



# Evaluating knowledge management in skills development providers

**Authors:**

Ralebitso K. Letshaba<sup>1</sup>   
Nkanyiso K. Ndlovu<sup>1</sup> 

**Affiliations:**

<sup>1</sup>Business school, Faculty of Economic and Management Sciences, North-West University, Potchefstroom, South Africa

**Corresponding author:**

Ralebitso Letshaba,  
kletshaba@gmail.com

**Dates:**

Received: 08 Apr. 2024

Accepted: 20 May 2024

Published: 28 June 2024

**How to cite this article:**

Letshaba, R.K. & Ndlovu, N.K., 2024, 'Evaluating knowledge management in skills development providers', *South African Journal of Information Management* 26(1), a1865. <https://doi.org/10.4102/sajim.v26i1.1865>

**Copyright:**

© 2024. The Authors.  
Licensee: AOSIS. This work is licensed under the Creative Commons Attribution License.

**Read online:**

Scan this QR code with your smart phone or mobile device to read online.

**Background:** The field of skills development has seen a paradigm shift in recent years, with knowledge management (KM) emerging as a pivotal aspect of improving training programmes. Skills development providers (SDPs) play a crucial role in bridging the skills gap in various industries.

**Objectives:** The primary objectives of this research were to assess the current state of KM practices in SDPs and identify the key factors that influence the successful implementation of KM systems.

**Method:** A quantitative method was used for this study, and the method consisted of 237 respondents who were sampled using the convenience sampling technique. The population consisted of the employees of the SDPs within the North West province in South Africa.

**Results:** Preliminary findings indicate that the concept of KM is known and comprehended in the skills sector. Moreover, KM processes, systems and/or tools and drivers are prevalent within the SDPs. However, it is revealed that the KM barriers and challenges are still experienced within the SDPs.

**Conclusion:** This research article concludes that KM is an indispensable tool for modern SDPs. It not only improves the quality of training but also ensures the longevity and adaptability of these organisations.

**Contribution:** This research article makes a significant contribution to the field of KM in SDPs by providing a comprehensive understanding of its role and impact.

**Keywords:** knowledge; knowledge management; implementation of knowledge management; skills development; skills development providers.

## Introduction

In the contemporary landscape of rapidly evolving industries and dynamic workforce demands, the imperative for organisations to adapt and excel has never been more pronounced (Alfawaire & Atan 2021). Amid this transformative backdrop, the interdependent relationship between knowledge management (KM) and skills development has emerged as an essential component in the pursuit of organisational agility and competitiveness (Al Naim 2023). This research article embarks on a comprehensive evaluation of KM in skills development providers (SDPs), illuminating the critical interplay of how knowledge is managed in the skills development sector. By dissecting their intricate connections, this article aims to offer insights that resonate with academics, practitioners and policymakers alike, as they endeavour to shape a future-ready workforce and foster knowledge-driven innovation.

Skills development is recognised globally as a crucial pathway to optimal job performance. Consequently, it is a significant mechanism for enhancing output, bolstering the public and private sectors, improving the economy and alleviating poverty (Brewer 2013). Establishing the Sector Education and Training Authorities (SETAs) has led to recognising institutions that offer skills development as fundamental in skills provision (Lategan & Prinsloo 2005). The SETAs are crucial in facilitating training opportunities by collaborating with SDPs. These initiatives primarily target young individuals not already enrolled in educational institutions but also extend to individuals seeking additional education and training (Mayombe 2022). Hence, the SDPs undergo accreditation and regulation processes administered by the SETAs.

To effectively accomplish the strategic objectives of the nation through skills development, it is imperative to focus on the necessity of thoroughly examining the operations and presence of the

SDPs. Different terms such as 'training providers', 'private training providers', 'skills trainers' or 'agencies for training and development' serve to define SDPs. While these terms may appear interchangeable, they each imply distinct characteristics associated with entities engaged in facilitating skills enhancement (Harris, Simons & McCarthy 2006:14). These training providers are situated within a global context characterised by increasing volatility, unpredictability and complexity. The expanding challenges faced by SDPs has led to the recognition of effective KM as a potential approach to solving these problems (Kalkan 2017).

Gwena and Chinyamurindi (2018) have demonstrated that companies, such as SDPs, must establish and cultivate a solid foundation of knowledge resources to attain success and facilitate organisational growth. This necessitates the use of strategic KM practices. There is a consensus among scholars and professionals in the field of strategic management that knowledge has become the central element in the emergence of new opportunities (Cepeda-Carrion, Cegarra-Navarro & Cillo 2019; Gaviria-Marin, Merigó & Baier-Fuentes 2019; Gwena & Chinyamurind 2018; Hislop, Bosua & Helms 2018; Mahdi, Nassar & Almsafir 2019). According to Sunassee and Sewry (2002), it has been argued that knowledge is the principal asset in the contemporary era, and KM is considered to be of utmost importance for the overall economy.

Nevertheless, the concept of KM has yet to be thoroughly examined in many areas of the economy within emerging nations, particularly in the context of SDPs. Although there have been several studies conducted on KM in South Africa, including those by Mavodza and Ngulube (2011), Chigada and Ngulube (2015), Mello and Fombad (2018), Makore and Eresia-Eke (2021), Norma and Nkambule (2021), Cyster and Salubi (2022), the existing literature indicates a dearth of research specifically focused on KM in SDPs. Chetty, Proches and Singh (2021) contend that it is crucial to highlight the necessity and significance of studying KM in SDPs. They assert that organisations, including SDPs, must convert their knowledge into goods and services to ensure revenue generation and enhance their organisational capabilities, thereby attaining a competitive edge. The motivation for doing this study stems from a recognised vacuum in KM within the field of SDPs, which has yet to be thoroughly examined in the current body of literature.

The purpose of this study is to evaluate and establish the existence of KM processes, system tools, drivers for KM and the barriers and challenges within the SDPs. After this introductory section, the present article proceeds with the objectives of the study and a comprehensive examination of the existing body of literature. Then, the theoretical framework that underpins the research question is discussed. The research question is succeeded by a detailed exposition of the research methods employed for data collection and analysis. The obtained results are presented,

followed by a thorough discussion of their alignment with the existing literature. Lastly, a conclusion from the results is outlined, along with suggestions for potential future research avenues.

## Objectives of the study

The objectives of the study are as follows:

- To evaluate the KM processes (creation, capturing, retention and sharing) within the SDPs.
- To assess the system tools that facilitate KM (STKM) at the SDPs.
- To assess drivers for KM within the SDPs.
- To determine KM barriers and challenges (KMBC).

## Theoretical background

A knowledge-based view (KBV) was developed as a result of current research in management and economics literature, and it proposed that the development, integration and use of knowledge is what drives the existence of businesses (Donate & De Pablo 2015). The KBV is a development of an organisation's resource-based view (RBV), which emphasises strategic assets as the primary driver of competitive edge (Amit & Schoemaker 1993). The present study centred its attention on the KBV, a contemporary perspective that is employed to comprehend KM within the SDPs. According to the KBV, intellectual assets play a crucial role as a fundamental organisational resource, facilitating the attainment of a competitive edge that can be sustained. With the current circumstances, knowledge has become a critical element within the organisations (Chang & Lin 2015).

From this standpoint, organisations that successfully oversee their knowledge resources may anticipate many advantages (Azeem et al. 2021), including decreased expenses related to people and infrastructure, along with enhanced innovation, organisational effectiveness and customer satisfaction (Abbas & Kumari 2021). The fundamental objective of an organisation's application of KM is to become conscious of its knowledge, both personally and collectively, and to reshape itself to make the greatest use of the knowledge the company has or can acquire (Donate & De Pablo 2015).

According to Alavi and Leidner (2001), the implementation of KM practices, which often depend on technologies, results in favourable organisational outcomes like improved interaction and a greater degree of employee involvement, efficacy in problem-solving and time to market, higher-performing financial results, enhanced advertising techniques and increased teamwork and performance, which explains the broad understanding of the importance of KM. However, innovation appears to be the most significant problem for KM in knowledge-intensive industries because competitive advantage rests greatly on a firm's capacity to continuously develop novel goods and processes (Fachrunnisa, Adhiatma & Tjahjono 2020).

## Knowledge management

Since the 1990s, a sizable and highly reliable body of literature has clearly emphasised the significance of KM in organisations (Badaracco 1991; Blackler 1995; Boisot 1998; Davenport and Prusak 1997; Nonaka and Takeuchi 1995; Wiig 1993). According to De La Vega (2010:279), 'organisations have always managed knowledge, even without noticing it'. According to Ling et al. (2008), KM has become recognised as the strategy through which an organisation can use the implicit and explicit knowledge of its workers, business partners and external specialists to its advantage.

Knowledge management is a complex system that goes far beyond the information-centric aspect of any system because managing knowledge is seen as a process that improves intellectual capital and enhancing intellectual capital is a difficult task (Kalkan 2017). Above all else, it is crucial to manage knowledge in an organised, deliberate and systematic manner to harness intellectual capital and increase organisational performance and competitiveness (Daud & Yusoff 2011). Ahmady, Nikooravesh and Mehrpour (2016) define KM as a set of methods that regulate the production, dissemination and application of knowledge. To fulfil this description, organising and supporting structures had to be built, relationships between members had to be facilitated, technological resources had to be used and knowledge had to be explained (Saarikoski et al. 2018).

Knowledge management generally focuses on organising and making essential knowledge available anywhere and at all times it is required (Purwanto 2020). Knowledge management is an approach that guarantees people within the organisation have the right information at the right time in the right format (Bolisani & Bratianu 2018). An organisation's capacity for innovation is positively impacted by the efficient management of knowledge. The KM system significantly affects an organisation's ability to develop new products, processes and knowledge (Santoro et al. 2018). As a result, KM gives businesses a basis to grow more inventive and competitive (Abbas 2019). Emanating from the assertions on the concept of KM, the focus is directed to the KM success factors and barriers.

## Knowledge management success factors

When workers have the necessary information at their disposal in a usable manner, they are more productive (Chetty et al. 2021). Several variables, including management, cultural backgrounds, organisational design, duties and responsibilities, technological infrastructure, human behaviour, among others (Chi6n, Charles & Morales 2020; Rezaei, Khalilzadeh & Soleimani 2021), affect how well KM functions inside a company. According to Greiner, B6hmann and Krcmar (2007), to have a long-lasting strategic impact, additionally, Sokoh and Okolie (2021) asserted that KM targets and techniques should be implemented and aligned with the organisation's objectives and strategy. Chetty et al. (2014) backed up this idea by claiming that KM

is frequently in line with an organisation's goals and that the organisation's business demands are of strategic relevance.

According to Wong (2005), a variety of factors affect whether KM initiatives used inside an organisation will be effective. Below is a description of most of the elements (strategic purpose, organisational set-up, leadership commitment and support, knowledge technology, human capital and business culture) that affect how well KM works:

- *Strategic purpose*: The strategic goal of KM must be made apparent to every employee. Supporting an organisation's strategic goals will ensure employee buy-in and dedication, which will eventually ensure the success of KM (Wong 2005).
- *Organisational set-up*: Wong (2005) asserted that creating an appropriate organisational structure is necessary for adopting KM. A proper organisational culture necessitates the development of a set of roles and duties for teams to carry out KM-related tasks.
- *Leadership commitment and support*: By emphasising the value of KM to employees inside the organisation, leaders can demonstrate their dedication and support. This includes boosting employee morale, encouraging a culture of creating knowledge and sharing and guiding the evolution that results from KM (Wong 2005).
- *Knowledge technology*: When creating KM systems, it is crucial to keep in mind that they should be user-friendly and simple to use while also meeting the needs of the user(s). The information that is provided needs to be accurate and reliable (Wong 2005).
- *Human capital*: Considering people are the ones who create knowledge, human resources must take action to promote and strengthen employees' confidence and productivity. Because humans are necessary for both the initial creation of knowledge and its ongoing maintenance, KM cannot function without them (Wong 2005).
- *Business culture*: The business culture is crucial because it promotes knowledge sharing among its employees. Because business culture establishes the values, attitudes and rules that govern employee conduct inside an organisation, it is crucial to the success of KM (Wong 2005).

## Knowledge management barriers

According to Oliva (2014), knowledge is a crucial organisational asset that, when managed well, may help a company advance towards achieving its strategic objectives and goals. The author also stated that recognising the barriers that hinder KM will allow firms to develop strategies to overcome these barriers (Oliva 2014). It was proposed that five major barriers might prevent the implementation of KM, including the lack of interest from staff members, ineffective communication and interaction, little to no interest in the culture of sharing knowledge, low intellectual capacity among workers and a lack of motivation, incentives and appreciation (Chetty et al. 2021; Oliva 2014). These barriers have a negative effect on each stage of the KM process (creation, capturing, retention and sharing), as stipulated in



the objectives. The appraisal and accumulation of knowledge, as well as its dissemination, are hampered by these barriers. In addition, as will be discussed below, different barriers to KM (poor leadership and management, lack of accountability, responsibility and ownership, poor performance measures, poor implementation, poor organisational processes and culture fit, over-dependence on technology) are identified in the literature.

*Poor Leadership and Management:* Failure is attributed to a lack of management responsibility, insufficient leadership and management support. The proper business and technical skills must be maintained to ensure effective KM, else it is likely to fail. Through training interventions, skills can be maintained and improved, and KM must be implemented with specific, measurable objectives (Oliva 2014).

*Lack of Accountability, Responsibility and Ownership:* A company could lose control over knowledge if leadership responsibility and accountability are not properly enforced. Accountability is impacted by organised and regulated responsibilities and vice versa. The lack of willingness to take on responsibility is categorised as a knowledge barrier and is significantly influenced by company culture (Oliva 2014).

*Poor Performance Measures:* Because of the intangible nature of KM, evaluating its effects, particularly its financial significance, can be challenging. Evaluation of this idea is extremely hard because the value produced by KM is indirect. For management to maintain and advance the concept, indicators of performance are essential. Moreover, a successful KM measurement instrument might enhance corporate and/or worker performance (Oliva 2014).

*Poor Implementation:* An organisation could encounter three common problems when implementing KM, according to Singh and Kant (2008). These typical problems are:

1. *Poor performance outputs:* Problems related to KM performance results consist of poor practical plans, improper knowledge representation and inefficient knowledge system utilisation.
2. *Poor organisational processes and culture fit:* The objectives and procedures of an organisation are interdependent. As a result, if the KM idea is not included in these processes, failure will result, particularly in the case of information technology, which must be compliant with the organisational design and its KM initiatives.
3. *Over-dependence on technology:* It is said that there was a clear disregard for tacit knowledge because of excessive emphasis on KM systems. Although IT is an enabler, it is not adequate on its own to transfer tacit knowledge because it is best shared between people.

## Research method and design

The use of a quantitative research technique for data collection by utilising a self-administered questionnaire was deemed more appropriate for this study because of the

characteristics of the subject matter, the size of the population and the extensive numerical data gathered, which necessitated analysis through statistical methods. The study's population refers to the specific group of individuals from which the researcher aims to derive findings (Babbie 2010). In this particular instance, the individuals included were the employees of the SDPs, who were chosen using the convenience sampling technique. Convenience sampling is a form of nonprobability sampling. It involves selecting individuals from the target population based on practical considerations such as their convenient location, their availability at a specific time or their readiness to participate (Etikan, Musa & Alkassim 2016). The goal was to survey 300 participants from a pool of roughly 400 workers, drawing from prior research in KM, which typically involved sample sizes ranging from 150 to 400 individuals (Ansari, Youshanlouei & Mood 2012:218; Ghahroudi, Hoshino & Ahmadpoury 2019:1955; Yang 2011:18). However, 237 completed questionnaires were received.

Meaning the response rate was 79%. The target population for the study involved the employees of the accredited SDPs within the North West province of South Africa as per SETA's database. The employees were conveniently sampled to respond to the closed-ended questions contained in the questionnaire. All 237 completed questionnaires were analysed using Microsoft Excel and Statistical Package for the Social Sciences (SPSS).

The questionnaire established the demographics of the respondents and determined the existence of KM within the SDPs, with the focus on the following aspects: knowledge management processes (KMP), STKM, drivers for knowledge management (DKM) and KMBC.

## Ethical considerations

In adherence to ethical guidelines, the research conducted herein received approval from the Economic and Management Sciences Research Ethics Committee (EMS-REC) at North-West University. Prior to commencing the study, all procedures and protocols were carefully reviewed and approved by the committee to ensure the protection of human subjects and the ethical conduct of research. Participants were provided with informed consent forms outlining the purpose, procedures, risks and benefits of the study and were assured of their voluntary participation and confidentiality of their data. Measures were taken to minimise any potential risks or discomfort to participants throughout the duration of the study. Additionally, all data collected was treated with strict confidentiality and anonymity. This study was conducted in accordance with the ethical principles outlined by the North-West University and the guidelines set forth by the Economic and Management Sciences Research Ethics Committee (EMS-REC), demonstrating our commitment to upholding the highest standards of integrity and respect for participants' rights (NWU-01830-22-A4).

## Results and discussions

This section provides a comprehensive description of the demographic information of the participants. The information encompasses the age, highest level of educational attainment, working experience and job title of the personnel in the SDPs. Tables were utilised in this study to present the analysis of the items contained within Sections A and B of the questionnaire. The data shown in the tables represent the opinions of the respondents, along with corresponding summaries. The frequencies and percentages of the demographic information are provided in Table 1.

According to the data provided in Table 1, the examination of the respondents' demographic information reveals that most SDPs in the North West province of South Africa (35.4%;  $n = 84$ ) are workers aged between 31 and 40 years. Moreover, a significant proportion of the employees (55.7%;  $n = 132$ ) hold a degree as their highest educational level, and 23.2% ( $n = 55$ ) have working experience ranging from 5 to 10 years. Finally, many employees (33.3%;  $n = 79$ ) are employed as Facilitators.

Moreover, to ascertain the presence of KM practices among SDPs, it was crucial to assess the respondents' comprehension and familiarity with the idea of KM. The evaluation is presented in Table 1. The data indicates that 65% ( $n = 154$ ) of the participants demonstrated familiarity with KM, whereas 35% ( $n = 83$ ) reported not being familiar with it. The results indicate that a majority of employees inside the SDPs (65%,  $n = 154$ ) are familiar with or comprehend the concept of KM.

**TABLE 1:** Frequencies and percentages of the demographics information.

Variable	Category	<i>n</i>	%
Age (years)	Under 20	1	0.4
	21–30	48	20.3
	31–40	84	35.4
	41–50	69	29.1
	51 and over	35	14.8
Highest qualification	Certificate	15	6.3
	Matric	16	6.8
	Diploma	55	23.2
	Degree	132	55.7
	Masters	18	7.6
	Doctoral	1	0.4
Working experience (years)	Less than 1	10	4.2
	Between 1 and 2	45	19.0
	Between 2 and 3	51	21.5
	Between 3 and 4	41	17.3
	Between 5 and 10	55	23.2
	Over 10	35	14.8
Job title	Administrator	74	31.2
	Facilitator	79	33.3
	Assessor	63	26.6
	Moderator	10	4.2
	Quality Assurer	11	4.6
Understanding and familiarity of the concept of knowledge management	Yes	154	65.0
	No	83	35.0
Types of knowledge	Tacit	47	20.0
	Explicit	61	26.0
	Tacit and explicit	129	54.0

From the analysis of the findings in Table 1, it is discovered that KM does exist within the SDPs. It is deemed crucial to determine the existence of KM because the training providers are operating in the sector categorised as the knowledge economy. Participants were prompted to identify the categories or forms of knowledge that exist inside the organisation. Fifty-four per cent of the respondents stated that both tacit and explicit knowledge are available in the SDPs, whereas 20% of the sample expressed the belief that tacit knowledge is present among the SDPs (Table 1). Moreover, 26% reported the presence of explicit information in SDPs. In support of the findings on tacit and explicit knowledge, Nonaka (1994:14), in his scholarly article on the idea of organisational knowledge creation, suggests that 'organisational knowledge is created through a continuous dialogue between tacit and explicit knowledge'.

### Reliability and validity

Cronbach's alpha was employed to assess the internal consistency and reliability of the measurement instruments. To provide satisfactory dependability, it is necessary to have a value exceeding 0.7 (Lobiondo & Haber 2013; Samuels 2017; Shuttleworth 2015). Based on the findings presented in Table 2, the Cronbach's alpha coefficients for each research construct indicate a range of 0.799 to 0.949. Given that all of these values are above the threshold of 0.7, the findings therefore confirm the dependability of the measures employed in this study.

Validity tests were conducted, and convergent and discriminant validity were evaluated. Both tests are described below as well as the findings in Table 3. Convergent validity is a measure of the extent to which the indicators of a concept converge, as determined by the explanation of item variance (Sarstedt et al. 2014). Furthermore, the assessment of the convergent validity of measurement items may be accomplished by examining the correlations within the item-total index, as demonstrated by Nusair et al. (2010). The convergent validity was achieved through item-to-total correlation values that ranged between 0.534 and 0.839 as indicated in Table 3. The results indicate the values of 0.5 and higher suggest a convergent validity (Cheung et al. 2023).

### Discriminant validity

Hair et al. (2014) state that to determine whether discriminant validity exists, it is necessary to determine whether the observed variable has a higher loading on its construct than

**TABLE 2:** Reliability assessment.

Construct	Number of items	Cronbach's Alpha
KMP	10	0.934
STKM	11	0.940
DKM	11	0.877
KMBC	12	0.934

KMP, knowledge management process; STKM, system tools that facilitate knowledge management; DKM, drivers for knowledge management; KMBC, knowledge management barriers and challenges.

on any other construct included in the structural model. As suggested by Chinomona (2011), the correlation between the research constructs must be less than 1.0 to ascertain discriminant validity. As demonstrated in Table 4, the inter-correlation values for all paired latent variables are less than 1, indicating the existence of discriminant validity.

The association among the established constructs varied from a slight negative value of  $-0.145^*$  (illustrating discriminant validity) to a moderate positive value of  $0.468^{**}$  (suggesting reasonable convergent validity). Analysis of the correlation matrix between these constructs indicates the presence of discriminant validity because of their considerable dissimilarity.

### Knowledge management processes

With regard to the KM processes within the SDPs, individual responses on the measurement items showed that the majority of respondents agreed with all the measurement items as demonstrated in Table 5. The highest percentage of respondents (42.2%) agreed with the statement 'knowledge created within the organisation is easily accessible', followed by 41.4% who also agreed that 'Sharing of knowledge across departments is easy'.

In the findings, it is highlighted that KM processes (creation, capturing, retention and sharing) are practised within the SDPs. From the results, it is revealed that access to knowledge within the SDPs was chosen as an essential aspect of the KM processes by the majority of the respondents. In general, KM processes are essential for organisations striving to remain competitive in the contemporary knowledge-based economy (Zaim, Muhammed & Tarim 2019). The SDPs are knowledge-driven because of the nature of the training and development programmes they are offering. Employees' access to knowledge in this skills-driven environment is important for the organisation, as it will enable the employees to be up-to-date and knowledgeable. This access to knowledge confirms that the SDPs have in place proper and user-friendly systems or tools to access knowledge.

Moreover, it is discovered from the results that the sharing of knowledge across departments is easy in the SDPs. With

easy access to knowledge, employees can share the created or acquired knowledge within the organisation. This emphasises that the sharing of knowledge is very important in the skills sector. Every employee needs to be up to date and well informed about the development in the organisation. Additionally, the acknowledgment of knowledge as a crucial asset for organisations within the contemporary business landscape affirms the necessity for KM processes that enable the creation, distribution, and implementation of both individual and collective knowledge (Martelo-Landroguez & Cepeda-Carrión 2016). Employees must understand the value of KM processes to contribute to the creation of new knowledge, including how it is acquired and stored for future purposes. This knowledge should also be shared with everyone to facilitate the successful implementation. As a result, the KM process is a critical component in the SDPs in the facilitation of KM implementation.

### Systems and/or tools that facilitate knowledge management

This study aimed to analyse the STKM at the SDPs. The findings indicated that the majority of respondents agreed with all statements on STKM as demonstrated in Table 6. On the item 'Online Meeting, Messaging and Boardroom discussions', the majority of the respondents (50.2%) agreed with the statement. The second item to be selected by the employees with (42.6%) majority was based on 'Training and Support (Online learning)'.

This portrays that online meetings, messaging and boardroom discussions are preferred system tools to facilitate

**TABLE 4:** Correlation between the constructs.

Construct	KMP	DKM	STKM	KMBC
KMP	1	-	-	-
DKM	0.457**	1	-	-
STKM	0.234**	0.468**	1	-
KMBC	0.400**	0.312**	-0.145*	1

KMP, knowledge management process; DKM, drivers for knowledge management; STKM, system tools that facilitate knowledge management; KMBC, knowledge management barriers and challenges.

\*\* , Correlation is significant at the 0.01 level (two tailed).

\* , Correlation is significant at the 0.05 level (two tailed).

**TABLE 3:** Item-to-total correlation values.

Item	Item to total correlation values	Item	Item to total correlation values	Item	Item to total correlation values	Item	Item to total correlation values
KMP1	0.821	STKM1	0.542	DKM1	0.687	KMBC1	0.606
KMP2	0.839	STKM2	0.653	DKM2	0.638	KMBC2	0.673
KMP3	0.562	STKM3	0.562	DKM3	0.657	KMBC3	0.734
KMP4	0.816	STKM4	0.534	DKM4	0.775	KMBC4	0.729
KMP5	0.817	STKM5	0.544	DKM5	0.798	KMBC5	0.751
KMP6	0.789	STKM6	0.704	DKM6	0.745	KMBC6	0.790
KMP7	0.810	STKM7	0.702	DKM7	0.763	KMBC7	0.690
KMP8	0.821	STKM8	0.462	DKM8	0.780	KMBC8	0.699
KMP9	0.685	STKM9	0.653	DKM9	0.744	KMBC9	0.744
KMP10	0.559	STKM10	0.382	DKM10	0.771	KMBC10	0.673
-	-	STKM11	0.699	DKM11	0.782	KMBC11	0.718
-	-	-	-	-	-	KMBC12	0.714

KMP, knowledge management processes; STKM, system tools that facilitate knowledge management; KMBC, knowledge management barriers and challenges; DKM, drivers for knowledge management.

**TABLE 5:** Knowledge management processes.

Variable	Percentage				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
KMP1	18.1	19.4	15.6	33.8	13.1
KMP2	17.7	19.8	15.2	34.6	12.7
KMP3	4.2	11.8	19.8	34.6	29.5
KMP4	19.0	20.3	15.6	32.9	12.2
KMP5	19.8	23.2	19.4	27.8	9.7
KMP6	19.0	18.6	17.3	32.5	12.7
KMP7	18.1	20.3	13.9	33.8	13.9
KMP8	17.7	19.8	15.6	35.9	11.0
KMP9	6.8	15.2	17.7	42.2	18.1
KMP10	5.9	13.5	16.0	41.4	23.2

KMP, knowledge management processes.

**TABLE 6:** System tools that facilitate knowledge management.

Variable	Percentage				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
STKM1	6.8	8.4	11.4	44.7	28.7
STKM2	9.7	11.4	21.9	36.7	20.3
STKM3	0.8	3.4	17.7	46.4	31.6
STKM4	3.4	9.3	16.0	40.1	31.2
STKM5	1.7	6.8	9.3	39.7	42.6
STKM6	8.0	14.8	22.4	30.4	24.5
STKM7	9.7	15.6	27.0	27.8	19.8
STKM8	7.6	9.7	16.9	38.0	27.8
STKM9	9.7	13.1	21.1	32.1	24.1
STKM10	0.8	3.4	11.4	34.2	50.2
STKM11	5.9	9.3	21.5	38.4	24.9

STKM, system tools that facilitate knowledge management.

KM in the SDPs. These system tools are considered effective and efficient by the employees of the SDPs. Employees recognise the important function of system tools in aiding KM; it can be emphasised that these tools are commonly known and utilised by employees at a regular basis whether in personal or work-related encounters. These tools contribute immensely to the creation, acquisition, storing, sharing and application of knowledge in the organisation. The use of tools enables the organisation to be effective and efficient in facilitating KM.

The main function of the SDPs is training and development. It is worth noting that the employees who are tasked to conduct skills development programmes recognised training as one of the critical components for STKM in the SDPs. Hence, KM system tools are regarded as methods and techniques that organise and categorise explicit knowledge logically and systematically gather, organise and standardise all the accumulated knowledge (Wu et al. 2011).

Several system tools have been developed and used to facilitate the deployment of KM in businesses. System tools that enable KM can be categorised based on their strategic approach, operational processes and technological capabilities. The tools in question have seen significant improvements in their characteristics and capabilities because of technological developments (Osman, Noah & Saad 2022). On the contrary, Reddy, Reddy and Jonnalagadda

(2022) asserted that improper use of STKM can lead to a decline in employee performance, innovation, quality of service, user satisfaction and other related factors. It is critical for the SDPs to have various system tools to facilitate KM implementation, and such tools must be maintained regularly.

## Drivers for knowledge management

One of the research objectives for this study was to assess drivers for KM within the SDPs. According to the results, the majority of respondents agreed with each and every driver for KM items in the measurement scale demonstrated in Table 7. On the item 'Enhancing work quality of projects', the majority (40.5%) of the respondents were in agreement, followed by 39.7% of the respondents who also agreed with the statement on 'Sharing employees' expertise and perceptions'.

The findings allude that within the drivers of KM in the SDPs, employees are more concerned with enhancing the work quality of training projects they are conducting. This means that to drive KM in the organisation, it is critical to enhance the quality of work on projects. This in turn will lead to customer satisfaction and gives the organisation a competitive advantage over its competitors.

Coming to the findings on the statement 'Sharing employees' expertise and perceptions', it is important to mention that these findings validate the results of KM processes on the item 'Sharing of knowledge across departments is easy'. It is presented that the employees in the SDPs are sharing their expertise and perceptions. In order for the skills development programmes to be executed and be successful, it is compulsory for the employees to share their expertise and perceptions. The staff component of these training enterprises is made up of individuals possessing different qualification levels and work experiences. The acknowledgement of employees' expertise and perceptions is considered an essential driver of KM in the SDPs.

The concept of a KM driver refers to a critical and indispensable element or circumstance that enables an organisation to effectively implement KM practices. This implies that the organisation must allocate attention to both favourable circumstances and pertinent variables in order to effectively implement KM (Wu et al. 2011). To achieve and sustain a competitive advantage, organisations must integrate appropriate key drivers for KM into their operations to enhance the KM resources (Ling et al. 2008). Through the drivers for KM, firms are anticipated to acquire the capacity to effectively manage their knowledge resources and, eventually, attain their strategic objectives (Yu, Kim & Kim 2004). Therefore, the SDPs should be conversant with the drivers for KM in their organisations and be in a position to promote and maintain their execution towards KM implementation.



## Knowledge management barriers and challenges

Another objective of this article was to measure KMBC in the SDPs. According to the findings, nearly half of the respondents agreed with each item on the KMBC within the SDPs (see Table 8). However, on the item 'Lack of resources in terms of a budget, staff, and IT infrastructure', the majority (38.4%) of the respondents were in agreement with the statement. Additionally, 36.3% of the respondents agreed with both statements concerning 'Lack of training, support and, leadership'.

The results indicate that the lack of resources is prevailing in the skills development enterprises. From this perspective, it is evident that the deficiency of resources such as budget, staff and IT is a serious barrier or challenge in skills development organisations. Without proper and sufficient resources, KM practice will never be realised. Furthermore, 'Lack of training, support and, leadership' in the SDPs were also identified as barriers or challenges for effective KM. If employees are not provided adequate training and support in KM practices, it will hamper the efficacy of the skills organisations. Without the leadership from the management of these skills enterprises, it will be impossible for KM to be implemented. The management needs to lead by example and provide guidance and support throughout the KM practice.

**TABLE 7:** Drivers for knowledge management.

Variable	Percentage				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
DKM1	5.5	16.5	18.1	38.0	21.9
DKM2	7.6	14.8	20.3	39.7	17.7
DKM3	5.1	18.1	20.7	36.7	19.4
DKM4	2.5	8.9	20.3	37.1	31.2
DKM5	3.0	5.5	21.1	40.5	30.0
DKM6	3.8	12.7	24.9	35.4	23.2
DKM7	3.8	9.3	19.4	34.6	32.9
DKM8	3.4	12.2	20.7	34.6	29.1
DKM9	4.6	11.4	26.6	34.2	23.2
DKM10	4.6	12.2	19.4	38.4	25.3
DKM11	4.2	8.4	14.3	38.4	34.6

DKM, drivers for knowledge management.

**TABLE 8:** Knowledge management barriers and challenges.

Variable	Percentage				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
KMBC1	9.7	21.5	19.4	32.5	16.9
KMBC2	9.3	21.5	15.2	36.3	17.7
KMBC3	5.9	21.1	15.6	30.0	27.4
KMBC4	8.4	18.6	15.2	30.0	27.8
KMBC5	8.9	19.8	13.9	25.7	31.6
KMBC6	9.7	18.6	13.5	27.4	30.8
KMBC7	13.5	36.3	19.8	19.4	11.0
KMBC8	14.8	35.0	16.9	21.5	11.8
KMBC9	15.2	36.3	19.0	19.8	9.7
KMBC10	13.1	38.4	15.2	21.1	12.2
KMBC11	16.0	30.8	17.7	20.7	14.8
KMBC12	11.8	28.3	21.5	24.1	14.3

KMBC, knowledge management barriers and challenges.

The employees need to be conscious of the factors that hamper their productivity and organisational success. Most organisations operate on strict budget allocations, whereas others struggle with the provision of resources. In such instances, it compels the employees to sacrifice, compromise and improvise on the organisational resources to keep the basic operations ongoing. To support the findings, a study conducted by Sharma and Singh (2015) has also identified several barriers and challenges related to KM within organisational contexts. These include a lack of involvement from the management team, an unsupportive organisational structure, little understanding of technology, a failure to learn from previous mistakes, a lack of trust among staff members, inadequate training programmes, restrictions on the distribution of knowledge and a scarcity of resources in terms of finance, IT infrastructure and human resources. Bartzak (2012) conducted a study to determine the existence of KM barriers. The study highlighted several difficulties encountered in KM implementation, such as the need for leadership training and dedication and the scarcity of resources. Therefore, the existence of KMBC should be evident to the management and employees within the SDPs. Additionally, measures should be put in place to overcome such obstacles towards KM implementation.

## Contribution

This article contributes to the body of literature and empirical findings on KM within South Africa. It is crucial to determine how KM practices are implemented in the skills sector. Additionally, the article offers insights into the existence and operations of the SDPs in the skills economy. This study emphasises the importance of KM for organisations responsible for imparting knowledge through training and development programmes. It emphasises the critical role played by the KM processes and system tools in the KM implementation. It further highlights the KM drivers, barriers and challenges to be considered in KM implementation within the SDPs.

## Implication to practice

The findings of this study are important to the skills development sector because this work has presented the literature on KM in SDPs. It is fundamental and required that the concept of KM is given more attention especially as the SDPs exist in the knowledge economy. It will be detrimental to the employee and management of the skills development sector enterprises to ignore the impact and value of KM in their organisations. In addition, it is also logical for the owners or managers of the SDPs to identify individuals within their organisations to work as knowledge specialists and dedicate duties and responsibilities for them to be able to enhance KM practices. With all the available KM systems and implementation plans in place, such resources will allow the SDPs to implement KM. The organisations will benefit and see the importance of KM in their operations and through their products and services.



## Limitations of the study

The limitation of this study was the data collection that was aimed at the employees exclusively of the owners or managers of SDPs in the North West province of South Africa. Additionally, limiting the gathering of data to a single province restricts the ability to generalise the study's findings. However, if the collected data were acquired from all the provinces, it would have made the findings applicable to the whole population of the SDPs in South Africa. The absence of an updated database of the accredited SDPs in the North West province from other SETAs entails that other organisations might have been left out of the study. This might have a negative impact on the study's sample size calculation, which was based on the databases of the accredited and active SDPs provided by the SETAs. Lastly, future research should be conducted with the use of a qualitative approach to acquire an in-depth understanding of KM in the SDPs.

## Conclusion

This article evaluated KM in SDPs. The findings support and promote the practice of KM within the skills development organisations. It is determined from the findings that the employees in the SDPs have an understanding and are familiar with the concept of KM. Moreover, the employees indicated the existence of both tacit and explicit knowledge in their organisations. The KM processes concluded that the accessibility and sharing of knowledge are highly taking place within the skills organisations. This emphasises the importance and value of knowledge among the employees of the SDPs. The findings regarding the system tools for facilitating KM in the organisations showed that the employees preferred to have online meetings, use instant messaging tools and boardroom discussions as systems or tools for KM practice. However, with regard to KMBC, more attention should be given to the provision of resources such as the budget, staff and IT infrastructure. Additionally, the lack of training, support and leadership were also identified as barriers and challenges in KM.

## Acknowledgements

The author would like to thank Dr Kaizer Ndlovu for his supervision, support and guidance in writing this article. This article is partially based on the author's thesis entitled 'Developing a framework for the implementation of knowledge management within skills development providers in South Africa' towards the degree of Doctor of Philosophy in Economic and Management Sciences with Business Administration in the Business School, North-West University, South Africa on 30 April 2024, with supervisor Dr Nkanyiso Kaizer Ndlovu. Not yet uploaded on the NWU Boloka Institutional Repository.

## Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

## Authors' contributions

R.K.L. contributed towards the conceptualisation and conducted the study towards his PhD research. R.K.L. was also involved in the writing of the article and handling all comments from the reviewers and the Editorial Board. N.K.N. contributed towards the conceptualisation, methodology, formal analysis, validation, writing, review and editing, supervision and funding acquisition of this research article.

## Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

## Data availability

The data that support the findings of this study are available from the corresponding author, R.K.L., upon reasonable request.

## Disclaimer

The views and opinions expressed in this article are those of the authors and are the product of professional research. It does not necessarily reflect the official policy or position of any affiliated institution, funder, agency or that of the publisher. The authors are responsible for this article's results, findings and content.

## References

- Abbas, J. & Kumari, K., 2021, 'Examining the relationship between total quality management and knowledge management and their impact on organizational performance: A dimensional analysis', *Journal of Economic and Administrative Sciences* 39(2), 426–451. <https://doi.org/10.1108/JEAS-03-2021-0046>
- Abbas, J., 2019, 'Impact of total quality management on corporate sustainability through the mediating effect of knowledge management', *Journal of Cleaner Production* 240, 118806. <https://doi.org/10.1016/j.jclepro.2019.118806>
- Ahmady, G.A., Nikooravesh, A. & Mehrpour, M., 2016, 'Effect of organizational culture on knowledge management based on Denison model', *Procedia-Social and Behavioral Sciences* 230, 387–395. <https://doi.org/10.1016/j.sbspro.2016.09.049>
- Al Naim, A.F., 2023, 'Enhancing workforce productivity and organizational agility through digital transformation: Role of technological integration, skills development initiatives and low organizational trust', *The Journal of Modern Project Management* 11(1), 324–341.
- Alavi, M. & Leidner, D.E., 2001, 'Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues', *MIS Quarterly* 25(1), 107–136. <https://doi.org/10.2307/3250961>
- Alfawaireh, F. & Atan, T., 2021, 'The effect of strategic human resource and knowledge management on sustainable competitive advantages at Jordanian universities: The mediating role of organizational innovation', *Sustainability* 13(15), 8445. <https://doi.org/10.3390/su13158445>
- Amit, R. & Schoemaker, P.J., 1993, 'Strategic assets and organizational rent', *Strategic Management Journal* 14(1), 33–46. <https://doi.org/10.1002/smj.4250140105>
- Ansari, M., Youshanlouei, H.R. & Mood, M.M., 2012, 'A conceptual model for success in implementing knowledge management: A case study in Tehran municipality', *Journal of Service Science and Management* 5(2), 212–222. <https://doi.org/10.4236/jssm.2012.52026>
- Azeem, M., Ahmed, M., Haider, S. & Sajjad, M., 2021, 'Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation', *Technology in Society* 66, 101635. <https://doi.org/10.1016/j.techsoc.2021.101635>
- Babbie, E., 2010, *The practice of social research*, 12th edn., Wadsworth/Thompson, Southbank.
- Badaracco, J.L., 1991, *The knowledge link: How firms compete through strategic alliances*, Harvard Business School Press, Boston, MA.
- Bartczak, S.E., 2012, 'Identifying barriers to knowledge management in the United States military', PhD thesis, The Graduate Faculty of Auburn University, Auburn, AL.

- Blackler, F., 1995, 'Knowledge, knowledge work, and organizations: An overview and interpretation', *Organization Studies* 16(6), 1021–1046. <https://doi.org/10.1177/017084069501600605>
- Boisot, M.H., 1998, *Knowledge assets: Securing competitive advantage in the information economy*, Oxford University Press, New York, NY.
- Bolisani, E. & Bratianu, C., 2018, 'The elusive definition of knowledge', in E. Bolisani & C. Bratianu (eds.), *Emergent knowledge strategies: Strategic thinking in knowledge management*, pp. 1–22, Springer International Publishing, Cham.
- Brewer, L., 2013, *Enhancing youth employability: What? Why? and How? Guide to core work skills/Laura Brewse*, International Labour Office, Skills and Employability Department, ILO, Geneva.
- Cepeda-Carrion, G., Cegarra-Navarro, J.G. & Cillo, V., 2019, 'Tips to use partial least squares structural equation modelling (PLS-SEM) in knowledge management', *Journal of Knowledge Management* 23(1), 67–89. <https://doi.org/10.1108/JKM-05-2018-0322>
- Chang, C.L.H. & Lin, T.C., 2015, 'The role of organizational culture in the knowledge management process', *Journal of Knowledge Management* 19(3), 433–455. <https://doi.org/10.1108/JKM-08-2014-0353>
- Chetty, R., Proches, C.N.G. & Singh, N., 2021, 'Knowledge management as a strategic asset for customer service delivery at a contact centre in South Africa', *Knowledge Management & E-Learning* 13(2), 225–249. <https://doi.org/10.34105/j.kmel.2021.13.013>
- Cheung, G.W., Cooper-Thomas, H.D., Lau, R.S. & Wang, L.C., 2023, 'Reporting reliability, convergent and discriminant validity with structural equation modeling: A review and best-practice recommendations', *Asia Pacific Journal of Management* 1–39. <https://doi.org/10.1007/s10490-023-09871-y>
- Chigada, J. & Ngulube, P., 2015, 'Knowledge-management practices at selected banks in South Africa', *South African Journal of Information Management* 17(1), 1–10. <https://doi.org/10.4102/sajim.v17i1.634>
- Chinomona, R., 2011, 'Non-mediated channel powers and relationship quality: A case of SMEs in Zimbabwe channels of distribution', Unpublished PhD thesis, National Central University, Taoyuan City.
- Chión, S.J., Charles, V. & Morales, J., 2020, 'The impact of organisational culture, organisational structure and technological infrastructure on process improvement through knowledge sharing', *Business Process Management Journal* 26(6), 1443–1472. <https://doi.org/10.1108/BPMJ-10-2018-0279>
- Cyster, C. & Salubi, O., 2022, 'Knowledge management practices in a religious organisation in South Africa', *European Conference on Knowledge Management* 23(1), 252–259. <https://doi.org/10.34190/ecmk.23.1.609>
- Daud, S. & Yusoff, W.F.W., 2011, 'How intellectual capital mediates the relationship between knowledge management processes and organizational performance?', *African Journal of Business Management* 5(7), 2607–2617.
- Davenport, T.H. & Prusak, L., 1997, *Working knowledge: How organizations manage what they know*, Harvard Business School Press, Boston, MA.
- De La Vega, A.F.R., 2010, 'Knowledge management and innovation: What must governments do to increase innovation?', in A. Green, M. Stankosky & L. Vandergriff (eds.), *In search of knowledge management: Pursuing primary principles*, pp. 275–285, Emerald Group Publishing, Bingley.
- Donate, M.J. & de Pablo, J.D.S., 2015, 'The role of knowledge-oriented leadership in knowledge management practices and innovation', *Journal of Business Research* 68(2), 360–370. <https://doi.org/10.1016/j.jbusres.2014.06.022>
- Etikan, I., Musa, S.A. & Alkassim, R.S., 2016, 'Comparison of convenience sampling and purposive sampling', *American Journal of Theoretical and Applied Statistics* 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Fachrunnisa, O., Adhiatma, A. & Tjahjono, H.K., 2020, 'Cognitive collective engagement: Relating knowledge-based practices and innovation performance', *Journal of the Knowledge Economy* 11, 743–765. <https://doi.org/10.1007/s13132-018-0572-7>
- Gaviria-Marin, M., Merigó, J.M. & Baier-Fuentes, H., 2019, 'Knowledge management: A global examination based on bibliometric analysis', *Technological Forecasting and Social Change* 140, 194–220. <https://doi.org/10.1016/j.techfore.2018.07.006>
- Ghahroudi, M.R., Hoshino, Y. & Ahmadpoury, F., 2019, 'The impact of knowledge management orientation on new product commercialization: The mediating role of market orientation', *American Journal of Industrial and Business Management* 9(10), 1949–1968. <https://doi.org/10.4236/ajibm.2019.910127>
- Greiner, M.E., Böhmman, T. & Krmar, H., 2007, 'A strategy for knowledge management', *Journal of Knowledge Management* 11(6), 3–15. <https://doi.org/10.1108/13673270710832127>
- Gwena, C. & Chinyamurindi, W.T., 2018, 'Effects of knowledge management on innovation capabilities amongst small and medium enterprises in South Africa: The case of Buffalo City Metropolitan Municipality', *Southern African Journal of Entrepreneurship and Small Business Management* 10(1), a177. <https://doi.org/10.4102/sajesbm.v10i1.177>
- Hair, J.F., Hult, G.T.M., Ringle, C.M. & Sarstedt, M., 2014, *A primer on partial least squares structural equation modelling*, Sage, Thousand Oaks, CA.
- Harris, R., Simons, M. & McCarthy, C., 2006, *Private training providers in Australia: Their characteristics and training activities. A national vocational education and training research and evaluation program report*, National Centre for Vocational Education Research Ltd., Adelaide.
- Hislop, D., Bosua, R. & Helms, R., 2018, *Knowledge management in organizations: A critical introduction*, Oxford University Press, Oxford.
- Kalkan, V.D., 2017, 'Understanding knowledge management in academic units: A framework for theory and research', *European Journal of Business and Social Sciences* 5(12), 1–14.
- Lategan, A.H. & Prinsloo, F.P., 2005, 'Identifying a national leadership skills training and development strategy for leaders within Sector Education Training Authorities (SETAs)', *SA Journal of Human Resource Management* 3(1), 43–50. <https://doi.org/10.4102/sajhrm.v3i1.54>
- Ling, T.N., Yih, G.C., Eze, U.C., Gan, G.G.G. & Ling, L.P., 2008, 'Knowledge management drivers for organisational competitive advantage', in *Proceedings of Applied International Business Conference*, Sabah, November 6–8, pp. 502–510.
- Lobiondo, G. & Haber, R.J., 2013, *Nursing research in Canada, methods, critical appraisal, and utilization*, 3rd Canadian edn., Elsevier, Toronto, ON.
- Mahdi, O.R., Nassar, I.A. & Almsafir, M.K., 2019, 'Knowledge management processes and sustainable competitive advantage: An empirical examination in private universities', *Journal of Business Research* 94, 320–334. <https://doi.org/10.1016/j.jbusres.2018.02.013>
- Makore, S. & Eresia-Eke, C., 2021, 'Knowledge management as an antecedent of performance in construction firms', *Journal of Contemporary Management* 18(2), 67–85. <https://doi.org/10.35683/jcm20120.120>
- Martelo-Landroguez, S. & Cepeda-Carrión, G., 2016, 'How knowledge management processes can create and capture value for firms?', *Knowledge Management Research & Practice* 14(4), 423–433. <https://doi.org/10.1057/kmnp.2015.26>
- Mavodza, J. & Ngulube, P., 2011, 'Exploring the use of knowledge management practices in an academic library in a changing information environment', *South African Journal of Libraries and Information Science* 77(1), 15–25. <https://doi.org/10.7553/77-1-63>
- Mayombe, C., 2022, 'Partnership with stakeholders as innovative model of work-integrated learning for unemployed youths', *Higher Education, Skills and Work-Based Learning* 12(2), 309–327. <https://doi.org/10.1108/HESWBL-03-2021-0065>
- Mello, A. & Fombad, M., 2018, 'Knowledge management practices in public organisations: The case of the National School of Government in South Africa', *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa* 2018(57), 70–89.
- Nonaka, I. & Takeuchi, H., 1995, *The knowledge-creating company: How Japanese companies create the dynamics of innovation*, Oxford University Press, New York, NY.
- Nonaka, I., 1994, 'A dynamic theory of organizational knowledge creation', *Organization Science* 5(1), 14–37. <https://doi.org/10.1287/orsc.5.1.14>
- Norma, R.O.M.M. & Nkambule, B., 2021, 'Knowledge management for effective and ethical management of public schools: Perspectives from South Africa', *Participatory Educational Research* 9(3), 166–179. <https://doi.org/10.17275/per.22.60.9.3>
- Nusair, K. & Hua, N., 2010, 'Comparative assessment of structural equation modeling and multiple regression research methodologies: E-commerce context', *Tourism Management* 31(3), 314–324. <https://doi.org/10.1016/j.tourman.2009.03.010>
- Oliva, F.L., 2014, 'Knowledge management barriers, practices and maturity model', *Journal of Knowledge Management* 18(6), 1053–1074. <https://doi.org/10.1108/JKM-03-2014-0080>
- Osman, M.A., Noah, S.A.M. & Saad, S., 2022, 'Ontology-based knowledge management tools for knowledge sharing in organization – A review', *IEEE Access* 10, 43267–43283. <https://doi.org/10.1109/ACCESS.2022.3163758>
- Purwanto, A., 2020, 'The role of job satisfaction in the relationship between transformational leadership, knowledge management, work environment and performance', *Solid State Technology* 63(2), 293–314.
- Reddy, H.B.S., Reddy, R.R.S. & Jonnalagadda, R., 2022, 'Literature review process: Measuring the effective usage of knowledge management systems in customer support organizations', *International Journal of Research Publication and Reviews* 3(7), 3991–4009. <https://doi.org/10.55248/gengpi.2022.3.7.45>
- Rezaei, F., Khalilzadeh, M. & Soleimani, P., 2021, 'Factors affecting knowledge management and its effect on organizational performance: Mediating the role of human capital', *Advances in Human-Computer Interaction* 2021, 1–16. <https://doi.org/10.1155/2021/8857572>
- Saarikoski, H., Primmer, E., Saarela, S.R., Antunes, P., Aszalós, R., Baró, F. et al., 2018, 'Institutional challenges in putting ecosystem service knowledge in practice', *Ecosystem Services* 29(Part C), 579–598. <https://doi.org/10.1016/j.ecoser.2017.07.019>
- Samuels, P., 2017, *Advice on exploratory factor analysis*, Centre for Academic Success, Birmingham City University, Birmingham.
- Santoro, G., Vrontis, D., Thrassou, A. & Dezi, L., 2018, 'The Internet of Things: Building a knowledge management system for open innovation and knowledge management capacity', *Technological Forecasting and Social Change* 136, 347–354. <https://doi.org/10.1016/j.techfore.2017.02.034>
- Sarstedt, M., Ringle, C.M., Smith, D., Reams, R. & Hair, J.F., Jr, 2014, 'Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers', *Journal of Family Business Strategy* 5(1), 105–115. <https://doi.org/10.1016/j.jfbs.2014.01.002>
- Sharma, B.P. & Singh, M.D., 2015, 'Modeling the knowledge sharing barriers: An ISM approach', *International Journal of Knowledge-Based Organizations (IJKBO)* 5(1), 16–33.
- Shuttleworth, M., 2015, 'Internal consistency reliability', *Consistency-Reliability* 18(3), 66–67.
- Singh, M.D. & Kant, R., 2008, 'Knowledge management barriers: An interpretive structural modelling approach', *International Journal of Management Science and Engineering Management* 3(2), 141–150. <https://doi.org/10.1080/17509653.2008.10671042>

- Sokoh, G.C. & Okolie, U.C., 2021, 'Knowledge management and its importance in modern organizations', *Journal of Public Administration, Finance and Law* 20(1), 283–300. <https://doi.org/10.47743/jopaf1-2021-20-19>
- Sunassee, N.N. & Sewry, D.A., 2002, 'A theoretical framework for knowledge management implementation', in *Proceedings of the 2002 Annual Research Conference of the South African Institute of Computer Scientists and Information Technologists on Enablement through Technology*, Port Elizabeth, September 16–18, pp. 235–245.
- Wiig, K.M., 1993, *Knowledge management foundations: Thinking about thinking: How people and organizations create, represent, and use knowledge*, Schema Press, Arlington, TX.
- Wong, K.Y., 2005, 'Critical success factors for implementing knowledge management in small and medium enterprises', *Industrial Management & Data Systems* 105(3), 261–279. <https://doi.org/10.1108/02635570510590101>
- Wu, C.C., Wu, C.H., Li, C.C. & Huang, T.H., 2011, 'Drivers of organizational knowledge management', *African Journal of Business Management* 5(11), 4388–4402.
- Yang, D.Y., 2011, 'The effect of knowledge management on product innovation – Evidence from the Chinese Software Outsourcing Vendors', *iBusiness* 3(1), 16–22. <https://doi.org/10.4236/ib.2011.31003>
- Yu, S.H., Kim, Y.G. & Kim, M.Y., 2004, 'Linking organizational knowledge management drivers to knowledge management performance: An exploratory study', *Proceedings of the Hawaii International Conference on System Sciences* 37, 3697–3706.
- Zaim, H., Muhammed, S. & Tarim, M., 2019, 'Relationship between knowledge management processes and performance: Critical role of knowledge utilization in organizations', *Knowledge Management Research & Practice* 17(1), 24–38. <https://doi.org/10.1080/14778238.2018.1538669>