Influencing factors of Knowledge sharing amongst academics in Western Cape's Universities and HEIs, South Africa

by

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I declare that the above dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I have submitted the dissertation to originality-checking software and that it falls within the accepted requirements for originality.

28 November 2023

_____   _____

SIGNATURE: DATE

DEDICATION

This study is dedicated to my children, you are my joy and the stars that illuminate my universe, and it is with boundless love and unwavering belief in your potential that I dedicate this lifetime to you. Navigate life's journey with courage, kindness, and resilience, embracing the pursuit of knowledge and the beauty of empathy. Your wings are destined for greatness. Let the flame of curiosity guide you towards your dreams. Always know that in every step, you carry the love, hopes, and dreams of parents who believe in your limitless potential.

ACKNOWLEDGEMENTS

ABSTRACT

Higher education institutions (HEIs) create, disseminate, share, and exchange knowledge through relationships among people, processes, and technologies. Knowledge sharing (KS) in academia enables people within institutions to develop practices that allow them to collect and share what they know. Higher education institutions are knowledge-intensive centres. This often leads to actions that compete to improve services and outcomes. Despite these opportunities, knowledge sharing has implications because it exposes the knowledge sharer and recipient to several vulnerabilities and risks, which influence the knowledge-sharing process. This study investigates factors that influence knowledge-sharing intentions amongst academics in SA institutions of higher learning.

The research used an online questionnaire-based survey to collect knowledge-sharing intentions data from personnel at three universities and one TVET (Technical and Vocational Education and Training) college located in the Western Cape Province, South Africa. Data analysis was performed using SPSS (Statistical Packages for Social Sciences) and the findings of this study revealed that academics' KS intentions are positively influenced by organisational culture, organisational structure, self-efficacy, and technology literacy. This study has reinforced the understanding of the factors that influence KS amongst academics in South African HEIs.

KEYWORDS: Academics; Higher education institution; knowledge sharing; Knowledge management; Universities.

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TERMS AND DEFINITIONS

Term	Definition
Academics	Knowledge workers engaged in creating and disseminating new knowledge through lecturing, writing and research (Jones and Sallis, 2013)
Community of Practice (CoP)	Defined as formal or informal groups of persons sharing the same concern or set of problems, they interact, share, develop and expand their knowledge on that particular subject (Wenger, 2014; Heeyoung and Lisang, 2014; McDonald and Cater-Steel, 2016)
Intellectual Capital (IC)	Defined by Yogesh Malhotra in "Knowledge assets in global economy" as intangible knowledge assets that are distinguished from traditional factors of production. Unlike the traditional factors that are governed by the law of diminishing returns, Knowledge economy is guided by increasing returns whereby marginal increase in performance is realised for every additional knowledge unit effectively used". (Malhotra, 2000)
Knowledge Management (KM)	Knowledge management (KM) is the process of producing, archiving, applying, updating, and disseminating knowledge both internally and externally. (Alavi and Leidner, 2001, 114).
Knowledge Sharing (KS)	Knowledge sharing is defined as the transfer of knowledge among individuals, groups, teams, departments, and organisations (Asrar-ul-Haq and Anwar, 2016, 2).

LIST OF ACRONYMS

4IR: Fourth Industrial Revolution

COP: Community of Practice

HEIs: Higher Education Institutions**.**

IC: Intellectual Capital

IT: Information Technology

KM: Knowledge Management

KMS: Knowledge Management System

KS: Knowledge Sharing

KW: Knowledge Worker

SA: South Africa

SPSS: Statistical Package for Social Sciences

TVET: Technical and Vocational Education and Training

Unisa: University of South Africa

UCT: University of Cape Town

UWC: University of Western Cape

CHAPTER 1: INTRODUCTION

1.1 Introduction and Background

In today's knowledge-based economies, the key role played by Knowledge Management (KM) in driving economies has gained momentum and recognition. According to Bitkowska (2016), KM connects people, processes and technology to leverage the organisation's knowledge base that is used to achieve its strategic objectives, improve performance, decision -making and drive innovation.

The understanding of KM has evolved and advanced remarkably over the last three decades (Girard, 2015). In modern times, Industry 4.0 with its capabilities to integrate and interconnect devices and machines to enhance capabilities to learn and share data autonomously has positively influenced the birth of KM 4.0 (Manesh etal., 2020). Today, KM has become a reference field offering theoretical, conceptual, and methodological basis to other disciplines (Razi and Habibullah, 2017). KM and its processes have been studied from various angles and contexts including knowledge sharing (KS) in higher education institutions in various countries. While universities and higher education institutions (HEIs) may not be perceived as profit-driven enterprises, they are not immune to evolving perspectives on the role of knowledge in society. HEIs inherently operate in knowledge-rich environments, with their primary mission being the creation and dissemination of knowledge through teaching, learning, and research (Corcoran and Duane, 2018). Economic and societal factors, along with national policies, are increasingly galvanising public HEIs into adopting business-like practices.

HEIs face pressure to cut costs, enhance efficiencies, and generate their revenue streams, as they compete globally for students (Fullwood and Rowley, 2017). According to Mazorodze and Buckley (2020), Knowledge sharing is vital in knowledge-intensive organisations like universities and HEIs; to this end, it is crucial for these organisations to harness the intellectual capital of their staff to remain globally competitive. Consequently, it is logical for KM to occupy a central role in the business strategy of universities and HEIs to recognise, manage, and leverage the knowledge assets of HEIs. Kidwell, Vander Linde, and Johnson (2000) suggest that effective KM can lead to improved decision-making, shorter cycles for curriculum and research development, improved academic and administrative services, and cost reductions.

Knowledge is now regarded as a very important intangible asset with potential to be exploited by organisations to gain a competitive advantage (Tseng and Lee, 2014). Research has proved that managing knowledge effectively can lead to innovation, sustainability, and improved business performance (Tseng and Lee, 2014). As attested by UNESCO (2009), universities and HEIs ought to create mutual partnerships with communities and civil societies to facilitate knowledge transmission and sharing for sustainable development (Meek, Teichler and Kearney, 2009). As far as Durst and Wilhelm (2012) are concerned, knowledge has become a crucial asset for organisations in the 21st century.

Universities and HEIs are knowledge-intensive organisations whose knowledge is embedded in academic staff members. Polanyi (1966) posits that knowledge comes in two types, namely:

implicit and explicit. In contrast to tacit knowledge, which is a personalised quality that is challenging to formalise and transmit, Polanyi (1966) is of the view that explicit knowledge refers to knowledge that can be conveyed in a formal, organised language. (Nonaka, Byosiere and Borucki, 1994). Knowledge is believed to be valuable to a community only when it is shared within a community of practice; this leads to knowledge sharing.

Knowledge residing in the minds of academics does not meaningfully contribute to organisational success until it is shared with others within the organisation (Mkhize, 2015). This knowledge can be easily lost when academics in question retire, resign, or die; hence, the importance of sharing it. Essentially, knowledge sharing within communities of practice leads to individual learning, organisational learning, sustainability, and continuous innovation (Ling, 2011). It is therefore imperative that academics share knowledge within a community of practice. It is against this backdrop of knowledge sharing that the researcher seeks to:
Investigate the factors that influence the South African academics' intentions to share information.

1.2   Problem Statement

This research addresses the limited understanding of knowledge sharing (KS) factors and how academics in South African universities and HEIs share knowledge. Knowledge is widely considered as one of the key means of production in business today, and it results in sustainable competitive advantage as well as value and wealth-creation for organisations (Al-Kurdi, El-Haddadeh and Eldabi, 2018). Management of knowledge is therefore essential for businesses' success (Holste and Fields, 2010). Drucker (1993) described knowledge as the sole key economic resource in a knowledge society.

Universities and HEIs are the epitome of knowledge-intensive environments (Corcoran and Duane, 2018). Given their engagement in research and dissemination of knowledge through publications and conferences, universities and HEIs are knowledge-intensive institutions (Fullwood and Rowley, 2017). However, knowledge amongst academic staff is rarely shared in a systematic manner. As a result of failing to effectively share knowledge within a community of practice, universities and (HEIs) could face huge challenges when shifting towards a knowledge-based economy (Alsaadi, 2018). A knowledge-based which is characterised by the growing importance of intellectual capital (IC) and (KS) to raise education performance and improve educational programs, and the overall outcomes in universities and HEIs (Al-Kurdi, El-Haddadeh and Eldabi, 2018).

1.3   Purpose of the Study

The purpose of this research is to study and enhance the understanding of (KS) factors among academics in South African universities and (HEIs). The research will create a conceptual framework to facilitate the understanding of factors that influence knowledge sharing amongst academics in South African universities and HEIs.

1.4 Research Questions

Primary research question

The primary research question of the study is:

Which critical factors influence knowledge sharing among academics in SA universities and HEIs?

Secondary research questions

The secondary research questions of the study are:

1. What is the influence of organisational factors on KS amongst academics in SA?
2. What are the individual factors that influence KS among academics?
3. What are the technological factors that determine knowledge sharing in SA universities and HEIs?
4. How can a conceptual framework that can be used to study KS intentions amongst academics in SA universities and HEIs be developed?

1.5 Research Objectives

The significance of this study lies in its potential to contribute to the improvement and advancement of academia in SA. To improve collaboration amongst academics, the study will examine how academics in universities and other higher education institutions share their knowledge. Knowledge sharing boosts research outputs and strengthens academic networks. Identifying barriers and opportunities for KS can inform policies and funding decisions and thus promote open access and inclusivity in academic research. Ultimately, the research findings may lead to a more connected and collaborative academic community, of South African academics.

Primary research objectives

The primary research objectives of the study is to:

Investigate factors that influence the sharing of academic knowledge amongst academics in South African universities and HEIs, by exploring the factors that either facilitate or hinder knowledge sharing.

The secondary research objectives of the study are:

1. To investigate organisational factors that affect KS amongst academics in South African universities and HEIs.
2. To explore individual factors which influence KS amongst academics in South African universities and HEIs
3. To explore technological factors that determine knowledge sharing amongst academics in South African universities and HEIs.
4. To develop a conceptual framework that can be used to study KS factors amongst academics in South African universities and HEIs.

1.6 Research Hypothesis

The following three hypotheses were developed from the research objectives of the study and will be tested and validated:

H1:   Organisational factors have a positive relationship with knowledge sharing.

H2:   Individual factors have a positive relationship with knowledge sharing.

H3:   Technology literacy has a positive relationship with knowledge sharing.

1.7 Research Methodology and Design

Research methodology "controls the study, dictates how the data is acquired, arranges them in logical relationships, sets up an approach for refining and synthesising them" (Leedy and Ormord, 2013). Methodology plays a critical role in research studies; this chapter serves as a blueprint and guide, detailing the approach, procedures, and techniques utilised in this study to obtain reliable and valid findings. The research methodology is summarised in Table 1.1.

Table 1.1: Methodology and design summary

Research onion layer	Selection for the study
Philosophy	Positivist
Approach	Deductive
Strategy	Survey
Methodological choice	Mono method-Quantitative
Time horizon	Cross-sectional
Data collection	Questionnaire
Data analysis	Descriptive and inferential statistics

1.8 Validity and Reliability.

The validity of the study is frequently mentioned with reference to the accuracy or reliability of the results, and the conclusion must be sufficiently precise to address the research issue. In the opinion of Saunders et al. (2019), the measurement's validity determines whether the instrument only measures the things it is designed to measure. Therefore, content validity assures that the items correspond to the evaluation's subject.

Validity

The validity of the study refers to the extent to which the findings accurately and reliably represent the intended research objectives (Creswell and Creswell, 2018). The concept diagram's sets of data items for each factor in this study were validated using content validity. Research questions were based on the existing literature and were directly connected to the stated hypotheses and research goal to improve the validity. To enhance validity, the researcher used rigorous data analysis techniques, critically interpreted the results, and acknowledged limitations. The

researcher also considered whether findings could be generalised to larger populations and locations with similar characteristics to the study population (Saunders et al., 2019). By upholding these principles, the study can generate trustworthy and meaningful insights into KS amongst academics in South African universities and HEIs.

Reliability

The reliability of a study refers to the extent to which its results are consistent, stable, and can be trusted to accurately represent the phenomenon under investigation. It represents how much trust can be put in the findings and if a similar set of outcomes would be obtained if the study was to be conducted again under identical circumstances. Ranjit (2019) indicates that the reliability of a questionnaire is shown when participants understand the questions in a similar way, even at different times. Achieving reliability involves employing rigorous research methods, consistent data collection procedures, and ensuring that the study's instruments and measures produce consistent results over time. High reliability enhances the credibility of the research and increases confidence in its conclusions, making it a crucial aspect of any valid and valuable research.

1.9 Ethical Consideration

When conducting this research, the researcher paid careful attention to ethical considerations set out by the University of South Africa (Unisa). Respondent's rights to anonymity, confidentiality and access to information were upheld ensuring that all participants are fully aware of the study's purpose, procedures, and potential risks. Confidentiality and data privacy were rigorously maintained to protect the identities and sensitive information of the participants. Any potential conflicts of interest were disclosed and managed transparently to uphold the integrity of the research as per Unisa policies.

1.10 Significance of the Study

The significance of this study lies in its potential to contribute to the improvement and advancement of academia in South Africa. To improve collaboration amongst South African academics, the study will examine how academics in universities and other HEIs share their knowledge. Knowledge sharing boosts research output and strengthens academic networks. Identifying barriers and opportunities for knowledge sharing can inform policies and funding decisions, thus promoting open access and inclusivity in academic research. Ultimately, the research findings may lead to a more connected and collaborative academic community of South African academics.

1.11 Research Contribution

The study contributes to the advancement of KS within the context of African universities and HEIs. Literature suggests that most empirical studies on KS were conducted in the business sector (Chedid, Caldeira and Alvelos, 2019). The researcher seeks to explore the factors that facilitate or hinder the sharing of knowledge in South African universities and HEIs.The study brings to light the organisational, individual, technological, and knowledge-sharing factors that either support or hinder the sharing of knowledge amongst academics. It suffices to say that it is the responsibility of the institution's leaders to create an enabling culture and environment support

knowledge sharing, motivate employees, and ensure the availability of technology that facilitates KS as well as the smooth and free flow of knowledge (Nonaka et al 1994). Improved KS helps management with decision-making processes that enable and universities and HEIs to efficiently achieve their goals (Fullwood and Rowley, 2017).

Self-efficacy and motivation are individual factors that have a bearing on knowledge sharing. Academics desire recognition and reward for their contribution. This then leads to the point that reward systems should be implemented to promote and stimulate knowledge sharing (Muqadas et al, 2017). On the other hand, organisational, individual, and technological factors can also be hindrances to knowledge sharing in South African HEIs. Essentially organisations that do not support KS encourage knowledge hoarding; equally, such Institutions tend to fall behind in creativity and innovation (Bibi and Ali, 2017). Lack of leadership, lack of appropriate reward system, and lack of knowledge sharing platforms and technological factors can cause South African universities and HEIs to drop in knowledge transfer rankings. The study will highlight areas that need to be improved to facilitate and accelerate the rate of knowledge sharing amongst academics and fully realise the benefits of the knowledge economy. There is ample opportunities for universities and HEIs to address KS limitations amongst knowledge workers (KW) with the view to improve the knowledge transfer in SA as the country is gearing up for the fourth industrial revolution (4IR).

1.12 Dissertation Layout

This dissertation is comprised of five chapters, which are outlined below.

Chapter 1: Introduction

This chapter provides the introduction, background, and motivation for the study. The research questions, objectives, significance, and contribution of the study are also outlined.

Chapter 2: Literature Review

The chapter reviews literature that relates to this study. The chapter covers the following: an introduction to the literature review; a discussion of the theories that underpin the study; the contextual framework developed for the study; the factors that influence knowledge sharing; and more detailed discussion on barriers and challenges to KS which were highlighted in this chapter. The study hypothesis was also developed in this chapter.

Chapter 3: Research Design and Methodology

Chapter 3 elaborates in detail the research methodology and design adopted for this study. Furthermore, the chapter narrates aspects relating to population sampling, the sample size, demographics, measuring instrument, use of the questionnaire as a data collection method, data analysis, descriptive statistics, and ethical clearance procedures.

Chapter 4: Data Analysis, Results, and Interpretation

In Chapter 4, the data analysis and interpretation delve into the comprehensive analysis and interpretation of the collected data. This crucial phase is accomplished through the

implementation of a variety of analytical methods. The methods allow deep exploration of the data, extracting meaningful insights, patterns, and trends to give the study a more holistic understanding of the data's significance and implications. The chapter ensures a rigorous and systematic approach to data examination, which enhances the validity and reliability of the study's conclusions.

Chapter 5: Conclusion and Contribution

This is the last chapter of the dissertation, and it provides a comprehensive summary of the research findings using the data interpretation and analysis from the preceding chapters as a foundation. Apart from addressing the research objectives and questions, this chapter articulates key insights and conclusions derived from the study. It highlights the significance of the research, emphasising its contributions to the existing body of knowledge in the field. The chapter discusses the implications of the findings and their relevance to academics in South African universities and HEIs. Additionally, it identifies potential areas for future research and offers recommendations for practical applications. Chapter 5 serves as a vital endpoint to the study, summarising its outcomes and showcasing its value in advancing the understanding and practice of KS among academics in South African universities and HEIs.

1.13 Summary

This maiden chapter of this comprehensive study plays a crucial role in introducing the landscape of KS amongst academics in South African universities and HEIs. It provides a concise yet informative overview of existing literature, setting the stage for the subsequent research. The chapter outlines the study's research objectives, methodology, and its intended contributions to the academic community and South African society at large. Furthermore, it discusses the rationale behind the study, articulates the problem statement, and outlines the research questions that it aims to answer.

As the chapter unfolds, it provides insight into the methodology used to gain meaningful insights and previews the structure of the upcoming dissertation. Chapter 1 acts as a guide, ensuring that both researchers and readers embark on a journey of knowledge that will be thoroughly explored in the subsequent chapters. The next chapter (i.e., the literature review) explores the various research studies that are pertinent to this study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The practice and application of knowledge management (KM) in organisations is not new; it has always existed. Knowledge management is essential for the success and sustainability of organisations, although it has only been acknowledged as one of the most important strategic resources in organisations within the past ten years (Ipe, 2003 as cited in Nonaka and Takeuchi, 1995). It is acknowledged that improving an organisation's competitiveness, innovation and overall performance can be achieved through KM, which reduces duplication of effort (Girard, 2015). Knowledge management refers to the process of systematically capturing, acquiring, organising, and sharing both explicit and tacit knowledge of employees to maximise organisational learning (Alavi and Leidner, 1999; Davenport et al, 1998). Nonaka (2007) referred to KM as knowledge-based management that connects people to people and people to information to create a competitive advantage. The subject of KM is not a new concept. Alavi, Kayworth and Leidner, (2005) define KM as "The generation, representation, storage, transfer, transformation, application, embedding, and protection of organisational knowledge".

The purpose of this literature review is to document and analyse the body of information already available and recent research on knowledge sharing (KS) in the Western Cape universities and higher education institutions (HEIs) in particular and KM in general. Several theories have been developed and studied over the years to understand human knowledge-sharing behaviour. The theory of reasoned action (TRA), which Fishbein and Ajzen (1975) established, serves as the foundation for the conceptual research model.

2.2. Theoretical Frameworks

2.2.1 Theory of reasoned action

The TRA is a well-known theory used to investigate knowledge-sharing intention in many circumstances, and it is used to predict and explain individual behaviour. Specific behaviours are generally governed by a reasoned action approach, which assumes that people's behaviour reasonably flows from their beliefs, attitudes, and intentions, as claimed by Ajzen and Fischbein (1991). According to this viewpoint, the TRA is founded on the idea that a person's behaviour is dictated by that person's behavioural intention to carry it out. The individual's views and subjective norms about the behaviour influence this purpose in and of themselves. This study applies a framework illustrated by Figure 2.1, which conceptually follows the TRA (Wang and Wang, 2012). Few researchers have investigated the causes of attitudes towards knowledge sharing, and this emphasises the need to include additional factors to provide a more comprehensive outlook and better explanation of human behaviour. Consequently, this study incorporates the internal and extrinsic motivating components investigated by Ling (2011). Other than having a huge impact on the attitude toward knowledge since people do not work, learn, or share knowledge in isolation but rather together, networking has a significant impact on motivation, which is described as energised or activated towards an end (Wang and Noe, 2010).
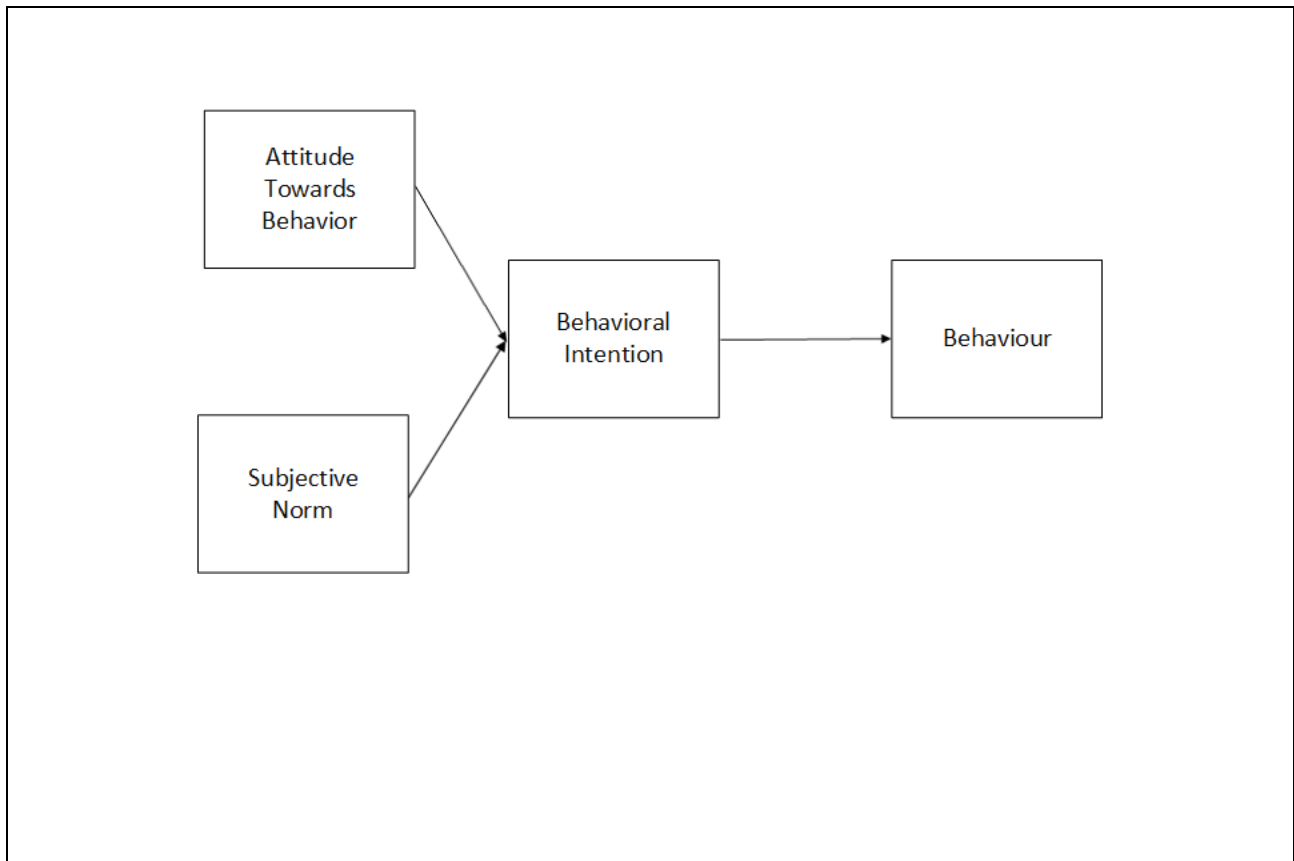
Figure 2. 1: Theory of Reasoned Action adopted from Fishbein and Ajzen, (1975).

2.2.2. Theory of Planned Behaviour

One of the most well-known theories for evaluating individual behaviour is the theory of planned behaviour (TPB) which was developed in the 1980s; formerly known as the TRA and was first put forth by Ajzen and Fishbein (1980). According to TRA, behaviour predicts both attitude and subjective norms. TPB in 1990 included the additional variable of perceived behavioural control (PBC) (Ajzen, 2006). According to the TPB, three distinct antecedents—attitudes, subjective standards, and perceived behavioural controls—control human behavioural intentions to engage in specific behaviours (Ajzen, 1991). Morris, Marzano, Dandy, and O'Brien (2012), proclaim that TPB is one of the most important and frequently applied theories to explain human behaviour in particular settings. Additionally, TPB is a recognised theory with known variables that affect both behavioural intention and actual behaviour (Hsieh, Rai, and Keil, 2008; Pavlou and Fygenson, 2006). TPB was successfully used in various research to identify and forecast factors that influence people's KS intentions and behaviour (Abzari and Abbasi, 2011; Daud et al., 2015; Goh and Sandhu, 2014; Tohidinia and Mosakhani, 2010). Even though the TPB was initially one of the most applied behavioural models, academics have thought about ways to go beyond it. To improve our collective understanding of KS behaviours, several authors have combined elements derived from other theories, such as Social Cognitive Theory, Self Determination Theory, and others (Chennamaneni, 2006; Tohidinia and Mosakhani, 2010). Similarly, this study seeks to extend the TPB by incorporating several additional variables emanating from the literature review.
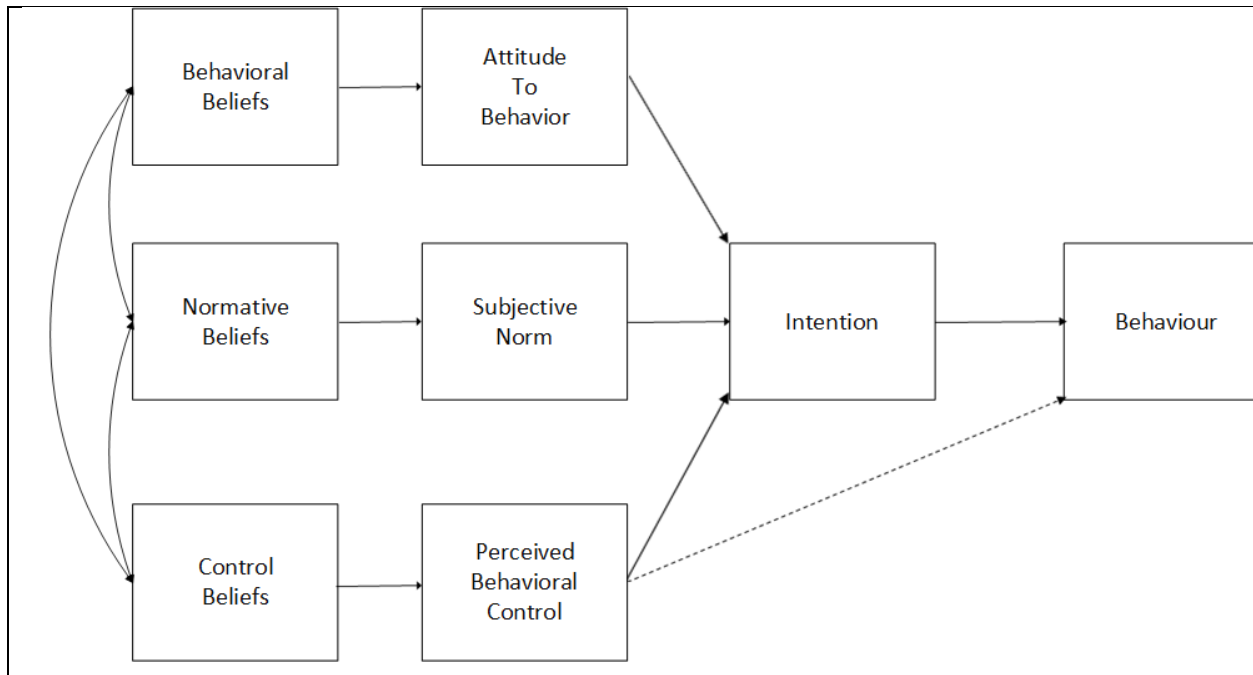
Figure 2. 2: Theory of Planned Behaviour adopted from Ajzen and Fishbein (1980)

2.2.3 Social cognitive theory

Social cognitive theory (SCT) was developed by Bandura (1977), and it posits that human actions are influenced by the social network that a person is a part of as well as that person's intelligence (Chiu, Hsu and Wang, 2006; Lin and Huang, 2010). In fulfilment of the SCT, a person's behaviour is impacted in part by the environment in which they are as well as their own cognition, such as their beliefs and expectations (Bandura, 1997). Furthermore, this theory suggests that people are influenced by self-efficacy, or the confidence people have in their skills to carry out specific tasks, as well as the results they anticipate from carrying out those tasks (Hsu et al., 2007). The theory is highly relevant to understanding KS among academics. In the academic setting, KS plays a vital role in advancing research, fostering innovation, and enhancing collective learning.

Personal factors

SCT underscores the significance of personal factors, observational learning, and the interplay between cognitive processes and the environment in shaping behaviour. When applied to KS among academics, the theory highlights the importance of self-efficacy, rewards, organisational culture, organisational structure, organisational climate, and management support. All these factors comprise the organisational factors to be investigated in this study.

External environment

SCT also acknowledges the influence that social contexts such as trust have on traits and behaviour. The theory explains how social contexts might affect a person's behaviour (Chang et al., 2013). The theory considers how individuals interact with one another, the environment in which they live or work, and how that environment affects them (Chang et al., 2013). This study explores how trust in universities and HEIs influences knowledge-sharing behaviour.

Behaviour

Behavioural factors play a crucial role in KS among academics, influencing the extent to which information and expertise are exchanged within the academic community. Factors such as trust, and reciprocity are essential when creating a conducive environment for KS in universities and HEIs.
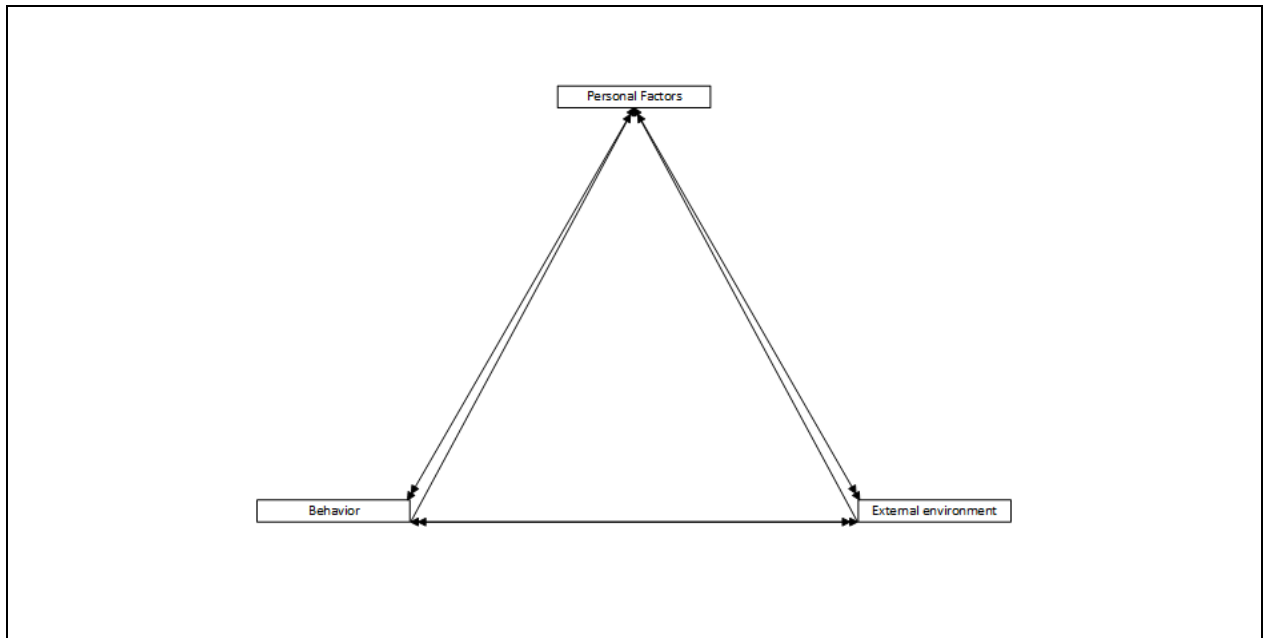
Figure 2. 3: Social Cognitive Theory adopted from Bandura (1977)

2.2.4 Technology Acceptance Model

The Technology Acceptance Model (TAM) is a theoretical framework that builds upon the theory of reasoned action (TRA) to explain the acceptance and adoption of information systems (Davis, 1989, Davis et al., 1989). TAM predicts intention to use technology (Braun, 2013). TAM purports that an individual's intention to use a system is influenced by two key factors, namely: perceived usefulness and perceived ease of use. This means that users are more likely to adopt a new system if they perceive it as useful for their tasks and find it easy to use. However, TAM acknowledges that certain limitations, such as limited skills, time constraints, environmental or organisational factors, and unconscious habits, can hinder the freedom to use technology (Gangwar, 2018).

Focusing on these two crucial factors, TAM provides valuable insights into user behaviour and has proven to be a powerful tool for studying the adoption of information technologies across various contexts. It represents a significant theoretical contribution to the study of ICT adoption and usage behaviours (Chen and Li, 2011; Galletta, 1999). While TAM has been criticised on other grounds, it serves as a useful general framework and is consistent with several investigations regarding factors that influence older adults' intention to use new technology (Braun, 2013).
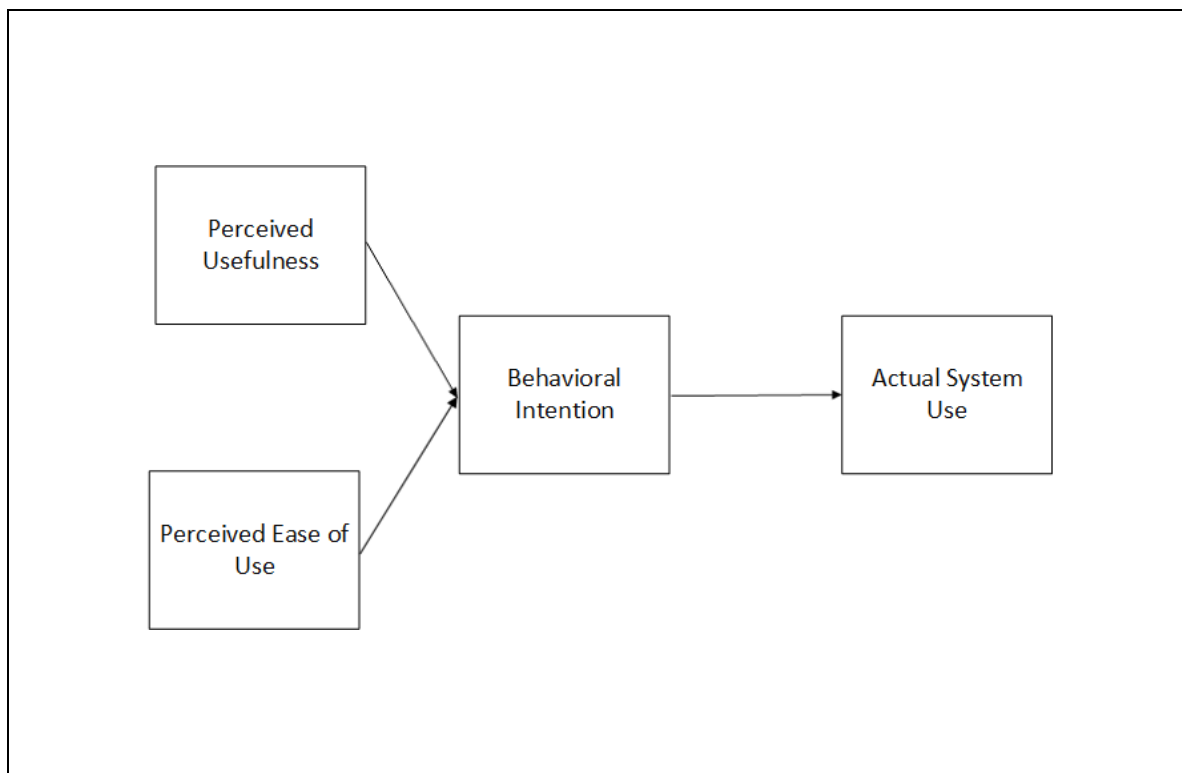
Figure 2. 4: Technology Acceptance Model adapted from (Davis, 1989)

The factors in this study, namely organisation, individual, technological factors, and KS intention, are derived from TRA, TPB, SCT and TAM theories.

2.3   Preliminary Literature Review

Factors that influence KS amongst academics either facilitate or hinder knowledge sharing in South Africa (SA). The literature is categorised into four subcategories namely: organisational, individual, technological and knowledge factors.

2.3.1   Factors facilitating knowledge sharing.

Knowledge sharing is the vital process of disseminating knowledge within an organization, and facilitating collaboration among academics (Perik, 2014). It entails people sharing information, which results in the creation of new knowledge and insights (Perik, 2014). Ipe (2003) emphasises that knowledge sharing acts as a channel that converts individual knowledge into competitive and economic value for the organization, creating an essential connection between individuals and institutions.

Moreover, the creation of new knowledge through KS provides institutions with a competitive edge and improves overall performance and results. Nassuora and Hasan (2009) emphasize the importance of capturing, organizing, and sharing the wealth of knowledge existing within universities and (HEIs) to benefit other academics. This process includes activities that enhance organisational learning capacity, encourage collaboration, make it easier to share information, and facilitate the achievement of both individual and organizational goals (Lin, 2006).

For KS to flourish within universities and HEIs, certain key facilitating factors are essential. Organizational, individual, technological, and knowledge-sharing factors have been identified as crucial elements of this process. These factors collectively contribute to fostering an environment

conducive to knowledge sharing. In this section of the study, we aim to explore the positive influence of organizational, individual, and technological factors, as well as knowledge-sharing factors, on the intentions of academics to engage in knowledge-sharing within HEIs and universities.

2.3.2 Organisational factors

Organisational culture, management support, organisational structure and trust influence the intentions to share knowledge in universities and HEIs. These factors facilitate the sharing of knowledge by aligning to the strategic organisational structure in a manner that promotes the movement of knowledge within the institution to empower individuals and improve the institute's performance (Al-Kurdi, El-Haddadeh and Eldabi, 2018).

2.3.2.1 Organisational culture

Several definitions are used to describe organisational culture. The CISM Review manual 15th edition defines culture as a pattern of behaviours, beliefs, assumptions, attitudes, and ways of doing things. Furthermore, it is stated that organisational culture profoundly influences knowledge-sharing behaviour within an organisation. According to Schein (1985), organisational culture is shared values, beliefs and practices of the people within an organisation. Organisational culture is also "A long-standing set of common values, beliefs, customs, practices, principles, and routines that guide how an organisation and its members behave" (Lin, 2006). Organisational culture is reflected in organisational structures, stories, and missions. Schein (1984) proposed that organisational culture is the "pattern of basic assumptions that a given group has invented, discovered, or developed to address its problems with external adaptation and internal integration, that have worked well enough to be considered valid and, as a result, to be taught to new members as the proper way to perceive, think, and feel about those problems." A culture that allows KS facilitates problems to be solved, encourages creativity, innovation and enables new members to integrate quickly into the organisation. Maiga (2017) stated that organisational culture develops norms that create an organisational setting for social interaction and influence people's communication and information sharing.

Emphasis should be placed on a positive culture that promotes the sharing of knowledge among HEIs and university staff because it results in positive outcomes and performance. Research has proved that positive elements of culture directly support knowledge sharing and encourage innovation. When knowledge-sharing culture is incorporated into organisational strategy, it permits change in the attitude and behaviour of employees and stimulates the eagerness to share knowledge (Mansor, Mustaffa and Salleh, 2015).

2.3.2.2 Management support

The Leadership style ad adopted within the HEIs and universities plays a crucial role in influencing KS in universities and HEIs. Research has proved that participative leadership styles, as opposed to autocratic ones, are supportive and conducive to fostering KS in HEIs (Fullwood, Rowley and McLean, 2018). Xue, Bradley, and Liang (2011) reckon that there is a direct impact on KS produced by empowering leadership on KS initiatives. Conversely, Fullwood et al., (2019)

discovered that KM is impeded by a laissez-faire management style in HEIs and universities. Studies have demonstrated that when management supports knowledge sharing in HEIs, there is a noticeable improvement in both the quality and quantity of the knowledge shared amongst academics (Wang and Noe, 2010). Management should support and develop an environment that promotes and provides sufficient resources for exchange of knowledge within an organisation. Effective management support goes beyond simple resource allocation but also the cultivation of a positive working environment that support KS acknowledged that management support includes resource allocation, a positive working environment created and KS (Amayah, 2013).

The leadership style adopted within universities and Higher Education Institutions (HEIs) plays a pivotal role in shaping the culture of knowledge sharing (KS). Research underscores that participative leadership styles, as opposed to autocratic ones, are conducive to fostering KS within HEIs (Fullwood, Rowley, and McLean, 2018). Xue, Bradley, and Liang (2011) highlight the direct impact of empowering leadership on facilitating KS initiatives. Conversely, Crawford (2005) found that a laissez-faire management approach can hinder Knowledge Management (KM) efforts within HEIs.

Studies have consistently demonstrated that when management actively supports knowledge sharing initiatives within HEIs, there is a noticeable enhancement in both the quantity and quality of shared knowledge (Wang and Noe, 2010). Moreover, colleagues' encouragement of KS has been found to positively influence employees' perceptions of the usefulness of knowledge sharing platforms. Effective management support entails not only resource allocation but also the cultivation of a positive working environment conducive to knowledge exchange (Amayah, 2013b). Organizational backing significantly impacts trust within academic institutions, thereby promoting a culture of openness and collaboration (Amayah, 2013).

HEIs and universities' failure to provide adequate management support may lead to academics hoarding crucial information, jeopardizing the institution's ability to thrive. Therefore, management support emerges as a crucial factor in policy formulation, fostering organizational culture, and driving innovation within HEIs (Maiga, 2017). In academic environments where management support is encouraged, KS flourishes, as a result fostering innovation and creativity amongst academics. Empowering leadership is widely recognized as a catalyst for nurturing a KS culture among academics in universities and HEIs (Fullwood et al., 2018).

2.3.2.3 Organisational structure

HEIs should create and maintain structures that facilitate KS. The formal organisational structures within universities should encourage interactions among academics to increase effective KS (Al-busaidi, Olfman and Al-busaidi, 2014). Knowledge is shared informally even in highly structured organisations because employees often share knowledge unconsciously through informal interactions (Amayah, 2013). Formal channels or structures of communication must be established because using informal structures results in some knowledge being lost in the process. The transfer of tacit knowledge in higher education institutions is influenced by

organisational structures, which should be created to encourage people to share their expertise. This would facilitate the transfer of information inside educational institutions (Asrar-ul-Haq and Anwar, 2016). A culture that values innovation and emphasises learning from mistakes is especially important since, as KS demonstrates, failure is not the end but rather a teaching opportunity (Wang and Noe, 2010). While tacit information is more difficult to formalise and express, it may still be shared with the right structures. Explicit knowledge is easier to communicate and share because it is formal and systematic (Perik, 2014). Less hierarchical departments encourage KS by facilitating the sharing of expertise among colleagues. To maximize knowledge transfer and achieve strategic goals, institutions should prioritize structures that align with their business objectives (Maiga, 2017).

2.3.2.4 Organisational climate.

Organisational climate is described as a context associated with the thoughts, feelings, and behaviours of the individual employees (Chen, et al 2012). It is closely related to culture in the sense that climate is easily identified and changed, and its elements are temporary, however, culture can be not easily changed (Jain, Sandhu and Goh, 2015). Elements such as fairness, innovativeness, and affiliation can hamper KS when they are not addressed properly. When females are not treated equitably as it often happens in many institutions, gaps are created that result in these females not being willing to share knowledge with their male counterparts.

Organisational climate is a key driver for KS amongst academics (Chen, et al 2012). The organisational climate has an impact on KS behaviour (Amayah, 2013 as cited in Za´rraga and Bonache, 2003). In an organisation where personal competition is emphasised amongst employees, there will be an unwillingness to share knowledge (Amayah, 2013). A positive organisational climate facilitates KS strategies; in contrast, a negative organisational climate is a barrier to the willingness to share knowledge amongst academics. Three main aspects of organisational climate influence KS namely: fairness, innovativeness, and affiliation (Chen, et al 2012). While fairness will positively lead academics to freely share knowledge and become knowledge workers in a community of practice, unfair behaviour can hinder KS among academics. In environments where there is no innovation, creativity and technology development, KS does not thrive. Therefore, lack of innovation and technology development limits KS.

Chen et al (2012) describe the connectivity of social behaviours and norms. Affiliation is that sense of oneness in a community of practice. If individual academics do not value or recognise some affiliation, the sharing of knowledge is inhibited. A literature review on organisational climate led to the following hypothesis.

H1: Organisational factors have a positive relationship with knowledge sharing.

2.3.3   Individual factors

Nonaka and Takeuchi (1995) as cited in Maiga (2017) postulate that the success of KS depends on the involvement of individuals because individuals are originators and communicators of information. Involvement and willingness to share information is of paramount importance in KS

practices. Organisations cannot produce knowledge without individuals, and unless individual knowledge is shared with other individuals and groups, the information is likely to have limited impact on organisational effectiveness (Ipe, 2003). Of great interest is the fact that an organisation's ability to leverage knowledge is highly dependent on its employees, who create, share, and use knowledge and further build on the knowledge of other academics (Ipe, 2003). Individual factors in the study are self-efficacy and motivation.

2.3.3.1 Self-efficacy

At all levels in HEIs, enjoying sharing knowledge and self-efficacy play a major role in an individual's willingness to share their knowledge (Noor, et al 2014). Self-efficacy refers to a person's self-evaluation and confidence in one's ability to share knowledge (Perik, 2014). Self-efficacy is further defined as an individual's judgement of their capability to execute a particular behaviour (Chen, et al 2012). Self-efficacy influences behaviour by affecting motivation and confidence to overcome difficulties and improve performance (Chen, et al 2012). It also influences willingness and interest to share knowledge by changing perceptions of academic staff. Thus, academic staff in universities and HEIs have the confidence and ability to easily share knowledge with co-workers since they spend much of their time-sharing knowledge with students.

2.3.3.2 Motivation

Motivation is another element that facilitates the sharing of knowledge in HEIs. It influences the behaviour of academics to share knowledge through intrinsic and extrinsic values. (Ipe, 2003) believes that because people are unlikely to share knowledge without significant personal motivation, knowledge does not easily flow across the organisation. Amayah (2013) listed three categories of motivational factors that affect someone's readiness to share knowledge, namely personal benefits, community-related considerations, and normative considerations. Financial incentives and rewards seem to be the main drivers of academics' decisions on whether or not to share their expertise (Cheng et al, 2009). When knowledge is shared for personal enhancement, it results in status and career development and a better professional reputation (Amayah, 2013). Sharing knowledge to establish ties, build a stronger community and fortify one's position in a community. Studies found this to have a bearing on information sharing in HEIs (Amayah, 2013). Normative factors are associated with organisational norms. Inkpen and Tsang (2005) as cited in Asrar and Anwar (2016) are of the view that when individuals develop friendly relations in the organisation, the chances of knowledge transfer are enhanced, and this is beneficial to organisations. According to research, those who are friendlier tend to be more driven and more willing to share knowledge with their colleagues (Al-Husseini and Elbeltagi, 2015).

Islam et al. (2015) revealed that through the help of technological knowledge, organisations have been able to gather and distribute vast amounts of information and data in a short time. This method of dissemination is commonly used to enable users to access and share knowledge.

2.3.3.3 Reward system

Rewards and incentives are useful tools for encouraging KS among academics. In light of this, organisational incentives and rewards are intended to motivate individuals to share their

knowledge. Apart from financial compensation, an individual's actions and mindset can also be externally driven by opportunities for career growth, education, and reputation (Jahani, Ramayah and Effendi, 2011).

Reward systems play a vital role in the success of KS amongst academics (Mansor and Saparudin, 2015). According to Hashim and Ali (2014), there is a positive relationship between reward systems and KS. When reward systems are put in place, more knowledge is likely to be shared in an organisation. Reward systems should be aligned with the objectives of an organisation because some behaviours that are exhibited in the organisation reflect how employees are rewarded (Tan 2016). Extrinsic and intrinsic incentives are equally significant because individuals have different motivations for enhancing their knowledge. In a same vein, rewards have the potential to encourage KS if they are properly observed. Tan (2016) asserts that HEIs are more likely to have low KS among academics when they lack clear rewards programmes and financial policies that promote knowledge sharing.

Zhang and Jiang (2015) suggested that rewards can be a potential trigger for KS. KS across cultures may also be hampered by a lack of incentives. This study demonstrates how acknowledging KS's contributions among staff members can foster a positive work environment and raise morale. To bolster this perspective, Cabrera and Cabrera (2005) proposed that companies that acknowledge and incentivize KS activity in their employees comprehend that KS is an organisational value proposition.

2.3.3.4 Collaboration

Collaboration is the readiness to cooperate with others to produce better results (Seonghee and Boryung, 2008). As stated by Tan (2016), an effective research collaboration among academics promotes KS by not only adding value but also creating new value since collaboration brings academics together to plan, discuss and solve common work tasks. Collaboration and productivity tools such as Google Workspace, and Microsoft Teams facilitate interactions, the exchange of ideas and the application of knowledge among academics. Academics' willingness and ability to share knowledge encourage them to collaborate for large projects or research work to be conducted efficiently and effectively. This leads to the following hypothesis:

H2: Individual factors have a positive relationship with knowledge sharing.

2.3.4 Technology factors

Modern digital technologies open doors to vast realms of information that enable seamless long-distance collaboration among academics (Norulkamar and Hatamleh, 2014). Institutions should actively promote and support the training of academics by utilizing various electronic platforms for communication and collaboration. As highlighted by Zhang, (2014), contemporary social media platforms like Facebook, Twitter, and Instagram can serve as powerful tools for fostering a culture of knowledge-sharing in the workplace. Academics need to enjoy using technology for them to be more willing to share their knowledge, Technology must be user-friendly (Cheng, Ho, and Lau,

2015). Furthermore, the adoption of technology can significantly boost academics' motivation to engage in knowledge sharing (Norulkamar and Hatamleh, 2014).

2.3.4.1 Technology Literacy

Technological literacy is the understanding, attitude, and ability of people and organisations to effectively use digital tools and technology to identify, access, interact, transact, manage, analyse, and synthesise digital resources to produce or construct new knowledge (Biswas and Pahwa, 2015). In the current digital age, technology literacy is an important skill in education. Universities and HEIs must work hand in hand with industries to improve the effectiveness and ability of students to incorporate technology into the industrial system (Biswas and Pahwa, 2015). Academics rely on ICT as an enabler and technology skill to collaborate and create new knowledge.

2.3.4.2 Skills Technology Applications Training

Knowledge application is defined as the process of using and applying knowledge to accomplish a task and mission (Abdullah, Selamat, Jaafar, Abdullah and Sura, 2008). Training on how to use information technology is essential because academics must be able to use technology to accomplish tasks and roles efficiently. According to Alavi, Kayworth, and Leidner (2006), only academics who possess proficiency in using technology, are willing to impart their knowledge, and inspire others to acquire it. Sharing information through different digital technologies and platforms enables people who are limited by geographical distance, space, and time to collaborate easily. Universities and HEIs should implement skills training and development courses or programs to encourage continuous learning of digital or technology skills. Skills development for academics enables them to share knowledge and skills efficiently.
This leads to the following hypothesis:

H3: Technology literacy has a positive relationship with knowledge sharing.

2.3.5 Knowledge-Sharing Intention

For Universities and HEIs to fully leverage the benefits of KS, they must integrate KS into their strategic planning processes (Maiga, 2017). This mandate ensures that academics actively engage in knowledge-sharing practices. By providing academics with the necessary tools, they can effectively pass on knowledge among themselves and impart students with insights relevant to the corporate landscape. KS intentions depend on several factors like organisational, individual and technological factors that influence the individual's willingness to share knowledge and the channels of communication in place (Lin, 2012). The conceptual framework of the study is based on the hypotheses formulated in this study and is illustrated in Figure 2 5.
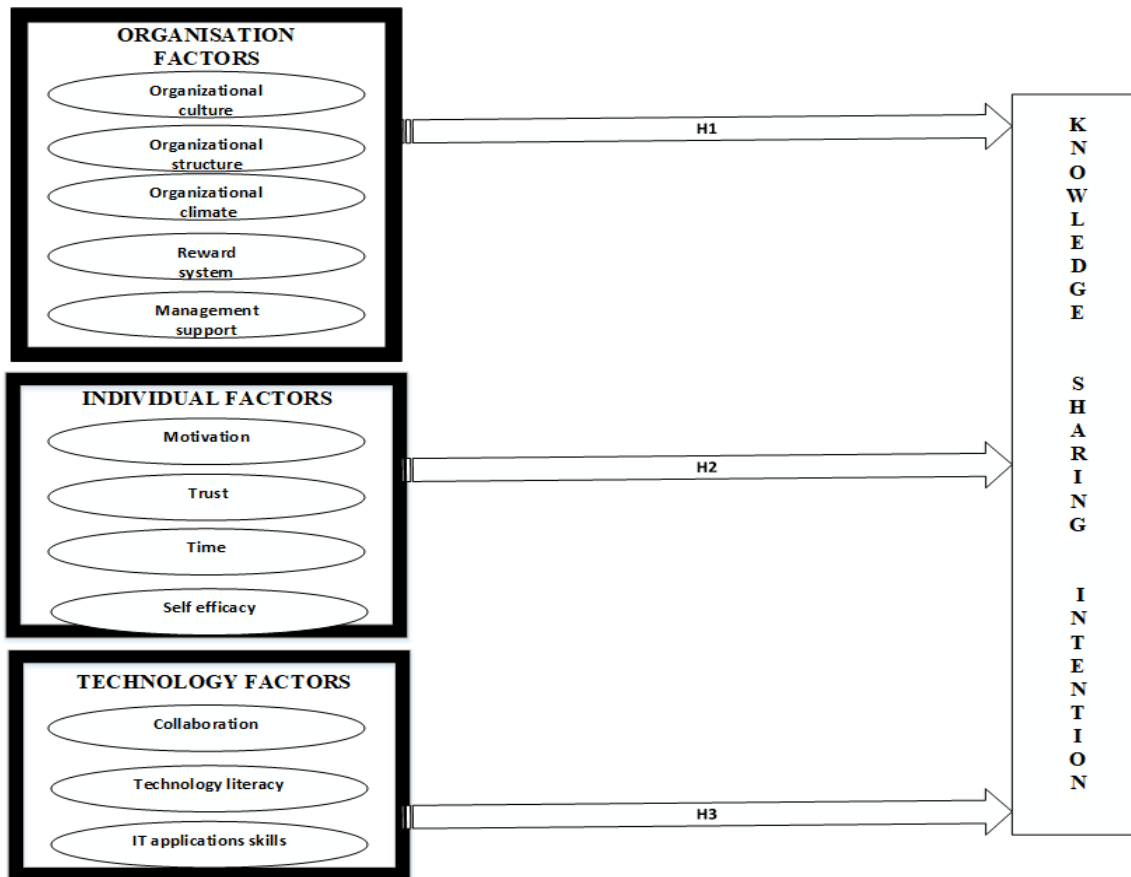
Figure 2. 5: Conceptual Framework (developed by the Author)

2.4 Barriers to Knowledge Sharing Amongst Academics

Universities and higher education institutions (HEIs) inherently thrive as knowledge-intensive entities, as evidenced in the literature (Howell and Annansingh, 2013). They stand as quintessential hubs for knowledge generation, application, and dissemination, embodying the essence of knowledge-driven enterprises (Cronin and Davenport, 2000; Ramachandran, Chong, and Ismail, 2009 as cited in Goddard, 1998). The fundamental tenet of Knowledge Sharing (KS) revolves around harnessing available knowledge to optimize organizational performance (Salisbury, 2003; Cheng, Ho, and Lau, 2009 as cited in Alavi and Leidner, 1999).

However, academic discourse highlights recurring cases of knowledge hoarding among scholars (Muqadas, Aslam, and Rahman, 2017). Given that academics serve as knowledge workers, the sharing of tacit knowledge entrenched within their expertise represents a pivotal institutional asset for attaining sustainable competitive advantage (Nassuora and Hasan, 2009). Despite the abundance of knowledge within academic circles, a prevailing reluctance to share knowledge impedes the realization of its full potential within the community of practice. This reluctance is attributable to a myriad of factors.

Three main categories can be used to classify barriers to knowledge sharing: information technology issues, organisational factors, and individual factors (Riege, 2005).

2.4.1 Organisational factors

Organisational factors fall outside of individual factors. External factors comprise managerial roles to support, lead, motivate and provide adequate resources for KS. Organisational factors include organisational culture and organisational structure. It is the organisational structure that defines

the behaviour, attitudes, dispositions, and ethics that create the organisational culture (Masters and Skola, 2014). When an organization's culture is out of step with its strategies, employees get demoralised or unmotivated, which leads to knowledge hoarding. In order to avoid any snags resulting from misalignment, strategic leaders are urged to align culture with strategy (Asrar-ul-Haq and Anwar, 2016).

Furthermore, an organisational culture that is not aligned with strategies leads to dysfunctional behaviours that promote unwillingness to share knowledge. A culture that does not support and reward knowledge exchange does not motivate academics. It is emphasised that impediments to information sharing should be removed to give employees the most suitable tools and create a conducive environment that promotes productivity and enable institutions to attain a competitive edge (Nonaka et al., 1994). In as much as academic departments are unique and complex, cultures may be different between departments (Fullwood, et al, 2013). This results in rifts being created as staff only want their department to perform better than the other. A culture that does not emphasise trust in institutes of higher learning is a great barrier to KS as most of the knowledge is confidential.

Other organisational barriers that prevent employees from sharing knowledge include organisational climate (Amayah, 2013). KS among academics is impeded by organisational factors like as reward schemes and managerial support (Al-Kurdi, El-Haddadeh, and Eldabi, 2018).

2.4.1.1 Organisational culture

Organisational culture is defined as shared work values, beliefs, norms, assumptions, and traditions (Galer, Vriesendorp and Ellis, 2005). It is "The way we do things here", (Blackshaw and Communications, 2018). In addition, culture refers to a system of beliefs entrenched in society and expressed through the behaviour of the people and organisation (Asrar-ul-Haq and Anwar, 2016). Organisational culture primarily deals with academics' adoption of correct norms, values and beliefs on KS, and organisational culture has a complex and crucial relationship with the knowledge-sharing activities in the organisation. Literature suggests that organisational culture has a positive influence on KS activities (Corcoran and Duane, 2018 as cited in Hyslop 2013). Despite this, a number of compelling reasons and research point out the detrimental effects that organisation culture can have on KS. According to Alavi, Kayworth, and Leidner's (2005). Unfavourable organisational culture might result in dysfunctional behaviours that encourage a reluctance to share knowledge. Accordingly, unfavourable organisational cultures can be a major obstacle to knowledge sharing among academics (Bass and Avolio 1993).

An organisational culture that is not aligned with strategies demoralises or demotivates staff resulting in knowledge being hoarded. Specific emphasis is placed on strategic leaders to align culture to strategy with a view to eliminate any hiccups resulting from misalignment (Asrar-ul-Haq and Anwar, 2016). Furthermore, an organisational culture that is not aligned with strategies leads to dysfunctional behaviours that promote unwillingness to share knowledge. Along with that, barriers to knowledge sharing should be broken to give employees the most suitable tools and

create a conducive environment for productivity and attest to their competitive edge (Nonaka et al., 1994). Organisation culture that does not emphasise trust in institutes of higher learning is a great barrier as most of the knowledge is of confidentiality.

Organisational culture can be classified into two groups, namely: transactional and transformational (Corcoran and Duane, 2018). Formal hierarchical structures, processes, and procedures are the foundation of transactional culture, which is strongly related to them. This is the dominant style of HEIs and is always distinct from most commercial and public organisations. KS is hindered by transactional culture, in contrast to transformational culture, which encourages workers to be adaptable, dynamic, flexible, and willing to share knowledge (Corcoran and Duane, 2018).

2.4.1.2 Organisational structure

Organisational structure, according to Liao, Chuang, and To (2011), is the set of administrative controls and officially assigned duties used to oversee and coordinate work processes. According to Masters and Skola (2018), organisational culture and structure are intertwined. Management should support knowledge-sharing initiatives and promulgate a KS culture within HEIs (Noor et al, 2014). Bureaucratic structures in universities are barriers to knowledge sharing amongst academics. Academics tend to implement KS strategies better in flexible decentralised environments compared to highly centralised environments (Jain and Sandhu, 2015). It is therefore imperative that structures in HEIs must support KS.

Fullwood, Rowley and Delbridge (2013) point out that the organisational structure of HEIs could be a significant barrier to KS amongst academics if they take the form of individualism and most academics tend to work in isolation. Furthermore, the fact that in some university structures, different faculties have different structures could be a hindrance to KS (Fullwood, Rowley and Delbridge, 2013).

Institutions of higher education are characterized by intricate structures that inherently pose obstacles to Knowledge Sharing (KS). One of the biggest challenges facing KS is the variety of university faculties, each having its own distinct organisational structure (Fullwood, Rowley, and Delbridge, 2013). Formalised structures help prevent knowledge loss by providing individuals with clear instructions on the necessary procedures and protocols. This hinders KS initiatives.

Moreover, the hierarchical reporting structures prevalent in higher education institutes often stifle KS by promoting vertical communication channels while impeding horizontal exchanges (Noor, Hashim, and Ali, 2014). A lack of horizontal communication channels and a lack of engagement among academic personnel create strong obstacles to information sharing. Maiga (2014) highlights how the absence of formal structures exacerbates bureaucratic hurdles, impeding KS and exacerbating inefficiencies within universities and HEIs. The emphasis on vertical communication, driven by bureaucratic layers, further complicates KS initiatives, as it fails to facilitate the free flow of knowledge through horizontal channels.

Furthermore, effective knowledge sharing hinges on open lines of communication. When communication pathways are restricted or unavailable, the dissemination of knowledge becomes severely constrained, hindering the sharing process itself.

2.4.1.3 Organisational climate

Organisational climate is described as a context associated with thoughts, feelings, and behaviours of the individual employee (Chen, Chuang and Chen, 2012). It is closely related to culture in the sense that climate is easily identified, and its elements are temporary, however, culture cannot be easily changed (Jain, Sandhu and Goh, 2015). Elements such as fairness, innovativeness and affiliation can hamper KS when they are not addressed properly. As previously mentioned, unfair and unequal treatment of females in the workplace has the potential to discourage them from sharing knowledge with their male counterparts.

Organisational climate is a key driver for KS amongst academics (Chen, et al 2012). The organisational climate in which academics work has an impact on KS behaviour (Amayah, 2013 as cited in Za´rraga and Bonache, 2003). In workplaces where employees are very competitive with one another, such cultures prevent KS (Amayah, 2013). A positive organisational climate facilitates KS. On the other hand, KS among academics is impeded by an unfavourable organisational climate. Fairness, innovativeness, and affiliation are the three primary organisational climate dimensions that have an impact on KS (Chen, et al 2012).

While fairness will help academics become knowledge workers in a community of practice and encourage them to freely share their knowledge, unfair behaviour can impede knowledge sharing among academics. KS does not flourish in circumstances devoid of innovation, creativity, and technological advancement. Thus, KS is limited by a lack of innovation and technological advancement Chen et al, (2012). Within a community of practice, affiliation is the feeling of unity. KS is hampered when academics do not respect or acknowledge certain affiliations.

2.4.1.4 Reward system

Studies and literature have revealed that incentives and reward systems motivate academics to share knowledge (Al-Kurdi, El-Haddadeh and Eldabi, 2018). The absence of both incentives and reward systems can be a huge barrier to KS (Ling, 2011). People generally need to be appreciated and their efforts recognised and rewarded (Blackshaw and Communications, 2018). If the rewards are not favourable people are not motivated to either work or share the knowledge they have. A disproportion of individual efforts and the reward and recognition systems discourage KS among academics (Mcdermott and O'Dell, 2001). Maiga (2016) stressed that people's ability to create, share, and apply information is hampered by a lack of incentives and rewards. Higher education establishments cease creating and sharing knowledge as a result, failing to fulfil their duty in society.

2.4.1.5 Management support

The absence of managerial backing is an additional organisational hurdle that KS faces. One of the obstacles facing KS is the lack of effective administrative leadership and guidance (Riege,

2005). Sometimes management fails to provide sufficient guidance, ongoing assistance, and training. To support KS, Davenport (1997) emphasised that management must give financial support and a commitment to KS practices. Management should allocate sufficient budgets to support knowledge distribution and collaboration within organisations (Riege, 2005). Senior management should be able to formulate, align and integrate KS into the goals and strategic objectives of the business. Leadership is dysfunctional if it disregards the expectations of its subordinates as a collective (Hofstede, 1991). To gain the support of academic staff in KS, senior management needs to communicate goals and intentions transparently (Howell and Annansingh, 2013). Departments find it challenging to share knowledge when higher education officials fail to emphasise the value of KS and the appropriate use of technology. For information to move between departments and within departments, clear communication channels must be established. Organisational factor barriers to KS were described by Reige (2005) and are included in Table 2.1.

Table 2.1: Potential organisational factor knowledge sharing barriers (Riege, 2005)

Item	Knowledge Sharing Barrier
1	Lack of or unclear integration of KM strategy and sharing activities into the organization's goals and strategic approach.
2	Lack of administrative guidance and leadership in promoting the ideals and advantages of knowledge-sharing activities.
3	Lack of formal and informal venues for reflection, sharing, and producing (new) knowledge.
4	Absence of open mechanisms for incentives and recognition that would encourage people to impart more of their expertise.
5	The current business culture does not sufficiently foster knowledge sharing activities
6	Knowledge retention of highly skilled and experienced staff is not a high priority.
7	Inadequate infrastructure to facilitate sharing practices
8	Lack of corporate resources that would allow for sufficient sharing possibilities.
9	High levels of external competition that exist against subsidiaries, corporate divisions, or functional sectors.
10	Information and communication flow restrictions that exist in specific directions (e.g., top down).
11	The physical workplace and the design of the workspaces which limit productive sharing techniques.
12	Intense internal competition among company units, functional sectors, and subsidiaries.
13	Hierarchical organisational structures that hinder or slow down sharing activities.
14	Company unit sizes that are too large and unmanageable to improve interaction and enable easy collaboration.

2.4.2 Individual Factors

Some people do not recognise the benefits of KS and hence tend to hoard the knowledge they have. Riege (2005), who coined the so-called "Triad of knowledge-sharing barriers", reckons that individual factors such as lack of trust, losing knowledge power and shortage of social networks are caused by human behaviour, perceptions and activities of individuals or groups, within businesses environments and communities of practice. Such barriers hinder the transfer and distribution of knowledge amongst people (Riege, 2005). The potential individual barriers as defined by Reige are summarised in Table 2.2.

Table 2.2: Potential Individual Knowledge sharing barriers (Riege, 2005).

Item	Knowledge Sharing Barrier
1	Lack of time to either recognise people needing specific knowledge or to participate in information sharing.
Item	Knowledge Sharing Barrier
2	The fear that knowledge sharing may endanger individual's professional stability.
3	Lack of mindfulness and acknowledgement of the esteem of possessed information to other people.
4	The capacity to communicate explicit information over tacit knowledge, such as expertise and experience, which calls for interactive learning, conversation, perception, and problem-solving.
5	The practice of strong hierarchical chain of command and formal power.
6	Deficient capture, assessment, criticism, correspondence, and resilience of past errors that would enhance the effects of individual and organisational learning.
7	Differences across degrees of expertise.
8	Absence of contact time and communication between information sources and recipients.
9	Poor communication including verbal, written and interpersonal aptitudes.
10	Differences in both gender and age.
11	Lack of human networks.
12	Intellectual imbalances.
13	Accepting responsibility for intellectual property because of concern that one would not get management and co-workers' full approval and appreciation.
14	Lack of faith in individuals because they could misuse knowledge and claim unfair credit for it.

2.4.2.1 Lack of motivation

Lack of motivation among academic staff is a major barrier to KS in institutions of higher learning. Absence of motivation forces academic staff to start their own ventures outside their mainstream jobs because they feel neglected and not supported in their endeavours. Individual academics that are not motivated to engage in KS are detrimental to academic institutions and students at large. Perik (2014) is of the view that individuals think that, when knowledge is shared, it will be worth the effort and that they will personally receive some benefits. Lack of these reciprocal benefits demotivate staff, and it becomes a daunting task to share knowledge. Hoarding knowledge becomes the norm unless intrinsic or extrinsic motivations are evident. Asrar-ul-Haq and Anwar (2016) have stated that individuals are not motivated to share knowledge when there

are no rewards; they tend to keep their knowledge to themselves and not share it with other parties.

2.4.2.2 Lack of trust

Sharing of knowledge among academic staff who do not trust each result in the circulation of inaccurate knowledge, or individuals not using the shared knowledge simply because they do not trust the source of the knowledge (Norulkamar and Hatamleh, 2014). To this end, lack of trust hampers knowledge-sharing efforts when sources are suspicious and the person sharing the knowledge is not trustworthy. Research has proved that lack of trust is associated with the willingness to share knowledge (Amayah, 2013). It is understood that academics believe that their knowledge is power and losing it would threaten their promotion opportunities and integrity and thus make it difficult for them to execute their duties (Amayah, 2013). According to Maiga (2017), a group of people lacking trust cannot build good relationships, which can lead to failure in knowledge sharing. Within HEIs, KS is not booming as it should because of a lack of trust among academics. According to Nonaka and Takeuchi (1995), people communicate knowledge through sharing their ideas and experiences. However, some situations can hinder people from exchanging and learning new information because of interpersonal mistrust.

2.4.2.3 Lack of time

It has been noted that most academic staff do not have time to share knowledge with their fellow academics (Li et al., 2014). Lack of time disrupts any attempts to share knowledge, starving institutions of the much-desired knowledge that will increase their overall performance. The majority of academics that are too busy to identify others who could benefit from their knowledge and impart it to them, robbing the institution of a crucial resource. Academics do not share information when they prioritise individual effort over knowledge sharing (KS). This may be the outcome of organisations that do not value knowledge sharing or permit staff members to work together.

2.4.2.4 Lack of Collaboration

Lack of collaboration hinders the sharing of knowledge and results in hoarding of information by individuals. Lack of trust among team members results in reluctances to share knowledge. Communication barriers such as language differences and cultural differences lead to lack of collaborations in HEIs (Li et al, 2014). Suitable software applications that can facilitate KS amongst academics must be developed. Some software applications used in HEIs do not support KS. Customised software applications that promote better communication and collaboration should be developed to facilitate KS in universities and HEIs. The administration of HEIs ought to provide internal training to employees on technology use. Employees find it difficult to operate complicated and hostile technologies. Systems that produce communication gaps can be detrimental to KS and a major obstacle to it.

2.4.3 Technology factors

Technology barriers poses a serious threat to integration of information communication technology processes and systems that act as enablers for KM. According to Davenport and

Prusak (1998), the network and storage capabilities of computing and technology infrastructure facilitate knowledge exchange. Knowledge workers and others who need to transfer knowledge across geographical boundaries can be connected via the internet, intranet, e-mail, networks, and cloud storage capabilities. These tools can also aid in the storing of fresh knowledge (Ling, 2011). A mismatch between organisational needs and information technology systems are barriers to KS in HEIs (Jain and Sandhu, 2015). Effective information technology (IT) and communication platforms that enable information sharing are essential for HEIs (Fullwood, Rowley, and Delbridge, 2013). Digital platforms are used efficiently by HEIs that support knowledge exchange to share services effectively and seamlessly (Biswas and Pahwa, 2015). Inadequate IT infrastructure makes it more difficult for academics to share information in this digital age of innovation and IT. Lack of technology prevents KS among HEI academics. When academics realise that there are limited technologies and opportunities to share knowledge, the motivation to share knowledge is disrupted (Bibi and Ali, 2017 as cited in Andreeva and Sergeeva, 2016). Institutions of higher learning that do not invest in IT find it difficult to share knowledge. Information may be shared more quickly and easily when digital technology is used; conversely, it becomes more difficult when it is not used (Riege, 2005). Technology can facilitate remote cooperation, support virtual systems, and enable quick access to enormous amounts of data and information (Riege, 2005). It is challenging for researchers to transmit data from the field to the office in the absence of virtual systems. Reige (2005) reported potential technology barriers to KS, and these are listed in Table 2.3.

Table 2.3: Potential Technology Knowledge sharing barriers (Riege, 2005)

Item	Knowledge Sharing Barrier
1	The way individuals conduct themselves is hampered by the lack of integration of IT systems and procedures.
2	Work routines and communication channels hampered by a lack of technical assistance (internal or external) and quick maintenance of integrated IT systems.
3	Employees' unrealistic assumptions of what technology can and cannot achieve.
4	Lack of interoperability across various IT procedures and systems.
5	The lack of compatibility between individual needs and integrated IT systems and procedures limits sharing activities.
6	Lack of knowledge and experience with IT systems leading to reluctance to utilise them.
7	Inadequate training for employees to become comfortable with new IT systems and procedures.
8	Lack of communication and failure to highlight the benefits of any new systems over current ones.

2.5   Summary

This chapter reviewed previous research into KS amongst academics and the main factors that influence the transfer of knowledge between academics using the KS model derived from literature. Literature review has identified and investigated the four main factors, namely organisational factors, individual factors, technology factors and knowledge-sharing factors. All

the variables such as management support, organisational culture, organisational structure, organisational climate, reward system, self-efficacy, lack of motivation, and lack of time, lack of trust, collaboration, technology literacy and IT applications were investigated and evaluated according to the following criteria:

(1) Factors that facilitate KS
(2) Barriers to KS.
The next chapter outlines the methodological approach for this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.0   Introduction

It was established in the preceding chapter that knowledge sharing in higher education institutions (HEIs) needs to be emphasised so that its benefits may be realised. With a focus on research methodologies, research design, study population, sampling, data collection, data analysis, validity, and ethical issues that were used in this study, this chapter will examine and analyse the procedure in detail. Research methodology "controls the study, dictates how the data is acquired, arranges them in logical relationships, sets up an approach for refining and synthesising them" (Leedy and Ormord, 2013). Methodology plays a critical role in research studies; this chapter serves as a blueprint and guide, detailing the approach, procedures, and techniques utilised in this study to obtain reliable and valid findings.

This research study explores factors that influence knowledge sharing (KS) within South African universities. Knowledge Sharing, a fundamental aspect of organisational and educational environments, encompasses the transfer and dissemination of knowledge among individuals and groups. Understanding the dynamics and determinants of KS is crucial for fostering collaboration, innovation, and growth within educational institutions. There are three basic types of research approaches, namely: mixed, qualitative, and quantitative (Leedy and Ormord, 2013).

3.1   Mixed Research

Mixed research integrates quantitative and qualitative methods into a single study, making it a powerful research strategy in the social sciences. The advantages of both methods are combined in this strategic integration. Quantitative data (numerical) provides a broad picture, while qualitative data (narratives) provide deeper insights. Researchers can overcome the limitations and potential biases inherent in each method alone by triangulating data from these various sources to acquire a richer and more comprehensive knowledge of complex phenomena. Additionally, mixed methods research offers flexibility in design, enabling a researcher to assign equal weight to both approaches or give priority to one approach to address a particular aspect of the research question. This adaptability ensures the research question is best served by the chosen methodology. (Saunders, Lewis and Thornhill, 2012).

3.2   Qualitative Research

The goal of qualitative research is to comprehend phenomena in context-specific settings, such as real-world situations, without attempting to change the phenomenon of interest. It unearths events that occurred in the past and those that are presently occurring (Salkind, 2017). Furthermore, qualitative research focuses on events that happen in a natural setting and its aim is to explore and understand the meaning and individuals attributed to human problems (Creswell, 2014). Qualitative research is used to examine social settings, interpersonal relationships, and organisational performance. Qualitative researchers collect data themselves by scrutinising documents, observing behaviour, or interviewing participants (Hofstede, 1991). Using qualitative research, a holistic account of factors that influence knowledge sharing is established.

Descriptive qualitative research gives a rich description of the phenomenon being investigated (Marshall and Rossman, 1999) by focusing on events that occurred in the past (Salkind, 2017). It is capable of unearthing factors that influence KS in institutions of higher learning. Descriptive research is meant to systematically describe a situation, problem, phenomenon, service, or program; furthermore, it provides information about the living conditions of a community, or describe attitudes towards an issue (Salkind, 2017). Open-ended questions are used for data collection in descriptive qualitative research. It is difficult to generalise the results of qualitative research, which makes it not suitable for this study.

3.3 Quantitative Research

In research, a quantitative approach employs measurement and statistics to turn empirical facts into numbers and create mathematical models that quantify behaviour (Hofstede, 1991). According to this claim, researchers obtain numerical data, analyse it with a range of statistical methods such as Statistical Packages for Social Sciences (SPSS), and then allow the numerical results to support or refute a hypothesis so that the findings can be extrapolated from a sample to a wider population (Maiga, 2017). In addition, quantitative research uses questionnaires that have closed-ended questions to ease data coding and the use of statistical software (Leedy and Ormord, 2013). A qualitative approach to research measures objective facts and focuses on variables and is independent of the content being researched.

Justification of research selection

The study follows an assumption that reality is objective. The researcher accepts that the factors influencing KS amongst academics are external to the researcher. Another reason is that quantitative research allows the researcher to collect factual data which can be described, measured, and observed quantitatively (Creswell and Creswell, 2018). Hence online questionnaires were administered to academics in selected universities and HEIs. Based on the nature of the study, quantitative research method will be used.

3.4 Research Design

As far as Creswell (2009) is concerned, research design is the plan or proposal to conduct research. The plan involves the intersection of philosophy, strategies of inquiry and specific methods (Creswell, 2009:29). This study used a post-positivist perspective. The researcher focused on academics, librarians, and middle administration personnel at universities (deans) while employing a quantitative study methodology. The researcher used questionnaires and interview schedules to gather data.

Survey design incorporates cross-sectional and longitudinal studies that collect data utilising questionnaires or structured interview questions (Creswell, 2009). In the survey research method, the researcher used a representative sample to assemble and analyse data by interviewing persons who were representative of the study population. The acquired results were used to generalise the whole population (Guthrie, 2010). As reported by Lin (2007). the qualitative research approach has been widely used for the determining the motives that influence KS

behaviour; however, qualitative research studies focussing on South African universities and HEIS are scant.

The choice of a questionnaire-based survey was influenced by the following reasons:
Firstly, online questionnaire surveys provide a pragmatic and cost-effective way to collect data from stakeholders (Abu-Rumman, 2018).
Secondly, convenience. Online questions can be completed from any location with internet connection, at a time convenient to the respondent.
Thirdly, anonymity. The questionnaires can be designed to be anonymous; this can encourage respondents to be more honest in their responses.
In the context of SA academics and intelligentsia, very little research has been conducted on the factors that influence KS tendencies. Therefore, it is crucial collect accurate information and data on knowledge sharing across HEIs and universities.

3.4.1 Sampling population

The researcher used a quota-sampling method to adequately represent the three subgroups of academics, namely professors/lecturers, deans, and librarians. Quota sampling was chosen for several reasons. First, it ensured that specific demographic groups are represented in the sample in a proportion that mirrored the population. This is especially valuable when studying matters related age, gender, profession, level of education, and other demographic variables. Secondly, quota sampling is often a cost-effective option, the researcher conducted the research during the COVID-19 pandemic with limited resources and options. Hence, In order to overcome time and resource constraints, the researcher gathered participants based on accessible quotas. Lastly, quota sampling allows comparative analysis amongst different demographic groups because the researcher can control the number of participants in each category. The researcher was mindful of the limitations of the quota-sampling method since such limitations have the potential to introduce bias if quotas do not accurately reflect the population.

The size of the target population was 180, comprising of 110 lecturers/professors, 50 librarians, and 20 deans of faculties. The target population sample for the survey was sourced from universities and HEIs in the Western Cape Province of South Africa. Specifically, participants were sourced from three universities, namely, The University of the Western Cape (UWC), Cape Peninsula University of Technology (CPUT), University of Cape Town (UCT), and one Technical and Vocational Education and Training (TVET) institution called the College of Cape Town (COCT). Data was collected using online self-administered survey questionnaires using Google Forms.

Care was taken to balance the gender of the respondents. A Likert scale was used to measure the respondent's level of agreement with statements of a questionnaire which relate to inhibitors, enablers and factors that influence KS. The rating scale that was used in this study allowed the respondent's response options ranging from 1 (lowest level of agreement) to 5 (highest level of agreement) to measure their attitudes, opinions, or perceptions regarding specific factors being investigated.

3.4.2 Sampling

The researcher considered a range of factors to choose the population. The academic intentions and perspectives on knowledge exchange form the basis of the study. Table 3.1 shows the distribution of respondents according to their rank and institutions.

Table 3.1: Sample population and the demographics of the survey

University/College	Academics/Lecturers	Librarians	Deans
COCT	20	5	5
CPUT	30	15	5
University/College	**Academics/Lecturers**	**Librarians**	**Deans**
UCT	30	15	5
UWC	30	15	5
TOTAL	110	50	20

Professors/lecturers were selected from the four research institutions as respondents in the study because they are faculty members who are involved in full-time research. Professors and Lecturers actively share their knowledge through published journals, conferences, workshops, symposia, and seminars. They fully understand and participate in knowledge-sharing practice
The librarians were chosen for their crucial role as collectors, processors, custodians and sharing or transmitting of learning and research resources. The librarians are key to the goal of universities and HEIs in serving as the keepers and suppliers of knowledge. Librarians help to identify, acquire, organise, store, recommend and facilitate access to knowledge-sharing resources.

Deans in universities and HEIs form part of the middle management, and they administer, control, and manage the operations of the faculties. They interface with senior management and academics. Deans, therefore, play a crucial role in the development, archiving, sharing, dissemination, and distribution of knowledge within faculties. Moreover, deans are also involved in policy and decision-making roles geared towards knowledge sharing.

3.5 Measuring Instrument

Data was collected through an anonymous online Google survey, which was used as a data collection instrument. Online surveys are a cost-effective and quicker method for data collection (Singh and Sagar, 2021). According to Babbie (2017), close-ended questions are popular in survey research because they give provision to uniformity of responses and are easier to process. For collecting quantitative data, a questionnaire is more effective and suited for this process. As claimed by Mouton (2001), questionnaires are commonly used as measuring instruments in research studies where a large sample is required. Questionnaires allow researchers to efficiently collect data from a significant number of participants in a standardised manner. Online questionnaires are particularly useful for quantitative data collection and analysis. By distributing

questionnaires to a broad population, researchers can reach a wide range of individuals and collect data on specific variables of interest. The structured nature of questionnaires with closed-ended questions and predefined response options facilitates data coding and analysis. It is important for researchers to carefully design and validate questionnaires to ensure reliability and validity to measure the intended constructs.

In this study, quantitative and numerical data were collected through a Google online questionnaire. The questionnaire had various variables including demographic information such as gender, age, academic position, academic work experience, and academic experience related to knowledge management and KS. The respondents expressed their opinions on organisational factors, individual factors, technology factors, and KS factors. These opinions were captured using a Likert scale, where respondents indicated their level of agreement or disagreement with specific statements ranging from "Strongly agree" to "Strongly disagree" in sections B to E of the questionnaire. Saunders et al. (2019) and Malebana (2014) assert that this type of approach focuses on capturing the respondents' thoughts, beliefs, or feelings regarding the specific factors being investigated.

3.5.1 Description of the measuring instrument

The strength of the Likert scale lies in its ability to convert subjective feelings and opinions into a quantitative format. By providing a range of response options, researchers can capture the nuances of participants' attitudes, perceptions, and opinions. Not only does this structured approach facilitate data collection, it also allows for easy statistical analysis and comparison. By using the Likert scale, researchers can obtain numerical data that was processed and analysed using various statistical techniques. The quantitative nature of the Likert scale ensures objectivity and enables researchers to draw meaningful insights and conclusions from the data. To summarise, the Likert scale offers a valuable tool for administering respondents' feelings and opinions in a quantitative manner. With its range of response options, from strongly disagree (1) to strongly agree (5), the Likert scale enables researchers to collect data that can be easily processed and analysed statistically, thus enhancing the rigour and objectivity of their findings.

Table 3.2: The measuring instruments

Section	Measurements
A: Demographic information	gender, age, academic position, academic work experience, and academic experience with knowledge management and knowledge sharing.
B: Organisational factors	Contains seven items to measure Organisational factors.
C: Individual factors	Contains seven items to measure Individual factors.
D: Technology factors	Contains five items to measure technology factors.
E: Knowledge sharing factors	Contains ten items to measure knowledge sharing factors.

3.6 Reliability and Validity

3.6.1 Reliability

Reliability, as defined by Creswell and Guetterman (2020), explores the consistency and stability of individual scores obtained from an instrument administered repeatedly. It involves minimising sources of measurement error and ensuring coherence in the research data. The ability of another researcher to produce similar results when investigating the same problem indicates the reliability of both the questionnaire and the research study.

To assess the internal consistency of the questionnaire, Cronbach's alpha (a scale reliability test) was employed (Wrench et al., 2016). Leedy and Ormrod (2019) are of the view that internal consistency reliability assesses how consistently each item or activity inside a single assessment instrument produces the same outcome. The Cronbach's alpha provides an indication of how effectively a set of items captures a unidimensional hypothetical construct, with values ranging from 0 (indicating no internal reliability) to 1 (indicating perfect reliability) being assigned to the internal consistency and by extension the reliability of the construct. As depicted in Table 3.3, the interpretation of Cronbach's alpha adhered to the guidelines proposed by Jain and Angural (2017).

Table 3. 3: Interpretation of Cronbach's Alpha

Cronbach's alpha value	Internal consistency
$\alpha \geq .9$	Excellent
$.8 \leq \alpha < .9$	Good
$.7 \leq \alpha < .8$	Acceptable
$.6 \leq \alpha < .7$	Questionable
$.5 \leq \alpha < .6$	Poor
$\alpha < .5$	Unacceptable

Source: Jain and Angural (2017)

Although the commonly accepted limit for Cronbach's alpha is .7, it may decrease to .60 in exploratory research (Robinson et al., 1991, cited in Hair et al., 2019).

3.6.2 Validity

Validity refers to how closely a measurement matches the object it is meant to quantify (Hair et al., 2019:13). The research instrument for this study was created using both face validity and content validity. Face validity, as defined by Leedy and Ormrod (2019:128), refers to the extent to which a measurement, at a surface level, appears to be gauging a certain quality. In contrast, content validity refers to how well an assessment tool or technique captures the entirety of the feature being evaluated.

To ensure face validity, the supervisor reviewed the tool to assess if the questions were consistent with the research goals and covered the relevant domain of the research. This assessment aimed to verify whether the instrument appeared to measure the intended characteristic on the surface. In terms of content validity, the instrument underwent exploratory factor analysis to examine whether highly correlated items loaded onto a single construct. This analysis helped to assess whether the measurement instrument adequately reflected the breadth of the characteristic being assessed.

By ensuring reliability and validity during the questionnaire compilation and providing a clear explanation of the reliability coefficient along with a thorough analysis of the results, the researcher enhances the credibility and trustworthiness of the study's findings.

3.7   Data Analysis

Quantitative analysis is the manipulation and numerical representation of data aimed at describing and explaining the occurrence of observations (Babbie, 2017:494). Descriptive statistical, inferential statistical, explanatory factor analysis, and multiple regression analysis were used in this study. These are discussed individually in the next subsection.

3.7.1 Descriptive statistics

According to Levine et al. (2019:35), descriptive statistics is commonly used as the initial step in summarising and presenting data. These statistics include numerical techniques such as standard deviations, means, frequencies, and more, as well as graphical techniques such as pie charts and error bars. In this study, demographic information and the degree of agreement on the construct items were presented using frequencies and proportions.

With regards to the Likert scale, which has a range of 1 (strongly disagree) to 5 (strongly agree), the mean value was employed to interpret the respondents' agreement levels. Table 3.4 shows how this was determined.

Table 3. 4: Mean interpretation

Mean agreement level	Interpretation
Below 2.5	Disagreement
2.5 < mean < 3.5	Neutral
Above 3.5	Agreement

In summary, descriptive statistics play a crucial role in summarising and presenting data. Descriptive statistics include numerical and graphical techniques, such as means, standard deviations, frequencies, and proportions. The Likert scale responses were interpreted based on mean values.

3.7.2 Inferential statistics

Inferential statistics plays a crucial role in research because it enables researchers to draw conclusions about the underlying population based on data collected from a sample (Black, 2020:4). In this study, one inferential statistical technique, namely correlation analysis, was employed. Correlation analysis was utilised to examine the relationships between variables in the dataset. It provides insights into the strength and direction of the associations between variables. The results of the correlation analysis are discussed in detail in the subsequent subsection.

To determine the significance of the findings obtained from inferential statistical tests, a 5% level of significance was employed using the p-value. The p-value, which is calculated from a statistical test, represents the probability of obtaining a particular set of observations if the null hypothesis were true (Bevans, 2020). If the estimated p-value is less than 0.05, the null hypothesis is rejected since it suggests that the observed results are unlikely to be the result of pure chance. In summary, inferential statistics were utilised in this study to draw conclusions about the underlying population. Correlation analysis was used as an inferential technique. The significance of the findings was assessed using the p-value at a 5% level of significance.

3.7.2.1 Composite variables

A composite score is derived from Likert-type items using a Likert-scale approach. Specifically, four composite variables were created in the study, namely Organisational Factors, Individual Factors, Technology Factors, and Knowledge Sharing. To construct these composite variables, the individual Likert-type items within each construct were averaged together.

To determine the level of agreement or disagreement among respondents, the mean of the composite variable was considered. If the mean was at least 3.5, it indicated that respondents were in agreement with the statements or items. Contrastingly, if the average was less than 2.5, it indicated that the respondents disagreed with the statements or items.

This methodology allows for the aggregation of multiple Likert-type items into a single composite score, providing a summary measure for each construct. By calculating the mean of the items, it becomes possible to assess the overall level of agreement or disagreement among respondents. This approach simplifies the analysis and interpretation of the data, enabling researchers to make comparisons and draw conclusions based on the composite scores.

It is worth noting that the specific cut-off points of 3.5 for agreement and 2.5 for disagreement may vary depending on the context and the scale used. Researchers need to carefully determine and justify these cut-offs based on the characteristics of their study and the nature of the construct being measured.

3.7.2.2 Correlation analysis

Correlation analysis is a technique for evaluating the strength of a linear relationship between two variables. The sample correlation coefficient between the variables in this study was determined using the Pearson correlation coefficient. The Pearson correlation coefficient ranges from +1

(indicating a perfect positive relationship) to -1 (indicating a perfect negative relationship), with 0 signifying no relationship (Hair et al., 2019:261). Table 3.5 provides guidance for interpreting the correlation coefficient.

Table 3.5: Correlation coefficient

Correlation	Interpretations of the correlations
$0 < r < 0.2$	Very weak
$.2 < r < 0.4$	Weak
$.4 < r < 0.6$	Moderate
$.6 < r < 0.8$	Strong
$.8 < r < 1.0$	Very strong

Source: Salkind (2018)

As shown in Table 3.5, the correlation coefficients is classified into different levels of strength. For instance, correlations between 0 and 0.2 are considered very weak, while correlations between 0.2 and 0.4 are classified as weak. A correlation between 0.4 and 0.6 is considered moderate, while a correlation between 0.6 and 0.8 is regarded as strong. Correlations between 0.8 and 1.0 are labelled very strong (Salkind, 2018).

In this study, correlation analysis was performed to examine the relationships among the following variables: Organisational Factors, Individual Factors, Technology Factors, and Knowledge Sharing. By calculating the correlation coefficients, it was possible to assess the strength and direction of the relationships between these variables, shedding light on their interconnectedness and potential associations.

3.7.3 Exploratory factor analysis

Exploratory factor analysis (EFA) is a technique used to uncover the underlying structure among variables in an analysis. Its primary purpose is to identify groups of highly correlated variables that measure a common construct. In this study, EFA was conducted following the 10 steps outlined by Watkins (2020).

The initial steps (1 and 2) involved determining the variables to include in the analysis and selecting the participants. This was done during the questionnaire design and participant selection process. Data cleaning was done at this stage.

Step 3 focused on screening the data, particularly the Likert-type variables included in the model. Step 4 assessed the appropriateness of factor analysis. The sample size of 110 participants met the recommended threshold of being ideally higher than 100 (Hair et al., 2019). Additionally, the Bartlett test of Sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were used. A KMO value of at least 0.5 indicates adequate factor analysis, while a value of 1 represents

perfect adequacy. The Bartlett test examined the sufficiency of correlations among the variables, with a p-value less than 0.5 indicating significant correlations.

Step 5 involved the selection of the factor analysis model. Principal component analysis, based on the total variance was chosen. The use of unities (1s) in the diagonal of the correlation matrix indicated that all variances were common or shared.

Step 6 focused on the factor extraction method, aimed at data reduction. Principal component extraction was employed in this study.

Step 7 determined the number of factors that need to be retained using the eigenvalue method. Retained factors have eigenvalues above one; this is recommended by Hair et al. (2019) and Tabachnick and Fidell (2014).

In Step 8, factors were rotated using the varimax rotation method. This technique is thought to be better than other orthogonal factor rotation techniques at streamlining the factor structure because it simplifies the columns in a factor matrix. (Hair et al., 2019).

Steps 9 and 10 involved interpreting and reporting the results of the EFA, which were presented in Chapter 4 of the study.

3.7.4 Multiple regression analysis

The multiple linear regression methodology is a statistical method for analysing the relationship between several independent factors and a dependent variable. In this study, multiple linear regression was employed to analyse the data. Firstly, the research variables were identified, including the dependent variable and the set of independent variables. The dependent variable represents the outcome or response variable of interest, while the independent variables are the predictors or factors that potentially influence the dependent variable.

Next, data collection was conducted to ensure that appropriate measures were taken to collect accurate and reliable data for all variables of interest. The sample size was determined based on statistical considerations, aiming for an adequate number of observations to ensure reliable estimates.

Prior to performing the regression analysis, data pre-processing steps were undertaken. This involved checking for missing values, outliers, and assessing the distributional assumptions of the variables. Data cleaning techniques, such as imputation or removal of missing values, were applied when necessary. The multiple linear regression model was then specified by formulating the relationship between the dependent variable and the independent variables. The model was expressed as a mathematical equation, with the dependent variable as the outcome to be predicted and the independent variables as the predictors.

Assumptions of multiple linear regression were assessed to ensure their validity. These assumptions include linearity, independence, homoscedasticity, and absence of multicollinearity. Diagnostic tests and graphical analyses were performed to evaluate these assumptions. The regression coefficients were estimated using an appropriate method, such as ordinary least squares (OLS), which aims to minimise the sum of squared residuals. The statistical significance of the coefficients was assessed using hypothesis tests and p-values.

Model fit and overall goodness-of-fit was evaluated using measures such as R-squared, adjusted R-squared, and F-test. These metrics show the amount of the dependent variable's volatility that can be accounted for by the independent variables, as well as the model's overall significance. Furthermore, the assumptions of the regression model were validated, including examining residual plots, assessing multicollinearity, and conducting tests for influential observations or outliers.

Interpretation of the regression results involved analysing the estimated coefficients, their significance, and their direction of association with the dependent variable. The strength and direction of the relationships between the independent variables and the dependent variable were assessed based on the magnitude and sign of the coefficients. Lastly, the findings were discussed considering the research objectives, thus providing insights into the relationships between the variables and their implications. Limitations of the study were acknowledged, and recommendations for future research were suggested to further enhance the understanding of the examined relationships.

3.8   Ethical Clearance Procedures

The survey was distributed by the relevant institution's (university or HEIs) Human Resources Departments with a cover letter included that clearly explains the intention of the survey and assurances pertaining to privacy and confidentiality. Ethical clearance was obtained following Unisa guidelines and through by strict and compliance with best practice and standards. A high degree of protection of the participants from harm, embarrassment and some unusual stress that may arise during the collection of data was avoided. Participation is the study was voluntarily, and participants were informed about the aim of the study well in advance. The rights to privacy of the participants were observed, respected and no personal information of the participants or information that can be directly linked to the participants was published. Furthermore, the results of the study will not be used for any cause other than the intended use, which is to gain insights into the research problem. A consent form was signed to show an understanding of the study and no coercive force was used on participants to take part in the study and/or when the data is being collected.

3.9   Summary

The chapter provided a roadmap and approach used for this study on factors influencing KS amongst SA academics. After outlining the strategies used in the study to ensure the credibility and validity of the study, the chapter explained and discussed the research design, data collection methods used by the researcher, and the techniques used to do data analysis. Ethical considerations and procedures followed were also highlighted.

Some of the key elements discussed in the chapter are:
1. Research design - to align the research questions to the research objectives with the view to address the research problem and generate meaningful insights.
2. Data collection - to highlight the methods used to gather data and the selection of online survey questionnaire and the reasons behind the choice.

3. Data analysis –refers to the data analysis techniques that were used to interpret the collected data, the statistical procedures followed, and insights obtained from the data.
4. Ethical considerations - to ensure the research abides by the ethical principles put in place by UNISA to uphold the protection of participants' privacy.

CHAPTER 4: RESULTS, INTERPRETATIONS AND FINDINGS

4.1 Introduction

In this chapter, the response rate and demographic profile of the respondents are discussed. Furthermore, proportions are discussed using the descriptive statistics of the sample and constructs. The reliability of the instrument and the response rate of the instrument are also outlined. To determine which items are highly correlated for the validity test, exploratory factor analysis was used. The correlation was performed to ascertain the relationship between knowledge sharing (KS) and organisational factors, individual factors, and technology factors. A stepwise regression analysis was used to conclude the analysis on how KS is affected by these factors. The summary of findings and conclusions is at the end of the chapter.

4.2 Response Rate

A total of 110 questionnaires were administered to five different institutions in South Africa; of these, 84 were answered using an online survey. Twenty-six of the respondents did not respond to the request to participate in the study. A response rate of 76.3% regarded a usable response rate. Table 4.1 summarises the relevant values pertaining to the participation of the respondents in the survey.

Table 4.1: Response rate of the study

Item	Number
Questionnaire administered	n = 110
Initial total responses	84
Non-usable responses	26
Total usable responses	84
Usable responses rate	76.3%

4.3 Demographic Profile of the Sample

Table 4.2 shows the demographical information of the respondents which covers the following socio-demographic variables: gender, age, current academic position; years of academic work experience, years employed by institution and academic experience on knowledge management and KS.

Table 4.2: Socio-demographic characteristics of knowledge sharing amongst academics

Variable	Category	Frequency	%
Gender	Female	42	50.0
	Male	42	50.0
	Total	84	100.0
Age	20-30	15	17.9
	31-40	27	32.1
	41-50	24	28.6
	Above 50	18	21.4
	Total	84	100.0
Current academic position	Professor	17	20.2
	Assistant Professor	5	6.0
	Lecturer	36	42.9
	Senior Lecturer	15	17.9
	Assistant Lecturer	11	13.1
	Total	84	100.0
Years of academic work experience	Less than 6 years	21	25.0
	6-10 years	24	28.6
	11-15 years	15	17.9
	16-20 years	14	16.7
	More than 20 years	10	11.9
	Total	84	100.0
Years employed by your institution	Less than 6 years	23	27.4
	6-10 years	24	28.6
	11-15 years	19	22.6
	16-20 years	12	14.3
	More than 20 years	6	7.1
	Total	84	100.0
Academic experience with knowledge management and knowledge sharing	None	7	8.3
	Less than 1 year	3	3.6
	1 year – 5 years	28	33.3
	6-10 years	23	27.4
	More than 10 years	23	27.4
	Total	84	100.0

The distribution of the respondents in terms of gender was equal (n=42). By age group, the 31–40 (32.1%; n=27) cohort seems to be the driving force behind universities and higher education institutions (HEIs) in the Western Cape. This is closely followed by the 41–50 cohort at (28.6%; n=24), with the over 50 years (21.4%; n=18) and the 20-30 (17.9%; n=15) age groups trailing behind. It suffices to say that most academics in the Western Cape Province are aged between 31-40. Very few academics are in the 20-30 years age range; this is expected since this cohort is expected to be busy building their careers through personal development and studying (often full-time).

In terms of rank, the majority of participants are Lecturers (42.9%; n=36) followed by Professors (20.2%; n=17) and Senior Lecturers (17.9%; n=15). The Assistant Lecturers and Assistant Lecturers trail behind at 13.1% (n=11) and 6% (n=5), respectively. The survey indicates HEIs have more lectures than professors because professors possess exceptional qualifications and expertise in their areas of study.

In terms of years of academic work experience, most of the respondents (28.6%; n=24) have 6-10 years academic work experience. followed by those with less than 6 years with a composition of 25% (n=21), about 17.9% (n=15) of the respondents have 11-15 years academic work experience and 16.7% (n=14) have 16-20 years work experience with 11.9% (n=10) of the respondents having more than 20 years of academic work experience. Most of the respondents in Western Cape universities have 6-10 years of experience with very few of the respondents having more than 20 years of experience. This could be related to the high workload, reward systems and lack of motivation (Ling, 2011).

In terms of years employed by the institution, the majority of the respondents 28.6% (n=24) have been employed by their respective institutions for 6-10 years. Only 27.4% (n=23) of the respondents have been employed by their institutions for less than 6 years. Respondents who have been employed for 11-15 years are sitting at 22.6% (n=19) (n=12). The number of respondents decreases significantly as one moves to to higher service years (14.3% (n=12) for 16-20 years and 7.1% (n=6) for over 20 years. The majority of academics in the Western Cape Province have been employed by the same institution for 6-10 years; very few of the respondents have been employed by the same institution in excess of 20 years. This points to high staff turnover. Knowledge should be shared amongst academics in a systematic way so that the huge number of young academics can gain from the few experienced academics. Individual factors like rewards systems could also be improved to retain academics beyond 10 service in SA universities and HEIs.

An analysis of experience of the respondents in knowledge management and KS revealed that 33.3% (n=28) of the respondents have 1 -5 years of experience, 27.4% (n=23) of the respondents have 6-10 years of experience, and respondents with more than 10 years of experience are sitting at 27.4% (n=23). While only 8.3% (n=7) of the respondents do not have any experience with knowledge management and KS, a mere 3.6% (n=3) of the respondents have less than one year experience.

4.4 Frequency Statistics of the Variables

4.4.1 Frequency statistics on organisational factors

Seven items were used to assess organisational factors, and Table 4.3 displays the agreement levels of these factors.

Table 4.3: Agreement levels on organisational variable

Item	Level of agreement				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
QB1. The existing organisational culture in my university motivates me to freely share my knowledge with colleagues.	7.1% (6)	3.6% (3)	6.0% (5)	47.6 (40)	35.7 (30)
QB2. In my department, knowledge sharing with colleagues is regarded as normal.	4.8% (4)	6.0% (5)	17.9% (15)	41.7% (35)	29.8% (25)
QB3. This institution encourages staff to freely share knowledge.	4.8% (4)	7.1% (6)	7.1% (6)	42.9% (36)	38.1% (32)
QB4. Sharing my knowledge with colleagues would not necessarily result in colleagues sharing their knowledge with me.	1.2% (1)	7.1% (6)	17.9% (15)	46.4% (39)	27.4% (23)
QB5. The structure in my Institution plays a crucial role in driving knowledge sharing.	4.8% (4)	7.1% (6)	14.3% (12)	45.2% (38)	28.6% (24)
QB6. My institution has mechanisms in place that encourage knowledge sharing	8.3% (7)	2.4% (2)	13.1% (11)	53.6% (45)	22.6% (19)
QB7. I usually interact freely with my colleagues.	4.8% (4)	7.1% (6)	13.1% (11)	40.5% (34)	34.5% (29)

An analysis of Table 4.3 reveals that all items have an agreement level of more than 70%. About 83.3% of the respondents agreed that with the statement that "the existing organisational culture in my university motivates me to freely share my knowledge with colleagues", while 10.7% of the respondents disagreed with the statement. Only 6% of the respondents neither agreed nor disagreed. When asked if in their department sharing KS with colleagues is regarded as normal 71.5% of the respondents agreed, 10.8% disagreed and 17.9% of the respondents neither agreed nor disagreed. With respect to the statement *"This institution encourages staff to freely share knowledge"*, about 81% of the respondents agreed, 11.9% disagreed and 7.1% neither disagreed nor agreed with the statements.

Whereas 73.8% of the respondents agreed that sharing their knowledge with their colleagues would not necessarily result in colleagues sharing their knowledge with them, 8.3% disagreed on with this notion and 17.9% neither disagreed nor agreed. When addressing the issue of if the structure in the institution plays a crucial role in driving KS, 73.8% of the respondents agreed, with a mere 11.9% disagreeing and 14.3% neither disagreeing or agreeing. To assess whether institutions had put in place mechanisms to encourage KS. Most of the respondents (76.2%) responded in the affirmative, 10.7% disagreed and 13.1% neither agreed nor disagreed. Lastly,

about 75% of the respondents agreed that they usually interact freely with their colleagues and 11.9% disagreed with 13.1% neither agreed nor disagreed with the relevant statement.

4.4.2 Frequency statistics on individual factors

The seven items assessing individual factors and the agreement levels are shown in Table 4.4.

Table 4.4: Agreement levels on individual factors

Item	Level of agreement				
	Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
QC1. Rewards and monetary incentives positively motivate me to share my knowledge.	8.3% (7)	16.7% (14)	14.3% (12)	42.9 (36)	17.9 (15)
QC2. Self-efficacy influences my desire and interest to share knowledge with co-workers.	2.4% (2)	4.8% (4)	11.9% (10)	50.0% (42)	31.0% (26)
QC3. Sharing my knowledge with colleagues can threaten my professional stability.	23.8% (20)	23.8% (20)	21.4% (18)	21.4% (18)	9.5% (8)
QC4. I trust academics in my university/college.	3.6% (3)	4.8% (4)	19.0% (16)	46.4% (39)	26.2% (22)
QC5. There is a mutual relationship that is based on reciprocal trust with my colleagues.	4.8% (4)	8.3% (7)	21.4% (18)	42.9% (36)	22.6% (19)
QC6. I think that sharing knowledge and experiences can help to innovate and create new knowledge.	3.6% (3)	2.4% (2)	4.8% (4)	42.9% (36)	46.4% (39)
QC7. I prefer to work in groups rather than alone.	10.7% (9)	4.8% (4)	20.2% (17)	44.0% (37)	20.2% (17)

An analysis of Table 4.4 reveals that only a single item had an agreement level that is below 50%. About 60.8% of the respondents agreed that rewards and monetary incentives positively motivate them to share their knowledge, while 25% disagreed and 14.3% neither agreed nor disagreed with this statement. When asked if self-efficacy influences their desire and interest to share knowledge with co-workers, the results were as follows: 81% of the respondents agreed, 7.2%

disagreed and 11.9% of the respondents neither agreed nor disagreed. In terms of the notion of whether *"Sharing my knowledge with colleagues can threaten my professional stability"*, about 30.9% of the respondents agreed with the statement, 47.6% disagreed while 21.4% neither disagreed nor agreed.

About 73% of the respondents agreed that they trust academics in their university/college, 8.4% disagreed on this notion while 19.0% neither disagreed nor agreed. As to whether there is a mutual relationship that is based on reciprocal trust with their colleagues, 65.5% agreed, 13.1% disagreeing and 21.4% neither disagreeing nor agreeing. In terms of whether if the respondents think that sharing knowledge and experiences can help to innovate and create new knowledge, 89.3% of the respondents agreed, 6% disagreed, and 4.8% neither agreed nor disagreed. Lastly and still on the individual factors, 64.2% of the respondents agreed that they prefer to work in groups rather than alone and 15.5% disagreed with 20.2% neither agreed nor disagreed.

4.4.3 Frequency statistics on technology factors

The levels of agreement for the seven items used to measure technology variables are displayed in Table 4.5.

Table 4 5: Agreement levels on technology factors

Item	Level of agreement				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
QD1. Mismatch between my information technology requirements and the information technology systems in my institution limit my knowledge sharing practices.	15.5% (13)	23.8% (20)	10.7% (9)	33.3% (28)	16.7% (14)
QD2. I use information technology tools provided by the institution to facilitate communication with colleagues.	4.8% (4)	2.4% (2)	7.1% (6)	46.4% (39)	39.3% (33)
QD3. I rely much on the use of information technology to collaborate and share	6.0% (5)	3.6% (3)	19.0% (16)	41.7% (35)	29.8% (25)

Item	Level of agreement				
	Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
knowledge with my colleagues.					
QD4. I use information technology to access external knowledge that helps me do my job.	7.1% (6)	2.4% (2)	6.0% (5)	45.2% (38)	39.3% (33)
QD5. I use information technology to access external knowledge that helps me work.	2.4% (2)	4.8% (4)	3.6% (3)	44.0% (37)	45.2% (38)

All the items had respondents agreeing to the issues. An average of 50% of the respondents agreed that the mismatch between their information technology requirements and the information technology systems in their institution limit their KS practices, while 39.3% of the respondents disagreed and 10.7% neither disagreed nor agreed. Regarding the notion of whether "*I use information technology tools provided by the institution to facilitate communication with colleagues*", 85.2% of the respondents agreed with the statement, while 7.2% disagreed and 7.1% neither agreed nor disagreed with the statement. When respondents were asked if they relied on the use of information technology to collaborate and share knowledge with their colleagues, 71.5% agreed, 9.6% disagreed while 19% neither agreed nor disagreed.

When further probed as to whether they use information technology to access external knowledge that helps them do their job, 84.5% agreed, 9.5% disagreed and 6% neither agreed nor disagreed with the statement. In terms of whether the respondents use information technology to access external knowledge that helps them, 89.2% agreed, 7.2% disagreed and 3.6% neither agreed nor disagreed with the statement.

4.4.4 Descriptive statistics on knowledge-sharing factors

The agreement levels for the 10 questions used to assess the factors affecting KS are displayed in Table 4.6.

Table 4 6: Agreement levels on knowledge sharing factors.

Item	Level of agreement				
	Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
QE1. Trust is a crucial consideration for me to share my knowledge with members of my university or higher education institution	3.6% (3)	3.6% (3)	9.5% (8)	47.6 (40)	35.7 (30)
QE2. Knowledge sharing helps everyone bond within my community of practice.	2.4% (2)	10.7% (9)	15.5% (13)	46.4% (39)	25.0% (21)
QE3. Knowledge sharing will get me acquainted with other academics.	3.6% (3)	1.2% (1)	10.7% (9)	46.4% (39)	38.1% (32)
QE4. There are more chances to get a promotion when I engage in knowledge sharing.	11.9% (10)	14.3% (12)	19.0% (16)	36.9% (31)	17.9% (15)
QE5. Trust amongst academics encourages knowledge sharing.	2.4% (2)	3.6% (3)	8.3% (7)	57.1% (48)	28.6% (24)
QE6. Lack of time affects knowledge sharing in my institution.	7.1% (6)	20.2% (17)	16.7% (14)	34.5% (29)	21.4% (18)
QE7. The information technology infrastructure in my university is user-friendly and facilitates knowledge sharing seamlessly.	7.1% (6)	2.4% (2)	7.1% (6)	52.4% (44)	31.0% (26)
QE8. The difficulty of using information technology and lack of training on new applications prevents me from sharing knowledge	11.9% (10)	20.2% (17)	17.9% (15)	32.1% (27)	17.9% (15)
QE9. Internet technologies are crucial in knowledge sharing.	3.6% (3)	1.2% (1)	8.3% (7)	36.9% (31)	50.0% (42)
QE10. I use mobile technologies to share knowledge.	4.8% (4)	0% (-)	11.9% (10)	40.5% (34)	42.9% (36)

Looking at Table 4.6, all items have an agreement level of more than 50%. About 83.3% of the respondents agreed that trust is a crucial consideration for them to share their knowledge with members of their university or HEI, while 7.2% disagreed and 9.5% neither agreed nor disagreed with the statement. When asked if KS helps everyone bond within their community of practice 71.4% of the respondents agreed with the statement, 13.1% disagreed and 15.5% of the respondents neither agree nor disagreed. With respect the statement "*Knowledge sharing will get me acquainted with other academics*", 84.5% of the respondents agreed, 4.8% disagreed while 10.7% neither disagreed nor agreed with the statement.

About 54.8% of the respondents agreed that their promotion prospects were enhanced when they engage in KS, and 26.2% and 19.0% of the respondents disagreed and neither disagreed nor agreed with the statement. As far as he advent of trust amongst academics encouraging KS is concerned, 85.7% agreed, 6% disagreeing and 8.3% neither agreeing nor disagreeing with this notion. In terms of whether lack of time affects KS in their institution, 55.9% agreed, 27.3% disagreed, and 16.7% neither agreed nor disagreed with this statement.

When further asked if the information technology infrastructure in their university or HEI user friendly and facilitates KS seamlessly, 83.4% of the respondents agreed with the statement. A further 9.5% and 7.1% of the respondents disagreed and neither agreed nor disagreed with the statement, respectively. In terms of whether the difficulty of using information technology and lack of training on new applications prevents them from sharing knowledge, 50% agreed, 32.1% disagreed and 17.9% neither agreed nor disagreed with the statement.

A total of 83.4% of the respondents agreed with the notion that *"Internet technologies are crucial in knowledge sharing"*; while only 4.8% disagreed with this statement, the balance (8.3%) neither agreed nor disagreed with the same statement. Lastly, given the preponderance of mobile technologies in the world today, it was not surprising to find that 83.9% of the respondents agreed to using mobile technologies to share knowledge; only 4.8% and 11.9% of the respondents disagreed and neither agreed nor disagreed with the statement in question.

4.5   Reliability of the Research Instrument

The Cronbach's alpha was used to assess the internal consistency of the instrument on a Likert scale, with its response options items ranging from strongly disagree (1) to strongly agree (5). For items to be highly correlated and consistent, they should be high values in Cronbach alpha. According to Pallant (2020), for an instrument to be considered reliable, its alpha coefficient should be above 0.7. The closer the value is to one the more reliable the instrument.

Table 4.7: Reliability of the constructs

Construct	No of items	Cronbach's alpha	Acceptable level
Organisational Factors	6	.831	Good
Individual Factors	5	.636	Questionable
Technology Factors	3	.706	Acceptable
Knowledge Sharing	6	.724	Acceptable
Total	20	.898	Good

Organisational factors were found to possess good reliability; an alpha coefficient of .831 was recorded, which is regarded as being good. With respective alpha coefficient values of .706 and .724, technology factors and KS were found to possess acceptable reliability in line with suggestions by Jain and Angural (2017). Individual factors had questionable reliability. The overall instrument is good .898 with 29 items; this shows that the tool has internal consistency and can be applied to additional data analysis.

4.6   Exploratory Factor Analysis

Using IBM SPSS 28, an exploratory factor analysis using the principal component analysis approach and varimax rotation was carried out. Establishing whether items belonging to the same construct occupy one factor is the primary goal of factor analysis. The constructs' items were produced by the factor analysis on organisational, individual, technology and KS being included in the factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sample adequacy and the Bartlett's test of sphericity were used to assess the applicability of the factor analysis. Table 4.8 shows the results of this assessment.

Table 4.8: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.807
Bartlett's Test of Sphericity	Approx. Chi-Square	794.088
	df	190
	Sig.	p<.001

The calculated Kaiser-Meyer-Olkin value was 0.807, which is greater than the minimum acceptable value of 0.5. With a chi-square value of 794.088, 190 degrees of freedom, and a p-value of less than.001, the Bartlett's Test of Sphericity was significant. The null hypothesis was rejected by using the Bartlett's Test of Sphericity; this indicates that the variables' correlations were strong enough. Factor analysis is appropriate as shown by both tests.

Table 4.9: Rotated factor solution

CONSTRUCTS	Rotated Component Matrix			
	Item	Component		
		1	2	3	4
Individual	QC1. Rewards and monetary incentives positively motivate me to share my knowledge.	0.73			
	QC3. Sharing my knowledge with colleagues can threaten my professional stability.	0.745			
	QC4. I trust academics in my university /college.	0.584			
	QC5. There is a mutual relationship that is based on reciprocal trust with my colleagues.	0.839			
	QC6. I think that sharing knowledge and experiences can help to innovate and create new knowledge.	0.725			
	QC7. I prefer to work in groups rather than alone.	0.773			
CONSTRUCTS	Rotated Component Matrix			
Organisational	QB2. In my department Knowledge sharing with colleagues is regarded as a normal.				
	QB3. This institution encourages staff to freely share knowledge.		0.817		
	QB5. The structure in my Institution plays a crucial role in driving knowledge sharing.		0.717		
	QB6. My institution has mechanisms in place that encourage knowledge sharing		0.634		
	QB7. I usually interact freely with my colleagues		0.618		
Technology	QD2. I use information technology tools provided by the institution to facilitate communication with colleagues.			0.621	
	QD4. I use information technology to access external knowledge that helps me do my job.			0.662	

	QD5. I use information technology to access external knowledge that helps me work.			0.806	
Knowledge Sharing	QE2. Knowledge sharing helps everyone bond within my community of practice.				0.831
	QE3. Knowledge sharing will get me acquainted with other academics.				0.533
	QE4. There are more chances to get a promotion when I engage in knowledge sharing.				0.787
	QE5. Trust amongst academics encourages knowledge sharing.				0.632
	QE9. Internet technologies are crucial in knowledge sharing.				0.530
	QE10. I use mobile technologies to share knowledge.				0.696
	Eigenvalue	6.863	2.105	1.679	1.474
	% of variance	34.314	10.516	8.355	7.364

Exploratory Factor Analysis was utilised to determine the validity in this research. Principal Component Analysis was used as a reduction technique through the utilisation of varimax rotation method to discover appropriate decision components. Inclusive of that, the study illustrates that decision variables were loading in their categories and their Eigenvalue is greater than 1 and fit to be used in the research (Pallant, 2020) as illustrated in Table 4.9.

The rotation method determines the factors that load in each specific group. A factor with a loading value greater than 0.3 is considered valid (Pallant, 2020). Table 4.9 shows that the first group extracted are individual factors and have the highest total variance explained, contributing 34.314%. The second highest total variance explained was organisational factors which contributes 10.516% followed by technology factors contributing 8.355% and KS contributing 7.364% (see Tables 4.9). Four iterations of extractions conformed to the 4 categories and 20 components that make a total contribution of 65.219% of the total variance. The following questions were removed owing to lack of validity: QE1, QE6, QE7, QE8, QD1, QD3, QD6, QB1, QB2, QB4 and QC2.

4.7 Descriptive Statistics of the Constructs

Composite variables are determined by averaging or summing Likert scale items with at least four items (Subedi, 2016). Items in a construct were averaged to create four composite variables that made it possible for the researcher to interpret the averages using the Likert scale. Table 4.10 lists the composite variables that were determined.

Table 4.10: Constructs mean and standard deviation.

Construct	Mean	SD	Agreement Level
Technology factors	4.1508	.79	Agreed
Knowledge Sharing	3.9683	.62	Agreed
Organisational factors	3.8929	.85	Agreed
Individual factors	3.5933	.61	Agreed

An average close to four was recorded for the constructs knowledge sharing, organisational and individual factors; the respondents agreed the means were $M = 3.97$; $SD = .62$ for knowledge sharing $M = 3.89$; $SD = .85$ for organisational and $M = 3.59$; $SD = .61$ for individual. Technology had a mean above four indicating that the respondents agreed $M = 4.15$; $SD = .79$. Given that the total variation was greater than 60%, the factor solution accounted for 65.805%, making it a robust solution according to Hair et al. (2019).

4.8 Correlation of the Constructs

The Pearson product-moment correlation of the decision variables was evaluated as shown in Table 410. The r-values range from 0.473 to 0.686. This indicates a suitable relationship between constructs. The r-value can range from -1 to 1 as proposed by Pallant in 2020. If the value of r is close to 1 there is a stronger correlation between the constructs. The p-value is less than 0.05 indicates s a significant correlation between decision variables. The relationship was significant between Knowledge Sharing and Individual (r=.619; 0.05), Knowledge Sharing and Organisational (r=.656; 0.05), and Knowledge Sharing and Technology (r=.686; 0.05) among others as shown in Table 4.11.

Table 4.11: Relationship testing using Correlation Analysis

Item	Organisational	Individual	Technology	Knowledge Sharing
Organisational	-			
Individual	.473**	-		
Technology	.571**	.475**	-	
Knowledge Sharing	.656**	.619**	.686**	-
*p < .05 statistically significant; ** p < .01 statistically highly significant				
ᵃr > .3 statistically significant (medium effect); ᵇr > 0.5 statistically significant (large effect)				

4.9 Multiple Regression Analysis

Multiple regression analysis results are shown in Tables 4.12 to 4.13. These results have a p-value that is less than 0.05 and are significant at a 95% level of confidence. R-squared is equal to 0.639. Knowledge sharing has a contribution of 63.9%. Given that the F-change value is less

than 0.05, this contribution is statistically significant. The results allow the analysis of variance for this study to be conducted.

Table 4.12: Summary of the regression model along with Knowledge Sharing as a dependent variable

Model	R	R-square	R-square adjusted	Standard error of the estimate	R-square change	F-change	p-value
1	.686[a]	.471	.464	.45221	.471	72.981	$p < .001$
2	.763[b]	.582	.572	.40447	.111	21.503	$p < .001$
3	.799[c]	.639	.625	.37833	.057	12.579	$p < .001$

a. Predictors: (Constant), Technology
b. Predictors: (Constant), Technology, Individual
c. Predictors: (Constant), Technology, Individual, Organisational
d. Dependent Variable: Knowledge Sharing

The coefficients demonstrate the contribution of choice variables to the equation (Table 4.13). As indicated in Table 4.13, three constructs have a p-value of less than 0.05, and contribute statistically significantly, namely: technology (Beta=.371), individual (Beta=.300) and organizational factors (Beta=.302).

Table 4.13: Estimations from stepwise regression models using knowledge sharing as dependent variable

Model	Unstandardized Coefficients		Standardised Coefficients	t-value	p-value	F	Collinearity Statistics	
	B	SE	Beta				Tolerance	VIF
(Constant)	1.708	.269		6.343	<.001	72.981		
Technology	.545	.064	.686	8.543	<.001		1.000	1.000
(Constant)	.913	.295		3.091	.003	56.365		
Technology	.402	.065	.507	6.207	<.001		.775	1.291
Individual	.386	.083	.378	4.637	<.001		.775	1.291
(Constant)	.788	.279		2.828	.006	47.141		
Technology	.295	.068	.371	4.352	<.001		.620	1.612

Individual	.305	.081	.300	3.770	<.001		.714	1.400
Organisational	.221	.062	.302	3.547	<.001		.622	1.609

4.10 Summary

The chapter elaborated on the frequency, reliability, validity, descriptive statistics, correlation, and regression analysis of this study. The research instrument was deemed appropriate to be analysed using correlation and regression analysis. The results of the investigation were discussed and outlined in this chapter. The results and findings are detailed in the chapter that follows.

CHAPTER 5: DISCUSSIONS, CONCLUSIONS AND CONTRIBUTIONS

5.1 Introduction

Based on the analysis and interpretations in chapter four, this chapter outlines the study's summary, results, and recommendations. According to Stangor (2015), the research discussion chapter summarises the study's findings, provides meaning to the interpretations, and ties the findings to the research. In the case of this study, it provides some theoretical and conceptual insights into the understanding of (KS) intentions and behaviours among selected academics in SA universities and higher education institutions (HEIs). The research findings should particularly assist both knowledge management (KM) and KS researchers and decision/policymakers in general. This is done with the view to gain an understanding of factors that influence academics' tendencies and behaviours towards KS. Previous studies in the KS discipline have placed a great deal of attention on academics in Asia and Europe, and very few studies have been conducted in the context of South Africa (SA) and the Western Cape in particular. To this end, the goal of this study was to investigate KM factors that influence KS amongst SA academics. The research questions which this study sought to answer were:

1. Which critical factors influence Knowledge Sharing among academics in SA's universities and HEIs?
2. What is the influence of organisational factors on KS amongst Academics in SA?
3. What are the individual factors that influence KS among academics in SA?
4. What are the technological factors that determine knowledge sharing in SA universities and HEIs?
5. How can a conceptual framework that can be used to study KS intentions amongst academics in SA universities and HEIs be developed?

The conceptual framework adapted from Cheng et al. knowledge-sharing model (2009) answers the first research question of this study, namely: Which critical factors influence Knowledge Sharing among academics in SA's universities and HEIs? It has been discovered that organisational, individual, and technology factors all influence KS in HEIs.

5.2 Organisational Factors

This study has demonstrated that organisational factors have a significant influence on KS.

5.2.1 Organisation culture

The study has established that organisational culture has a positive influence on KS. A significant number (83.3%) of the respondents attested that organisational culture in their institutions motivate them to share knowledge freely with their colleagues. This aligns with previous research that highlighted the positive impact of organisational culture on KS amongst academics. For example, Corcoran and Duane (2018) affirmed that transformational organisation culture promotes employees to be flexible, adaptive, dynamic, and freely share knowledge. Moreover, the results are consistent with the study conducted by Kucharska and Bedford (2019), which shows that organisational culture positively influences KS. It is assumed that organisational

culture dimensions proposed by Hofstede (2011) have an influence on KS. Based on the views of Tan (2016), a culture that positively promotes KS supports innovation in HEIs; This means that if organisational culture increases, KS attitudes among academic staff in research universities would increase positively. Management in SA HEIs can promote efforts towards developing a cooperative working environment among academic staff. For example, academics can be encouraged to work and cooperate amongst themselves in research teams or departments. Such high levels of KS in groups are more likely to foster close and mutual relationships among members in the institutions, which can further increase KS between members. It is also noted that when KS culture is incorporated in an organisation it promotes changes in attitude and behaviour of employees and stimulates the willingness to share knowledge (Mansor, Mustaffa and Salleh, 2015). Not only are effective communication, cooperation and collaboration crucial for transferring existing knowledge, it also plays an important role in the development of new knowledge in SA institutions This is evidenced by the huge emphasis placed by major funding bodies on cross-disciplinary collaborations.

5.2.2 Organisation Structure

Organisation structure based on the KS model proposed by Cheng et al. (2009) and general organisational culture are interwoven. Zheng, Yang and McLean (2010) ascertained that structure can influence culture (Saunders, Lewis and Thornhill, 2012 cited in Johnson and Scholes, 2008). Management should support KS initiatives and promulgate a KS culture within HEIs (Noor et al, 2014). Bureaucratic structures in universities are barriers to KS amongst academics. Academics tend to implement KS strategies better in flexible decentralised organisations compared to highly centralised environments (Jain and Sandhu, 2015). It is therefore imperative to ensure that existing structures support KS in universities.

5.2.3 Management support

In this study, 76.2% of respondents agreed that management in universities has put in place mechanisms that support KS. As far as Nadason, Saad and Ahmi (2017) are concerned, top management should provide sufficient funds, incentives, and rewards to motivate and cultivate a KS culture amongst academics. For instance, management can provide sufficient funds to enable academics to present their research findings and attend conferences. Management can do a lot to support KS in universities and HEIs.

5.2.4 Organisational climate

The climate in which academics work has an impact on KS behaviour (Chang and Lin, 2015). Fairness refers to an academic's opinion of how fair institution policies are; as a result, fairness encourages academics to share their knowledge. By the same token, academics that are affiliated have a sense of belonging and are more likely to help each other. On the authority of Khalil, Shah and Khalil (2021), affiliation is a significant predictor of organisational climate toward KS intention. South African universities and HEIs emphasise competition amongst staff members. Academics often compete to publish, and this could lead to unwillingness to share knowledge (Amayah, 2013).

5.2.5 Reward system

According to 60.8% of respondents, the reward systems in universities motivate them to share knowledge. When rewarded accordingly, it has been proved that academics can share knowledge, and collaboration is made possible to broaden the knowledge base. Seonghee and Boryung (2008) emphasised that appropriate reward systems are needed to encourage members to share their knowledge. Furthermore, the authors reported that and non-tangible rewards such as sabbatical leave dedicated to research, financial support for research-related travels and recognition have a positive impact on KS amongst academics (Seonghee and Boryung, 2008).

5.3 Individual Factors

The third research question of this study was: What are the individual factors that influence KS among academics? It has been found that individual factors affect KS in SA universities and HEIs.

5.3.1 Self-efficacy

Self-efficacy, which has been identified as the "amount of confidence of an employee in his or her ability to affect organisational performance is a significant factor affecting knowledge sharing behaviour" (Fullwood et al 2018). In this study, 81,0% of the respondents agreed that academics' willingness to share knowledge is associated with their internal drive. Chen et al (2012) opined that self-efficacy creates a favourable organisational climate that will enhance attitude and willingness to engage in KS. Essentially, this stance seems to support the close proximity between academics' willingness to share knowledge and internal drive. Accordingly, academics have come to understand that if they share knowledge, they can use their colleagues' experience to help them perform their job efficiently (Wing Chu, Wang, and Yuen, 2011). Nevertheless, Byrge and Tang, (2015) are of the opinion that self-efficacy levels can be improved by conducting some technology training sessions among academics and this can assist in the South African context.

5.3.2 Lack of trust

Gururajan and Fink, (2010) are of the view that lack of trust impedes knowledge transfer. This was supported by Noor et al (2014) who noted trust as an important element in knowledge transfer; conversely, lack thereof reduces the transfer of knowledge. In line to the above notion, 72.6% of respondents stated that they trust academics in their institutions. Trustworthy was identified as one of the elements that shows the integrity of an individual hence its importance in sharing knowledge. While lack of trust may generally seem to impede knowledge transfer, the respondents indicated that they were comfortable with sharing knowledge.

5.3.3 Lack of motivation

It has been suggested that the ability and motivation of academics to share knowledge determines the success of universities (Bibi and Ali, 2017). The fact that universities are centres of knowledge makes the sharing of that knowledge very important. Intrinsic and extrinsic motivation should be encouraged so that academics can share knowledge among themselves with students and with relevant industrial bodies. While most participants in this study agree that lack of motivation hampers the sharing of knowledge, the management of universities and HEIs must put in place measures that motivate staff to share and transfer knowledge. Jahani et al. (2011) noted that

monetary elements are a key element in motivation, and their absence can lead to academics searching for greener pastures elsewhere.

5.3.4 Lack of time

According to the findings of this study, it has been found that academics have time to share knowledge, but other limiting factors hinder them from sharing this knowledge. Factors such as organisational culture, self-efficacy and technology literacy affect the sharing of knowledge. However, in a study conducted in Malaysia, lack of time was cited as one of the obstacles to information sharing (Jahani and Jain, 2009). Furthermore, another study conducted in the United States of America revealed that lack of time prevents people from sharing knowledge; their time is instead used to do other things (Maiga, 2017).

5.4 Technological Factors

It has been found that technological factors influenc the way academics share knowledge in South African universities and HEIs.

5.4.1 Technology Literacy

The ability to identify, access, interact and transact with, manage, analyse, and synthesise digital resources to produce or construct new knowledge is referred to as technological literacy (Biswas et al., 2015). Participants in this study have acknowledge the impact technology has on the sharing of knowledge. It is emphasised that when it comes to technology, it is best to select the appropriate and suitable technology that can provide the best communication link between academic staff and university to enhance KS which academics are able to use (Norulkamar and Hatamleh, 2014). In addition, Hendriks (1999) recommended that utilising new technology makes workers more eager to share their expertise. Exposing heads of departments to new technologies serves as an act of recognition which motivates them to share knowledge.

5.4.2 Information technology tools

In this study, 85.2% of respondents attested to the fact that they use information technology tools to share knowledge in HEIs. Information technology (IT) tools enable a fast, safe, and reliable way of sharing and storing knowledge. To align with global trends, universities must invest in IT and the requisite infrastructure.

5.4.3 Collaboration

This study has established that collaboration influences KS; this is on the back of the 71.5% of the respondents who acknowledged using IT tools when collaborating with other academics. Use of IT tools in collaborations results in creativity and innovation by academics, which empower students to be ready for their careers and the job market. Suffice it to say that collaboration goes hand in hand with trust, and people generally prefer collaborating with people they trust (Corcoran and Duane, 2018). Thus, it is essential for university management to create an environment that allows collaboration and trust among academics to facilitate sharing of knowledge through research.

5.5   The Research Model of the Study

The outcomes of the investigation, which were supported as shown in Table 5.1. The study results were significant as shown by a p value less than 0.05, and the results are clearly displayed in Figure 5.1.
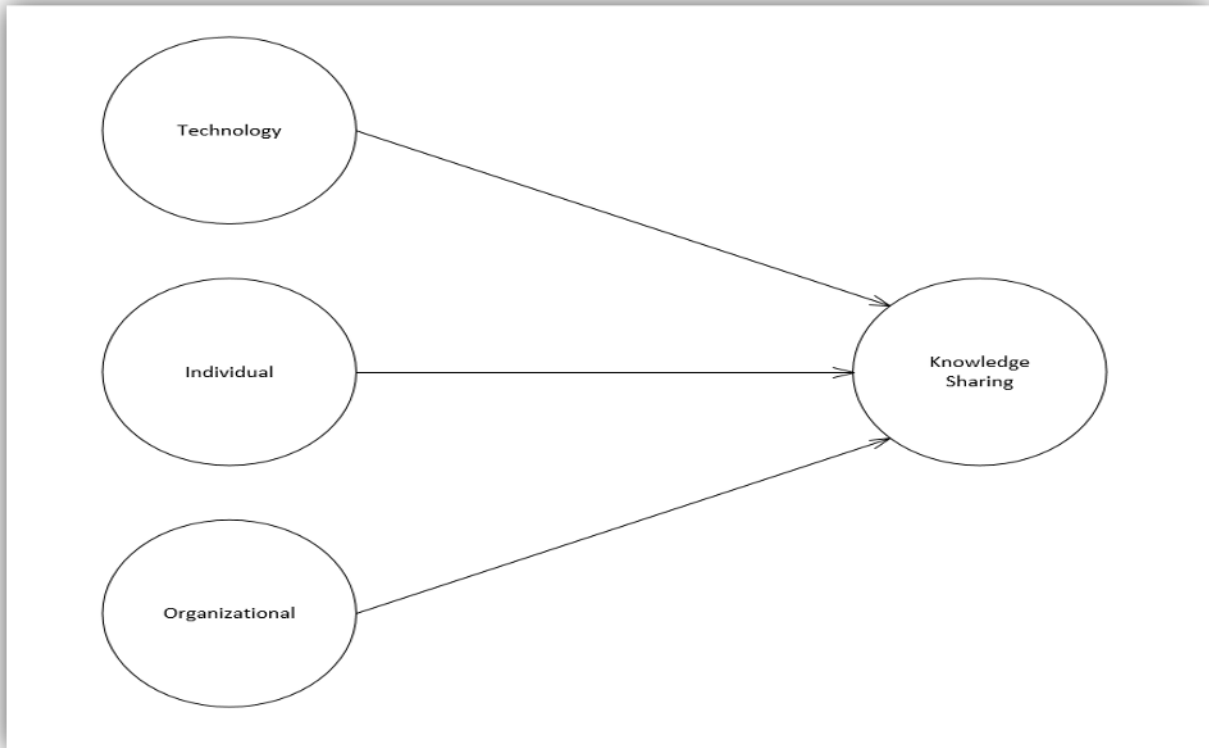
Figure 5. 1: Model of the study (by Author)

Table 5.1: Hypotheses of the study

Hypotheses	Decision
H1: Organisational factors have a positive relationship with knowledge sharing	Supported
H2: Individual factors have a positive relationship with knowledge sharing.	Supported
H3: Technology literacy has a positive relationship with knowledge sharing	Supported

5.6   How the research questions were answered?

This research work has answered the following questions:

1. Which critical factors influence Knowledge Sharing among academics in SA's universities and HEIs?
2. What is the influence of organisational factors on KS amongst Academics in SA?
3. What are the individual factors that influence KS among academics?
4. What are the technological factors that determine knowledge sharing in Universities and HEIs?
5. How can a conceptual framework that can be used to study KS intentions amongst academics in universities and HEIs be developed?

This research has identified three broad factors that affect KS among academics. These are organisational, individual, and technological factors. Organisational culture and the structure of the organisation were found to have an impact on academics while self-efficacy and lack of motivation are individual factors affecting academics. Technology literacy was identified as one of the technological factors that affect the sharing of knowledge in universities and HEIs.

5.7 Key Contributions

Literature review shows that, in general, very few studies have been conducted on the sharing of knowledge among academics in universities in South Africa and Africa. This study contributes to the body of knowledge by highlighting organisational, individual, and technological factors that affect KS. It further highlighted that universities being centres of knowledge also need to do more to promote the sharing of knowledge that will in turn transform the economy. Another contribution of this study points to an organisational structure as playing a vital role in promoting KS. As a result, the management of universities should put in place structures that allow the creation and sharing of knowledge to flourish. Furthermore, the study found established that technology literacy, which is still lacking in the African continent and is of paramount importance in KS, should be emphasised not only in universities and HEIs, but in all sectors of the economy.

5.8 Recommendations and Limitations

This study was conducted in Western Cape universities and HEIs only, and it cannot be generalised to represent the whole of South Africa. Therefore, a need exists for additional studies to be conducted on KS among academics across South Africa. Another limitation of this study is that since the data was collected only in South Africa, the South African cultural and legislation barriers might have influenced the findings of this study. The study only focused on academics in universities and one TVET college, and the findings cannot therefore be generalised to other HEIs. More research work needs to be conducted under other learning backgrounds and environments such as public schools and vocational training colleges. Essentially, it is therefore recommended that additional studies be conducted to establish factors that influence KS in South African HEIs.

5.9 Future Work

Additional research work needs to be conducted in other learning backgrounds and environments such as public schools and vocational training colleges. It is therefore recommended that additional studies be conducted to determine factors that influence knowledge sharing in Universities and HEIs of other provinces of SA.

In future, longitudinal research may be used to track the development of significant explanations. Instead of South Africa, the investigation can focus on the African continent by conducting longitudinal studies that could provide a deeper understanding of how KS practices evolve over time. Additionally, exploring the effectiveness of specific interventions or strategies aimed at enhancing KS could yield practical insights for improving collaboration among academics. Further investigation into the role of technology and online platforms in facilitating knowledge exchange

could prove to be valuable, especially when conducted in parallel with comparative studies that examine KS practices across different countries or regions.

5.10 Discussion and Conclusion

This section delves into a thorough examination of results from the study of KS amongst academics in universities and HEIs in the Western Cape, SA. The study examined the many aspects of KS amongst academics in SA, shedding light on both current trends and the challenges faced by academic institutions in support of successful KS. It underlines numerous dimensions, such as organisational, individual, and technological factors, as well as resource shortages and limitations, all of which influence KS within universities and HEIs in the Western Cape, SA.

The study identified common challenges such as organisational structures and cultures that may inhibit collaboration, faculty members' individual motivations, and barriers to sharing of knowledge, and the limitations imposed by existing technological infrastructure. Not only do these factors pose a serios challenge, they also set the stage for identifying potential solutions and opportunities for improvements.

The research also underscores the crucial role played by multidisciplinary cooperation and the utilisation of digital platforms in KS amongst academics in SA. By fostering collaboration across diverse academic disciplines and harnessing the power of technology, institutions can transcend these constraints and facilitate the seamless flow of knowledge. Furthermore, this discussion underscores the significance of concepts such as open access to research materials, the formation of multidisciplinary networks, and the need for targeted interventions in enhancing KS practices. These elements are important to improve both academic research and policy development at country level.

In conclusion, this section summarises the study's contributions to the understanding of KS amongst academics in the Western Cape universities and HEIs. It demonstrates the significance of KS in the growth of not just academics but also society at large. Recognising the essential role played by efficient KS in driving SA economy, the section calls for continued exploration in this domain and suggests potential avenues for future research. By shedding light on these findings, this research seeks to propel SA's Western Cape universities and HEIs toward a more collaborative, innovative, and knowledge-rich future.

5.11 Summary

The research findings, as discussed in Chapter 5 and visualized through Figure 5.1, form a comprehensive model that delves deeper into the intricate dynamics of KS amongst academics of universities and HEIs in the Western Cape, SA. This comprehensive exploration underscores the myriad of challenges faced, including those of an institutional nature, while simultaneously focusing on a discerning light on the important role played by multidisciplinary collaboration, the influence of organisational culture, and the power of digital platforms as enablers of KS.

The pivotal message delivered within this section is the importance of fostering an environment that champions open access and promotes multifaceted conversations, thereby enriching the overall impact of research and KS practices amongst academics in the Western Cape, SA. The study's significance is not solely confined to the Western Cape context, it extends its applicability to a global perspective, emphasising the universal relevance of its insights and advocating for inclusivity in KS, beyond geographical boundaries.

In the conclusive segment of this study, a seamless connection is drawn between the research findings and the initially established objectives. Furthermore, an honest acknowledgement of the study's inherent limitations is made, and the foundation is laid for future research. This conclusion provides a brief and insightful reflection on the entire research journey, encapsulating a definitive relevance of KS amongst academics in the Western Cape, SA.

By carefully building on these crucial components, the researcher aims to enrich the discourse and extend the reach of the research, eventually improving the comprehension of the intricacies of KS amongst academics in the Western Cape and its broader implications for the global scholarly community.

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APPENDICES

Appendix A: Unisa Ethical Clearance Approval

UNISA COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY'S (CSET) RESEARCH AND ETHICS COMMITTEE

23 March 2020

> Ref #:   036/AG/2019/CSET_SOC
> Name: Mr Admire Gwanzura
> Student #: 46850325

Dear Mr Admire Gwanzura

> **Decision: Ethics Approval for 3 years**
> **(Humans involved)**

_____

Researchers: Mr Admire Gwanzura, 34 Bute Road, Wynberg 7800, agwanzura@gmail.com, +27 21 763 5304, +27 72 271 8694

Project Leader(s): Mrs Mmfani Serote, serotm@unisa.ac.za, +27 11 670 9180
Prof Peter Mkhize, mkhizpl@unisa.ac.za, +27 11 471 3565

> **Working title of Research:**
>
> Exploring Knowledge Sharing Amongst Academics in South Africa

Qualification: MSc in Computing

_____

Thank you for the application for research ethics clearance by the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee for the above-mentioned research. Ethics approval is granted for a period of three years, from 23 March 2020 to 23 March 2023.

> 1. The researcher will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
> 2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.

3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.

4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.

7. No field work activities may continue after the expiry date (23 March 2023).

8. Permission to conduct research involving UNISA employees, students and data should be obtained from the Research Permissions Subcommittee (RPSC) prior to commencing field work.

9. Permission to conduct this research should be obtained from the University of the Western Cape (UWC), University of Cape Town (UCT), Cape Peninsula University of Technology (CPUT), and College of Cape Town prior to commencing field work.

Note:

The reference number 036/AG/2019/CSET_SOC *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee.*

Yours sincerely

_____

Dr. B. Chimbo

Chair: Ethics Sub-Committee SoC, College of Science, Engineering and Technology (CSET)

_____   _____

Prof E. Mnkandla   Prof B. Mamba
Director: School of Computing, CSET   Executive Dean: CSET

Approved - decision template – updated Aug 2016

Appendix B: Participant Information Sheet

UNISA | university of south africa

PARTICIPANT INFORMATION SHEET

Ethics clearance reference number: 036/AG/2019/CSET_SOC
Research permission reference number

27 August 2019

Title: Exploring Knowledge sharing amongst academics in South Africa

Dear Prospective Participant

My name is Admire Gwanzura and I am doing research with Mmafani Serote, a lecturer in the College of Science, Engineering and Technology towards an MSc Computing at the University of South Africa. We are inviting you to participate in a study entitled Exploring Knowledge Sharing amongst academics in South Africa.

I am conducting this research to find out the factors that influence knowledge sharing amongst academics in South Africa.
This study is expected to collect important information that will contribute to the body of knowledge on knowledge sharing. The researcher would like to explore the factors that facilitate or hinder the sharing of knowledge in universities and higher learning institutions in the S.A. context. The study examines the organizational, individual, and technological factors that either support or hinder knowledge sharing amongst academics. It is noted that it is the responsibility of the institution's leaders to create a culture that supports knowledge sharing, motivates employees and ensures that technology allows sharing of knowledge to facilitate a smooth and free flow of knowledge.
The study will help highlight areas that need to be improved to facilitate and accelerate the rate of knowledge sharing amongst academics in order to
fully realize the benefits of a knowledge economy like competitive advantage.
The study will gather insights that facilitate and improve the transfer of knowledge in S.A. tertiary education institutions amongst academics. The study will raise awareness on the importance of both explicit and tacit knowledge in universities.

WHY AM I BEING INVITED TO PARTICIPATE?

I chose academics as participants in the study. I got the contacts of the participants through their institutions' consent after applying for permission using the UNISA ethical clearance forms. The study will gather data from approximately 150 participants from Universities in the Western Cape province of South Africa using Google Forms.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

Your role as a participant is to voluntarily answer a questionnaire on knowledge sharing. The study involves questionnaires. Questions on Knowledge management and sharing will be presented to you and I kindly ask you to answer truthfully. This questionnaire should take not more than 45 minutes of your time.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Your participation in this study is voluntary and there is no penalty or loss of benefit for non-participation. You are under no obligation to consent to participation. If you decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. The project involves the submission of non-identifiable material such as questionnaires, this therefore means it will not be possible to withdraw once you have submitted the questionnaire.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

There will be no monetary benefits for the participant, the participants as a group, the scientific community and/or society. There will be no benefit from your participation, however, it is envisioned that the findings of this study will raise awareness on the maturity model of knowledge sharing in South African universities, provide insights to decision makers in tertiary education on the importance of knowledge sharing in promoting business competitiveness, sustainability and enhancing education outcomes. The importance of investing into knowledge management processes for knowledge generation, storage, and distribution.

ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

No possible or reasonably foreseeable risks of harm or side-effects to the potential participants.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

Your name will not be recorded anywhere and no one, apart from the researcher and identified members of the research team, will know about your involvement in this research. The given answers will be assigned a code number, or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings

Your answers may be reviewed by people responsible for making sure that research is done properly like members of the Research Ethics Review Committee. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

Participants anonymous data may be used for other purposes, such as a research report, journal articles and/or conference proceedings. Privacy will be protected in the publication of the information supplied.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

Hard copies of your answers will be stored by the researcher for a minimum period of five years in a locked cupboard at UNISA for future research or academic purposes; electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. Hard copies will be shredded and electronic copies will be permanently deleted from the hard drive of the computer .

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

You will not be reimbursed or receive any incentives for your participation in the survey.

HAS THE STUDY RECEIVED ETHICS APPROVAL?

This study has received written approval from the Research Ethics Review Committee of the School of Computing Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact Admire Gwanzura on 0217635304 . Should you require any further information or want to contact the researcher about any aspect of this study, please contact Admire Gwanzura on 0217635304, mobile 0722718694 or email on 46850325@mylife.unisa.ac.za
Should you have concerns about the way in which the research has been conducted, you may contact Mmafani Serote on GJ Gerwel building College of Science, Engineering and Technology on 0116709180, email serotm@unisa.ac.za or contact the research ethics chairperson of the Research Ethics Review Committee at UNISA if you have any ethical concerns.

Thank you for taking time to read this information sheet and for participating in this study. Kind regards

Admire Gwanzura.

0722718694.

Appendix C: Questionnaire

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Ethical clearance #:036/AG/2019/CSET_SOC

Research permission:Mr Admire Gwanzura

COVER LETTER TO AN ONLINE ANONYMOUS WEB-BASED SURVEY

Dear Prospective participant,

You are invited to participate in a survey conducted by Admire Gwanzura under the supervision of Mmafani Serote, a Lecturer in the College of Science, Engineering and Technology towards a MSc Computing at the University of South Africa.

The survey you have received has been designed to study the factors that influence the knowledge sharing tendencies and behaviours of academics in Western Cape universities and higher education institutions.
You were selected to participate in this survey because of your position as an academic in the Western Cape province. By completing this online survey, you agree that the information you provide may be used for research purposes, including dissemination through peer-reviewed publications and conference proceedings.

It is anticipated that the information we gain from this survey will help us to gain insights into the maturity levels of knowledge management in the Western Cape tertiary institutions. You are, however, under no obligation to complete the survey and you can withdraw from the study prior to submitting the survey. The survey is developed to be anonymous, meaning that we will have no way of connecting the information that you provide to you personally. Consequently, you will not be able to withdraw from the study once you have clicked the send button based on the anonymous nature of the survey. If you choose to participate in this survey it will take no more than 45 minutes of your time. You will not benefit from your participation as an individual, however, it is envisioned that the findings of this study will enhance knowledge sharing practices understanding within universities and higher education institutions in the Western Cape. Knowledge management practices like knowledge sharing lead to competitive advantage, promote career development, innovation and improve universities capabilities and outcomes. We do not foresee that you will experience any negative consequences by completing the survey. The researcher(s) undertake to keep any information provided herein confidential, not to let it out of our possession and to report on the findings from the perspective of the participating group and not from the perspective of an individual.

The records will be kept for five years for audit purposes where after it will be permanently destroyed and all electronic versions will be permanently deleted from the hard drive of the

computer. You will not be reimbursed or receive any incentives for your participation in the survey.

The research was reviewed and approved by the School of Computing Research and Ethics Committee (SOCREC).
The primary researcher, Admire Gwanzura, can be contacted during office hours at International School of Cape Town (0217635304).
The study leader, Mmafani Serote, can be contacted during office hours at GJ Gerwel
Building, College of Science Engineering and Technology Telephone number: 011 670 9180

 Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the School of Computing Research and Ethics Committee (SOCREC), at
UNISA College of Science Engineering and Technology. Alternatively, you can report any serious unethical behaviour at the University's Toll-Free Hotline 0800 86 96 93.
You are making a decision whether or not to participate by continuing to the next page. You are free to withdraw from the study at any time prior to clicking the send button.

Appendix D Online google form questionnaire

Section A. Participant demographics.

Would you please introduce yourself?

A1-What is your gender?

a	Female	
b	Male	

A2-What is your age group?

a	20-30	
b	31-40	
C	41-50	
d	Above 50	

A3-What is your current academic position?

a	Professor	
b	Assistant Professor	
C	Lecturer	
d	Senior Lecturer	
e	Assistant Lecturer	

A4-How many years of academic work experience do you have?

a	Less than 6 years	
b	6-10 years	
C	11-15 years	
d	16-20 years	
e	More than 20years	

A5-How many years have you been employed by your institution?

a	Less than 6 years	
b	6-10 years	
C	11-15 years	
d	16-20 years	
e	More than 20 years	

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A6-How long is your academic experience with knowledge management and knowledge sharing?

a	None	
b	Less than 1 year	
C	1 year -5 years	
d	6-10 years	
e	More than 10 years	

Section B Participant knowledge sharing influenced by organizational factors

Indicate your view on the impact of organizational factors such as culture and structure on willingness to share knowledge in your institution. Choose option from (1) to (5) ,1 indicates (Strongly Disagree) and 5 (Strongly Agree)

1	2	3	4	5
Strongly Disagree	Disagree	Other	Agree	Strongly Agree

		1	2	3	4	5
B1	The existing organizational culture in my university motivates me to freely share my knowledge with colleagues.	1 o	2 o	3 o	4 o	5 o
B2	Trust is a crucial consideration for me to share my knowledge with members of my university or higher education institution.	1 o	2 o	3 o	4 o	5 o
B3	In my department Knowledge sharing with colleagues is regarded as a normal.	1	2	3	4	5
B4	Knowledge sharing helps everyone bond within my community of practice.	1	2	3 o	4	5
B5	Knowledge sharing will get me acquainted with other academics.	1 o	2	3 o	4 o	5 o

		1	2	3	4	5
B6	This institution encourages staff to freely share knowledge.	1		3	4	5
		o		o	o	o
B7	Sharing my knowledge with colleagues would not necessarily result in colleagues sharing their knowledge with me.	1	2	3	4	5
		o		o	o	o
B8	The structure in my Institution plays a crucial role in driving knowledge sharing.	1	2	3	4	5
		o	o	o	o	o
B9	My institution has mechanisms in place that encourage knowledge sharing	1	2	3	4	5
		o	o	o	o	o
B10	I usually interact freely with my colleagues.	1	2	3	4	5
		o	o	o	o	o

Section C Participant knowledge sharing as influenced by individual factors

		1	2	3	4	5
C1	Rewards and monetary incentives positively motivate me to share my knowledge.	1	2	3	4	5
		o	o	o	o	o
C2	Self-efficacy influences my desire and interest to share knowledge with co-workers.	1	2	3	4	5
		o	o	o	o	o
C3	Sharing my knowledge with colleagues can threaten my professional stability.	1	2	3	4	5
		o	o	o	o	o
C4	I trust academics in my university /college.	1	2	3	4	5
		o	o	o	o	o
C5	There is a mutual relationship that is based on reciprocal trust with my colleagues.	1	2	3	4	5
		o	o	o	o	o
C6		1	2	3	4	5

	There are more chances to get a promotion when I engage in knowledge sharing.	o	o	o		o	0
C7	Trust amongst academics encourages knowledge sharing.	1	2	3		4	5
		o	o	o		o	o
C8	I think that sharing knowledge and experiences can help to innovate and create new knowledge.	1	2	3		4	5
		o	o	o		o	o
C9	I prefer to work in groups rather than alone.	1	2	3		4	5
		o	o	o		o	o
C10	Lack of time affects knowledge sharing in my institution.	1	2	3		4	5
		o	o	o		o	o

Section D Participant knowledge sharing influenced by information communication technology

D1	The information technology infrastructure in my university is user-friendly and facilitates knowledge sharing seamlessly.	1	2	3	4	5
		o	o	o	o	o
D2	The difficulty of using information technology and lack of training on new applications prevents me from sharing knowledge	1	2	3	4	5
		o	o	o	o	o
D3	Mismatch between my information technology requirements and the information technology systems in my institution limit my knowledge sharing practices.	1	2	3	4	5
		o	o	o	o	o
D4	I use information technology tools provided by the institution to facilitate communication with colleagues.	1	2	3	4	5
		o	o	o	o	o
D5	I rely much on the use of information technology to collaborate and share knowledge with my colleagues.	1	2	3	4	5
		o	o	o	o	o
D6	I use information technology to access external knowledge that helps me do my job.	1	2	3	4	5
		o	o	o	o	o
D7	I use information technology to access external knowledge that helps me work.	1	2	3	4	5
		o	o	o	o	o
		1	2	3	4	5

D8	Internet technologies are crucial in knowledge sharing.	o	o	o	o	o
D9	I use mobile technologies to share knowledge.	1	2	3	4	5
		o	o	o	o	o

Appendix D: Editors Certificate

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by

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Supervisor: Mrs Mmatshuti Sekota
Co-Supervisor: Prof Bester Chimbo

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