Business & Social Science
IJRBS

Research in Business & Social Science

IJRBS VOL 11 NO 7 (2022) ISSN: 2147-4478

Available online at www.ssbfnet.com
Journal homepage: https://www.ssbfnet.com/ojs/index.php/ijrbs

Factors influencing the implementation of knowledge management in the South African government

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ARTICLEINFO

Article history:

Received 19 August 2022
Received in rev. form 23 Sept. 2022
Accepted 16 October 2022

Keywords:

Knowledge Management, Critical Success Factors, Knowledge Management implementation, South African Government, Service Delivery.

JEL Classification:
M38; M15

ABSTRACT

Although Knowledge Management was introduced as a Key Performance Indicator (KPI) for all senior management in South Africa 15 years ago, its implementation has been slow and inconsistent. This paper aimed to identify the factors that contribute to or deter the implementation of Knowledge Management in the South African government. The issue was explored through a review of literature on Knowledge Management, as well as results of an interview and questionnaire completed by government officials doing Knowledge Management practitioner work in the South African government. The quantitative data was analysed using DATAtab. The findings identified two key factors that deter the implementation of Knowledge Management in the South African government: most departments in the South African government do not value Knowledge Management, and public officials responsible for implementing Knowledge Management in their departments lack implementation skills. A lack of research on Knowledge Management in developmental governments exists. More research on this subject is necessary. The research will benefit Knowledge Management and Public Administration practitioners alike.

Introduction

Due to the complexity and diversity of Knowledge Management, there is no universally accepted definition of the term. Knowledge Management is best understood by considering what it entails: collecting, storing, and using knowledge. When good Knowledge Management happens, knowledge can be easily found, stored, and made accessible to the broader workforce, offering several tangible business benefits, as previously mentioned. When poor Knowledge Management happens, knowledge will not be easily found, stored, or made accessible to the broader workforce, causing uninformed decision-making and poor governance overall. Hence, the lack of good Knowledge Management results in a poorly managed, unorganised, and under-capacitated organisation (Hajric, 2018; Igbinovia & Ikenwe, 2017; Koenig, 2018; Ondari-Okemwa & Smith, 2009; Theriou et al., 2011). Despite the growing body of Knowledge Management literature, few studies have focused on the unique difficulties and opportunities faced by public sector organisations.

Because of the growing importance placed on information as a source of competitive advantage in today's economy, many businesses are reevaluating their approach to Knowledge Management and looking for new ways to maximize the value of their knowledge assets (Akhavan & Jafari, 2006). Hence, Governments worldwide are under pressure to adapt and modernize their methods to support growth in the emerging knowledge-based economy. More so, government agencies frequently experience turnover among their knowledge employees, which is why it is believed that a lack of Knowledge Management systems hinders efforts to preserve institutional memory (Yosuf & Wanjau, 2014).

A knowledge-based economy requires local governments to adapt and modernize (Yosuf & Wanjau, 2014). To be competitive, local governments must embrace Knowledge Management to improve their operations and service delivery (Figurska, 2014; Gaffoor & Cloete, 2010). While Knowledge Management's goal is to improve organisational efficiencies, effectiveness, and competitiveness

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https://doi.org/10.20525/ijrbs.v11i7.2035

through knowledge (Yosuf & Wanjau, 2014), only moderate successes have been experienced, suggesting that the full benefits have yet to be realised (Schultze & Leidner, 2002).

Despite the importance of knowledge sharing among employees for the productivity of public sector organizations (PSOs) (Jørgensen et al., 2021; Mc Evoy et al., 2019; Yosuf & Wanjau, 2014), there is a dearth of research on the topic (Massaro et al., 2015). More so, ineffective implementation of Knowledge Management practices leads to inadequate capacity to sustain Government projects, which negatively impacts the country's economic growth (Yosuf & Wanjau, 2014).

South Africa's National and Provincial Government Departments adopted Knowledge Management 15 years ago when it was recognized as an essential component of growth in the private sector (DPSA, 2019). Knowledge Management is currently a key performance indicator (KPI) in the performance contracts of the top government officials in South Africa. South Africa's long-term plan, the National Development Plan (NDP) 2030, includes Knowledge Management as a strategy for institutionalizing lifelong learning, ensuring steady career advancement, and fostering an environment conducive to knowledge development and innovation (DPSA, 2019). One may claim that the necessity to enhance public service in South Africa spurred the implementation of Knowledge Management (Dikotla et al., 2014; Mothamaha & Govender, 2011). One could reasonably argue, however, that the South African government's emphasis on Knowledge Management has not resulted in better services for the people. Kimani (2013) and Sawe and Rotich (2016) note that many national and provincial government departments are slow to adopt Knowledge Management, despite its potential to improve service delivery.

The South African government is under immense pressure to repair a failing public service that provides inadequate services. Although the South African government adopted Knowledge Management over 15 years ago, its implementation has been extraordinarily delayed and uneven, leading several authors to conclude that the current service delivery crisis facing the country is the result of weak governance due to competency shortages (DPSA, 2019) (PwC, 2018b; DPSA, 2019; Jayasingam et al., 2020; Page, 2020; Daily Maverick, 2021c). Since this study is motivated by the need to generate new insights that will help the South African government understand why KM is delayed and unevenly implemented, the paper aims to answer the research question, “What are the factors that contribute to or deter the implementation of Knowledge Management in the South African government?”

This research was conducted using a mixed methods approach. The data from 139 government officials doing Knowledge Management practitioner work in the South African government were collected through a survey questionnaire. A literature review and a personal internet interview were used to validate the quantitative data collected through the survey questionnaire.

Literature Review

Theoretical and Conceptual Background

Knowledge Management

The following discussion provides an overview of the history of Knowledge Management, a definition of Knowledge Management, an exploration of the importance of Knowledge Management and an explanation of Knowledge Management's core lifecycle.

Historical Overview of Knowledge Management

When the history of Knowledge Management was explored, the following competing views on its origins emerged (Dalkir, 2005; Koenig & Neveroski, 2008; Mašić et al., 2017; Mohajan, 2017; Schutt, 2003) namely: (i) Knowledge Management dates to the time of the Greek philosopher Aristotle, who attempted to create and record knowledge for use in different societies; (ii) Knowledge Management dates to the Sumerian civilization in Mesopotamia. One of the earliest ways to retain knowledge was through word of mouth and the use of human memory. At that time, the Sumerians recorded and stored their knowledge on clay tablets, which were then classified to form the first libraries; and (iii) Knowledge Management is a relatively new field of study, dating from the 1960s to the 1990s. During this period, Peter Drucker, Karl-Erik Sveiby, Nonaka, and Takeuchi all authored articles that helped to shape Knowledge Management as a discipline (Giorgi, 2021). That is, it all began with the formulation of the concept of a "knowledge company." In addition, Peter Drucker is credited with coining the term "knowledge worker" in the 1960s.

Although scholars have different perspectives on the history of Knowledge Management, they all agree that the modern concept of Knowledge Management did not emerge in the private sector until the late 1980s. This occurred during the birth of the Internet and the almost universal recognition of the Internet's value as a resource for sharing information and knowledge, particularly for geographically dispersed organizations, and at a time when the value of an organization's information and knowledge was growing (Knowledge Associates, 2002; Koenig & Neveroski, 2008; Koenig, 2018; Mohajan, 2017).

The private sector recognized at the time that by developing tools and techniques such as dashboards, expert locators, and databases of best practices (lessons learned), they had created a unique knowledge-based product that could be sold to other businesses, substantial, complex, and geographically dispersed ones (Koenig, 2018). Furthermore, the current notion of Knowledge Management was made public in 1993 during an Ernst & Young-sponsored seminar in Boston (Prusak, 1999, referenced by Koenig (2018, p. 1)). Several authors and academics have defined Knowledge Management in various ways since then (Igbinovia & Ikenwe, 2017).

Knowledge Management Defined

To characterise Knowledge Management, Tom Davenport invented the phrase "capture, distribute, and use knowledge" in 1994 (Davenport, 1994, p. 130). Years later, the Gartner Group developed a new concept of Knowledge Management that is still commonly used today: "Knowledge Management is a collection of methodologies that involve identifying, capturing, evaluating, retrieving and sharing all of an enterprise's information assets" (Koenig, 2018, p. 1). Papers, processes, plans, databases, and uncaptured employee experiences and expertise are examples of information assets. There is no commonly recognized definition of Knowledge Management due to its broad and complicated nature (Igbinovia & Ikenwe, 2017; Koenig, 2018; Theriou et al., 2011). Nonetheless, delivering the right knowledge to the right person at the right time is vital in Knowledge Management. Aside from that, it is critical to realize that Knowledge Management is about more than just obtaining knowledge. The goal of Knowledge Management is to bring value to an organisation so that organizational goals may be met (Hajric, 2018). In stark contrast to all other business fads of the late 20th Century, Knowledge Management has demonstrated a remarkable capacity for longevity and expansion (Koenig, 2018).

Importance of Knowledge Management

In today's knowledge-based economy, organisations' competitiveness is determined by their employees' knowledge and skill, as opposed to conventional production qualities (Figurska, 2014). Hence, the value of knowledge exceeds that of labour, property, and financial wealth. When done right, Knowledge Management has the potential to make the employee, team, and organisation more efficient and give it a competitive advantage over its competitors (Figurska, 2014), namely: (i) Employee: Knowledge Management helps employees do their jobs well. It helps them make good decisions, solve problems, foster a feeling of community inside the organization and keep current on procedures and technology. It also encourages employees to improve their work techniques and gives opportunities for employees to participate more effectively; (ii) Team: Knowledge Management promotes peer mentoring, more effective networking and collaboration, a code of ethics, common language development; and (iii) Organisation: Knowledge Management helps to drive strategic direction, solve problems rapidly, communicate best practices, enhance knowledge contained in goods and services, generate ideas, raise innovation possibilities, establish a competitive advantage, and build memory for the organization.The following are some of the advantages of Knowledge Management: well-informed decision-making; a competitive knowledge-based workforce; work smarter (Wiig, 2002); minimize duplication of knowledge, saving time, money, and resources (Koenig, 2018; Ondari-Okemwa & Smith, 2009); competitive knowledge-based workforce; work smarter (Wiig, 2002); can 'do more with less' (Wiig, 2002); successful citizen participation in public decision-making; Competitive increase of society's intellectual powers; closes the gap between knowing and doing (skills) (Sawe & Rotich, 2016); Employees are empowered to grow and innovate (Sawe & Rotich, 2016); faster and more efficient (Theriou et al., 2011); reduction in effort (DPSA, 2019); reduction in mistakes and malpractice (DPSA, 2019); process and work method improvement (DPSA, 2019); and reduction in being dependent on consultants (DPSA, 2019).

Although there are several benefits to Knowledge Management, the most important is using intellectual capital to increase efficiency through improved decision-making (Chib & Sehgal, 2019; Mohajan, 2017).

Knowledge Management core lifecycle

Knowledge Management involves (i) capturing knowledge, (ii) storing knowledge, and (iii) using knowledge (see Figure 1).

Figure 1: Knowledge Management core lifecycle elements; *Source: Researcher's own construct*

Knowledge Management DIKW pyramid

It is critical to comprehend the concept of 'knowledge,' particularly how it varies from 'wisdom,' 'information,' and 'data.' For many years, the DIKW Pyramid (Figure 2) has been used to demonstrate this disparity (Fernanda & Salwa, 2018).

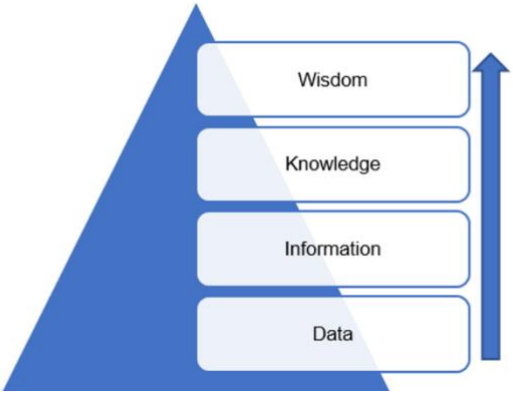

Figure 2: DIKW Pyramid; Source: *Adapted from Fernanda and Salwa*. (2018).

Fernanda and Salwa (2018) explain the meaning of the terms Data, Information, Knowledge, and Wisdom as follows:

i. *Data:* Data is a symbol, signal, or sensation linked with anything. Data is the beginning step for attaining a concrete result. Data might be in the form of logs, records, measurements, and so on;
ii. *Information:* According to Davenport and Prusak (2000, cited by Hajric, 2018, p. 9), data must be contextualised, categorised, calculated, and condensed to produce information. In addition, information refers to the conclusion formed because of the data obtained (Fernanda & Salwa, 2018);
iii. *Knowledge:* Knowledge is the perception of information that people have altered. According to Fernanda and Salwa (2018) and Igbinovia and Ikenwe (2017), knowledge is classified into two types: tacit and explicit knowledge. Tacit knowledge is information gained via direct observation and experience. It is the knowledge that is the most difficult to capture, transfer or depict in a physical manner (Igbinovia & Ikenwe, 2017). Explicit knowledge is information that is easily communicated because it has been written down, it is easily learnt and conveyed to others, and it has been codified and stored for future use (Fernanda & Salwa, 2018); and
iv. *Wisdom:* Wisdom is the highest skill demonstrated by a person's capacity to apply information efficiently and wisely. In this circumstance, the person makes informed and intelligent judgments.

The DIKW Pyramid, while providing a fundamental framework for how data transforms into information, knowledge, and wisdom, does not clearly distinguish between wisdom and knowledge. That is, knowing does not always result in better judgments or acts, and, more importantly, it does not make one wise (Intezari et al., 2016). Wisdom depends on data, information, knowledge, and additional attributes. To be knowledgeable, a person must have experience, judgment, intelligence, cognition, values, and beliefs (International Labour Office, 2011). As a result, these characteristics are identified with wisdom (Intezari et al., 2016).

Knowledge Management components

The Knowledge Management Component includes critical success factors and Knowledge Management tools. This is explored in more detail below.

Knowledge Management Critical Success Factors

Implementing Knowledge Management in any organisation is not a simple undertaking (Sin et al., 2009). It is a difficult task, and success demands well-thought-out criteria (Winkler & Mandl, 2007). Over time, essential requirements for efficiently implementing Knowledge Management have been established. They are known as Critical Success Factors (Theriou et al., 2011). Knowledge Management terms are used synonymously. Knowledge Management Critical Success Factors are also known as Knowledge Management Enablers in some literature (UKEssays, 2018). However, in this study, the Knowledge Management Critical Success Factors are divided into three independent yet interconnected components: Knowledge Management Objectives, Knowledge Management Pillars, and Knowledge Management Enablers. These three aspects must work together to successfully establish a Knowledge Management culture in an organization (see Figure 3).

Figure 3: Knowledge Management Critical Success Factors; *Source: Researcher's own construct*

The Knowledge Management Critical Success Factors are briefly explained below.

i. The Knowledge Management Objective is the strategic goal;
ii. The Knowledge Management Pillars contribute to the achievement of the Knowledge Management Objective. The three Knowledge Management Pillars are people, technology, process (Chan, 2017); and
iii. Knowledge Management Enablers help the Knowledge Management Pillars achieve the Knowledge Management Objective.

If the South African government does not take heed of the Critical Success Factors, they may be less likely to be successful with their Knowledge Management initiatives (UKEssays, 2018).

Knowledge Management tools

The tools used to capture, store, and use knowledge are known as Knowledge Management tools. Koenig (2018) identifies the following tools as fundamental:

i. *Expertise Locator System:* An expertise locator system is used to categorize and locate employees with specific skills. This is so that they can interact with subject matter experts within their organizations, allowing them to tap into their combined knowledge and abilities (Wells, 2016);
ii. *Lessons Learned:* This is gathering personal experience and making it available to others (such as through video logs). The purpose is to collect and use lessons acquired to prevent reinventing the wheel or repeating the same mistakes;
iii. *Enterprise Content Management (ECM):* An ECM system is a document management technology system that is the most visible and immediate aspect of Knowledge Management. These systems are designed to make it easier to publish, store, index and retrieve documents and organizational records. Several ECM systems are available, each with its advantages and disadvantages. The disadvantage to consider when choosing an ECM system is that the more data, information, and knowledge stored in it, the more difficult it can be to find things quickly. An ECM system aims to produce results fast (Hajric, 2018);
iv. *Communities of Practice:* This is a forum for professionals to exchange best practices and advice, ask questions about difficulties and opportunities, examine best practices, discuss lessons learned, and support one another (Hajric, 2018; Wenger & Snyder, 1999; Wenger, 1998);
v. *Knowledge Retention and Retirees:* Learn from Leavers and brown bag sessions (Lunch and Learn initiative) are examples of initiatives that enable experienced employees and retirees to keep and share their expertise.

Two of the most widely studied forms of explicit knowledge-sharing techniques in the Knowledge Management literature are expertise locator systems and lessons learned. Communities of practice have received the most attention as an implicit knowledge-sharing method (Virkus, 2011). Furthermore, according to Snowden (2002), it is difficult to know if someone is sharing what they know but determining if they are complying with existing systems is doable. Consequently, Knowledge Management tools may be considered a factor that contributes to the implementation of Knowledge Management.

Knowledge Management in the South African Government

The South African government adopted Knowledge Management over 15 years ago because of its popularity in the private sector, especially among consultants, and the substantial benefits it was shown to deliver (Adler, 2019; Davenport & Prusak, 2000; DPSA, 2019; Jayasingam et al., 2020; MingYu, 2002; Rowland & Syed-Ikhsan, 2004; Sawe & Rotich, 2016; Zack et al., 2009). Some academics listed below feel that Knowledge Management is the lubricant that will improve service delivery in South Africa, namely: Speed up the ability to make organisations work smarter (Wiig, 2002); Enable organisations to 'do more with less' (Wiig, 2002); Address the skills gap (Sawe & Rotich, 2016); Empower employees to grow and innovate (Sawe & Rotich, 2016); Facilitate

organisations to be faster and more efficient (Theriou et al., 2011); Reduce duplication of effort (DPSA, 2019); Prevent mistakes or malpractice (DPSA, 2019); Improve processes and work methods (DPSA, 2019); and Reduce dependency on consultants (DPSA, 2019). Paprika (2001) and Zamir (2019) add that service delivery is directly influenced by Knowledge Management in several ways. These include employee learning and agility, job performance, process effectiveness and process efficiency. Also, Knowledge Management influences the development of knowledge-based solutions that offer value (Paprika, 2001; Zamir, 2019).

Furthermore, when knowledge is captured, stored, and used effectively in government, as suggested by Heck and Rogger (2004), the following medium- and long-term benefits may be achieved (Ondari-Okemwa & Smith, 2009): significantly improved efficiency, transparency, and quality of service delivery; improvements in the transparency and agility of information flow; an equitable and more equitable division of tasks; properly organised government; properly organised internal business operations; technologically effective internal business operations; and optimised workflow-related skills.

Department of Public Service and Administration Knowledge Management components

According to DTPW (2019), the South African government is legally mandated to implement Knowledge Management in their respective government departments, namely: Constitution of the Republic of South Africa, 1996; Minimum Information Security Standards of 1996; Public Service Act, 1994; National Archives and Records Service of South Africa Act, 1996; Provincial Archives and Registry Service Act of the Western Cape, 2005; Promotion of Access to Information Act, 2000; Protection of Personal Information Act; Public Finance Management Act, 1999; State Information Agency Act, 1998; and Intergovernmental Relations Framework Act, 2005.

The DPSA is responsible for embedding Knowledge Management in the South African government. To successfully do this, they developed the National Knowledge Management Strategy Framework for implementation across the South African government. The objective of this framework is to contribute to the achievement of the NDP 2030, as well as to ensure institutional coherence and standardisation throughout all departments. Consequently, all national and provincial government departments are to align their respective department's Knowledge Management Strategies they already developed to this National Knowledge Management Strategy Framework. Even though Knowledge Management was identified as a critical component of the NDP 2030 in 2012, the DPSA only developed the National Knowledge Management Strategy Framework, i.e., the Knowledge Management strategy for South African government departments, in March 2019 (Cook, 2020; DPSA, 2019; National Planning Commission, 2011).

The National Knowledge Management Strategy Framework consists of four Knowledge Management Pillars - culture, people, content, and process, with technology serving as the Knowledge Management Enabler (DPSA, 2019). See Figure 4 below.

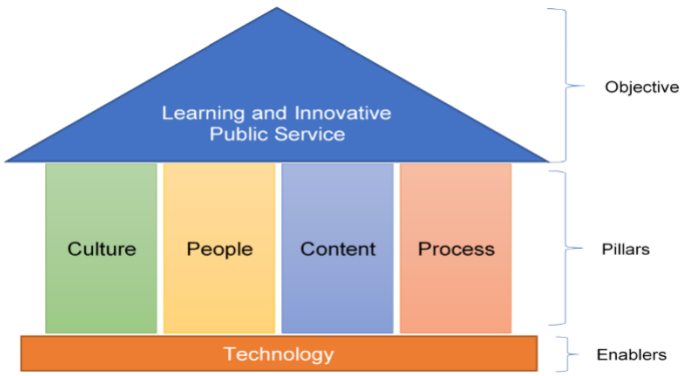

Figure 4: DPSA Knowledge Management critical success factors; *Source: Adapted from DPSA.* (2019), *24.*

Knowledge Management CSFs consist of three distinct yet interconnected elements: Knowledge Management Enablers, Knowledge Management Pillars, and Knowledge Management Objectives. Collectively, these three factors collaborate to embed Knowledge Management in the South African government. The following section goes into further detail on why the various elements were chosen: (i) People: The South African government can only successfully implement Knowledge Management and achieve its goals and objectives if the relevant expertise and competencies are accessible. Hence, developing capacity and competency is vital. This will be done through mentoring, coaching, succession planning and recruitment (DPSA, 2019); (ii) Culture: Both political and administrative leadership are crucial in creating an environment that encourages information flow and, as a result, a successful Knowledge Management implementation. However, because it deals with issues and practices rooted in organisational business operations, changing culture is one of the most challenging elements of Knowledge Management (DPSA, 2019). As a result, culture is a crucial Pillar; (iii) Process: The Process Pillar is concerned with Records and Information Management, such as file planning, registry, records management and so on. The goal of this Process Pillar is to have all records and information processes simplified, quick and with records or information readily available and not lost in the processing system (DPSA, 2019); (iv) Content: Documents and people both provide content. This content must be managed efficiently and effectively. Consequently, Knowledge Management

processes are driven by good content management systems (DPSA, 2019); and (v) Technology: Knowledge Management is enabled by Information, Communication and Technology (ICT) systems, which provide a platform for sharing, capturing, creating, storing, organising, and applying knowledge (DPSA, 2019). Also, technology is both a support and a cross-cutting enabler for each Knowledge Management Pillar (Igbinovia & Ikenwe, 2017).

Overall, the National Knowledge Management Strategy Framework's CSFs are the structural and functional components that aim to institutionalise Knowledge Management in the South African government (Sin et al., 2009). It provides structure and direction, and it can be considered as the Knowledge Management nuts and bolts (Williams, 2015). Hence, the CSFs illustrated in Figure 4 above are essential to the South African government's implementation of Knowledge Management.

Methodology

The researcher chose interpretivism *research philosophy* because this study relates to the social reality in which we exist which consists of various interpretations, meanings, and realities, for the simple reason that everyone who participates may have a different understanding, meaning, or reality of the subject. Thus, the researcher felt convinced that all perspectives, including their own, would help to shed light on the topic and provide insight into the research question. The issue was explored through a review of literature on Knowledge Management, as well as results of an interview and questionnaire completed by government officials doing Knowledge Management practitioner work in the South African government. Overall, the scope of this paper was exploratory and descriptive. According to Saunders et al. (2019), the researcher, when planning how to do the research study, must determine if their study is a snapshot taken at a certain point in time, or should if it is more akin to a journal or a series of snapshots representing occurrences over a set period. Consequently, this paper was cross-sectional as the research population was not monitored over time, which was appropriate because cross-sectional studies frequently employ the survey strategy to gather data (Saunders et al., 2019).

Sampling technique

According to Saunders et al. (2019), how a researcher plans their study affects the sort of data they need, the sources from which they must obtain it and the subjects from whom they must collect it. Hence, the first step is to supplement the empirical survey with a representative sample of a given research population (Veeran, 2012). In other words, determining the 'who, where and nature of the research population':

i. *Who:* 221 government officials employed by the South African government;

ii. *Where:* National and the provincial government of South Africa; and

iii. *Nature of the research population:* Officials that represent their respective departments at the DPSA National Knowledge Management Forum and who are responsible for the implementation of Knowledge Management in their departments (i.e., officials doing Knowledge Management practitioner work). Additionally, these include the officials responsible for coordinating the implementation of Knowledge Management in the South African government's national and provincial government departments.

Due to time, money, and resource constraints, it was necessary to generate a representative sample to reduce the number of cases in the research population (Umsl.edu, 2021). The research population was whittled down to 139 officials, who served as the sample population (Wisdom & Creswell, 2013; Radhakrishnan, 2014; Umsl.edu, 2021), using the Taro Yamane formula (Adam, 2020; Taherdoost, 2017).

Data collection

The researcher collected primary data through a survey questionnaire and a personal Internet-based interview. The secondary data were obtained through a literature review. The questionnaire included closed-ended questions, questions using the Likert scale and open-ended questions (Makanyeza et al., 2013) and was created using Microsoft Forms and then to be distributed to both the national government and provincial government officials via the Microsoft Office 365 online platform. Morton et al. (2012) state that not every sampled person who receives the questionnaire will complete it. As a result, the survey questionnaire was distributed to all 221 government officials (research population). This was done to increase the response rate and address the quality and validity questions.

A personal one-on-one Internet-based interview was conducted between the researcher and the respondent. This approach allowed those being interviewed to express themselves privately and without being limited by the researcher's structure (Bolderston, 2012). The interview schedule served as a guide for gathering information from the interviewee.

Additionally, the researcher, to increase the validity of the results, used more than three data sources—documents, organisational records, a survey interview as a survey questionnaire, as well as a personal Internet-based interview.

Data analysis and interpretation

Both quantitative and qualitative data were collected. For quantitative purposes, both national and provincial government officials were asked to complete an online survey questionnaire. The quantitative survey questionnaire was created using Microsoft Forms. The target population was sent an email with a link to the online questionnaire to collect the data. The data were collected in real-

time in Microsoft Excel, i.e., when respondents finished the online survey questionnaire, their data were immediately recorded in a Microsoft Excel file in the Microsoft Office 365 online cloud, accessible by the researcher. The collected data were uploaded to 'DATAtab,' a browser-based statistical analysis application, for analysis and processing. For qualitative purposes, a personal Internet-based interview was held with the DPSA official responsible for coordinating Knowledge Management implementation nationally and who hosts the DPSA National Knowledge Management Forum. The qualitative data collected from the personal Internet-based interview was separately analysed, which requires different analysing tools and techniques. Here induction data analysis (induction reasoning) was applied, which is the ideal qualitative content analysis method for this study.

Results and Discussions

To identify the factors that contribute to or deter the implementation of Knowledge Management in the South African government, the results are discussed according to the sample classification. The results are reported in a sequence that answers the research question and not in the order in which responses were given. Both quantitative and qualitative findings are provided to support each other and cancel out biases.

Demographic data

Of the questionnaire respondents who took part in the survey, 63.1% (n=41) were female, while 39.9% (n=24) were male (Figure 5).

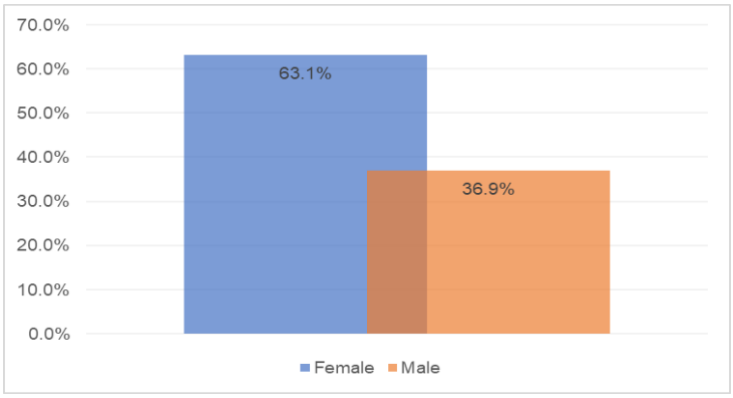

Figure 5: Gender distribution (n=65)

Of the respondents, 69.2 % (n=45) were between the ages of 41 and 60 (Figure 6).

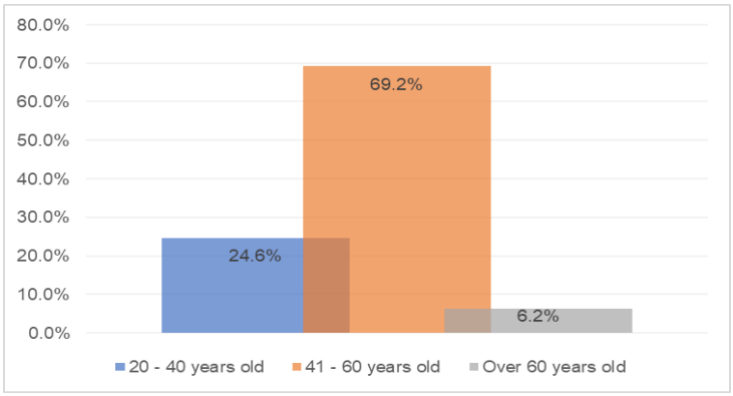

Figure 6: Age distribution (n=65)

The data shows a broad range of experience i.e., 73.8% (*n*=48) who took the survey each have a total work experience of 15 years and more (Figure 7).

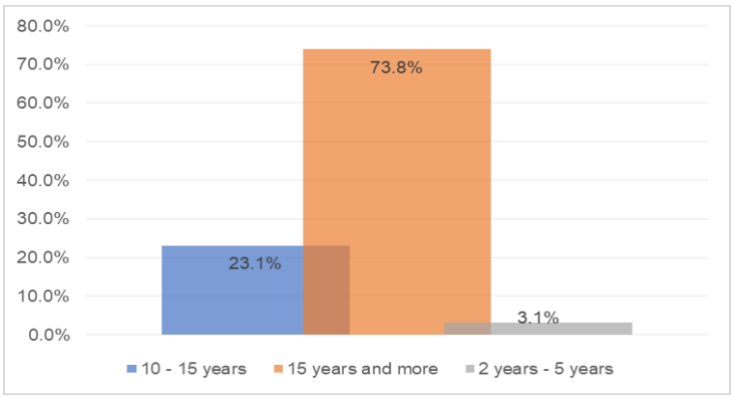

Figure 7: Total work experience (*n*=65)

According to Figure 8, 58.5% (*n*=38) of the government officials who participated in the survey were from the provincial government, while 41.5% (*n*=27) were from the national government.

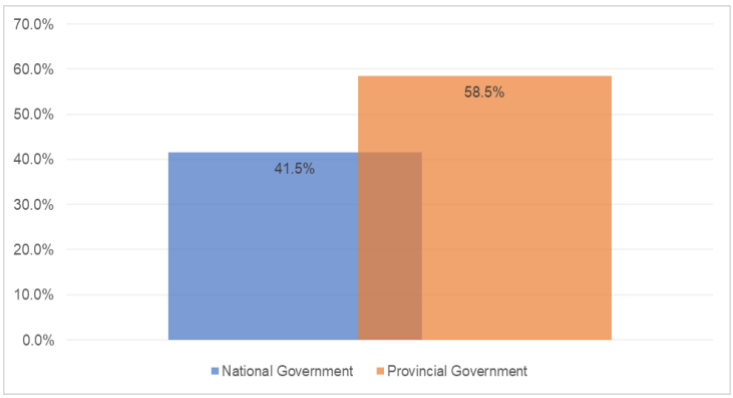

Figure 8: National and Provincial government employment status (*n*=65)

According to the results, government officials responsible for implementing Knowledge Management in their respective departments have varying employment levels. Less than half (43.1%) of the respondents were Deputy Directors, whereas 30.8% (*n*=20) were Directors and up. The remaining value (26.2%) were from junior management and lower-level staff (Figure 9). Consequently, these officials have varying perspectives on how to implement Knowledge Management.

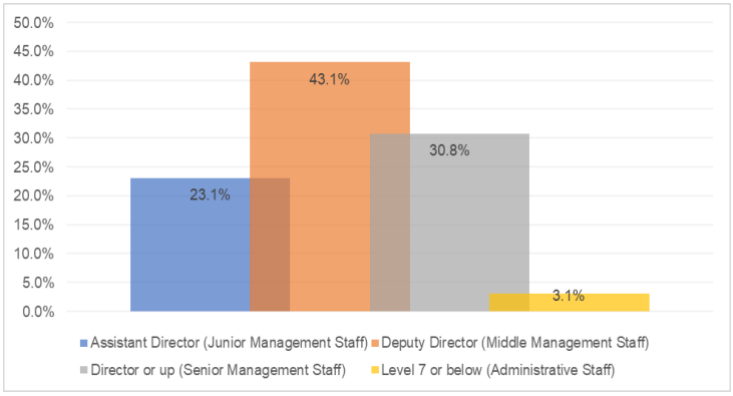

Figure 9: Employment level (*n*=65)

Lack of implementation skills.

The skills of government officials responsible for implementing Knowledge Management in their respective department were tested. According to the findings presented in Figure 10, 52.3% (*n*=34) of respondents believe they require Knowledge Management training

due to a lack of necessary skills. Consequently, a lack of implementation skills was identified as a factor that deters the implementation of Knowledge Management in the South African government.

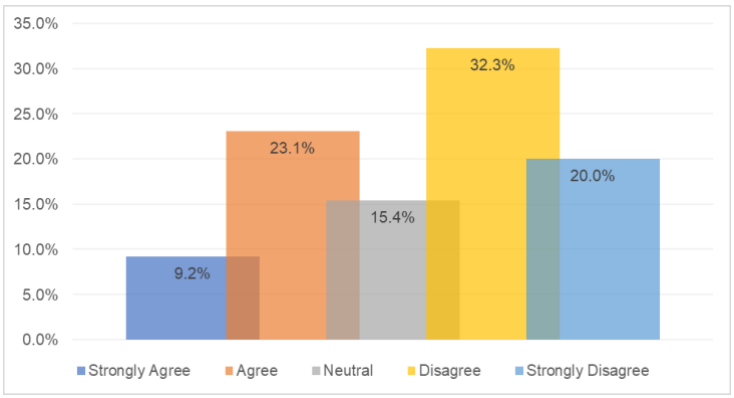

Figure 10: I do not need Knowledge Management implementation training. I have the skills (*n*=65)

The question was rephrased to further validate the response on skills. According to Figure 11, 64.7% (*n*=42) of respondents did not believe they have the necessary expertise to implement Knowledge Management in their department. This lends credence to the argument that government officials responsible for implementing Knowledge Management in their respective departments require training on how to do so since they lacked the required skills and experience.

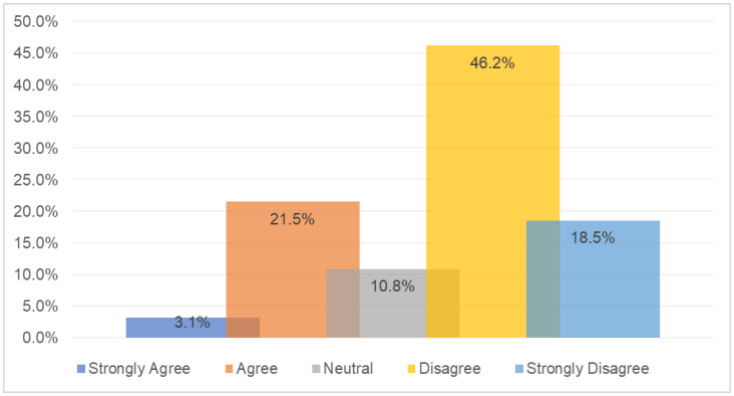

Figure 11: Necessary expertise to implement Knowledge Management (*n*=65)

During the qualitative internet-based personal interview, the interviewee shared the same sentiments regarding the quantitative findings on whether the respective officials responsible for implementing Knowledge Management had the prerequisite skills:

No, they do not. Because they do not understand this. One person I spoke with yesterday said, public service managers are not readers. People are confined to achieving targets and do not want to look at smart ways to enable them to achieve targets better.

Overall, both quantitative and qualitative findings shows that a lack of implementation skills is a significant deterrent to a successful implementation of Knowledge Management in the South African Government. To reap the full benefits of Knowledge Management, every effort must be made to ensure that those responsible for implementing Knowledge Management in their respective national or provincial government department are trained and upskilled in implementation tools.

Lack of skills and proficiency in Results-Based Monitoring and Evaluation, Programme and Project Management, Change Management and Strategic Planning.

Based on the qualitative results, between 56.9% and 66.1% of respondents reported that their proficiency in Results-Based Monitoring and Evaluation, Programme and Project Management, Change Management, and Strategic Planning is average, and that they need training in this. The quantitative results supported these findings. For example, when the interviewee was asked about whether the officials responsible for implementing Knowledge Management had the necessary implementation skills, this is what was said:

Not all of them. Because departments do not have a sense of Knowledge Management, its importance, and its value, they assign the function of Knowledge Management to an employee who they think is not busy. All because they want to comply. Also, some departments think that if they have a library, they should assign the librarian to conduct Knowledge Management work, because to them it fits in the Knowledge Management space. Yes, records are a building block. What I am trying to say, is that the skilling is

not at the place where it is supposed to be. So, the people assigned the Knowledge Management function in departments are clueless about what Knowledge Management work they are supposed to do. It is uneven, 80% not, 20% yes.

As previously mentioned, for the South African government to reap the full benefits of Knowledge Management, every effort must be made to ensure that those responsible for implementing Knowledge Management in their respective national or provincial government department are trained and upskilled in implementation tools, specifically Results-Based Monitoring and Evaluation, Programme and Project Management, Change Management and Strategic Planning. To ensure consistency and uniformity amongst the several national and provincial government departments, all officials responsible for Knowledge Management implementation must be skilled in the very same methodologies i.e., for Change Management, ADKAR Prosci, for Programme and Project Management, PMBOK, and for Strategic Planning, the VMOSA methodology. These methodologies are recommended as they are currently being applied in the Western Cape Government and seem to work well.

South African government departments do not value Knowledge Management

Figure 12 shows that 46.1% (n=30) of respondents believe their department values Knowledge Management, which was less than half of what the remaining respondents said. The results showed that most departments did not care much about Knowledge Management. With little value placed on Knowledge Management, it was not surprising that the implementation of Knowledge Management remains exceedingly slow and inconsistent. Hence, the lack of value placed on Knowledge Management is a deterrent.

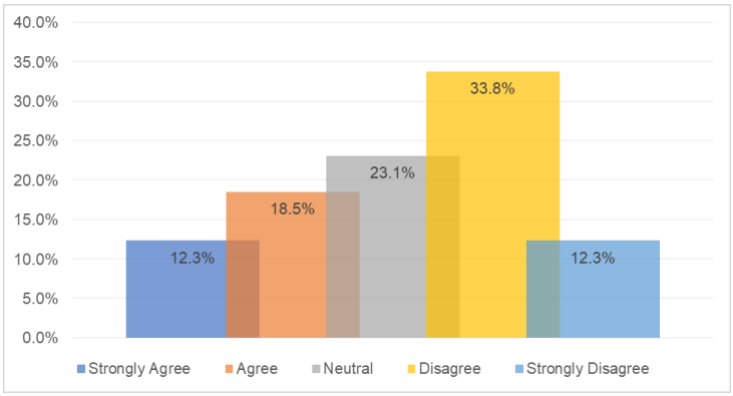

Figure 12: My department does not value Knowledge Management (n=65)

Additionally, according to the qualitative results, the interviewee substantiated this quantitative finding as follows:

In the public service, the implementation of Knowledge Management is very slow. Not in the country but in government. On a scale from 1 to 5, 5 being fast and 1 slow, we are at 1.5. This is due to a lack of understanding and the value of Knowledge Management.

Knowledge Management units not properly structured, well-staffed and well-capacitated.

Even though 60% (n=39) of respondents said they have a dedicated team/unit (e.g., Directorate Knowledge Management) responsible for implementing Knowledge Management in their department, open-ended interview results indicate that these units aren't structured correctly. For example, according to the interviewee, the organisational structure for Knowledge Management across government is not standardised. The quantitative survey questionnaire confirms this qualitative claim, with the following open-ended answers: "Knowledge Management must be structured correctly," "Design the Departmental structure to favour Knowledge Management personnel/unit," and "By now have formalised a staff structure to support Knowledge Management and equip it with the necessary tools," "Place it correctly in the Organizational Structure and allocate enough relevant human resources to the unit."

Lack of buy-in for Knowledge Management due to managements lack of understanding of how Knowledge Management improves service delivery.

44.6% (n=29) agreed that management is unsure how Knowledge Management improves service delivery, which is more than those who disagreed (36.9%, n=24). The rest answered neutral (18.5%, n=12).

Overall, the goal of Knowledge Management is to add value to an organisation through well-informed decision-making so that organisational objectives can be achieved. It was stated in the literature that the space between knowing something and doing something is extremely wide, and Knowledge Management plays a huge role in reducing this space. If Knowledge Management is not valued, the knowing and doing gap will not be reduced.

Implications

This research has several practical implications for the South African government as it will have them to gain competitive advantage. For example, when good Knowledge Management happens, knowledge can be easily found, stored, and made accessible to the wider

workforce, offering several tangible business benefits (Hajric, 2018; Igbinovia & Ikenwe, 2017; Koenig, 2018; Ondari-Okemwa & Smith, 2009; Theriou et al., 2011), namely:

i. Speed up the South African government's ability to make them work smarter (Wiig, 2002);
ii. Enable South African government to do more with less (Wiig, 2002);
iii. Address the skills gap by creating a knowledge-based workforce that is competitive and empowers employees to grow and innovate (Sawe & Rotich, 2016);
iv. Facilitate the South African government to be faster and more efficient (Theriou et al., 2011);
v. Enable informed decision-making within the South African government and it will reduce knowledge duplication i.e., time, money and resource wastage is addressed (Koenig, 2018; Ondari-Okemwa & Smith, 2009);
vi. Mistakes or malpractice will be avoided (Department of Public Service and Administration [DPSA], 2019);
vii. Processes and work methods will be improved (DPSA, 2019); and
viii. It will reduce dependency on consultants (DPSA, 2019).

Overall, the space between knowing something and doing something is done away with and the South African government will achieve its objectives outlined in Section 195 of Chapter 10 of the SA Constitution.

Conclusions

According to the literature, there are distinct benefits to implementing Knowledge Management in the South African government. Knowledge Management provides new alternatives, skills and activities that have the potential to have a big influence on and aid the South African government to be competitive, function well and achieve the targets of its NDP 2030. However, the literature highlighted South Africa's challenge in implementing Knowledge Management in its departments. It was said that even though Knowledge Management was adopted more than 15 years ago, its implementation to date has been slow and inconsistent. Hence, the research objective was to answer the following research question "What are the factors that contribute to or deter the implementation of Knowledge Management in the South African government?" Of this, the following two assumptions which was formed to facilitate answering the research question of this paper was proven to be correct, namely:

i. South African government departments do not value Knowledge Management. For instance, results suggest that most of the Knowledge Management units in the South African government's various national and provincial government departments aren't properly structured, well-staffed and well-capacitated. Results also showed managements lack of buy-in for Knowledge Management due to their lack of understanding of how Knowledge Management improves service delivery; and
ii. Public officials responsible for implementing Knowledge Management in their departments lack implementation skills. For instance, results showed that most government officials were not skilled or proficient in Results-Based Monitoring and Evaluation, Programme and Project Management, Change Management and Strategic Planning, which are key implementation skills.

This paper has two main limitations. Municipalities, provincial legislatures, and state-owned enterprises (SOEs) are excluded from this paper, and because of its cross-sectional nature, no general cause and effect link is established. Consequently, future research could use a longitudinal design. Furthermore, a lack of research on Knowledge Management in developmental governments exists. More research on this subject is necessary. The research will benefit Knowledge Management and Public Administration practitioners alike.

Acknowledgement

Author Contributions: Conceptualization, Methodology, Data Collection, Formal Analysis, Writing—Original Draft Preparation, Writing—Review And Editing by authors with equal participation. All authors have read and agreed to the published the final version of the manuscript.
Institutional Review Board Statement: Ethical review and approval were obtained for this study.
Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.
Conflicts of Interest: The authors declare no conflict of interest.

References

Adam, A. M. (2020). Sample size determination in survey research. *Journal of Scientific Research & Reports*, *25*(5), 90–97. https://doi.org/10.9734/jsrr/2020/v26i530263

Adler, R. M. (2019). Knowledge Management strategies for critical decision-making. https://medium.com/@rich_77042/knowledge-management-strategies-for-critical-decision-making-a94f921f094a Retrieved July 27 2020

Akhavan, P., & Jafari, M. (2006). Critical issues for Knowledge Management implementation at a national level. *VINE*, *36*(1), 52–66. https://doi.org/10.1108/03055720610667372

Allassignmenthelp, U. K. (2019). *Saunders research onion for effective research methodology*. Cockburn Central: Allassignmenthelp.

Bolderston, A. (2012). Conducting a research interview. *Journal of Medical Imaging and Radiation Sciences*, *43*(1), 66–76. https://doi.org/10.1016/j.jmir.2011.12.002

Chan, I., & Lau, Y. (2021). Learning from the greats: Identifying three knowledge sharing pillars to direct Knowledge Management initiatives in higher education institutions. *International Journal of Innovation, Creativity and Change*, *15*(2), 415–430.

Chan, I. (2017). Knowledge Management hybrid strategy with people, technology and process pillars. In M. Mohiuddin, N. Halilem, S. Kobir & C. Yuliang (Eds.), *Knowledge Management strategies and applications* (pp. 69–84). IntechOpen.

Chib, K. S., & Sehgal, G. (2019). A conceptual framework for measuring organisational performance through Knowledge Management's seci model: A mediating role of innovation and practices. *International Journal of Knowledge Management and Practices*, *7*(1), 55–70.

Cook, N. (2020). *South Africa: Current issues, economy and U.S. relations*. Congressional Research Service.

Daily Maverick. (2021a). *Foreign investment into South Africa tanked in 2020 after Ramaphosa's New Deal falters*. https://www.dailymaverick.co.za/article/2021-08-02-foregin-investment-into-south-africa-tanked-in-2020-after-ramaphosas-new-deal-falters/ Retrieved March 4 2022

Daily Maverick. (2021b). *Smoke and mirrors: Un data shows Ramaphosa's investment drive is barely alive*. https://www.dailymaverick.co.za/article/2021-02-10-smoke-and-mirrors-un-data-shows-ramaphosas-investment-drive-is-barely-alive/ Retrieved March 3 2022

Daily Maverick. (2021c). *Ramaphosa returns from West Africa tour to political and economic minefield while lamenting "catastrophic year" for SA*. *Daily Maverick*, December 8.

Daily Maverick. (2022). *South Africa: The world's most unequal country – World Bank report*. https://www.dailymaverick.co.za/article/2022-03-13-south-africa-the-worlds-most-unequal-country-world-bank-report/ Retrieved May 23 2022

Dalkir, K. (2005). *Knowledge Management in theory and practice*. Elsevier.

DATAtab Team. (2021). *DATAtab: Online Statistics Calculator*. https://datatab.net Retrieved April 4 2022

Davenport, T. H. (1994). Saving Is is soul: Human centered information management. *Harvard Business Review*, *72*(2), 119–131.

Davensport, T. H., & Prusak, L. (2000). *Working knowledge*. Harvard Business School Press.

Denkova, J., Lazarevski, P., & Denkova, B. (2018). The importance of the New Public Management for efficient Public Administration. Paper presented at *Challenging the* Status Quo *in* Management *and* Economics *STRATEGICA* International Academic Conference. October 11–12 2018. Bucharest, Romania.

Department of public service and administration (DPSA). (2019). *DPSA National Knowledge Management Strategy Framework*. DPSA.

2. Cape Town: Western Cape Government.

Dikotla, M., Mahlatji, M. R., & Makgahlela, L. A. (2014). Knowledge Management for the improvement of service delivery in South Africa's municipalities. *Journal of Public Administration*, *49*(3), 847–859.

Fernanda, R., & Salwa, M. (2018). A literature review of Knowledge Management: History, concept and process. *International Journal of Scientific and Engineering Research (IJSR)*, *7*(1), 417–421.

Figurska, I. (2014). The benefits of Knowledge Management in organizations. In N. Drelukiewicz, A. Memepel-Śnieżyk, A. Sokół & A. Sołoma (Eds.), *Market in the modern economy: Management – Processes.* Bratislava, Slovakia: KartPrint: 55–64.

Gaffoor, S., & Cloete, F. (2010). Knowledge Management in local government: The case of Stellenbosch Municipality. *SA Journal of Information Management*, *12*(1), Art. no.422, 7 pages. https://doi.org/10.4102/sajim

Giorgi, G. (2021). Knowledge Management and librarians and information managers. *Science*. Horticulture Australia, 1–25.

Hai Sin, C., Gan Goh, G. G., & Eze, U. C. (2009). Knowledge Management enablers toward successful new product development: A case study in a semiconductor manufacturing firm. *Journal of Knowledge Management Practice*, *10*(4), 27–46.

Hajric, E. (2018). Knowledge Management system and practices: A theoretical and practical guide for knowledge. https://www.knowledge-management-tools.net/files/A_Synthesis_of_Knowledge_Management_Failure_Factors.pdf Retrieved June 23 2021

Heck, U., & Rogger, A. (2004). Knowledge Management for e-service-delivery: A conceptual approach within e-government. *Lecture Notes in Computer Science*, 1–8. https://doi.org/10.1007/978-3-540-24683-1_1

Igbinovia, M. O., & Ikenwe, I. J. (2017). Knowledge Management: Processes and systems. *Information Impact*, *8*(3), 26–38. https://doi.org/10.4314/iijikm.v8i3.3

International Labour Office. (2011). *A skilled workforce for strong, sustainable and balanced growth: A G20 training strategy*. International Labour Office.

Intezari, A., Pauleen, D. J., & Taskin, N. (2016). The DIKW hierarchy and management decision-making. In *Proceedings of the Hawaii International Conference on System Sciences (HICSS)* (pp. 4193–4201). HICSS.

Jayasingam, S., Ansari, M. A., Ramayah, T., & Jantan, M. (2013). Knowledge Management practices and performance: Are they truly linked? *Knowledge Management Research and Practice*, *11*(3), 255–264. https://doi.org/10.1057/kmrp.2012.5

Jørgensen, R., Edwards, K., Scarso, E., & Ipsen, C. (2021). Improving public sector knowledge sharing through communities of practice. *VINE Journal of Information and Knowledge Management Systems*, *51*(2), 318–332. https://doi.org/10.1108/VJIKnowledge ManagementS-08-2019-0115

Kimani, L. W. (2013). *Knowledge-management in the public sector: Its role in facilitating the delivery of health infrastructure* [Master's Dissertation]. University of the Western Cape.

Knowledge Associates. (2002). Knowledge Management consulting method: Module 1.2. http://www.knowledge-management-online.com/support-files/module1.2-a-history-of-km.pdf Retrieved May 30 2022

Koenig, M., & Neveroski, K. (2008). The origins and development of Knowledge Management. *Journal of Information and Knowledge Management*, *07*(4), 243–254. https://doi.org/10.1142/S0219649208002111

Koenig, M. (2018). What is Knowledge Management? Knowledge Management explained. https://www.kmworld.com/About/What_is_Knowledge_Management Retrieved June 15 2020

Makanyeza, C., Kwandayi, H., & Ikobe, B. (2013). Strategies to improve service delivery in local authorities. *International Journal of Information Technology and Business Management*, *15*(1), 1–11.

Mašić, B., Nešić, S., Nikolić, D., & Dželetović, M. (2017). Evolution of Knowledge Management. *Industrija*, *45*(2), 127–147. https://doi.org/10.5937/industrija45-13201

Massaro, M., Dumay, J., & Garlatti, A. (2015). Public sector Knowledge Management: A structured literature review. *Journal of Knowledge Management*, *19*(3), 530–558. https://doi.org/10.1108/JKnowledge Management-11-2014-0466

Mc Evoy, P. J., Ragab, M. A. F., & Arisha, A. (2019). The effectiveness of Knowledge Management in the public sector. *Knowledge Management Research and Practice*, *17*(1), 39–51. https://doi.org/10.1080/14778238.2018.1538670

Ming Yu, C. (2002). Socializing Knowledge Management: The influence of the opinion leader. *Journal of Knowledge Management Practice*, *3*(3), 76–83.

Mohajan, H. K. (2017). The roles of Knowledge Management for the development of organizations. *Journal of Scientific Achievements*, *2*(2), 1–27.

Morton, S. M., Bandara, D. K., Robinson, E. M., & Carr, P. E. (2012). In the 21st century, what is an acceptable response rate? *Australian and New Zealand Journal of Public Health*, *36*(2), 106–108. https://doi.org/10.1111/j.1753-6405.2012.00854.x

Mothamaha, W. B., & Govender, K. K. (2011). Exploring the role of Knowledge Management in improving service operations – The case of the select departments in the City of Johannesburg, South Africa. *International Journal of Managerial Studies and Research (IJMSR)*, *2*(5), 1–8.

National Planning Commission. (2011). *National development plan – Vision 2030*. Government Printers.

Ondari-Okemwa, E., & Smith, J. G. (2009). The role of Knowledge Management in enhancing government service-delivery in Kenya. *South African Journal of Libraries and Information Science*, *75*(1), 28–39. https://doi.org/10.7553/75-1-1271

Page, E. C. (2020). *Principles of public administration*. London School of Economics.

Paprika, Z. Z. (2001). *Knowledge Management support in decision making*. Budapest University of Economic Sciences and Public Administration.

PricewaterhouseCoopers (PwC). (2018a). *Investment decisions: Why South Africa and why now? Forward-looking scenarios for the Ramaphosa presidency (2018–2022)*. PwC.

PricewaterhouseCoopers (PwC). (2018b). *What foreign investors want: South African insights from a global perspective on factors influencing FDI inflows since 2010*. PwC.

Prins, F. X., Etale, A., Ablo, A. D., & Thatcher, A. (2022). *Water scarcity and alternative water sources in*.

Public Service. Commission. (2005). *Evaluation of service standards in the public service*. Department of Public Service Commission.

Radhakrishnan, G. (2014). Sampling in mixed methods research. *International Journal of Advances in Nursing Management*, *2*(1), 24–27.

Rowland, F., & Syed-Ikhsan, S. (2004). Knowledge Management in a public organization: A study on the relationship between organizational elements and the performance of knowledge transfer. *Journal of Knowledge Management*, *8*(2), 95–111

Saunders, M., Lewis, P., & Thornhill, A. (2009). Understanding research philosophies and approaches. In *Research methods for business students* (pp. 122–161). Pearson Professional Limited.

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed). Pearson Professional Limited.

Saunders, M. N. (2020). *Research philosophies, approaches and strategies*. University of Birmingham.

Sawe, E., & Rotich, G. (2016). Influence of Knowledge Management on service delivery: Case of the Anti-Counterfeit Agency. *Strategic Journal of Business & Change Management*, *4*(2), 889–904.

Schutt, P. (2003). The post-Nonaka Knowledge Management. *Journal of Universal Computer Science*, *9*(6), 451–462.

Schultze, U., & Leidner, D. E. (2002). Studying Knowledge Management in information systems research: Discourses and theoretical assumptions. *MIS Quarterly*, *26*(3), 213–242. https://doi.org/10.2307/4132331

Snowden, D. (2002). Just-in-time Knowledge Management: Part 1 – Recognising common Knowledge Management errors and the progress they inhibit. *Knowledge Management Review*, *5*(5), 14–17.

Taherdoost, H. (2016). Sampling methods in research methodology: How to Choose a Sampling Technique for Research. *SSRN Electronic Journal*, *5*(2), 18–27. https://doi.org/10.2139/ssrn.3205035

Taherdoost, H. (2017). Determining sample sizes. How to calculate sampe size. *International Journal of Economics and Management Systems*, *2*, 237–239.

Theriou, N., Maditinos, D., & Theriou, G. (2011). Knowledge Management enabler factors and firm performance: An empirical research of the Greek medium and large firms. *European Research Studies*, *XIV*(2), 97–134. https://doi.org/10.35808/ersj/321

UKEssays. (2018). *Critical Success Factors for Knowledge Management*. https://www.ukessays.com/essays/management/critical-success-factors-for-knowledge-management.php? vref=1 Retrieved June 22 2021. Umsl.edu. 2021. *Populations and sampling*. https://www.umsl.edu/~lindquists/sample.html Retrieved December 30 2021

Veeran, P. (2012). *The impact of globalisation on Human Resources Management policies and procedures in the South African Public Service – A study of selected national government departments* [Doctoral Thesis]. Cape Peninsula University of Technology.

Virkus, S. (2011). Framework for information and Knowledge Management: Examples of knowledge sharing systems. http://www.tlu.ee/~sirvir/Information%20and%20Knowledge%20Management/Framework%20for%20IKnowledge Management/examples_of_knowledge_sharing_systems.html Retrieved April 5 2021

Wells, J. (2016). Knowledge ManagementWorld: BA insight introduces Expertise Locator. https://www.kmworld.com/Articles/News/News/BA-Insight-Introduces-Expertise-Locator-110338.aspx Retrieved June 24 2021

Wenger, E. C., & Snyder, W. M. (1999). Communities of practice: The organizational frontier. *Harvard Business Review*, *78*(1), 139–145.

Wenger, E. C. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge University Press.

Wiig, K. (2000). Application of Knowledge Management in Public Administration. *Journal of Knowledge Management*, *6*, 1–27.

Wiig, K. M. (2002). Knowledge Management in Public Administration. *Journal of Knowledge Management, 6*(3), 224–239. https://doi.org/10.1108/13673270210434331

Williams, D. (2015). Nuts and bolts of a Knowledge Management system. *Journal of Information and Knowledge Management*, *14*(4), 1–10. https://doi.org/10.1142/S0219649215500355

Williams, L. M. S., Johnson, E., Armaignac, D. L., Nemeth, L. S., & Magwood, G. S. (2018). A mixed methods study of tele-ICU nursing interventions to prevent failure to rescue of patients in critical care. *Telemedicine and e Health*, *00*(00): 1-11

Winkler, K., & Mandl, H. (2007). *Implementation of Knowledge Management in organisations*. Springer.

Wisdom, J., & Creswell, J. W. (2013). *Mixed methods: Integrating quantitative and qualitative data collection and analysis while studying patient-centered medical home models*. Agency for Healthcare Research and Quality.

Zack, M., McKeen, J., & Singh, S. (2009). Knowledge Management and organizational performance: An exploratory analysis. *Journal of Knowledge Management*, *13*(6), 392–409. https://doi.org/10.1108/13673270910997088

Zamir, Z. (2019). The impact of knowledge capture and knowledge sharing on learning, adaptability, job satisfaction and staying intention: A study of the banking industry in Bangladesh. *International Journal of Entrepreneurial Knowledge*, *7*(1), 46–64. https://doi.org/10.37335/ijek.v7i1.87

Yusuf, M., & Wanjau, K. (2014). Factors affecting implementation of Knowledge Management practices in state corporations in the national treasury in Kenya. *International Journal of Management Technology*, *2*(2), 9–18.

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