorities for leadership, dearth of buy-in and support from leadership and management, absence of recognition and rewards for mentors, a lack of succession management, non-existence of a KRM strategy, shortage of skills and knowledge transfer initiatives, lack of knowledge retention strategies for retiring workers, funding problems, hoarding information and knowledge for self-preservation, and the absence of proper KM technologies and systems. These key barriers are deeply rooted in the organisational cultural contexts and within the HRM systems of public sector enterprises. HR managers often face challenges in addressing these barriers, citing them as reasons for employee turnover, and hence struggle to fill mission-critical skills. The research highlights the importance of addressing these issues to ensure effective knowledge management in organizations.

Some HR managers tend to find employment equity a difficult topic. They hold it partially responsible for forcing certain workers out of the PSEs, as well as for their difficulties in filling positions requiring vital expertise. An interviewee expressed frustration over job equity as a hindrance as follows:

One of the barriers could be employment equity itself, because remember, when you tell people that you want to replace them with a black person, they might not transfer that knowledge because they know they are replacing themselves now (HR Manager#11, PSE4).

In this case, measures aimed at knowledge and skills transfer were rendered impossible by employment equity. One of the theories for knowledge loss was the idea that employment equity leads to involuntary turnover and subsequent knowledge loss. During the HR managers' interviews, employment equity (EE), which is a legislated employment policy in South Africa, came up as a contentious topic in creating barriers and contributing to knowledge risk issues in some PSEs. The participants also emphasized how their hiring practices became impediments as they gave knowledge-based behavioural abilities little consideration while seeking talent. The majority of HR managers highlighted that knowledge-driven qualities and behaviours were uncommon in public firms' talent acquisition efforts.

Effective knowledge management can also be hampered by denying workers the freedom to learn; by not allowing organizations to provide sessions where employees can learn from their work; and by not tracking employees' contributions to learning. It is also crucial to note that information and knowledge hoarding is a major obstacle to the preservation of personal knowledge, which is something that all people naturally desire to do. Participants summarised the sentiments that many managers have voiced as follows:

The feeling of people of saying: I do not want to share my knowledge because if I do share it with you, you will take over my job (HR Manager#1, PSE1).

I think that's a crippling thing, even with the guys who are ready to retire. They start hoarding information (HR Manager#18, PSE5)

As individuals we obviously want to preserve ourselves, and one of the key ones is information holding – I don't want to share my knowledge because if I do share it with you, you will take over my job (HR Manager#8, PSE2)

Because tacit knowledge people are just walking around and not sharing the knowledge, so for me those are the barriers (HR Manager#2, PSE1).

We don't have the initiative like other organisations of skills transfer. We don't have that. The skills transfer and knowledge transfer initiatives. It's done, but it's informally (HR Manager#19, PSE5).

Succinctly, the owner of that information hoards it out of fear that someone else may take over their position. Actions that make knowledge sticky in PSEs are knowledge hoarding, knowledge sharing and skills transfer practices, as highlighted in the aforementioned quotations. As a result, they influence how well knowledge management procedures and practices work. Human resource managers pointed out that one of the main obstacles to successful knowledge management and the management of knowledge-related loss was people or business units functioning in silos. Frustrations with regard to a silo mentality were shared by one participant as follows:

I think silos, operating in silos probably one of our biggest challenges around knowledge sharing and building a knowledge organisation (HR Manager#16, PSE9).

In addition, many human resource managers did not critically examine or contemplate their procedures and practices, particularly how they affected firm-specific knowledge management interventions and cultures whilst supporting it. They did, however, acknowledge their role in their PSEs effectively mitigating the risks related to knowledge loss induced by employee turnover.

4.2. Survey Findings

Reactions from the surveyed employees in public sector enterprises differed insofar as organisational barriers were concerned. Figure 1 displays the respondents' agreement or disagreement on various HRM practices affecting knowledge-related risk management efforts within their organizations. Over 80 percent of the participants expressed the opinion that obstacles within their establishments have an adverse effect on the management of knowledge loss risks. Furthermore, over 80% of the participants opined that their PSEs have a culture of red-tape, which obstructs the efficient management of tacit knowledge to prevent its loss. The answers were not entirely consistent in relation to the effectiveness of human resource management strategies in assisting knowledge management. Of those surveyed, 35.18 percent thought that their HR procedures effectively support knowledge management, while 35.17 percent indicated that their PSEs' HR procedures are ineffective. The latter suggests that knowledge-driven HRM methods are not used by the PSEs to mitigate knowledge loss risks. It is also worth noting that a sizeable portion of the respondents (29.66%) lacked knowledge on how well their HRM procedures support knowledge risk management efforts.

Regarding organisational structural barriers, the respondents' mixed reactions regarding this attribute suggest that organisational structure is a barrier to enabling knowledge management behaviour. According to 37.25% of the respondents, HRM units were not driving an organisational structure that supports knowledge management practices. However, a significant portion of respondents (35.87%) mentioned that this was the case in their organizations, suggesting that HRM is the driving force behind organisational structures that promote knowledge management practices. Notably, 26.90% of the respondents were unaware of the existence of HRM's role in driving or creating an organisational structure that is supportive of knowledge management. Similarly, the results showed a variety of opinions on HRM's role in fostering a knowledge-driven organisational culture, with 37.94% of the respondents indicating that HRM promotes a knowledge-centric culture, and almost the same percentage (37.24%) indicating that HRM did not drive a firm-specific culture that supports KM behaviours. Furthermore, a sizable portion of respondents (24.83%) did not know the answer to the question, suggesting

that they are unaware of the extent to which HRM influences organisational culture in order to promote knowledge transfer and retention-related practices.

Another area of interest in the statistical analysis was barriers pertaining to reward systems. Two variables explored this aspect. More than half of the respondents (52.41%) reported that their PSEs do not recognise and promote contributions to KM. With regard to whether PSEs reward their workers for sharing knowledge, a similar picture emerged whereby 56.55% stated that their PSEs do not reward employees for their knowledge-sharing behaviours and contributions. However, a sizable portion of respondents (20.69% and 31.73% respectively) believed that rewards were tied to contributions made for knowledge exchange and management to avoid potential knowledge risks. Only a small percentage of respondents, at 15.86% and 22.76% respectively, did not supply any data on the two variables. This suggests that the respondents' awareness of how rewards affect knowledge management and information-sharing practices within their organizations was lacking.

Another significant component in the study's statistical analysis was recruitment practices. The data analysed reveals that this variable was probably the only positive enabler for the acquisition of the required competencies and abilities. While 62.07% of respondents indicated that the HRM selection process focuses on an employee's capacity to learn and grow in the company, more than half of the respondents (60%) indicated that the process emphasizes an employee's overall fit in their organizations. On the other hand, a small but significant portion of respondents (15.86%) held the opposite opinion, suggesting that recruitment and selection procedures at PSEs do not prioritize employees' capacity to learn and develop, and that recruitment is unrelated to knowledge management. Furthermore, it is intriguing that a sizeable portion of respondents (22.07% and 26.21% respectively) lacked knowledge on whether hiring decisions prioritize candidates with the ability to learn. This implies that recruitment strategies in PSEs are not creating barriers as such to knowledge risk management, but they are helpful in the sourcing of potential employees with the right attitude, ability and skill to learn, grow and fit into the organisations. However, it is interesting to establish how they survive in such organisations, characterised as having red-tape and knowledge-unfriendly cultural barriers.

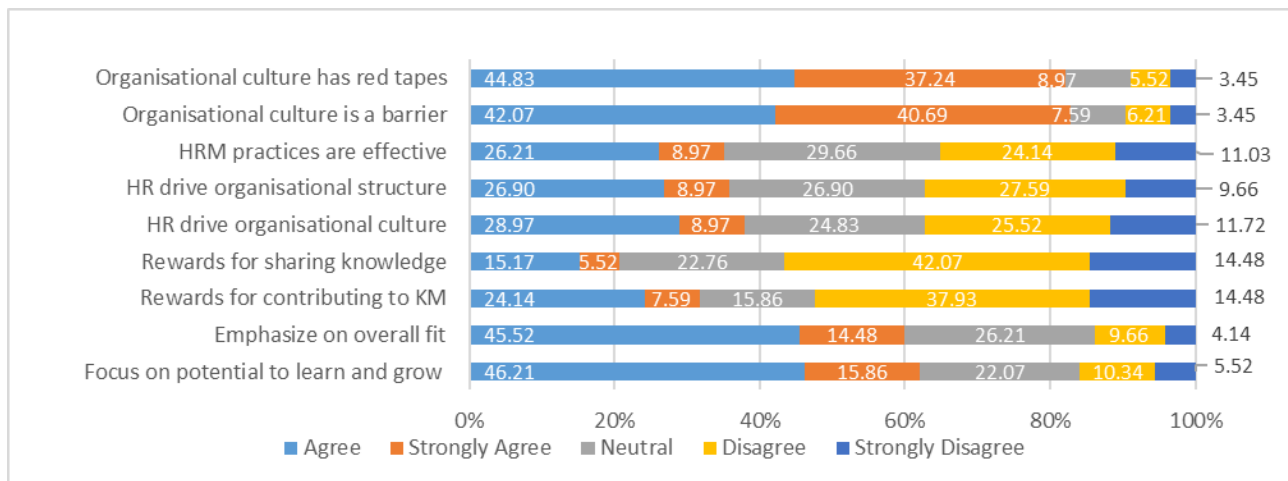


Figure 1. Barriers and enablers to knowledge risk management

5. Discussion of the Research Findings

The current project's qualitative and quantitative study findings identified many problems or elements that were thought to be impediments to public sector enterprises' ability to manage knowledge effectively. Organisational culture modifications are frequently necessary for the adoption of knowledge management (Klepić & Madžar 2017; Becerra-Fernandez & Sabherwal 2015). Thus, many of the obstacles to efficient knowledge management arise from the organisational culture. The study's findings illustrated the following as obstacles to the efficient management of knowledge and associated loss risks in public sector enterprises, which hamper knowledge management: a mindset of silos; cultures and structures; bureaucratic red-tape; knowledge as a source of power; a lack of systems for rewards and recognition; a dearth of knowledge-centric HRM practices; recruitment practices; employment equity; fixed-term hiring contracts; competing priorities for management and leadership; a

lack of knowledge-oriented leadership; knowledge hoarding; and inadequate IT systems to support knowledge management. However, on a positive note, the recruitment practices' focus on overall fit and on employees' potential to learn and grow assist PSEs to attract potential workers with the right knowledge-driven mental attitudes and abilities. Nonetheless, most HRM practices were found not be effective in enabling the management of knowledge risks. The present study's results corroborated those of earlier research on the essential success factors that organizations need to ensure effective knowledge management (Phaladi & Ngulube, 2024; Attar 2020; Sandelin et al. 2019; Ayatollah & Zeraatkar, 2019; Dikotla, 2019; Donate & de Pablo, 2015). The HR managers also underlined how their recruiting procedures hindered their ability to find talent since they paid little attention to behavioural skills based on knowledge. The majority of HR managers emphasised how rare knowledge-driven traits and behaviours were in the talent acquisition strategies of public sector enterprises. Knowledge sharing, a learning and training mentality and culture, succession planning, collaboration and networking skills, innovation and creativity mindset, ability to work well in a team environment, coaching and mentoring (willing to act as a mentor or be coached) are amongst the KM behavioural competencies that HR managers identified as lacking in their recruitment approaches. The focus seems to be more on the ability to learn and grow in some public sector enterprises not paying particular attention to KM behavioural competencies. This could be attributed to contextual and cultural factors in that KM is not that well-developed and understood by HR managers in most South African PSEs.

Given that the highlighted organisational factors have an impact on the knowledge management initiatives of the PSEs involved in this study, these organisational impediments ought to be addressed. The quantitative phase results validated the qualitative research on these issues and suggested that organisational impediments should be addressed in state-owned companies. The exploratory factor analysis, chi-square test for independence, and logistic regression analyses from the main study (Phaladi, 2021) went so far as to identify these organisational obstacles as intervention elements in the construction of a framework for knowledge loss reduction, even if the qualitative study findings showed and labelled the barriers as such. In a nutshell, knowledge loss in public sector enterprises can never be planned, prevented and mitigated effectively if there are no strategic interventions aimed at addressing organisational barriers. In summary, initiatives targeted at removing organisational obstacles are necessary to prevent and manage institutional knowledge loss.

The quantitative study findings corroborated the qualitative research findings, stating that bureaucracy or red-tape and organisational silos in public sector enterprises had a detrimental influence on the development of knowledge-centric cultures and knowledge stickiness, amongst others, which affect the ability of PSEs to share, absorb and retain their much-needed firm-specific knowledge assets. Silos and bureaucracy were cited by more than 80% of the respondents as obstacles to efficient knowledge management in their organizations. In South African public sector enterprises, silos, trust issues, bureaucracy and red-tape lead to major issues (Phaladi, 2011). It is apparent from the research findings that these barriers are deeply rooted within the organisational culture in many PSEs. In developed countries such as Italy, Russia, China and the United States, public sector enterprises have been instrumental in promoting economic development and supporting growth, largely due to the fact KM forms an integral component of their organisational life (Benassi & Landoni, 2019). Unlike many public enterprises in the developed countries, knowledge management as a science and management practice is underdeveloped in a majority of South African PSEs. This explains why so many PSEs are still struggling with these key organisational barriers impacting adversely on the effective management of tacit knowledge risks. Extant research also highlights the fact that several PSEs in developing countries are facing various barriers pertaining to knowledge management (Azaki & Rivett, 2022). Therefore, it remains undisputable that a lack of KM roles, strategies and functions in most public enterprises in developing economies lead to many contextual and cultural barriers to the effective management of tacit knowledge loss risks. State-owned businesses must make investments in contextual and cultural factors that impact and exacerbate knowledge loss. According to the results of this study, knowledge loss acknowledgment or realization will be the first step towards knowledge reduction (Phaladi & Ngulube, 2024). As a result, the cultural contexts will shift to knowledge-driven organisational cultures. A knowledge-driven culture in an organization is described by Klepić and Madžar (2017: page 259) as a way of life that encourages and supports human resources to generate, share and use information for the organization's long-term success. This statement suggests that in knowledge-intensive businesses such as

state-owned firms, an organisational culture characterized by silos and bureaucracy is ineffective in promoting knowledge-based competitiveness.

In state-owned firms, the organisational culture can be built and shaped towards being knowledge-centric through the removal of organisational impediments, such as a lack of recognition and incentives systems. An extant review on rewards for knowledge management has established that recognition and prizes play a significant role in organisational loss and retention management (Ramjeawon & Rowley 2020; Dikotla 2019). An obstacle to efficient knowledge transfer and retention initiatives is the absence of incentives and rewards designed to mould essential KM behaviours. According to a study on public water utilities by Sandelin et al. (2019), 95% of organisational knowledge is assumed to be tacit knowledge. Stated differently, the absence of incentives to attract and maintain knowledge workers in PSEs implies that 95% of tacit knowledge within PSEs is at risk of being lost unless knowledge-oriented retention strategies are crafted to address rewards, recognition and retention systems.

Mistrust within the organization is exacerbated by a lack of knowledge and instruction on knowledge management. An environment of trust within an organization fosters knowledge-sharing (Attar 2020; Khesal, Samadi, Musram & Zohoori 2013). People view their knowledge as giving them power. The belief that information is an individual employee's source of power and the only way to ensure job security fosters a culture of mistrust between workers and their employers (PSEs), according to McNeish and Mann (2010: page 25). Klepić and Madžar (2017: page 260) state that employees view knowledge as a weapon to propel their job success since it is perceived as a source of competitive advantage. Therefore, it fosters a certain amount of mistrust for staff members, which leads employees to abandon the desire to share their knowledge, expertise and skills under the pretext of contributing towards an SOE's knowledge risk management strategy and initiatives. In light of these factors, it is necessary to remove the obstacles related to a lack of understanding and education on the strategic significance of knowledge to the organization. This should entail safeguarding the organization's knowledge interests, in addition to the individual interests of the personnel. PSEs will always exist, even though employees may inevitably depart for various reasons. Hence, it is equally important to implement strategies that guarantee the retention of workers' expertise and knowledge upon their departure from the respective PSEs. Consequently, workers must develop a favourable outlook on tacit knowledge and the organisational initiatives aimed at safeguarding it (Ayatollah & Zeraatkar, 2019). Therefore, it is critical to raise awareness of KM problems and address the trust difficulties that lead to undesirable knowledge behaviours and knowledge stickiness within public sector enterprises. In addition, the lack of knowledge-driven leadership was seen as a significant impediment in both the qualitative and quantitative research findings.

The discussion of the aforementioned research findings may have also been affected and influenced by sample and data limitations, especially in the quantitative component of the study given the fact that only three PSEs participated in the survey against the nine that were part of the qualitative component. The response rate of 25% (145) was low, with potential implications for the validity of the research findings. However, the main purpose of the original study (doctoral project) was to establish the correlation co-efficiencies of variables that were significant for the construction of the Knowledge Loss Reduction Model. For this reason, exploratory factor analysis (EFA) was deployed in the main study to identify the correlation co-efficiencies of the variables. Hair, Black, Babin and Anderson (2014) recommend a response rate of 120% or more for EFA studies, which aim to establish the correlation co-efficiencies of significant variables for framework development.

6. Limitations and Suggestions for Further Research

This scholarly tract was carried out in order to identify organisational barriers to the effective management of knowledge and associated tacit knowledge risks (knowledge risk management) in selected South African public sector enterprises. The paper was extracted from a larger doctoral study (Phaladi, 2021) that explored a knowledge tacit loss mitigation framework in South African PSEs from the knowledge management and HRM standpoints. The nine-industry sector PSEs that were sampled in the qualitative study included the water utility sector, development financial corporations, research and development sector, service sector, and compliance and regulatory industries. Due to the coronavirus restrictions and other related complications, only three PSEs participated in the survey phase. The original research results could be transferable to other similar South African

PSEs, but are not very generalizable to other sector PSEs that were not part of the sampled enterprises. Furthermore, the results may not be transferable and generalizable to PSEs in other countries. The exploration of organisational barriers was only limited to the tacit knowledge loss risks category, induced by human resource turnover in country-specific PSEs. Future studies could explore organisational barriers and factors affecting other types of knowledge risks in PSEs or similar knowledge-intensive business enterprises across the globe using different samples and populations. Other similar studies could include strategic sectors of the economy such as energy generation, civil aviation, defence, mining and rail. Organisational knowledge management issues, particularly tacit knowledge loss risks and the related barriers affecting the effective management of knowledge, require a multi-/interdisciplinary approach for effective mitigation. Future research should explore these complex phenomena using MMR and multi-/interdisciplinary approaches. Theoretically, the study makes a significant contribution to the knowledge-based view and knowledge stickiness theories in research and practice. Methodologically, the paper also highlights the complexity surrounding tacit knowledge loss by proposing an interdisciplinarity approach using mixed methods research in future studies exploring the phenomenon.

7. Conclusion and Recommendation

The study's conclusions unequivocally showed that a number of obstacles prevented public sector enterprises from having an efficient knowledge management system, especially KRM strategies aimed at reducing the impact of employee-induced knowledge loss risks. These barriers included fixed-term employment contracts, employment equity, organisational red-tape, a knowledge-unfriendly business culture, a dearth of knowledge-driven structures, knowledge as a source of power, rewards and recognition systems were lacking, non-existence of knowledge-driven management and leadership, knowledge hoarding, silo mentality, lack of awareness and education on KM and knowledge-related risks, employment equity, and the absence of dedicated practices for knowledge risk management. All these barriers directly or indirectly affect knowledge stickiness in public enterprises, in the process making knowledge sticky and difficult to flow across business processes and units, leading to its loss. Since knowledge management was not institutionalized in the majority of public sector enterprises, a deficiency of knowledge-oriented leadership was apparent. Hence, strategies aimed at mitigating knowledge loss risks are non-existent in most PSEs. In public sector businesses, some measures were required to overcome the organisational hurdles. Thus, the empirical data showed that organisational obstacles should be considered as areas requiring management intervention, in addition to organisational culture. If state-owned businesses are serious about establishing an organisational culture and structure that is driven by information, they should remove all organisational restrictions. The lack of HRM techniques to address such problems is the root cause of many of the organisational impediments found in this study. HR managers and other important stakeholders must collaborate to solve the obstacles that have a detrimental influence on efficient knowledge management. This may be accomplished as follows:

- There is a dire need to eradicate a silo mentality within PSEs in order to reduce knowledge stickiness and ensure an easy flow of knowledge across business units.
- Complexity around bureaucracy and red-tape should be tackled with a sense of urgency.
- Increased intense awareness and education in KM and knowledge loss risks should be fast-tracked to tackle the myth that 'knowledge is a source of power', mainly because that perception creates knowledge stickiness within PSEs as organisational members see it as a 'weapon' to preserve and hoard their knowledge for their own individual interests and survival. All possible barriers to effective knowledge-sharing must be contained. There must also be an end to all potential obstacles to efficient knowledge-sharing and retention.
- There is a need to eliminate institutional barriers such as the absence of knowledge-driven recruitment, recognition and reward systems. This problem will be addressed in part by the creation and use of knowledge-driven reward and recognition systems, led by HRM departments. Rewards should help to mould and encourage the necessary knowledge management and related risk management behaviours. Human resource managers should articulate knowledge management behavioural capabilities in their talent acquisition initiatives to ensure that a knowledge risk culture is cultivated right from the recruitment process.

- Organisationally, public sector enterprises require knowledge-oriented leadership. As the default management procedure to address knowledge loss reduction, knowledge-oriented leadership should be reflected and translated in actual organisational structures, processes and strategies supporting knowledge management. Knowledge-driven leadership should also help remove any organisational obstacles in order to guarantee the application of efficient knowledge management techniques.

An increasingly integrated strategy incorporating human resource management techniques is required to address knowledge erosion and related risks in South African state-owned businesses. It takes regular risk assessments to create mitigation plans. As part of the strategy to break organisational silos, PSEs should develop communities of practices comprising employees across various business units. The company culture should also incorporate knowledge management, with HRM positions delineating responsibilities. A journey towards the effective mitigation of tacit knowledge loss in public enterprises starts with the recognition of tacit knowledge as a key strategic resource for organisational survival and effectiveness. Processes for performance contracts should include knowledge risk management, and a better understanding of the company's position on KM problems may be achieved via raising awareness of and advocating for knowledge risk management in HRM procedures, right from the recruitment to the retention phases. The formalization and improvement of knowledge management concepts should be spearheaded by HRM, and incentives for knowledge sharing behaviours are also some of the strategies proposed to effectively mitigate tacit knowledge in South African public sector enterprises. Organizational culture interventions, such as culture surveys and entropy scores, are crucial for fostering knowledge-driven behaviours and cultures. A knowledge-based strategy of PSEs should ideally incorporate KM and HRM practices into their KRM stance, thereby shaping their organisational culture to being knowledge-driven.

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