

**FACTORS AFFECTING THE USE OF
KNOWLEDGE MANAGEMENT PRACTICES
AMONG OPERATIONAL PERSONNEL WITHIN
SMALL- TO MEDIUM-SIZED ENTERPRISES IN
NEW ZEALAND: A SYSTEMATIC LITERATURE
REVIEW**

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Abstract

Knowledge management (KM) is the creation, sharing and utilisation of organisations' intangible assets in order to generate value for their stakeholders. Current literature focuses on KM within larger organisations and also at managerial levels. However, far too little attention has been paid to KM at the operational level within SMEs, especially in New Zealand. It is important to address this gap in research because SMEs are huge contributors to the New Zealand economy. More so, operational personnel are fundamental aspects of SMEs as they deal with their daily operations and customers. Operational personnel are central to SMEs' functional operations and hence, the management of their knowledge.

The objectives of this research are to determine themes from KM literature and use these to support the analysis of KM among SMEs' operational staff. In addition, this study seeks to gain better understanding of factors that influence KM at the operational level within SMEs in New Zealand.

To address these research objectives, a systematic literature review was conducted. This existing literature was then analysed thematically to identify factors that affect the use of KM practices among operational personnel within SMEs. Focus was placed particularly on SMEs within New Zealand. The thematic analysis method is one of the more practical ways of sifting through large volumes of data (in this study, literature), while offering a flexible method that allows for meaning to be captured through the researcher's interpretation of the qualitative data. Through analysis, this research generated nineteen elements that are then grouped into five factors. These factors include: managerial commitment, employee participation, organisational make-up, technology, and organisational resources. The factors are categorised along the lines of how they influence KM practice within SMEs, whether internally and/or externally. The five factors identified provide insight into what impacts KM processes and KM as a whole.

A model was developed to show the relationship between the categorised factors and KM processes. The results of this study indicate a collective influence that the five factors have on KM processes.

By developing a model that shows the relationship between factors and KM processes, this research has contributed to bridging the gap and integrating views across these areas: knowledge management, operational personnel, SMEs, in the New Zealand context. It is believed that the themes drawn from this analysis will help those within New Zealand SMEs to better understand KM at their operational level.

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Attestation of Authorship

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning."

Signature:

A handwritten signature in black ink. It features a stylized, circular emblem on the left, composed of several overlapping, curved lines. To the right of this emblem, the name "Zotimi" is written in a cursive, handwritten style.

Date: 19/09/2016

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“In all your ways acknowledge him and he will make straight your path...” Proverbs 3:6

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“For I know the plans I have for you,” declares the Lord, “plans to prosper you and not to harm you, plans to give you hope and a future.” Jeremiah 29:11

Chapter 1 INTRODUCTION

1.1 CHAPTER OVERVIEW

The purpose of this chapter is to introduce the context of study for this dissertation, in particular, the conditions leading to the present understanding of knowledge management (KM) within organisations. After the reasons for conducting this study, the research question and objectives are presented and the different areas that will be focused on are discussed. This chapter concludes with an outline of the dissertation structure.

1.2 RESEARCH GAP

There are varying definitions of knowledge and KM within existing literature. Knowledge is sometimes explained as a more complex form of information (Hoe, 2006), in the sense that knowledge is information interpreted in the context of an organisation's culture and values (Mårtensson, 2000). Other scholars, however, explain that knowledge is what a person knows, and is gained through lived experiences (Chadha & Ritika, 2012; North & Kumta, 2014; Pillania, 2008; Shelton, 2001).

Although the knowledge concept has been discussed between scholars over the last few decades, it is still not fully understood in regard to the impact of managing knowledge within organisations. In its simplest form, KM is the creation, sharing, and utilisation of an organisation's intangible assets in order to generate value for both its internal and external stakeholders (Gupta, Sharma, & Hsu, 2008; Rubenstein-Montano et al., 2001).

Moreover, KM research focus has been on larger organisations, with little regard for smaller-sized organisations (Pillania, 2008). A reason for this could be that "knowledge management is still very much viewed by smaller sized companies as a fad, that only the giants can afford to indulge in" (Alstete, 2011, p. 13). However, there is a growing realisation of the need and importance of KM for the sustainable competitiveness of small- to medium-sized enterprises (SMEs) (Pillania, 2008).

A properly managed knowledge base is said to have two significant benefits: the short term; operational efficiency, effectiveness and sustainable competitiveness (Arasanmi, 2014; Richter, Stocker, Müller, & Avram, 2013), and the long term; knowledge creation and innovation (Gottschalk, 2005). Not only can SMEs gain from the competitive advantage KM offers, but also, because they are smaller-sized organisations, they can retain the knowledge that may be essential for their growth. However, knowledge could lead to negative consequences, which can result in unnecessary accountability and potential loss of valuable employees (Ragab & Arisha, 2013). As such, a missed opportunity for the proper harnessing of knowledge can arise in situations such as lay-offs, resignations, retirements, restructuring and outsourcing (Delen & Al-Hawamdeh, 2009), and organisation mergers (Smith, 2001).

SMEs make up a large proportion of firms within most countries, and play a vital role in driving their economic growth, employment, and wealth (Lin, 2014). As Harris (2009) explains, although

SMEs tend to have limited resources and are often highly competitive, they are generally more entrepreneurial and willing to experiment and innovate than larger organisations. SMEs also have the potential to become larger-sized organisations. Their high employee turnover rate also makes for an interesting study in regard to knowledge management. These characteristics make KM an especially crucial aspect of SMEs.

This study seeks to improve the understanding of KM within SMEs in New Zealand, particularly among the operational personnel within these organisations. SMEs are a major contributor to the New Zealand economy, accounting for 97 per cent of enterprises and employing 29 per cent of employees in New Zealand (Waikato Times, 2014). According to the Ministry of Business Innovation and Employment (MBIE) (2015), SMEs are companies that have 20 or fewer employees. The same report states that 26 per cent of New Zealand's gross domestic product (GDP) is said to be produced by SMEs (Ministry of Business Innovation and Employment (MBIE), 2015).

Recent studies show that the importance placed on knowledge often varies between employees in organisations, based on their level of decision making (Ragab & Arisha, 2013). As such, several studies have focused on the strategic and tactical level within large organisations, or the managerial level within SMEs (Foos, Schum, & Rothenberg, 2006; Harris, 2009; Joia & Lemos, 2010; Smith, McKeen, & Singh, 2007). This leaves a gap in research on the management of knowledge amongst operational personnel. This study asserts that KM practices should be a vision communicated throughout organisations across all their hierarchical levels (Chan & Chao, 2008). Although employees within SMEs tend to be less proactive and motivated by KM endeavours, to prevent the loss of organisational knowledge and harness the competitive advantage of KM, organisations must recognise the value of knowledge throughout their organisation. This includes consideration for the lowest level personnel within organisations, that is, the front-line staff or operational personnel; those who get their hands dirty with the daily operations of organisations (Laudon & Laudon, 2014). It is essential to focus on operational personnel because they are a central part of SMEs functional performance, and thus, KM practices (Laudon & Laudon, 2014). Therefore, this review makes an effort to address this gap in research, by trying to understand the factors that affect KM amongst operational personnel within SMEs.

It is noteworthy that the number of studies considering KM among operational personnel within SMEs in New Zealand is limited. While Lin, Seidel, Shahbazzpour, and Howell (2013) have conducted a case study on a SME warehousing organisation within New Zealand, the research does not look specifically at the operational level within SMEs.

Based on the above discussions and identified gaps in literature, the research question for the present study is:

What factors affect the use of knowledge management practices among operational personnel within SMEs in New Zealand?

Therefore, considering these gaps in literature and the research question posed, a systematic literature review was conducted because it allowed the researcher to be fully immersed in the data, in an attempt to better understand how KM practices affect operation personnel within SMEs. In addition, conducting a systematic literature review allows meanings to be drawn across studies, thereby providing a more holistic understanding of the research topic. As such, the research seeks to bridge the gap and integrate views across these areas: knowledge management, operational personnel, and SMEs, in the New Zealand context. This is shown in Figure 1.1.



Figure 1.1: Research Gap

A total of 52 works (including academic journals, books, book chapters, theses and reports) on knowledge management in organisations were analysed with the objective of:

- 1) determining themes from knowledge management literature and using these to support the analysis of knowledge management among SMEs' operational staff
- 2) gaining better understanding of factors that influence KM at the operational level within SMEs in New Zealand

As a result of this research, theoretical insights can be applied to operational personnel within SMEs in the New Zealand context.

1.3 CHAPTER CONCLUSION AND DISSERTATION OVERVIEW

To address the research question presented in this chapter, this study interprets the themes that emerged from the systematic literature review. That is, the factors that influence KM among operational personnel within SMEs in New Zealand.

This dissertation is organised as follows: chapter two will provide a review of the existing literature on KM and operational personnel within SMEs, with a focus on New Zealand SMEs. Chapter three presents the methodological approach adopted for this study. A thematic analysis is then

conducted and the emergent themes are described in chapter four. Chapter five is dedicated to discussion of the findings. Lastly, chapter six concludes the dissertation with a summary of the findings and limitations of the study, and offers suggestions of areas for future study in the field.

Chapter 2 PRELIMINARY LITERATURE REVIEW: THEORETICAL FOUNDATIONS

2.1 CHAPTER OVERVIEW

Having introduced the context of this study and the research question in chapter 1, the purpose of this chapter is to review the existing literature. Within the scope of this research problem, the selected literature covers the following related areas: knowledge management, operational personnel, and small- and medium- sized enterprises (within the New Zealand context). Thus, the following sections in this chapter focus on these areas, respectively.

2.2 KNOWLEDGE: A BRIEF INTRODUCTION

Knowledge is often explained in relation to terms such as data, information and wisdom or intelligence (Hoe, 2006; Tan, 2011). Data is defined as a collection of unrefined, discrete facts that exist in their simplest form. For example, data could be the name of a customer, date of birth, or address. By itself, data does not provide any insight, context or meaning until it is transformed or processed (Hoe, 2006). Processed data is information, that is, data “endowed with relevance and purpose to the user” (Hoe, 2006, p. 492). Following on from the earlier example, data is transformed into information when it can be used to identify/differentiate a customer from others. Further, Hoe (2006) explains that knowledge is a more complex form of information. Knowledge is information interpreted in the larger context of organisations’ culture, experience, philosophy, and beliefs (Mårtensson, 2000). Both of these perspectives of understanding show that knowledge differs from information, in that knowledge is endowed within a context, and is closer to the stage of taking an action (Hoe, 2006). This context could be virtual, physical, mental or a combination of these (Hoe, 2006). For example, information becomes knowledge when it can be used to identify a customer’s consumption patterns. Finally, wisdom is the ability to choose and use knowledge within specific situations to achieve desired goals (Hoe, 2006). Based on the previous examples, knowledge becomes wisdom when other services can be tailored to the customer because of knowledge gained of their consumption patterns, thereby improving customer satisfaction and loyalty.

Scholars believe that ‘knowledge’ often confers a higher level of understanding when compared to these related terms (Chadha & Ritika, 2012; Hoe, 2006). Nevertheless, there are significant differences that exist between data, information, knowledge, and wisdom. Some scholars believe that as data can be transformed into information, so information can be transferred into knowledge, with the highest level of understanding being ‘wisdom’ (Batra, 2012; Hoe, 2006; Joia & Lemos, 2010).

In another definition, knowledge is described as an experience gained within or external to an organisation through personal and/or collective learning (North & Kumta, 2014). Similarly, Chadha and Ritika (2012), Shelton (2001), and Pillania (2008) define knowledge as an individual’s ideas, judgments, intuition, and competencies gained through experience and education. Such knowledge enables an individual to take effective action and make informed decisions. Knowledge is thus an experience that is continually changing, or non-static, whereby old

knowledge is replaced with new knowledge based on the evolution of technology, business processes, customer relationships and the market environment, say Lee and Wong (2005). Moreover, Gottschalk (2005) argues that knowledge is the combination of all the formentioned aspects, but can also be viewed as information processed in an individual's mind.

Despite the unarguable relevance of each definition provided by the different authors above, several aspects of knowledge remain unexplored. Particularly, these definitions do not take into consideration the various aspects of knowledge that differentiate its management within different-sized firms. From these definitions of knowledge, the researcher concludes knowledge is what an individual knows that is a renewable, reusable, and cumulative resource that can be valuable (to individuals, groups and organisations), if properly harnessed. Knowledge is renewable because it cannot be depleted with use. It is reusable as it can be used multiple times and by various personnel based on its availability. Lastly, knowledge is cumulative because, if documented over time, it can be valuable to organisations. That is, personnel will be able to access the knowledge as a resource that could improve decision-making. This definition is adopted for the current research, because it not only takes into consideration some of the characteristics of knowledge, but also encompasses the major aspects of the definitions developed in previous studies.

In an attempt to understand knowledge, it is also important to understand how it is classified. Literature suggests that knowledge can be classified as tacit or explicit knowledge along a continuum (Lee & Wong, 2015; Nonaka & Von Krogh, 2009). The knowledge continuum varies, according to how easily the knowledge can be captured, recorded, and shared (Nonaka & Von Krogh, 2009). It is important to distinguish between tacit and explicit knowledge, because both contribute to organisations in different ways. Knowing their specific contributions will ensure that organisations can tailor their business processes in order to harness the benefits of KM. Explicit knowledge is knowledge that has been documented and is accessible (Ragab & Arisha, 2013). Explicit knowledge is documented and can "be easily codified, transferred and shared" (Lee & Wong, 2015, p. 712). Furthermore, Chou (2005) states that explicit knowledge includes declarative knowledge, data, facts, or information. It is structured, often containing fixed context that is easily available, exploited and shared (Dhanaraj, Lyles, Steensma, & Tihanyi, 2004; Mårtensson, 2000). As a result, explicit knowledge is stored, using various means such as information technology, the internet, reports, documents, images, audios, printed manuals, or videos (Davenport & Prusak, 1998; Lee & Wong, 2015; Mårtensson, 2000).

On the other hand, tacit knowledge is the skills, experiences, intuition, insights, or hunches that reside in the minds of people (Lee & Wong, 2005; Mårtensson, 2000; Ragab & Arisha, 2013). This form of knowledge is often 'indwelling', and rooted in actions, procedures, routines, values, ideals, commitment, and emotions (Nonaka & Von Krogh, 2009). Tacit knowledge is often acquired through interactions and collaboration with employees, managers, customers, suppliers, and the business's processes (Mårtensson, 2000). This leads to the believe that tacit knowledge can be shared via socialisation, that is, communication and collaboration from other personnel within organisations (McAdam & McCreedy, 1999). As tacit knowledge is hidden, it is not easily represented or documented (Mårtensson, 2000). This form of knowledge is often in relation to the

value that human resources could generate and provide to those external to (customers and suppliers) and internal to (owner-managers and employees), organisations (Lee & Wong, 2005).

Tacit knowledge can be converted to explicit knowledge, and vice versa, as shown by the four dimensions for conversion of knowledge (Nonaka & Takeuchi, 1995). As illustrated in Figure 2.1, knowledge constantly alternates between tacit and explicit in a four-stage process of socialisation, externalisation, combination and internalisation, often regarded as the SECI model (Nonaka & Von Krogh, 2009). The model explains social interaction as tacit-to-tacit knowledge. This could include the transfer and sharing of knowledge through face-to-face interaction including meetings, workshops, and through shared experiences such as spending time together. Essentially, the socialisation dimension involves knowledge gain through hands-on experiences. The model explains tacit-to-explicit knowledge as externalisation. This involves the articulation of knowledge driven by tacit knowledge through means such as images, written documents, and concepts that allow knowledge to be easily shared amongst employees across organisations. Explicit-to-explicit knowledge is called combination, and deals with collating and integration of knowledge from within and outside organisations, to create new knowledge. Lastly, explicit-to-tacit knowledge is called Internalisation. This dimension involves the transformation of explicit knowledge to tacit knowledge, through means such as learning by doing. Internalisation, as a process, also involves the ability to make connections, identify patterns and make sense between fields, ideas, and concepts in a manner that allows for continuous individual and collective learning.

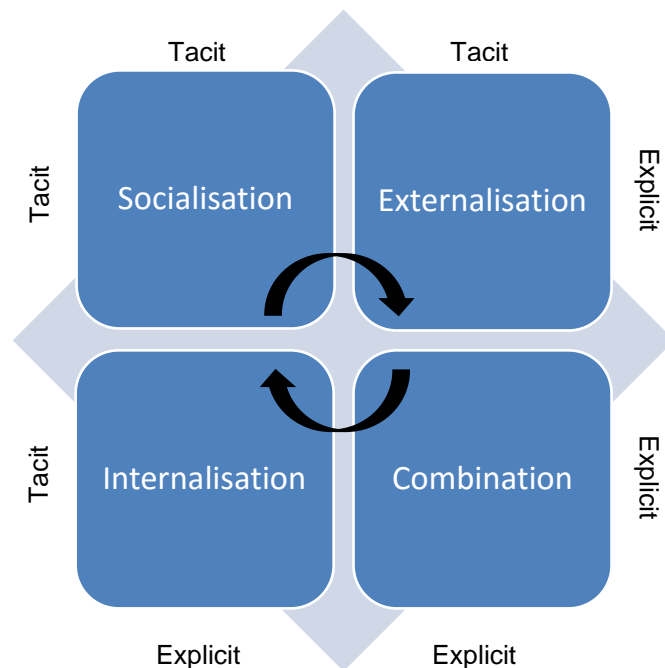


Figure 2.1: Dimensions for conversion of knowledge

Sourced: Nonaka and Takeuchi (1995)

2.3 KNOWLEDGE MANAGEMENT (KM)

Notwithstanding the previous section, the understanding and definition of knowledge is sometimes debatable (Edvardsson & Durst, 2013). For example, knowledge can be viewed as a tool or strategic asset for organisational survival and competition (Chan & Chao, 2008; Ragab &

Arisha, 2013; Wong & Aspinwall, 2004). On the other hand, Schultz and Leidner (2002) argue that knowledge can have both a positive and negative influence on organisational operations. Having a good knowledge base could improve organisational learning and shared commitment amongst its personnel (Schultz & Leidner, 2002), while having a poor knowledge base could impact on an organisation's processes in terms of resulting in inefficiencies, errors, and chaotic social relations (Schultz & Leidner, 2002).

A good knowledge base is mostly positive, and its negative consequences may be ignored (Ragab & Arisha, 2013). However, a missed opportunity for the proper harnessing of knowledge arises in situations such as lay-offs, resignations, retirements, restructuring and outsourcing (Delen & Al-Hawamdeh, 2009), and organisation mergers (Smith, 2001). Wickert and Herschel (2001) also suggest that in family-owned businesses where succession is not properly planned, lost knowledge can cripple organisations. The latter two examples are instances where poor knowledge management can have a negative effect on organisations. Taken together, these studies present the importance of knowledge, not only as a resource base, but also as a manageable asset within an organisation. Several studies have supported this idea, and have defined knowledge as an important resource within an organisation that brings about KM (Lee & Wong, 2005; Ragab & Arisha, 2013; Šajeva & Jucevičius, 2006; Tan, 2011).

KM is often described as a management tool that could assist with strategic decision making, and ensure an organisation's knowledge or 'intellectual-capital' (Mårtensson, 2000) is systematically acquired, organised, sustained, applied, shared and stored, in order to attain and retain greater value from its core business processes (Tan & Hung, 2006). To ensure that the advantages of knowledge are utilised, an organisation needs to develop adequate means of managing its knowledge (Chan & Chao, 2008). KM could help harness innovative capabilities and provide a competitive advantage to organisations (Chan & Chao, 2008; Hoe, 2006; Lee & Wong, 2005; Saini, 2015). Therefore, KM can provide a positive relationship between the availability of knowledge and organisational performance (Edvardsson & Durst, 2013).

While KM can be used as a management tool, caution is required when it is applied within and between organisations. Organisations need to be able to identify their knowledge, and use, create, share, and store that knowledge in a manner that creates business value and generates a competitive edge (Lee & Wong, 2005; Lin et al., 2013). Thus, adopting Gupta et al. (2008) and Rubenstein-Montano et al. (2001) definitions within this study, KM is explained as the creation, sharing and utilisation of an organisation's intangible assets in order to generate value for both its internal and external stakeholders. However, while the availability of KM as a tool can be advantageous, caution needs to be taken by organisations to properly understand its processes and success factors, in order to ensure it is used effectively and efficiently.

2.3.1 KNOWLEDGE MANAGEMENT WITHIN SMES

KM research focus has been on larger organisations with little regard for smaller-sized organisations (Pillania, 2008). A reason for this could be that "knowledge management is still very much viewed by smaller sized companies as a fad, that only the giants can afford to indulge in" (Alstete, 2011, p. 13). However, SMEs make up a large proportion of firms within most countries

and play a vital role in driving their economic growth, employment and wealth creation (Lin, 2014). Although SMEs tend to have limited resources and are often highly competitive, they are generally more entrepreneurial and willing to experiment and innovate than larger organisations (Harris, 2009). SMEs also have the potential of growing to be larger- sized organisations. Their high employee turnover rate also produces an interesting study in regard to knowledge management. These characteristics have brought a growing realisation of an equal need for KM within SMEs (Pillania, 2008; Šajeva & Jucevičius, 2006; Wickert & Herschel, 2001). As in larger organisations, SMEs need to capture and document what they know and also have a platform to learn from what other personnel know (Wong & Aspinwall, 2004). SMEs can benefit from the underlying tools and techniques that a properly managed knowledge base can offer (Wickert & Herschel, 2001). Further, the benefits of KM expand, increasing their chances of growing and gaining a competitive edge over competitors within their industry (Harris, 2009; Šajeva & Jucevičius, 2006), reducing costs, improving organisations' decision making (especially strategically), improving productivity and market share, innovation, and profitability over time (Edvardsson & Durst, 2013; Lin, 2014). Therefore, a study of KM within SMEs firstly requires a clear understanding of what characteristics differentiate them from larger organisations. This differentiation process, however, is often challenging and sometimes impossible, as there is no uniformly accepted definition of SMEs (Wong & Aspinwall, 2004). Nonetheless, smaller firms have many characteristics that differentiate them from larger organisations, and this can affect how knowledge can be managed within their organisations. The major differences are often to do with organisations' size/structure, culture, management, and resources. These differences mean that findings from large organisations are difficult to extrapolate to small organisations, thereby influencing how knowledge is managed (Thong, 1999). The upcoming paragraphs will explore some of these differences and suggest how they influence KM within SMEs.

A commonly described characteristic of SMEs that differentiate them from larger organisations is their flat organisational structure. A flat organisational structure is argued to promote KM in terms of easier informal, tacit knowledge sharing (Alstete, 2011; Cerchione, Esposito, & Spadaro, 2015). In line with this argument, Chan and Chao (2008) suggested that such simple structure encourages collaborative as oppose to individualistic behaviours. This is because employees within SMEs are closely situated, and the few hierarchical levels means employees are more open to sharing their knowledge across organisations, with fewer complications. On the other hand, flat organisational structure could unintentionally stop collaboration and knowledge sharing within an organisation by creating small knowledge groups throughout organisations (Tan & Hung, 2006). These groups are created as a result of individualistic reward systems provided by organisations to promote KM. A flat structure can also restrict KM within SMEs because control and decision making are centralised, or solely based on the owner's personal supervision (Alstete, 2011; Edvardsson & Durst, 2013). This means owner-managers are left to recognise the benefits that KM has on its business operations (Edvardsson & Durst, 2013). Consequently, if the owner-manager does not realise the benefits of KM, their organisations will not have specific policies in place to promote and/or support KM (Lin et al., 2013). It is important to note, however, that such

limitations may exist in large-sized organisations due to their large human resource pool, and may not be applicable in SMEs, where the human resource pool is much smaller.

From a different aspect, while larger organisations suffer from constraints of skills, time, and staff resources, these often pose more significant issues within smaller organisations (Thong, 1999). In terms of KM, SMEs often lack the finances and staff skills required to manage their knowledge (Atherton, 2003; Lin, 2014; Lin et al., 2013). As most of the knowledge is kept in the mind of the owner-manager, and there are no adequate funds to invest in technology that can record this knowledge, management can be hindered (Edvardsson & Durst, 2013). However, Alstete (2011) and Cerchione et al. (2015) oppose the idea that financial resources could be a constraint on SMEs. Alstete (2011) explains that funds should not cripple KM in SMEs, as in the long term, the value of KM and its return on investment is greater than the short-term cost. Thus, financial resources should not be a factor affecting KM in any sized organisation. Nonetheless, it is generally appreciated that limited human and skill resources remain significant constraints in the management of knowledge within SMEs. Therefore, more research into ways in which the available human and skill resources within SMEs can be optimally utilised in terms of KM will be beneficial to this economic sector.

With regard to organisational structure, there are different arguments regarding the influence of an organisation's size on KM. Some scholars believe that as SMEs are small, staff are proximately located on a day-to-day basis and this often creates a forum that encourages communication, collaboration and thus the knowledge creation and sharing processes (Alstete, 2011; Chan & Chao, 2008; Levy & Powell, 1998). However, as previously mentioned, small organisation size is often associated with limited time, finance and employee expertise (Edvardsson & Durst, 2013). In terms of time, as SME owner-managers control all aspects of their organisations, they have insufficient time to concentrate on strategic issues such as the benefits of KM, or to experiment with KM systems (Alstete, 2011; Edvardsson & Durst, 2013). Also, financial and expertise limitations can mean SMEs do not have the funds required and enough employees with the right skills to properly manage knowledge within their organisations. Taken together, the characteristic small organisation size of SMEs could impact on how knowledge is managed within their organisations.

Another line of argument suggests that management style and not overall structure of an organisation determines how knowledge is managed. It is believed that SMEs have a flexible management style. Studies suggest that a flexible management style encourages innovation and entrepreneurship, because there is less pressure on employees to follow strict policies that may restrict their innovative capabilities (Alstete, 2011; Chan & Chao, 2008; Edvardsson & Durst, 2013). Furthermore, the informal management style is advantageous as it allows for fewer layers of management, which leads to quicker decision making, high levels of customisation and rapid routines and strategies (Alstete, 2011; Lin et al., 2013). However, Edvardsson and Durst (2013) argue that this informality and lack of strategic policies may hinder and make difficult KM within SMEs.

The informal style of SMEs applies not only to management style, but also to the overall organisational culture. This culture encompasses values and beliefs that are often shared among the small number of employees, which may govern their behaviour and actions (Alstete, 2011). SMEs are more focussed on tacit knowledge, and have a culture of sharing through social channels (Edvardsson & Durst, 2013). While it can be inferred that such a unified cultural and corporate mind-set should provide a good foundation for managing knowledge, Chan and Chao (2008) argue that this organisational culture can be paradoxical. Despite the advantages that can be realised from the informal culture, the owner-manager who has the locus of control can easily shape the culture, which may create an unstable organisational environment (Chan & Chao, 2008; Lin et al., 2013; Wong & Aspinwall, 2004). This means the owner-manager's personality could influence their organisations' culture. This could either limit KM, if owner-managers do not understand the benefits of KM, or encourage KM, if the owner-manager has a positive disposition towards KM. Therefore, owner-managers play a strong role in how knowledge is managed within SMEs (Shelton, 2001). Organisational management must understand the value of knowledge, and openly accept and support KM processes in an effort to gather, sort, transform, record and share knowledge within an organisation in order to utilise it (Smith, 2001). In same regard, the extent to which the owner-manager is prepared to devolve management is often what affects if, and how well, KM is embraced within SMEs (Thong, 1999). While some studies have explained ways in which stable and structured organisational cultures can be maintained and sustained within large organisations (Alstete, 2011; Wong & Aspinwall, 2004), there have been limited studies on achieving the same organisational culture stability within SMEs. Nonetheless, maintaining a healthy knowledge-sharing culture can be advantageous in promoting KM within SMEs.

Another important consideration for SMEs is knowledge loss/erosion through employees leaving their organisations (Delen & Al-Hawamdeh, 2009; Wickert & Herschel, 2001). Although it can be argued that knowledge erosion also occurs in large organisations, this problem is especially important in SMEs, again due to their size. Knowledge erosion could occur through means such as; employee retirement, layoffs, and disregard to continuing the family business, and could mean a shift in competitive edge if the employee moves to another firm within the industry (Wickert & Herschel, 2001). In extreme cases, it could also lead to the death of the firm (Wickert & Herschel, 2001). Therefore, it is important that SMEs take extra precautions in regulating knowledge erosion within their organisation, and one of the means by which this problem can be controlled is ensuring a stable organisational culture.

The value that SMEs place on KM in general can be determined by how well organisations understand knowledge itself (Lin et al., 2013). Most employees within SMEs do not value KM systems and KM in general (Alstete, 2011). Further, SMEs are said to have a poor understanding of all the aspects of KM (Lin et al., 2013). However, Chan and Chao (2008) argue that employees who understand KM often positively embrace its practice as a means to leverage organisational performance and processes.

2.3.1.1 KNOWLEDGE MANAGEMENT WITHIN SMEs IN NEW ZEALAND

In the New Zealand context, SMEs are defined as firms with fewer than or equal to 20 employees, in accordance with the Ministry of Business Innovation and Employment (MBIE) (2015). The Ministry of Business Innovation and Employment (MBIE) (2015) shows that there are 487,602 SMEs within New Zealand. This number constitutes a significant proportion of the New Zealand workforce, with more than 900,000 employees (Waikato Times, 2014). Figure 2.2 presents the number of SMEs across various industries in New Zealand.

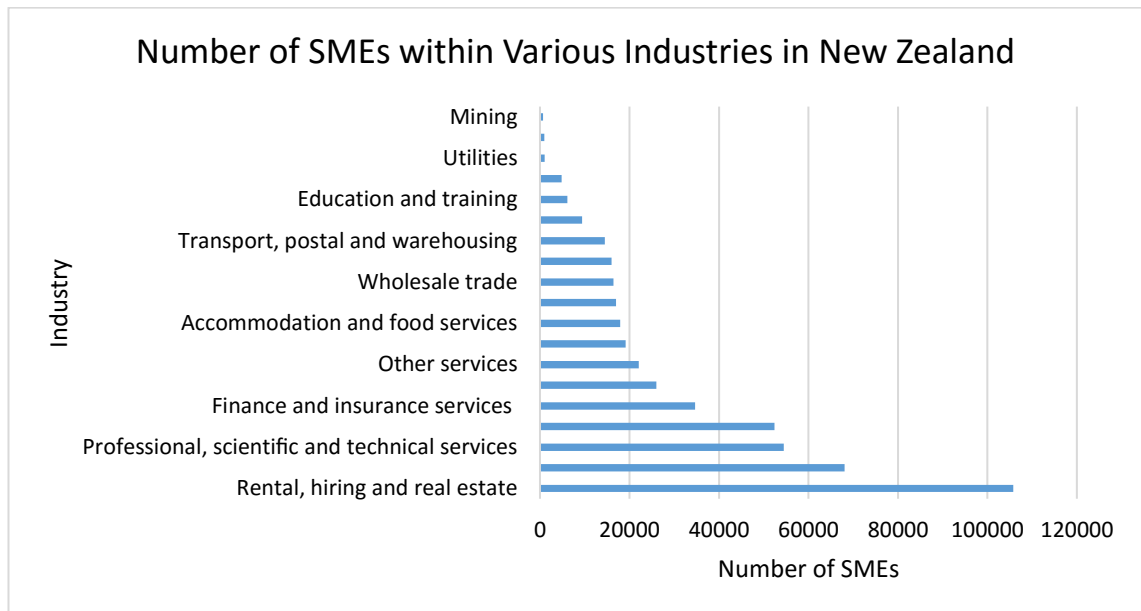


Figure 2.2: Number of SMEs within various industries in New Zealand

Sourced: (Ministry of Business Innovation and Employment (MBIE), 2015)

KM is a young and developing area of New Zealand research (Lin et al., 2013). New Zealand firms are characteristically small in comparison to global standards (Darroch & McNaughton, 2002). Despite their organisation's size, McCullough, Oliver, Symonds, and Brown (2004, p. 1) explain that:

New Zealand firms need to learn the art of KM, effectively exploiting the knowledge of employees and cultivating a culture of knowledge sharing. In particular, firms must have managers who are able to manage the innovation process, position products in markets, build reputable brands and improve quality.

New Zealanders often share strong national identity, sense of belonging and cultural diversity, according to Hong (2014). In line with these national cultural tendencies, most New Zealand firms adopt a team-based structure at higher levels of empowerment (Lin et al., 2013). This is very likely the result of the informal and open nature of New Zealand SMEs' culture (Lin et al., 2013). Their conclusions were drawn from research by Garrett, Buisson, and Yap (2006) on cross cultural comparison between New Zealand and Singapore SMEs; and by the Plester (2008) study of New Zealand work places.

Furthermore, Lin et al. (2013) explained that there is often a low power-distance relationship, in terms of status quo, within the work place, which supports the informal culture identified by Plester

(2008). Further, the low power-distance reflects New Zealand's classless society (Evans, 1999), although it is argued that New Zealand business culture favours an individualistic culture of self-pride and self-sufficiency (Evans, 1999). Further support is provided to this argument by the claim that New Zealand prides itself on having an individualistic work culture that drives 'kiwi ingenuity' (McCullough et al., 2004). Therefore, not surprisingly, New Zealand often has an informal and open work culture. Similarly to these general observations, Lin et al. (2013) clarify that New Zealand SMEs have an informal management structure that is illustrated by their reliance on people and tacit knowledge, most especially owner-manager tacit judgements. New Zealand SMEs are known to prefer a 'person-to-person' strategy (Handtrack, 2009).

In another argument, it is believed that New Zealand has a shortage of financial resources and the New Zealand economy is still affected by the global economic downturn of 2008, therefore it is suspected that this lack of financial resources acts as a barrier to the growth and development of New Zealand SMEs (Lin et al., 2013). The same article also explains that New Zealand experiences shortages in skilled human resources and this has a significant effect on the personnel employed within SMEs. However, others have argued that New Zealand's economy remained relatively stable during the global economic downturn of 2008, as it was able to avoid "the substantial credit losses incurred by many of their international counterparts" (Bedford, 2008, p. 18). It is therefore argued that the negative effects described by Lin et al. (2013) may not be as influential as initially believed. This is supported by Handtrack (2009), who argue that these poor resource bases do not affect KM within SMEs in New Zealand.

This study recognises that different industries and economic sectors (and sub-sectors) might approach KM differently. In addition, KM is likely to vary within different-sized firms, because this often adds a level of complexity in terms of hierarchy and managerial support. In this review, these characteristic features affect KM within SMEs. The next section attempts to explain KM within the lowest hierarchical level, that is, the operational level within SMEs.

2.3.1.2 KNOWLEDGE MANAGEMENT AMONG OPERATIONAL PERSONNEL WITHIN SMEs

Previous sections have discussed that although SMEs have a flat structure, they still have few hierarchical levels, which often consist of the owner-managers and operational personnel. The current study seeks to identify factors that affect how knowledge is managed among operational personnel within SMEs. Operational personnel are front-line employees; those who 'get their hands dirty' with the daily operations and processes of organisations (Laudon & Laudon, 2014). They are regarded as the production and service workforce within organisations and often deal directly with organisations' customers (Laudon & Laudon, 2014). Hence, it is important to focus on the operational level within SMEs, because operational personnel are central to their functional performance and thus management of their knowledge.

The active participation of operational personnel could lead to successful management of knowledge and may not be difficult to achieve, considering that knowledge sharing is easier within SMEs because of the high level of trust within SMEs, which is further facilitated through cross-functionalities, overlapping roles, and by close physical proximity in open workspaces (Wee and

Chua, 2013). However, operational personnel are believed to have a 'wait-and-see' attitude, assuming passive roles with regard to managing knowledge within their daily work (Chan & Chao, 2008). Employees would rather have owner-managers instruct them on the kind of knowledge that needs to be explored and how it should be explored (Chan & Chao, 2008). This would suggest that owner-managers have the responsibility to deploy knowledge in a manner that links individual efforts and accomplishments to business objectives. According to Oluikpe (2012, p. 863) "organisations need to find a way to cascade high-level strategic objectives and interpret these to the lowest level units and job roles".

This apparent lack of management at the operational level within SMEs has led the researcher to think of processes involved in KM that would aid operational personnel to incorporate KM goals within organisations' operations. Thus, an important part of being able to generate value through KM is the understanding that KM involves five processes that are cyclical and continuous. Much like any other processes, there are factors both within and outside organisations that could affect how well these processes function within organisations. These processes and factors are discussed in more depth in the following sub-sections.

2.3.2 KNOWLEDGE MANAGEMENT PROCESSES

As previously mentioned, KM processes are an important part of managing organisations' knowledge (Lee & Wong, 2005). KM processes include: knowledge acquisition, knowledge creation, knowledge application, knowledge storing, and knowledge sharing (Alstete, 2011; Lee & Wong, 2005, 2015; Lin, 2014). These five processes allow organisations to understand various perspectives and better cope with the complexities associated with KM (Alavi & Leidner, 2001). KM processes ensure knowledge is controlled in an effective way (Gold & Arvind Malhotra, 2001). This is achieved by aligning these KM processes with the overall organisation's processes. As such, it is fundamental to any organisation that management create a vision of the importance of KM, and its integration into their operations (Tan & Hung, 2006).

These five KM processes are shown in Figure 2.3 and explained in more detail in the following paragraphs.

The first step in the KM process is knowledge acquisition. Knowledge acquisition involves gaining new knowledge from internal and external sources (Lee & Wong, 2015). For example, within SMEs, knowledge can be acquired through internal channels such as experienced workers within organisations and owner-managers, and also through external sources such as the organisation's customers, suppliers and even its competitors (Lee & Wong, 2015). Internally, employees within SMEs mainly rely on owner-managers, who hold central power and thus act as the knowledge repository within their organisations. Employees are able to interact with the owner-manager to gain knowledge (Lee & Wong, 2015). External sources of knowledge are considered vital knowledge providers as they often have a direct impact on business performance, in terms of its success within the industry and market. Due to resource constraints within SMEs, external sources of knowledge often act as the means to gain competitive advantage (Lee & Wong, 2015). In fact, both internal and external sources of knowledge are advantageous to SMEs, because their smaller size often means they have close and direct relationships with other employees,

customers and suppliers. The close proximity is said to foster knowledge acquisition and enable faster and more direct knowledge flow (Wong & Aspinwall, 2004).

The second step in the process is knowledge creation, and this involves the development of new content or the replacement of existing content within an organisation's tacit and explicit knowledge (Tan & Hung, 2006). Knowledge creation involves knowledge development, discovery, and capture. This starts on a personal level, where knowledge is gradually acquired over time through learning, experience, self-reflection, and training, and proceeds to the organisational level, where innovation is used to add value to existing knowledge. Within SMEs, knowledge creation often involves tacit knowledge and generating new ideas through informal methods, such as dialogue, communication, interaction, and collaboration within a social setting.

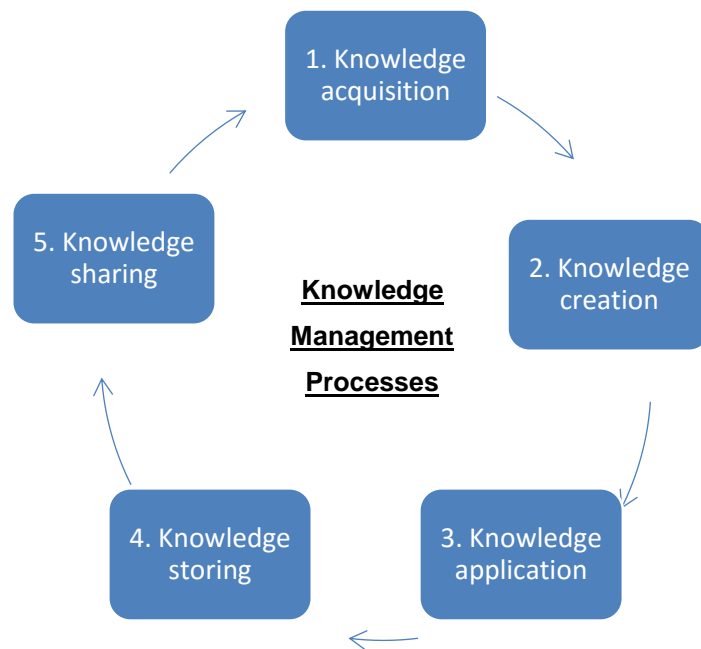


Figure 2.3: KM processes

Knowledge application is the third step in the KM process, and is an organisation's ability to identify what knowledge is required and should be applied to overall business processes (Tan, 2011), in a manner that adds value to organisations (Laudon & Laudon, 2014). There needs to be a mutually dependent and influential relationship between knowledge and organisational processes. This is because the manner in which knowledge is applied within different contexts is what gives an organisation its competitive edge, as opposed to the knowledge itself (Mårtensson, 2000; Tan & Hung, 2006). It is not enough to simply possess the necessary knowledge or the 'know-how', it is important to have the 'know-when' that knowledge should be utilised (Chou, 2005). For example, through better management of corporate knowledge, information required for corporate decisions can be made available and efficiently used (Meihami & Meihami, 2014). Likewise, KM makes a significant impact on an organisation's performance and innovation by providing competitive advantage and customer satisfaction (Meihami & Meihami, 2014).

The fourth step in the KM process is knowledge storage. It deals with the means by which knowledge is stored and reused in organisations to create and share organisational values (Choi,

2012). This often involves having a system in place that allows an organisation's knowledge to be easily documented, accessible, and retrievable by different employees across an organisation (Tan & Hung, 2006). In other words, knowledge storing ensures that employee knowledge is made more formal and accessible across organisations (Wong & Aspinwall, 2004). Knowledge storage is necessary in situations where new problems are to be solved using previously stored and related methods and procedures (Kim, Hong, Choi, & Cho, 2016). Hence, stored knowledge enables systematising information for reuse (Kim et al., 2016).

The final step in the KM process is knowledge sharing. This process ensures that the right knowledge is made available to the right people across organisations (Wong & Aspinwall, 2004). Moreover, it involves providing platforms or settings where employees can interact to pass on or gain new knowledge from one another (Tan, 2011). Knowledge sharing is important and can be beneficial within organisations as it allows for an organisation's knowledge to be readily used and utilised amongst its employees. Within SMEs, tacit knowledge is often the most common form of knowledge. SMEs are mainly concerned with the person-to-person 'human resource', which is embedded within the socialisation quadrant of the socialisation, externalisation, combination and internalisation (SECI) cycle (Cerchione et al., 2015). As such, knowledge is shared through more informal methods, such as through collaboration and communication amongst employees within SMEs (Cerchione et al., 2015; Edvardsson & Durst, 2013; Lee & Wong, 2015). This could include methods such as coaching and mentoring, meeting sessions, and through technological means such as emails, social media, and conference calling (Lee & Wong, 2015). Knowledge shared through such informal methods is often kept in the minds of the individuals involved, which offers little value to the overall organisation's procedures (Wong & Aspinwall, 2004). As a result, the knowledge-sharing process is important, as it allows organisational knowledge to be made readily available to various employees across the organisation. This, in turn, could improve the decision-making of employees and hence, improve the overall organisation's performance.

To manage knowledge, a common understanding of what constitutes knowledge within organisations must be reached (Šajeva & Jucevičius, 2006). Although this is not a process in its own right, it is important to have this as a foundation to understanding KM. A major area of what constitutes knowledge, is an understanding that there are factors acting on the KM processes that could hinder, and act as a barrier, in its cyclical processes. As such, this research seeks to identify factors among operational personnel that affect the management of knowledge within SMEs in New Zealand.

2.4 KNOWLEDGE MANAGEMENT FACTORS

As mentioned, there needs to be a consideration of factors that can interfere with and/ or support KM processes. Several authors have attempted to summarise these, however, there have been differing findings as to what factors critically affect KM within SMEs. Most studies agree that human and cultural factors, technical factors, and managerial factors, as explained by Cerchione et al. (2015), are often the most relevant factors that affect KM within SMEs. Human and cultural factors are often considered the most significant factors or drivers of KM (Ragab & Arisha, 2013; Tan & Hung, 2006). These factors deal with how to engage employees and create a culture that

promotes KM (Cerchione et al., 2015). For example, providing incentives such as monetary rewards encourage employees to manage organisations' knowledge. Secondly, technical factors concerning IT applications or systems can facilitate management of knowledge (Cerchione et al., 2015). IT development can affect both employees and the entire organisation, hence, it is important for organisations to find a way to positively channel the advantages of the development and advancement of technology in order to collect, share and utilise such organisational knowledge (Mårtensson, 2000). The advancement of internet and cloud services are cheaper alternatives that SMEs can implement within their business operations to aid KM. Lastly, the managerial factors consider how leaders in organisations can influence employees to manage their personal knowledge, as well as their organisation's knowledge, for the growth of their organisation (Cerchione et al., 2015). This means management needs to act as 'role models' to demonstrate that KM is more than simply management jargon, but is a course of action to cohesively identify and share employee skills to foster organisational competencies (Chan & Chao, 2008). This includes holding meetings, providing training sessions, scheduling workshops that create an environment for knowledge sharing, and/or changing business strategies to accommodate KM.

Although these three factors are found to be common across several studies, the researcher believes that these factors are not explained in enough depth and are not representative of the operational level, specifically. As a result, this research aims to provide a more holistic list of factors and elements that constitute these factors, with special focus on operational personnel within SMEs in New Zealand.

2.5 CHAPTER CONCLUSION

This chapter began with a definition of knowledge, and for the purpose of this study, knowledge is defined as what an individual knows that is a renewable, reusable, and cumulative resource that can be valuable (to individuals, groups and organisations), if properly harnessed. Further to this, KM is defined as the creation, sharing, and utilisation of an organisation's intangible assets to create value for its internal and external stakeholders. This chapter then explained KM within SMEs in the global context. An explanation of characteristics that differentiate how knowledge is managed within SMEs from larger organisations is provided. The explanation is then narrowed down to KM as it pertains to SMEs in New Zealand.

Generally, it is observed that within SMEs there are few hierarchical levels, mostly consisting of owner-managers and operational personnel. This is a key distinction between KM in SMEs and larger-sized organisations. The review conducted shows that there are several studies on KM within the managerial level, but there is little focus on KM at the operational level.

The last part of this chapter reviews the literature on the processes required for KM within SMEs. The review shows that there are factors that can affect these processes. However, these factors are not explained in great depth and have not focussed on operational-level personnel. The current research seeks to bridge the gap in the reviewed literature, by identifying factors that affect the management of knowledge among operational personnel within SMEs in New Zealand. This

is keeping with the objectives of this study. The factors that affect KM among operational personnel within SMEs in New Zealand are discussed in the following chapters.

Chapter 3 RESEARCH METHODOLOGY

3.1 CHAPTER OVERVIEW

The purpose of this chapter is to outline the methodology used, in detail, along with justifying why certain research procedures were undertaken. In particular, to identify an appropriate research methodology for this study, this chapter first explains the researcher's philosophical stance. It then outlines the research procedures that the study follows, by providing a full account of how the data for the research was collected, and why they were considered appropriate for this research. The chapter concludes with an explanation of how the data were analysed.

3.2 PHILOSOPHICAL BACKGROUND

In any research, it is important to understand the philosophical stance of the researcher and the theoretical underpinnings of the research. As such, for this study, this researcher assumes that knowledge about social reality is subjectively created. Thus, the researcher had an inter-subjective outlook when conducting the research (Grant & Giddings, 2002).

Based on this ontological and epistemological position, the chosen paradigm for the present research is interpretivism. Interpretivism is consistent with the idea of a subjectively created social reality, and knowledge of the social reality is acquired by taking into consideration the different perspectives of the authors used for this research. As such, for the current study, the researcher seeks to understand and draw meanings from the different viewpoints of authors and the context in which the research was situated, across the different literature studied. It is through interpreting the literature that greater understanding can be achieved of what factors affect KM among operational personnel within SMEs.

By taking on the position of an interpretivist researcher, there is an acknowledgement that multiple understandings and viewpoints can be interpreted and meanings drawn, in light of the research topic. Thus, this researcher assumes that each author that has contributed to the research area being studied, using varying viewpoints and knowledge of social reality, thus care has to be taken in interpreting the meanings.

3.3 METHODOLOGY

Research methodology or research design is the general research approach or strategy used here for data collection and analysis, in a way that it aligns with the research objectives (Easterby-Smith, Thorpe, & Jackson, 2008; Kothari, 2004). Methodology provides the criteria for evaluating research findings (Bryman & Bell, 2003). Within this research, the term 'approach' is used to differentiate methodology from the narrower term 'method' (Vaismoradi, Turunen, & Bondas, 2013).

The methodology chosen for the current research is a systematic literature review approach. The objective of a systematic review is to allow researchers to gain an overview of a specific research topic (Denscombe, 2014).

A systematic literature review is conducted to make sense of and integrate the various articles analysed within this research. It provides an understanding of what factors affect how knowledge is managed among operational personnel within SMEs, with a focus on the New Zealand context. This methodology is deemed appropriate for this research, as it seeks not only to collate previous studies but also to explore, understand, and interpret the existing literature around the research topic (Wang, Myers, & Sundaram, 2013). In addition, conducting a systematic literature review allows for comparisons and meaning to be drawn from conflating these studies. Thus, a systematic literature review should provide a more complete picture of the research topic, as it enables the researcher to systematically review articles in order to better understand what factors affect KM among operational staff within SMEs.

3.4 METHOD

Research methods are a subset of methodologies and are focused specifically on the techniques used for data collection. Methods are activities used to gather and analyse data with regard to the research questions and objectives (Crotty, 1998). It is therefore important that the methods used be specifically described, to adequately identify and justify the research process.

The following sub-sections include the processes undertaken for conducting the literature search, and provide an explanation of how the various articles will be analysed.

3.4.1 CONDUCTING THE LITERATURE SEARCH

Existing literature on KM will provide the data for this research. Within the context of this research, literature refers to sources of published data contributing to the research topic (Collis & Hussey, 2003), and for this study includes academic journals, books, book sections, theses and reports.

A search was conducted using two main business information system databases: Business Source Complete and ABI Inform. The researcher used the keywords: 'knowledge management', 'small business', 'operational', 'New Zealand', and 'review'. The keywords were selected because they describe in simple and distinctive terms the topic of the research.

'Knowledge management' was used as a keyword, and served as the basis for the entire search conducted, as this is the focus area of this study. As the databases may not accurately filter information that is required (Business Source Complete and ABI Inform are American databases), it is important to use words that the search engine will understand, because this will provide more accurate outputs relevant to the topic area. Therefore, from the database search dictionary of the two search engines, the phrase 'small business' was selected instead of 'small to medium enterprises'. The term SMEs has different definition in terms of organisational size, structure, and resource pool. The literature searches within this study showed that in general the keyword small businesses conceptually bares similar meaning to SMEs within the New Zealand context. The third keyword 'operational' was chosen because it encompasses operational level and operational personnel. It was important to use this as one of the keywords within the search, because the research is concerned with this hierarchical level within SMEs. 'New Zealand' was the fourth key word chosen for the database search, because this study is interested in understanding KM among operational personnel within SMEs, specifically within the New Zealand context. The fifth

keyword 'review' was used to find other literature reviews that have been previously written in the research area. This provided a great opportunity to find other publications that may be useful for this research.

All years of publication were considered throughout the literature search process, due to the limited amount of literature on the research area.

Across both databases, the search yielded 183 works, including academic journals, books, book sections, theses and reports. The total of 183 works was obtained using the four keywords alone and in combination with each other. However, only 19 articles were deemed relevant for this study, based on a review of their abstracts, introductions and conclusions. Articles were considered relevant for the study if they met the following criteria:

- academic
- peer-reviewed and English language
- full-text articles are obtainable
- examined some aspects of KM (factors and processes), especially in relation to operational personnel within SMEs and in the context of New Zealand

Next, the researcher read through each of the 19 articles obtained across the two databases. On reading the articles, 84 references were common across several (at least 2) articles. These references were noted, and formed another search list within the process.

This was undertaken to broaden the literature search, ensure that key authors in the area were included and make the search more accurate, as it found more articles, which did not necessarily include the list of keywords but were related to the topic being studied.

The third step in the literature search process was to search on Google Scholar using the new list of references. All 84 references were found. However, on reading their abstracts, introductions and conclusions, only 35 of the works were deemed relevant, as they were aligned with the objectives of this research.

The steps taken when conducting the literature search process are represented in the flowchart in Figure 3.1.

Across the three literature search processes, a total of 54 works were considered relevant for the current research. All 54 articles were then categorised under each of the research areas that this study seeks to bridge: knowledge management, operational personnel, SMEs and being within the New Zealand context, (as shown in Figure 1.1). This categorisation is presented in Table 3.1. Each article, however, can fall under one or more categories. This categorisation process was undertaken to sort the articles in a manner that facilitates analysis and reporting.

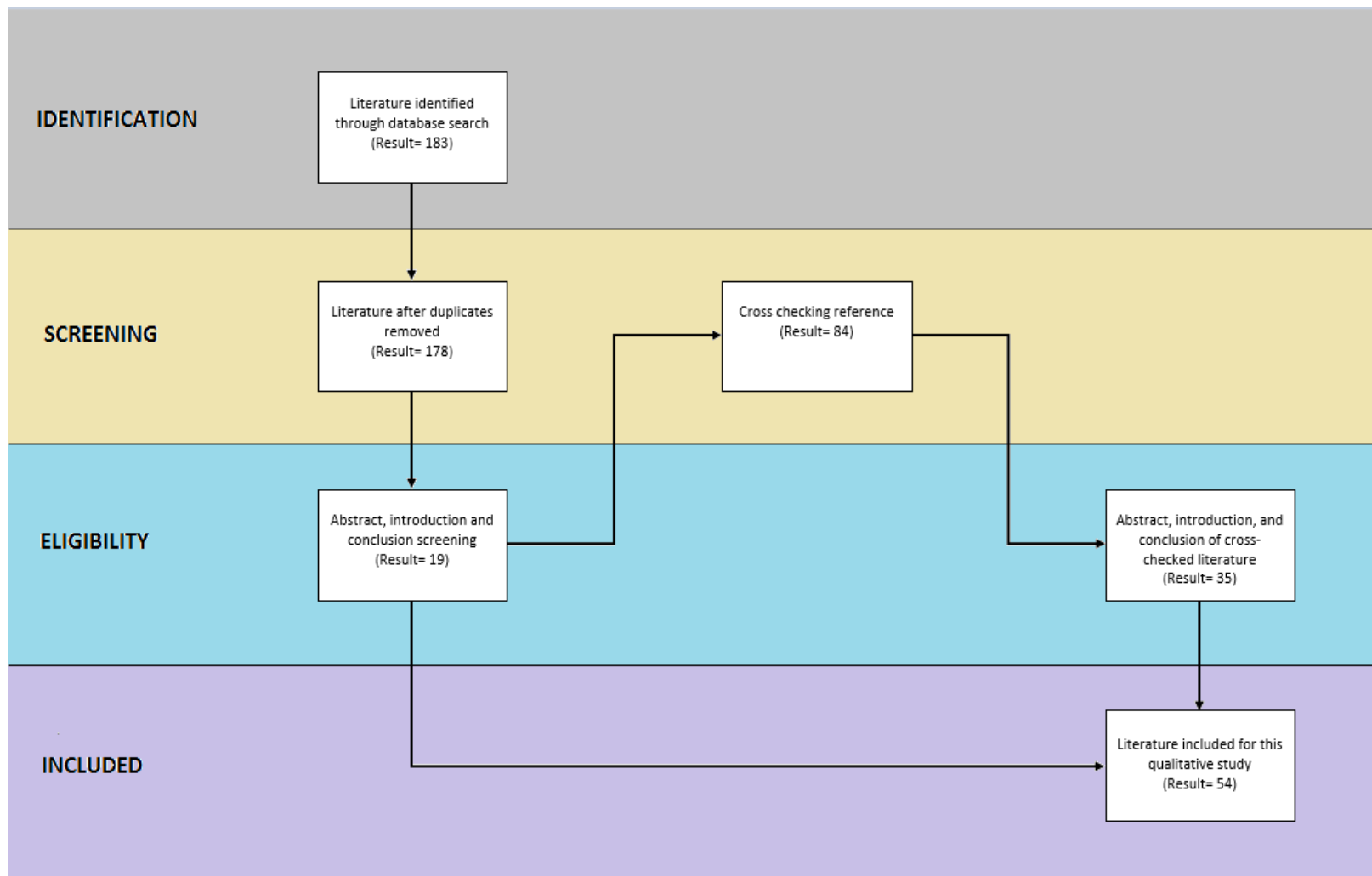


Figure 3.1: Systematic literature review flowchart

Knowledge management	Operational personnel	Small to Medium Enterprises (SMEs)	New Zealand SMEs
Alavi and Leidner (2001) Alstete (2011) Argote and Ingram (2000) Batra (2012) Cerchione et al. (2015) Chadha and Ritika (2012) Chan and Chao (2008) Chou (2005) Davenport and Prusak (1998) Delen and Al-Hawamdeh (2009) Dhanaraj et al. (2004) Edvardsson and Durst (2013) Gold and Arvind Malhotra (2001) Gottschalk (2005) Gupta et al. (2008) Hoe (2006) Joia and Lemos (2010) Kim et al. (2016) Lee and Wong (2005) Lin (2014) Lin et al. (2013) Mårtensson (2000) McAdam and McCreedy (1999) Meihami and Meihami (2014) Nonaka and Von Krogh (2009) North and Kumta (2014) Pillania (2008) Ragab and Arisha (2013) Rubenstein-Montano et al. (2001) Saini (2015) Schultz and Leidner (2002) Shelton (2001) Smith (2001) Tan and Hung (2006) Tan (2011) Wickert and Herschel (2001)	Alstete (2011) Chan and Chao (2008) Lin et al. (2013) Oluikpe (2012) Wee and Chua (2013)	Alstete (2011) Cerchione et al. (2015) Chan and Chao (2008) Delen and Al-Hawamdeh (2009) Edvardsson and Durst (2013) Harris (2009) Levy and Powell (1998) Lin (2014) Lin et al. (2013) Ministry of Business Innovation and Employment (MBIE) (2015) Pillania (2008) Šajeva and Jucevičius (2006) Shelton (2001) Smith (2001) Tan and Hung (2006) Thong (1999) Wickert and Herschel (2001) Wong and Aspinwall (2004)	Darroch and McNaughton (2002) Evans (1999) Handtrack (2009) Hong (2014) Lin et al. (2013) McCullough et al. (2004) Ministry of Business Innovation and Employment (MBIE) (2015) Garrett et al. (2006) Plester (2008)

Table 3.1: Literature categorised based on the research area

3.5 DATA ANALYSIS

The method chosen for analysing literature within this research is thematic analysis. This is because it offers a theoretically flexible method that allows for meaning to be captured through the researcher's interpretation of qualitative data (Crowe, Inder, & Porter, 2015), and often requires sifting through large volumes of data (in this case, articles) to find relevant information for the research question posed. Hence, for the purpose of this study, thematic analysis is a method used to systematically analyse the available literature, in order to draw meanings from themes that exist around the research topic.

However, in order to thematically analyse the data obtained for this research, it was important to consider the meanings drawn, and words used, within the various articles, as they might be originally intended and within the context the authors used them. To achieve this, researcher has to be fully immersed within each article, so that a truer and more holistic understanding can be obtained (Vaismoradi et al., 2013).

Furthermore, this research follows the Braun and Clarke (2006) six phases for conducting thematic analysis. The first phase in the conduct of thematic analysis requires researchers to familiarise themselves with the data they are working on. Similarly, Vaismoradi et al. (2013) believe that the researcher needs to make sense of the whole reading. To become familiar with the literature in this research, each study was read several times, in order to make sense of the information contained in them. Then each was examined, in order to find patterns of meaning and better understand what each author is trying to communicate (Liamputtong, 2009). The second phase involves data extraction, in order to capture as many patterns and emerging themes from the different studies being reviewed as possible (Vaismoradi et al., 2013). Within the current study, this was achieved by reading several articles to understand what appears to be critical themes emerging from the literature. After gaining that understanding, each article was read again, and keywords that could become themes were noted and highlighted. The themes that emerged from this study are the elements that were later categorised as factors that affect KM within SMEs, with a particular focus on New Zealand. The third phase involved collating and categorising the identified themes, and collecting relevant evidence to support each of them. Each theme that emerged across all the literature reviewed was compared and contrasted in terms of how well they are conceptually aligned. Groups of themes that were very similar, definition-wise, were then renamed to form a main theme. This is followed by a fourth phase that involves generating a thematic map (Braun & Clarke, 2006). The thematic map enabled the visualisation of relationships between the themes developed (Braun & Clarke, 2006), based on whether the themes were relevant for the proposed research question and the data extracted in the first phase. The fifth phase deals with refining the themes, which is done to ensure that the names proposed for each theme are appropriate and a clear definition can be provided for each of them. Some of the themes developed within this current research were either negatively or positively worded. Within this fifth phase, the themes were refined so that the wording could become neutral. Lastly, the sixth phase suggested by Braun and Clarke (2006) provides a final opportunity to analyse the data. This phase is mainly concerned with relating the developed themes back to the purpose of the research – the research question and objectives. It also involves extracting and selecting compelling evidence from the literature to support each theme developed. Direct quotes and paraphrased sentences were then obtained from each

reviewed study to support the final themes deemed appropriate for this research. This evidence includes reasons the study suggests these themes, and to what extent those themes are considered relevant within the context of each article.

3.6 CHAPTER CONCLUSION

This chapter has established and justified the methodology to be utilised to find the answers to the research question. In addition, it outlined the systematic research procedures, providing the clear path the research process follows. The chapter also covers the data collection procedures (shown in Figure 3.1), including justifications for employing thematic analysis. Data collection resulted in 54 studies being deemed appropriate for this study. These will be analysed in the next chapter.

Chapter 4 FINDINGS

4.1 CHAPTER OVERVIEW

This chapter presents the results from the data analysis aspects of the current study. The analysis of data is the concluding step of the research procedure. Details of the methods and approaches to analysing data for this study were explained in the previous chapter. Therefore, the purpose of this chapter is to seek answers to the research question indicated in chapter 1:

What factors affect the use of knowledge management practices among operational personnel within SMEs in New Zealand?

To address this question, thematic analysis method was employed. Certain elements are identified and grouped into cogent factors that affect KM within SMEs. These elements and subsequent factors are presented with the hope that they provide a broader and more in-depth discussion on what factors affect KM within SMEs. There is a focus on SMEs in New Zealand within the context of the study objectives.

4.2 ELEMENTS AFFECTING KM WITHIN SMEs

As stated in chapter 2, three main factors which affect how knowledge is managed within SMEs were common across most studies: human and cultural factors, technical factors, and managerial factors. However, as observed in chapter 2, these factors are not explained in enough depth and are not representative of the operational level specifically. Within factors are elements that act as barriers to the management of knowledge in organisations. From analysis of the literature search conducted, nineteen elements were discovered. Those elements were discovered using the processes underlined in section 3.5. This required the researcher to be fully immersed within each article, so that a truer and more holistic understanding of each element could be obtained. These are presented corresponding to the authors in Figure 4.1. Each of the elements is explained in more depth in the following paragraphs, before they are categorised into factors.

TIME

Time, as an element, was considered significant by the articles reviewed. It is concerned with the length of time that employees have to invest in understanding and utilising KM practises, as well as the length of time that managers have to promote this tool within organisations. There is an apparent limitation to the length of time available within SMEs to manage knowledge. The papers reviewed have indicated that this limitation is due to the informal structure of most SMEs. This informal structure means that employees are more likely to spend more time doing additional work that is not specified within their job descriptions (Chan & Chao, 2008). Consequently, employees struggle to find time to engage in knowledge-creation and knowledge-sharing processes (Alstete, 2011; Cerchione et al., 2015; Chan & Chao, 2008; Edvardsson & Durst, 2013).

STRATEGIC FIT

From the reviews, strategic fit refers to how well KM is prioritised within SMEs. SMEs are unlikely to have formal policies for KM practice. Therefore, SMEs require more strategic perspectives for KM, in terms of aligning their KM goals with the overall organisational strategy (Lin et al., 2013; Wong & Aspinwall, 2004). Unless a more strategic approach and perspective is taken to KM, an optimal outcome is not guaranteed within SMEs (Lin et al., 2013). Strategic fit ensures long-term competitiveness and KM success within organisations. Although it can be argued that this element also influences KM practice within large organisations, it is more prevalent in SMEs, because they do not have the resources to waste if their KM goals are not met.

MANAGERIAL SUPPORT

Managerial support is another vital element in the management of knowledge within SMEs. The articles reviewed show that owner-managers' personalities, backgrounds, and individual objectives are often the key driver of changes within SMEs. The idea that power and control within SMEs are often centred on the owner-manager makes managerial support relevant. Owner-managers have strong control over the strategic direction and resource allocation within organisations. Owner-managers need to be role models, by exemplifying the desired behaviours required to utilise the benefits associated with KM. Knowledge is only managed within SMEs if the managers understand and value knowledge processes within their organisations. Managers must create a shared vision that reflects the importance of every KM process in the overall organisation operations (Tan & Hung, 2006). This could be through active promotion of KM practices by motivating and providing rewards for employees who manage their knowledge (Chadha & Ritika, 2012). Further, managers need to demonstrate willingness to freely share their own knowledge and learn from others within their organisations (Šajeva & Jucevičius, 2006).

Lack of managerial support can be a huge barrier to managing knowledge in SMEs (Lin, 2014). The same author explains that incorporating KM within SMEs' daily operations is a difficult managerial task, and thus managers must be aware of the implications of managing organisation knowledge and be prepared to provide the necessary resources (Lin, 2014).

FINANCE

SMEs often have a relatively smaller cash reserve than larger organisations, which makes them more vulnerable to slight changes or fluctuations in the market or delays in customer payments (Lin et al., 2013). This means that SMEs have limited funds to manage knowledge (Alstete, 2011). Therefore, finance is relevant in KM within SMEs. SMEs are restricted in their ability to build and utilise KM infrastructure and databases compared with larger organisations. Consequently, employees within SMEs manage knowledge using informal approaches. Tacit knowledge and informal knowledge sharing are most common in SMEs, and clearly support the idea that they have finance as a limiting element. These aspects were mentioned in chapter 2.

		Author/Year												
		Lin, Shahbazpour, and (2013)	Seidel, Howell (2013)	Edvardsson and Durst (2013)	Chan and Chee-Kwong (2008)	Alstete (2011)	Cerchione, Esposito, and Spadaro (2015)	Lin (2014)	Tan (2011)	Chadha and Ritika (2012)	Lee (2015)	Tan and Hung (2006)	Šajeva and Jucevičius (2006)	Ragab and Arisha (2003)
Elements that affects KM	Time			*	*	*	*							
	Strategic Fit	*		*							*		*	
	Managerial support				*	*	*	*	*	*	*	*	*	
	Finance	*		*		*	*				*			
	Employee skills	*		*		*	*							
	Organisation culture	*					*		*	*	*	*	*	*
	Organisational structure	*		*	*				*	*		*		*
	Human resource availability	*			*		*				*			
	Technology					*	*	*	*	*	*	*	*	
	Socialisation	*				*	*	*				*		
	Class differentiation	*			*						*			
	Codification	*		*	*	*								
	Information sharing				*						*			
	Trust	*			*						*			
	Job security				*									*
	Knowledge protection				*	*					*			
	Risk avoidance				*	*								
	Organisational politics					*								
	Incentives										*		*	*

Figure 4.1: Elements affecting KM within SMEs

EMPLOYEE SKILLS

Employee skills were shown to affect KM within SMEs. The review of the literature explains that there is a tendency for SMEs to have lower-skilled employees than larger organisations have (Lin et al., 2013). Their size limits their ability to attract highly experienced and expert employees, unlike larger organisations, which often pay better and offer better benefits (Alstete, 2011). As a consequence, employees with more experience and understanding of KM are likely to be engaged by larger organisations. This category of employees does not remain in SMEs for long, as they use SMEs as 'stepping-stones' in their career aspirations.

ORGANISATIONAL CULTURE

The review reveals that organisational culture entails values, norms, attitudes and behaviours that uniquely characterise the day-to-day functioning of organisations. It is considered a key element in the management of knowledge within SMEs. A positive organisational culture often creates an enjoyable working environment, which could improve business performance (Tan, 2011). A positive culture also places emphasis on the importance of collaboration between employees, as a way to facilitate open knowledge exchange. Tacit knowledge can more easily be transformed to explicit knowledge within SMEs in situations where the culture of organisations is positive (Chadha & Ritika, 2012). Inevitably, the level of teamwork, interaction, and communication increases and, as a consequence, employees are more open to sharing knowledge (Tan, 2011).

ORGANISATIONAL STRUCTURE

Organisational structure was viewed within the literature analysed as being relevant, because it influences the success or failure of KM within SMEs. Organisational structure is a foundation that facilitates the creation, transfer and utilisation of knowledge within SMEs (Lin et al., 2013). SMEs typically have a flat organisational structure relative to large organisations. It is believed that a flatter organisational structure could foster knowledge sharing among employees. This element should, ideally, positively influence KM practices within SMEs.

HUMAN RESOURCE AVAILABILITY

From the analysed literature, resource deficiencies are considered one of the most influential elements with regard to managing knowledge within SMEs (Lin et al., 2013). It is believed that KM within SMEs remains at an elementary level due to the comparatively smaller organisation size and limited human resource pool (Chan & Chao, 2008). SMEs have a limited number of staff, which means that each employee essentially holds broad organisational knowledge (Lin et al., 2013). Thus, this element not only affects organisations in terms of having dedicated staff who are concerned about KM, but it may also mean knowledge loss, especially when a few employees with broad organisational knowledge leave the organisation.

TECHNOLOGY

Technology is another important element that affects KM practice within SMEs. The articles reviewed explain that technology may be a major barrier to the management of knowledge within SMEs.

Organisations that use technology that does not align with their overall organisational strategy run the risk of poor performance. The preliminary review conducted in chapter 2 showed the majority of knowledge within SMEs is shared through socialisation, using basic infrastructure and information technology. Thus, the technology that is adopted should provide a systematic means of capturing knowledge from various employees, which could contribute to the management of organisational knowledge.

Developers and vendors of KM software and systems tend to target larger organisations more than smaller organisations, because of their ability to purchase and use these technological tools. Also, for purely market reasons, the SME market is saturated (Alstete, 2011). Therefore, vendors find it harder to penetrate and profit from marketing and selling to SMEs.

KM tools are the key to SMEs operating more widely without having to give up the benefits of their flatter structure, smaller size and openness (Alstete, 2011). With a well aligned and integrated KM tool and business operations, SMEs can leverage this opportunity to increase their resources, competitiveness and the survival of their organisations (Alstete, 2011).

SOCIALISATION

Knowledge is said to be better transferred within SMEs through informal means such as socialisation (Alstete, 2011). Socialisation is one of the dimensions of knowledge conversion, as stated in chapter 2. This element is relevant in the management of knowledge within SMEs, because it involves employees absorbing the essential but tacit aspects of an organisation's culture. This is usually achieved through "unspoken nuances, suggestions, observations, and interpretations of other people's actions" (Shelton, 2001, p. 433). There is a need to encourage employee interaction both formally and informally, so that employees that are not proximately located can still gain knowledge from one another (Tan & Hung, 2006).

CLASS DIFFERENTIATION

Similar to larger organisations, SMEs struggle with status differences between employees. Class differentiation is more profound in SMEs, as knowledge is mostly shared through socialisation and informal methods, as previously highlighted (Alstete, 2011; Cerchione et al., 2015). Employees are more likely to experience difficulties associated with seeking and gaining knowledge from more experienced, 'superior' employees (Alstete, 2011; Chan & Chao, 2008). Superior employees are those who have been with organisations longer, or have more years of experience (Chan & Chao, 2008; Lee & Wong, 2015). Superior employees may be unwilling to share their knowledge for fear of becoming less relevant in the organisation. Therefore, to manage knowledge, SMEs need to encourage strong collaboration between employees, where they can feel free to share and gain knowledge without fear of 'losing their superiority' or feeling inferior.

CODIFICATION

Codification refers to the documentation of knowledge from an otherwise tacit knowledge to an explicit one. Employees in organisations need "to know what their colleagues know and be connected with them to share the knowledge" (Alstete, 2011, p. 12). However, with the informal culture of SMEs, it

becomes a challenge to capture and store knowledge, as employees would prefer to share their tacit knowledge in an informal setting such as through socialisation (Cerchione et al., 2015; Edvardsson & Durst, 2013; Lee & Wong, 2015). Challenges with codifying thus arise, as SMEs struggle to transform their employees' tacit knowledge to explicit knowledge. As in large organisations, SMEs need to have methods in place to capture employee knowledge and provide a platform that ensures the sharing of, and easy access to, knowledge across their organisation (Lin et al., 2013).

INFORMATION SHARING

Information sharing refers to the cross-exchange of knowledge amongst employees within an organisation. The review shows that employees within SMEs may be reluctant to share knowledge, as they believe their knowledge gives them edge over other employees (Chan & Chao, 2008; Wong & Aspinwall, 2004). This is especially true for highly experienced staff, who are reluctant to acquire new perceptions or knowledge, as they have strong beliefs in their own understanding (Chan & Chao, 2008). Although this element influences both small and large organisations, it is more relevant in SMEs, where employees may find it difficult to get promoted because of their flat structure and limited resource pool. Hence, lack of information sharing may affect the knowledge sharing process.

TRUST

Analysis of the literature shows that trust is a fundamental element in managing knowledge. Trust is fundamental because a high level of trust is required between employees before they are willing to share their knowledge. The greater the level of trust, the more open employees are to one another. Consequently, they become more willing to collaborate and socially interact to share more truthful information among themselves over time (Wong & Aspinwall, 2004). In the same way, having a high level of trust means employees will be better devoted to achieving their organisation's goals and strategy (Lin et al., 2013). Therefore, employees are likely to put in more effort to ensure they manage the organisation's knowledge.

JOB SECURITY

From review of the literature, job security is referred to as the willingness of employees to share knowledge without the fear of losing their jobs. Job security is considered an important element in KM within organisations. While this factor influences both small and large organisations because employees feel that the knowledge they possess gives them an edge over their colleagues (Ragab & Arisha, 2013), the issue of hoarding one's knowledge is more acute in SMEs. This is because there is a slimmer chance of promotion within SMEs. Where a job is insecure, employees are unwilling to share information so they can retain their roles within their organisations. This attitude hinders KM practice within SMEs (Ragab & Arisha, 2013).

KNOWLEDGE PROTECTION

Knowledge protection was shown during the literature analysis to be an important element that could hinder KM within organisations. It is considered an essential element because of SMEs' high employee turnover. Knowledge protection involves designing an organisation's overall processes so that its

knowledge and employees' intellectual/personal capital are not illegally or inappropriately used, possessed and distributed (Chan & Chao, 2008; Šajeva & Jucevičius, 2006).

RISK AVOIDANCE

SMEs, because of their small size, are vulnerable to business failures, and have a small margin of error than larger organisations (Alstete, 2011). Due to this characteristic, SME managers are sensitive about taking operational and associated business risks. Therefore, it is common to find that SMEs seek a clearer vision and some degree of certainty about the outcome of decisions they make (Alstete, 2011). This has a direct impact on KM within SMEs, which are conditioned to prefer 'predictability and visibility' in their decision making and KM (Chan & Chao, 2008).

ORGANISATIONAL POLITICS

Within the current study, this element deals mainly with the transparency of an organisation when managing its knowledge, especially using KM systems. Politics, although present in organisations of all sizes, is especially relevant in SMEs, where the opportunities for career advancement are limited. As was previously stated, SMEs have flat organisational structures and are constrained in their resources. It is possible that organisational politics could prevent SMEs from disclosing sensitive knowledge (such as the organisation's procedures and policies) because of the risk that employees may leave the organisation to set up their own competitive businesses (Alstete, 2011). Thus there is a tendency for small businesses to remain family owned, where knowledge is only passed down through family members (Alstete, 2011).

INCENTIVES

From the literature, it is observed that people are the sole originators and key drivers of KM in organisations. Therefore, it is important to manage human resources in order for adequate use of KM to be achieved. Within the context of the present study, incentives involve providing clear communication and appropriate incentive schemes, and managing change and performance as part of organisational strategies. Employees need to know that they are not sharing their knowledge for no reason. One such scheme is to incentivise the knowledge sharing process, that is, make the knowledge sharing process reciprocal (Ragab & Arisha, 2013). Such incentive schemes promote KM within organisations, as employees know that they can gain more knowledge from other employees by sharing their own.

4.3. GROUPING AND CATEGORISING OF KM FACTORS

The 19 elements described in the previous section provide an understanding of the different aspects of SMEs that could either negatively or positively impact KM practices. In this section, the 19 elements identified are categorised by how well they conceptually align with each other.

This study, therefore, has come up with five categories. They emerged through thematic analysis of the different elements. This categorisation is presented in figure 4.2 as a list of five key factors. Some of these factors are internal to SMEs, wherein organisations have a measure of control on how they influence their practices. For instance, managerial commitment, organisational make-up and employee

participation (these have been colour-coded green on Figure 4.2). However, a factor such as organisational resource (colour-coded red) is external to SMEs, as they are driven by forces that are beyond the organisation's control.

The study has a category (technology) which may have both an internal and external influence on organisations. This is indicated in Figure 4.2 (colour-coded yellow) as the fourth key factor categorised. In summary, the five categories that emerged from the thematic analysis provide more comprehensive insight into factors that affect the management of knowledge at the operational level of SMEs. These five factors are explained further in the following sub-sections.

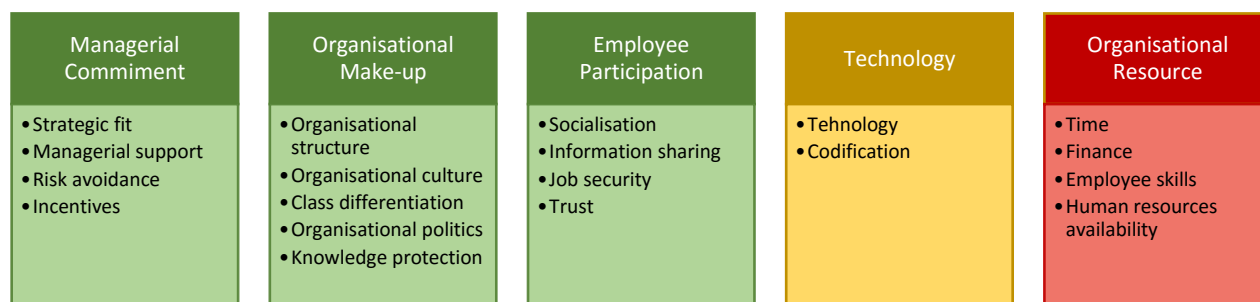


Figure 4.2: The five categories of KM factors and their respective elements

4.3.1 MANAGERIAL COMMITMENT

This is the first key category indicated in Figure 4.2. Within this category, there are four related elements that affect KM within SMEs. The literature suggests that, as owner-managers often have the locus of power and control within SMEs, they play a vital role in the management of knowledge as their personalities, backgrounds, and individual objectives often drive how and what changes are made within their SME (Šajeva & Jucevičius, 2006). This study recognises the need for managerial support for KM within SMEs, because owner-managers are often responsible for the management and monitoring of KM visions and goals by ensuring these are made visible, regular and extensively practiced across their organisations. Management needs to demonstrate that KM practices are not just management jargon used by highly skilled employees, but an essential tool to the overall success of organisations (Tan, 2011). Without management support, KM has little to no chance of being successful within organisations (Šajeva & Jucevičius, 2006). Therefore, for knowledge to be managed within SMEs, management must act as a role model by encouraging and practicing KM, in order for operational personnel to understand its benefits within their organisations' operations and performance.

Another element under the managerial support category is strategic fit. The results of this study show that SMEs managers often drive how well KM goals fit with an organisation's overall strategy and operations. This is because the owner-managers usually have the authority, power and control to make strategic decisions. Thus, the ability to align KM strategically with the overall organisations' processes is often driven by owner-managers. Strategic fit, as an element, is also an internal influencer of KM factors.

The third element under the managerial commitment category is risk avoidance. Analysis conducted shows that management within SMEs is sensitive and reluctant about business changes (Chan & Chao, 2008). This is because most SMEs have been in their respective industries for more than 15 years, so management believes there is no need to make changes to their already successful operations. Similarly, because of SMEs characteristic small size, they are vulnerable to business failures and have a small margin of error in which to experiment, compared with larger organisations (Alstete, 2011). Thus, SMEs often require some level of certainty in order to make the changes needed for KM practice. However, the researcher believes that this factor is especially crucial within SMEs in New Zealand, due to their limitations in resources of time, finance and human resource pool, as discussed within the preliminary literature review and analysis chapter.

Incentives involves the inclusion of clear communication, appropriate incentive schemes, and the management of change and performance as part of organisations' strategies. Incentives is a crucial element in the management of knowledge within SMEs and should not be ignored (Šajeva & Jucevičius, 2006). It was found that managing people is an important aspect of managing knowledge, and vice versa (Šajeva & Jucevičius, 2006). The reason for the importance of providing incentives in managing knowledge within organisations is that people are the sole creators of knowledge and often the drivers of KM (Ragab & Arisha, 2013; Šajeva & Jucevičius, 2006). The present study takes the position that incentives is a vital element in KM within SMEs. As stated in chapter 2, operational personnel are key to the success of KM, as well as the overall organisational operations. As such, it is fundamental to managing employees, most especially operational personnel, as this could directly affect how knowledge is managed.

This category is considered to be internally driven, as management and support are within organisations. Managerial support, strategic fit, risk avoidance, and incentives therefore form a category, because managing knowledge requires a strategic approach by owner-managers, which involves creating a shared vision and making an effort to convey the importance of KM across different levels found within SMEs. Furthermore, managerial commitment is important within SMEs. Proper management commitment should be encouraged within SMEs as it impacts KM processes.

4.3.2 ORGANISATIONAL MAKE-UP

The second category formed out of the thematic analysis is organisational make-up. This is also internal and includes five elements. Organisational structure is one of the most referenced elements, as shown in Figure 4.1. The literature reviewed shows that SMEs have a relatively flatter structure than larger organisations. This flat structure is said to be ideal for KM, especially in terms of knowledge sharing, as employees are closely situated within organisations. The present study provides an alternative view of the effect that organisational structure may have on KM within SMEs. For example, a flat organisational structure often creates silos within SMEs in New Zealand; that is, knowledge is condensed into small groups within organisations, which could hinder the knowledge sharing process (Lin et al., 2013). Small groups, or "informal" working teams, may create an environment where knowledge and information is shared only within the group and not across the entire organisation (Chan & Chao, 2008). While the importance of organisational structure is recognised in terms of its effect on KM, the present study takes

the position that the often-flat structure of SMEs does encourage knowledge sharing to certain limits. The silos of informal groups developed define these limits. As a result, eventually the management of knowledge and especially the process of sharing knowledge may negatively impact SMEs.

Organisational culture is another fundamental element under the organisational make-up category (Ragab & Arisha, 2013; Tan & Hung, 2006). The general observation across the literature is that SME culture tends to support KM practices because it is often more flexible, less formal, and centralised. These cultural tendencies are known to foster trust and more collective cultures. There is a direct relationship between organisational culture and KM (Chadha & Ritika, 2012). To manage knowledge, SMEs should create a culture that elevates employee's confidence level, collaboration, group interactivity, and mutual trust. Consequently, this research agrees with these general observations, and states that SMEs' culture represents a major contributor to KM. This is because a culture that fosters trust and collaboration amongst its employees often promotes KM practices. As such, this element could act as a major source of competitive advantage for organisations by improving overall performance and improving innovative capabilities. To achieve such a culture, SMEs need to form a culture that encourages KM practices across organisations.

Class differentiation is noted as an element that affects KM within SMEs. Employees should have no fear and be willing to share their knowledge without feeling that they will lose their superiority (Lee & Wong, 2015). Employees within SMEs are found to experience difficulty seeking knowledge from their superiors (Alstete, 2011; Chan & Chao, 2008). These findings contradict the expectation that SMEs' flat structure is ideal and encourages knowledge sharing amongst employees. The current study argues that class differentiation is not a significant element within SMEs in New Zealand, as New Zealand businesses are characterised by low power distances within organisations (Evans, 1999; Lin et al., 2013). Therefore, the idea that an employee is superior over another is not a major element that may affect KM within SMEs in New Zealand.

Another element under the organisational make-up category is organisational politics. Organisational politics can be observed from two perspectives: firstly, the perspective of employees, where they may hinder KM practices in order to keep their superiority and personal advantage. Secondly, from SMEs' perspectives, they may refrain from implementing KM systems that allow transparency of knowledge across their organisations, for fear of having an employee start their own competitive businesses (Alstete, 2011). This study argues that although organisational politics very much exist within organisations, it is not a major element that affects KM practice within SMEs, because this element is present in organisations of all sizes. The present study suggests that the Alstete (2011) findings may be a result of a lack of understanding by managers of how the characteristics of smaller businesses could affect how they manage knowledge.

Knowledge protection is the fifth element in the organisational make-up category. Knowledge protection is similar to the job security factor within the employee participation category. The difference between these two elements is that knowledge protection is more from the organisation's perspective. It involves safeguarding an organisation's knowledge and employees' intellectual/personal capital from illegal or inappropriate use, possession and distribution (Chan & Chao, 2008; Šajeva & Jucevičius, 2006). SMEs

are vulnerable if they make their organisation's knowledge easily assessable to all employees across their organisations (Alstete, 2011), because with enough and the right information, employees could start their own competitive businesses. This finding is confirmed by Chan and Chao (2008), who showed that knowledge within SMEs is lost through various means, especially through employees leaving organisations. Management should not overlook the protection of their knowledge from inappropriate use, possession and distribution. Knowledge protection is therefore an essential element to consider in the management of knowledge, as it could be the difference between success and failure.

This category is driven from within organisations, therefore, it is internal to organisations. It involves processes that organisations may be required to change in order to accommodate KM practices and how SMEs seek to create a culture that embraces KM practices. Furthermore, this study finds that organisational make-up can be linked to KM within organisations.

4.3.3 EMPLOYEE PARTICIPATION

This category contains four elements: socialisation, information sharing, job security, incentives and trust. Socialisation is one of the elements that affect KM within SMEs, and it is often the preferred means of sharing knowledge within SMEs, due to their small size and social culture. SMEs are more reliant on informal KM processes and tacit knowledge sharing amongst its employees (Alstete, 2011). A similar finding is observed within the New Zealand context. New Zealand SMEs often do not have formal procedures for knowledge sharing, but rather rely on employees, and especially employees with tacit judgement and preferences (Lin et al., 2013). The present study finds that this element mostly affects the knowledge sharing process. Therefore, owner-managers should encourage employee interaction through both formal and informal means, so that all employees across SMEs, who may not be proximately located, can still gain knowledge from each other (Tan & Hung, 2006).

Another element within the employee participation category is information sharing. Employees within SMEs, especially highly experienced personnel, are unwilling to share their knowledge due to their strong belief in their experience, and thus they become less open to new ideas, perspectives, and knowledge (Chan & Chao, 2008). This is because knowledge is often regarded as an employee's personal capital and, as such, what gives them an advantage over other employees (Lee & Wong, 2015). The present study argues that the willingness of an employee to share their knowledge is a crucial aspect to KM, as it could affect how much knowledge is gained, shared and documented.

Job security is another element under the employee participation category. Analysis conducted within this study shows that employees are often concerned about job security because of the high employee turnover common in SMEs. Similar to the information sharing element, employees tend to hoard their knowledge in fear of losing their unique edge to employees that they share their information with, which may affect their chances of promotion (Ragab & Arisha, 2013). In another observation, a study finds that employees are afraid of losing their jobs to technology if it offers a more effective substitute of their man-power (Chan & Chao, 2008). As such, this present study recognises that employees may avoid full commitment to KM practices, and most especially, the knowledge sharing and transfer processes.

This study finds that the greater the level of trust, the greater the knowledge friendly culture that is created amongst organisation members. A friendly culture promotes openness between employees and are therefore enables collaboration and social interaction to share more truthful information between themselves, over time (Lee & Wong, 2015). The analysis of the literature shows that SMEs' informal structure and culture often fosters the social and job-related interaction required for positive knowledge sharing (Lin et al., 2013). In the same way, the current study finds that trust is a fundamental element in the successful management of knowledge within SMEs. Trust is fundamental because SMEs prefer tacit-to-tacit knowledge transfer and gain. Trust allows for easier collaboration and interaction without fear of consequences, hence enhances truthful information sharing.

Although the term 'organisational' knowledge is used in most of the literature, an organisation cannot create knowledge on its own without the initiative of individuals and the interaction that takes place within groups (Nonaka & Takeuchi, 1995). The analysis conducted shows that employees are one of the most important factors that influence KM practices within organisations, and most especially in SMEs. Employees are an important aspect in the management of knowledge within organisations and can be regarded as critical infrastructure in KM practices (Tan & Hung, 2006). Taking New Zealand as an example, its business environment is regarded as a classless society that is reflected through its low power-distance between employees within organisations (Evans, 1999; McCullough et al., 2004). New Zealanders pride themselves on an individualistic work culture that drives 'kiwi ingenuity' (McCullough et al., 2004). This individualistic behaviour means that KM practices rely on employee participation. If employees are able to understand the benefits that KM offers, then knowledge can be successfully shared, acquired and managed within SMEs. Operational personnel are key to SME functional performance, and this study takes the view that the bulk of the emphasis placed on KM and its potential benefits are realisable, if more focus is placed on the operational levels in SMEs.

4.3.4 TECHNOLOGY

Technology is the fourth factor that affects KM within SMEs, as indicated in Figure 4.2. It has both an internal and external influence on KM in organisations. In this study, two elements have been categorised under this factor. Technology as an element acts as an enabler for most KM processes. Information technology, for example, shows a significant correlation with KM processes (Tan, 2011). Technology allows organisations to search for knowledge, and access and retrieve knowledge more quickly. Further technology enables collaboration and communication amongst employees (Lin, 2014). Technology was one of the most cited elements that could either hinder or enhance KM within SMEs.

Codification is also grouped as an element under technology. Codification is what changes tacit knowledge to explicit knowledge in the presence of technology, although SMEs often prefer a personalisation strategy over codification because of their flat structure, informal management style and resource deficits (Lin et al., 2013), meaning tacit knowledge sharing and communication is common.

As mentioned above, technology is both externally and/or internally driven. It is externally driven because few KM technologies and tools are being produced that are effective within the operations of SMEs. Most technology vendors focus on large organisations for the sale of KM technology because of economic gains (Alstete, 2011). On the other hand, technology affects KM practice through the limited

resource capacity of SMEs. SMEs are less able to afford technological solutions (that larger organisations have), and do not have the capacity to customise or develop theirs internally. On the whole, technology is an important factor, because it provides the platform on which SMEs tacit knowledge can be documented, stored, and made readily available to be applied in improved decision-making amongst various employees across an organisation.

4.3.5 ORGANISATIONAL RESOURCE

Four elements are grouped under the organisational resource factor. These elements are time, finance, employee skills and human resource availability. The current study takes the view that SMEs are constrained by these elements, and these often affect how knowledge is managed within SMEs.

SMEs have an informal culture; employees often spend their time doing work beyond their usual job specifications. As a result, employees may have limited time to engage with KM processes (Chan & Chao, 2008). Further, the time required for employees to be dedicated to KM practices could prove too costly for organisations, and SMEs in particular (Alstete, 2011). The thematic analysis undertaken finds that time is relevant. The informal and open culture in New Zealand SMEs suggests that they will experience similar time constraints to other SMEs in the literature.

Finance is another element that could constrain KM practice within SMEs. Financial resource levels in SMEs are comparatively lower than large organisations. As earlier explained, low financial capabilities mean that SMEs are unable to invest in technology and make the necessary organisational changes required for KM. The cost of implementing some of the required KM systems that could convert tacit knowledge to explicit knowledge is high. However, SMEs need to view KM as strategic and possessing long-term benefits that could ultimately improve organisational profits. The return on investment possible from having an operational KM process will outweigh the immediate cost of KM investments. SMEs are encouraged to provide good incentives for knowledge sharing amongst their employees.

The third element is employee skills, which externally influence SMEs. SMEs usually lack the necessary skills that could drive their KM goals and objectives. It is not unusual to find that SMEs lack the particular skill sets for KM achievement (Lin et al., 2013). They are often used as stepping stones for career development and progression by most employees, hence turnover affects their capacity to retain organisational knowledge. Their small size and the fact that they are constrained by finance mean they are unable to provide better salary and incentive packages when compared to large organisations. In the light of these, a low employee skill base affects understanding and hence, effort in managing knowledge.

Lastly, and similar to previous arguments, is the availability of human resources as an element under the organisational resource factor. The small resource pools prevalent in SMEs mean that each employee holds knowledge that may not be transferred to other employees. Knowledge erosion may occur when such employees leave and may be difficult to recover. As a result, managing knowledge, and especially the knowledge transfer process, remains at an elementary level within SMEs (Chan & Chao, 2008). Further, a shortage of human resources within SMEs means that employees may not have the necessary teams or departments dedicated to their KM goals.

In summary, organisational resources are an important factor because they affect the extent to which KM practices can be embraced within SMEs. Organisational resources determine how much resource is available in terms of time, employee skills, and finance within organisations. These elements are driven by external demands, fluctuations in the economy, and the availability of the greater resource pool of skilled and qualified personnel.

A study also finds that resource bases do not affect KM practices within SMEs in New Zealand (Handtrack, 2009). As SMEs form a large part of the New Zealand economy, and after the economy was re-stabilised after the global economic downturn in 2008, New Zealand SMEs often have had the resource base needed to drive KM practices within their organisations. Hence, organisational resources have been favourable to KM within SMEs in New Zealand

4.4 CHAPTER CONCLUSION

This chapter has essentially covered the aspect of the current study that categorised a set of elements into factors that affect KM within SMEs. A description of each element obtained from the literature reviewed was provided. The immediately following section categorised these elements using thematic analysis that conceptually grouped the elements. Five factors emerged from the grouping and those five factors were further discussed. Those five factors provide a more comprehensive understanding than the list of three factors previously mentioned in section 2.4. The five factors provide a more holistic list of factors, and elements that constitute these factors, with special focus on operational personnel within SMEs in New Zealand. SMEs, regardless of their size and structure, management, organisational culture, and limitations in finance and skilled human resources, need to value KM. SMEs in New Zealand are largely similar to SMEs in other countries, and the findings from this study applies to them. This researcher believes that operational personnel within SMEs need to understand the benefits of KM practices. Although operational personnel are more passive in their approach to managing knowledge within their daily processes, as they would rather wait for instructions from management, the researcher believes they have a key role to play. Operational personnel need to know how and when to explore KM. More can be achieved through proactive adoption of KM practices by SMEs, so that overall organisation goals can be realised.

Chapter 5 DISCUSSION

5.1 CHAPTER OVERVIEW

This chapter fulfils the objectives of this research by providing a comprehensive list of elements that can affect KM, derived from the literature reviewed. Based on a thematic analysis, this study categorised these elements on how well they conceptually align. The analysis shows that there are five main factors that affect KM among operational personnel within SMEs in New Zealand. These factors were described in chapter four and they include: managerial commitment, organisational make-up, employee participation, technology, and organisational resources.

In this chapter, the study findings are drawn together to answer the research question posed in chapter 1, which was:

What factors affect the use of knowledge management practices among operational personnel within SMEs in New Zealand?

The chapter reiterates the key findings of each of the factors that emerged from the thematic analysis conducted within the analysis chapter. The intention is to capture how each factor identified affects the KM processes discussed in chapter 2.

5.2 KM AMONG OPERATIONAL PERSONNEL WITHIN SMEs IN NEW ZEALAND

Despite the various definitions of knowledge and KM, an important theme that has resonated across the different studies is that knowledge is a valuable resource within SMEs that could affect their performance and consequently, their growth. Understanding KM is especially vital within SMEs, because they are key drivers of economic growth, employment and wealth in most nations. This is particularly true for SMEs in New Zealand, as they account for a significant proportion of businesses and the workforce of the country. There is a need for New Zealand SMEs to learn and exploit KM and its benefits to the fullest. Consequently, it is important that knowledge is managed among operational personnel within these SMEs, because they deal with the daily functions of organisations and often interact with organisations' customers. Operational personnel are key to SMEs' functional performance, and thus management of its knowledge. As such, KM is a growing area of study within smaller organisations. Within New Zealand, KM is in its infancy.

Knowledge is acquired from internal and/or external sources. Oftentimes, SMEs are focused on their internal sources of knowledge – that created by owner-managers and employees. However, external sources of knowledge are equally important. The need to manage knowledge from external sources is becoming increasingly acknowledged in organisations, due to the shift from a manufacture-based society to a service-based society. This means customers are often key sources of knowledge that can influence an organisation's success. As a result, there is growing need for SMEs to create platforms and systems where all forms of knowledge can be documented. This will further help employees to use the right knowledge, at the right time, which could provide the competitive edge organisations require.

The review conducted in chapter two shows that SME culture often favours the socialisation dimension; tacit-to-tacit knowledge sharing. In the review of literature on New Zealand SMEs, similar preference for tacit knowledge was observed. Employees within SMEs in New Zealand tend to prefer a 'person-to-person' strategy, electing to share knowledge amongst themselves as opposed to documenting it. However, this form of knowledge sharing offers little value to organisations. While the make-up of SMEs (their small size, informal management structure and limited resources) may make it difficult to convert tacit knowledge to explicit knowledge, it is highly recommended that SMEs document their knowledge through formal methods. Formally documenting knowledge ensures that organisational knowledge is readily available and assessable across the organisation.

The review conducted in chapter 2 shows that KM among operational personnel within SMEs in New Zealand is achieved when organisations understand KM processes. An important part of gaining this understanding is realising there are factors that affect these KM processes, and hence, hinder how SMEs can benefit from it. These factors either internally or externally influence KM within SMEs. The following section elaborates on how the five factors identified through the thematic analysis conducted in chapter 4 impact on the KM processes reviewed in chapter 2.

5.3 FACTORS THAT AFFECT KM AMONG OPERATIONAL PERSONNEL WITHIN SMEs IN NEW ZEALAND

The purpose of this research was to identify factors that affect the management of knowledge among operational personnel within SMEs in New Zealand. In the previous chapter, the five key factors found to influence KM are: managerial commitment, organisational make-up, employee participation, technology, and organisational resource. The five factors that emerged through thematic analysis aligned the study findings according to key concepts. It was important to distinguish the factors according to whether they had internal and/or external influences on KM practice within SMEs. These aspects (internal and/or external) were discussed as well. In order to encapsulate these findings, this study developed a model to illustrate the relationships between the five key factors discovered, and their locational influences; internal and/or external. Figure 5.1 is the resulting model, which depicts the five key factors (on the left-hand side), and KM processes (on the right-hand side). This current study presents this simple model to illustrate that there are five key factors that (in combination) affect KM processes to a greater or lesser extent. This simplified model does not show the magnitude of influence that each individual factor has on each of the five KM processes. It only depicts a collective influence that the factors have on KM processes as a whole.

As previously mentioned, the analysis conducted showed that all five factors have a measure of influence on each other. The interrelationships between all five factors are shown in Figure 5.1, with arrows depicting a feedback loop between the factors. From the study findings, mainly described in chapter 4, the following paragraphs provide a summary of different examples through which the factors influence each other.

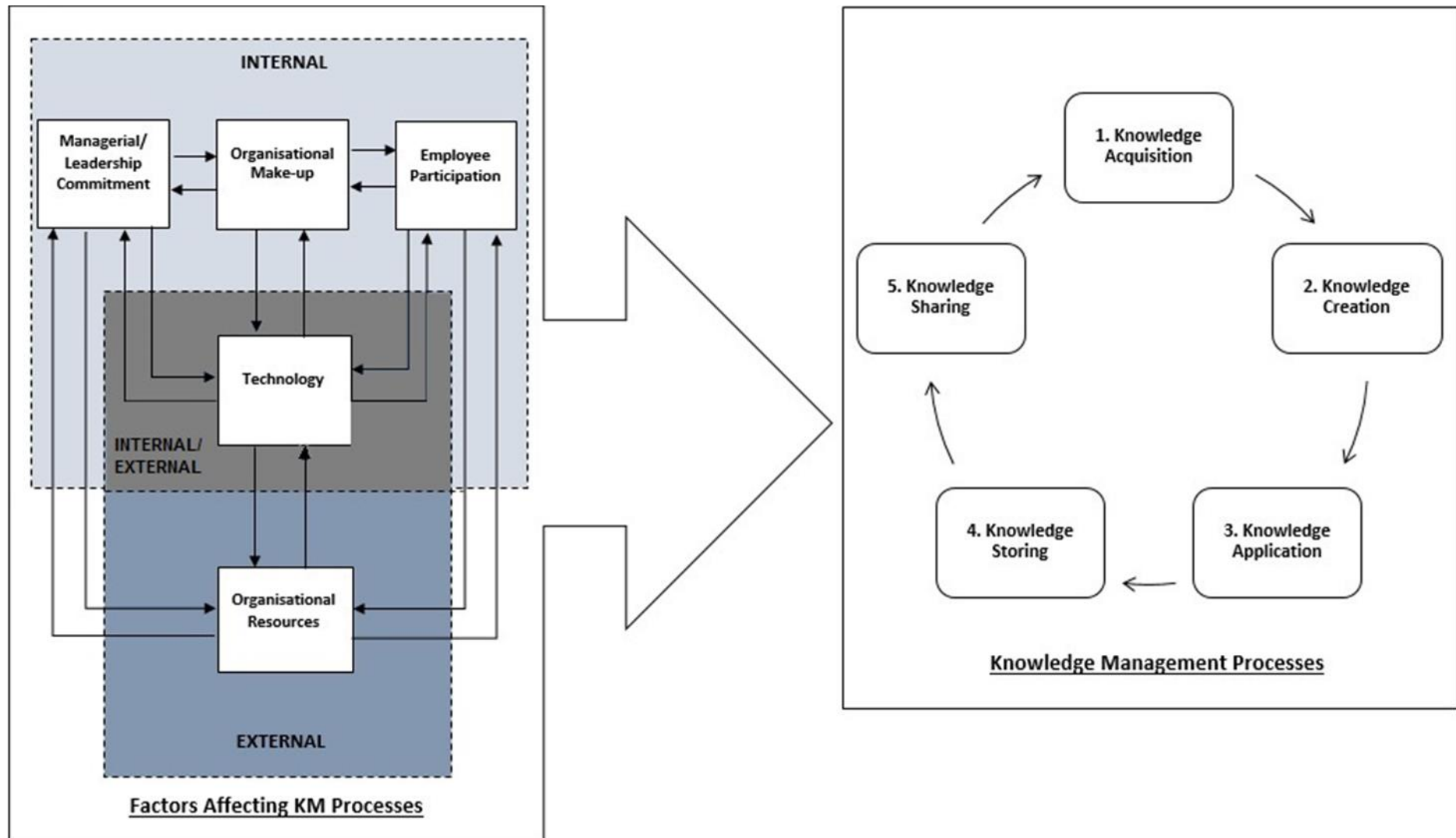


FIGURE5.1: Factors affecting KM processes

Organisational make-up, employee participation and managerial commitment all internally influence KM practice within SMEs. As such, all three factors are interconnected, wherein all factors have to create a positive environment in order for KM to be achieved. For example, managerial commitment is required to change the organisational make-up. Likewise, organisational make-up needs to be aligned with the overall KM goals, before management can promote KM practice within organisations. Above all, as discussed in Section 4.3.2, several studies have shown that KM within organisations needs to be driven by its management, and in the case of SMEs, owner-managers. Initiatives need to be taken by management to incorporate KM processes within an organisation's overall operations. These initiatives can be in various forms:

- an owner-manager must themselves show that KM is more than management jargon, but is an important asset and resource to the organisation
- the process of knowledge sharing and transfer is incentivising so that employees feel rewarded for partaking in the process

Similarly, management needs to be committed to KM goals, provide incentives and manage their knowledge so that employees can appreciate its importance and value within their organisation. It was found that if management is committed to managing knowledge within organisations, lower-level employees are likely to follow suit. Within SMEs, owner-managers need to educate and motivate their employees on how to manage the organisation's knowledge. This is not only for the direct benefits that organisations could gain (for instance competitive edge and growth) but more so because employees are the most important aspect in the management of knowledge within organisations, and can be the infrastructure on which a positive disposition to KM is built. Many strategies to manage knowledge within organisations are said to fail because employees do not realise the benefits associated with managing their personal knowledge as well as the organisation's knowledge. Operational personnel within SMEs are said to have a 'wait and see' attitude when it comes to knowledge, relying on owner-managers to direct them as to what and how knowledge should be used.

The manner in which SMEs is structured and the value it portrays (in other words the organisational make-up) can either promote or demote an environment that encourages employees to manage organisational knowledge, especially in terms of the knowledge sharing and knowledge transfer processes. Employees will feel comfortable sharing and transferring knowledge if they know that their knowledge is protected and could be beneficial personally, as well as for the organisation as a whole.

As shown in Figure 5.1, technology can internally and/or externally influence KM within SMEs. From the findings, the present research suggests that KM is a combination of technology and the people aspects of organisations. That is to say; the main issue with managing knowledge is persuading people to use available technologies that could enhance KM. All risks, whether perceived or real about KM within SMEs, have to be examined. For example, it is common to think that KM may result in people losing their jobs, or that other personnel may take personal advantage of knowledge that is shared. Other perceptions include the fear that knowledge may be inappropriately used and handled or that their job roles could be taken over by technology. However, technology assists to capture knowledge, convert knowledge from tacit to explicit, and help store knowledge so it is made readily available across

organisations. In terms of the people aspect, technology ensures that knowledge is available and easily accessible, which could help both employees and owner-managers with decision-making, which could be crucial for an SME's success.

Lastly, organisational resourcing is the only factor that externally affects KM within SMEs. Thematic analysis conducted in chapter 4 shows this factor is driven by external demands, fluctuations in the economy, and the availability of a greater resource pool of skilled and qualified personnel. While the organisational resource factor is external, it can affect the three factors (managerial commitment, employee participation, and organisational make-up) that are internal to organisations. For example, if the resource pool is limited, management will be hesitant to elect dedicated personnel to manage the organisation's knowledge. SMEs are limited in terms of employee skills. Analysis shows that SMEs often lack the necessary skills to drive its KM goals and objectives. Consequently, this could affect the willingness of employees to manage knowledge, because, if employees do not understand KM or its value within organisations, they most likely will not practice KM.

Similarly, limitations in organisational resources can impact on the technological factor. This is because limitations in finance and time mean that owner-managers do not have the time to research and experiment with technology that will allow the organisation to capitalise on the benefits of KM. Also, organisations may not have the funds to invest and implement technology to aid in their KM goals and strategy.

5.4 CHAPTER CONCLUSION

The findings from chapter 4 are discussed and used to answer the research question posed in chapter 1. Figure 5.1 provided a simple model that shows the relationship between the categorised factors and KM processes. The factors categorised are based on their internal and/or external influences on SMEs. This chapter highlights the collective influence the five factors that emerged from the thematic analysis have on KM processes as a whole.

Chapter 6 CONCLUSION

6.1 CHAPTER OVERVIEW

This chapter is the concluding chapter, and summarises the overall findings, presenting the highlights of the theoretical and practical contributions of this research. Given the research question discussed in Chapter 1, the researcher conducted a preliminary literature review to gain an understanding of the research topic within the existing literature. Adopting a systematic literature review described in Chapter 3, thematic analysis was conducted in Chapter 4. Based on the review conducted in Chapter 2 and the analysis conducted in Chapter 4, Chapter 5 sought to provide answers to the research question posed by exploring what factors, identified during the analysis, impact on the KM processes reviewed in chapter two. In concluding this chapter, some of the limitations of the current study are identified and areas for future research are suggested.

6.2 SUMMARY OF FINDINGS AND CONCLUDING REMARKS

To answer the research question posed: five factors were found to affect the management of knowledge among operational personnel within SMEs in New Zealand. These factors include: managerial commitment, employee participation, organisational make-up, technology, and organisational resources. The factors were categorised in the study according to how they influence KM practice within SMEs, whether internally and/or externally. The categorisation was depicted in Figure 5.1.

Managerial commitment, employee participation and organisational make-up, all internally influence KM within SMEs. The study found that people management is a crucial aspect of KM. The vision of KM needs to be encouraged throughout an organisation. This means, in terms of organisational make-up, there should be recognition that organisations may be required to change some of their processes to accommodate KM practices. Also, management needs to embrace KM, and emphasise its value within their company for employees, especially operational personnel, to follow suit.

The fourth factor that has an effect on KM practice within SMEs is technology, which has both internal and/or external influences on organisations. Technology is an important factor in managing knowledge within SMEs, because it provides platforms on which tacit knowledge can be converted to explicit knowledge through documentation and storage. Thus, technology ensures knowledge is made readily available across an organisation for improved decision-making by owner-managers and various employees.

Lastly, organisational resources externally influence KM practice within SMEs. This factor is driven by external demands, fluctuations in the economy, and the availability of the greater resource pool of skilled and qualified personnel. Organisational resources incorporate time, finance, employee skills and human resource availability. This study takes the view that SMEs can be constrained by these elements. Organisational resource is an important factor, because it affects the extent to which KM practices are embraced within SMEs. The study, however, found that the resource base does not affect KM within New Zealand SMEs as they form a large part of the New Zealand economy. As such, New Zealand

SMEs often have the resource base needed to drive KM practices within their organisations. Hence, organisational resources are favourable to KM within SMEs in New Zealand.

This study acknowledges that while some KM processes are being practiced within SMEs, there is little understanding of KM and its benefits, within the New Zealand context. As a result, KM is still being seen as a fad and consequently, little effort is being taken by SMEs' managements to formalise KM processes within their organisations.

The study also found that KM is a complex integration and alignment of KM processes with overall organisational operations. Although most of the characteristics of SMEs, such as their small size, friendly culture, flexibility, and informal management appeared to be ideal for KM practice, the findings of the study suggested otherwise, proving that SMEs are challenged by overcoming the internal and external obstacles posed by their character, in order to be able to manage knowledge within their organisation.

Moreover, SMEs within New Zealand must embrace KM as a managerial tool essential for its strategic decisions and growth. Such a positive disposition towards KM would incentivise their lower level, operational personnel to follow suit. This, in turn, could reduce the chance of knowledge erosion within SMEs and improve decision-making, adding value to the overall organisational operations and providing it with the competitive edge needed to succeed within its particular industry.

6.3 RESEARCH LIMITATIONS AND AREAS FOR FURTHER RESEARCH

In conclusion, this study has shown that a combination of factors has an impact on KM processes. An extensive literature search revealed that KM is an important managerial tool that could be beneficial to SME growth and competitiveness within industry. It has focused particularly on the operational level within New Zealand SMEs. It is important to understand the factors that affect KM among operational personnel within SMEs, because they are key to SMEs' functional performance and hence KM. In the light of these findings, the present research has contributed to the literature by bridging the gap in understanding of these areas: KM, operational personnel within SMEs within the New Zealand context.

As this section concludes the overall research, it seems the most appropriate point to reflect on some of the strategies and techniques used during the research. This section also identifies areas for further research. Potential areas for further research are outlined in the following paragraphs.

Existing literature was analysed within this study. While these secondary data sources can provide valuable understanding on KM in SMEs, there are few related studies in New Zealand. This means that it is difficult to understand the true nature of KM within New Zealand SMEs. As such, it will be interesting to conduct empirical research that specifically covers the topics of KM within SMEs in New Zealand. Such topic areas will provide a holistic understanding of the research topic within the specific context of New Zealand, as comparisons could be drawn to observe whether the themes observed from this study are applicable to operational personnel within SMEs. Moreover, at the national level, few researchers have conducted a comparative study across different contexts; countries and industries (Ragab & Arisha, 2013). Therefore, an interesting area of study could be to conduct empirical research within these different contexts and compare the findings with the general observations noted within this

study, among operational personnel within SMEs in the New Zealand context. The importance of conducting such research is to provide practical significance to existing research and the current study. As such, it is important that how KM processes and what KM factors differs across industries and countries are studied so that organisations can understand how KM use could be improved amongst operational personnel across SMEs.

The model developed within this research depicts a collective influence that the five factors identified have on KM processes as a whole. However, the model does not show the magnitude of influence that individual factors have on each of the five KM processes identified in chapter two, or whether and how the importance of the found factors change over the various processes. Conducting an empirical research on this research topic could provide a more extensive and conclusive finding as to what factors affect specific KM processes and to what extent. Further, a more complex model could be developed through empirical studies that would measure the influence of each individual factor on KM processes within SMEs. Nonetheless, the research conducted in this study is fundamental as it highlights the important point of focus for any future empirical study in this area.

While it is noted that technology is continually evolving with the present rise and adoption of cheaper and easily accessible technologies such as social media, the current study only provides a broad/general discussion of KM tools. As such, further research into evolving technologies, how they can support KM processes and their impact and accessibility within operational level in SMEs could prove an interesting study.

In addition, while selection bias is often a problem associated with systematic literature review methodology, the use of various search terms and databases within this study, attempts to mitigate any negative effects of this type of bias.

This study is one of the first undertaken to understand the factors affecting KM among operational personnel within SMEs in New Zealand. As research in this area is limited, it was important to consider a wide range of literature and the multiple viewpoints presented: the viewpoint of the author, their study participants and viewpoint of the current researcher when analysing the various studies. However, it is important to note the limitations that arose, in that a large part of the interpretation is through my viewpoint as the researcher, and some of these interpretations are based on prior experience and understanding of the research area. In this sense, it is almost impossible to eliminate all personal bias. Therefore, this bias is embraced in the interpretation phase of the study, as a way to strengthen the analysis conducted within the research.

As discussed throughout, SMEs often contribute significantly to the economy of most nations. As previously mentioned, people are an important aspect of KM. Thus, finding ways to utilise limited human and skill resources could provide a competitive edge for SMEs. This is important not only to the economic sector, but could be beneficial to organisations. As such, further research is required into ways in which limited human and skill resources within SMEs could be optimally utilised in terms of KM.

This study found that organisational culture is a fundamental element under the organisational make-up factor and has an impact on KM within SMEs. Literature reviews have explained how stable and

structured organisational cultures can be maintained and sustained within large organisations. Further investigation needs to be undertaken on achieving the same organisational culture stability within SMEs. A stable organisational culture will foster KM goals within SMEs, because this creates an environment in which KM could be better understood, openly accepted and supported. A good organisational culture embraces KM processes in an effort to gather, sort, transform, record and share knowledge within an organisation, for the benefits from KM practice (Smith, 2001). In the same regard, the extent to which owner-managers are prepared to devolve management (and knowledge) is often what affects whether, and how well, KM is embraced within SMEs.

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