



**THE USE OF SOCIAL MEDIA IN KNOWLEDGE TRANSFER IN AN INNOVATIVE
BUSINESS ENVIRONMENT**

by

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DECLARATION

I, Fredrick Nyambandi, declare that the contents of this thesis represent my own unaided work, and that the thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.



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28 September 2023

Date

ABSTRACT

Background: Knowledge transfer (KT) using social media (SM) in an innovative business environment (IBE) is trending and improving knowledge creation, elicitation, and organisational sustainability. This research aimed to explore the use of SM in KT in an innovative business environment.

Method: This study assumed a pragmatic paradigm and abductive approach. A mixed methodological choice and a cross-sectional time horizon were selected. The data collection techniques adopted were a systematic literature review (SLR), participant interviews, and the Delphi technique. The SLR data were collected from various databases. Data from *Publish or Perish* were uploaded to *VOSviewer* to perform a bibliometric analysis. Thematic analysis (TA) was conducted in conjunction with ATLAS.ti Version 8 software and IBM-Statistic Package of the Social Science (SPSS) on data collected from the participant interviews and the Delphi technique, respectively. The axiology of the researcher was that of a practising educator in ICT, a training professional, and a business process analyst.

Findings: Introducing readily available SM tools has significant potential in addressing the challenge of KT. Thus, an understanding of SM affordances in KT strategies in IBEs is becoming a priority.

Conclusion: SM facilitates KT although the management thereof is becoming more complex in an IBE.

Contributions: The study generated three contributions to the body of knowledge: Firstly, practical social media in the form of a KT framework to organisational practitioners; secondly, theory integration, useful to the novice researcher and leadership who want to improve KT strategies; and thirdly, a key methodological contribution in the form of a pragmatic paradigm using mixed methods choices for the collection and analysis of data and the interpretation of results.

Keywords: Social media, knowledge transfer, innovative business environment, social media and knowledge transfer, social media and knowledge transfer culture.

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DEDICATION

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RESEARCH OUTPUTS

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ABBREVIATIONS AND LIST OF ACRONYMS

Abbreviation	Description
CAQDAS	Computer Aided Qualitative Data Analysis Software
CCM	Cyber Crime Marketplace
CoP	Community of Practice
ERP	Enterprise Resource Planning
HCI	Human Computer Interaction
HIB	Human Information Behaviour
HII	Human Information Interaction
ISACA	Independent Communications Authority of South Africa
IBE	Innovative Business Environment
ICT	Information and Communications and Technology
IoT	Internet of Things
IoT	Internet of Technology
IS	Information Systems
IT	Information Technology
KM	Knowledge Management
KS	Knowledge Sharing
KT	Knowledge Transfer
MIS	Management Information System
PEOU	Perceived Ease of Use
PQ	Primary Question
PRO	Primary Research Objectives
PU	Perceived Usefulness
SA	South Africa
SM	Social Media
STT	Socio-Technical Theory
TEKT	Technology-Enabled Knowledge Transfer

DEFINITIONS OF KEYWORDS

This subsection presents a list of terms, phrases, and corresponding definitions in relation to usage in this study:

Information Technology (IT): “The use of computer based investment and capabilities that influence firm performance through three significant organisational capabilities (agility or ability to react to unexpected changes, digital options, and entrepreneurial alertness called ability to explore markets and opportunities) and strategic processes, capability building, entrepreneurial action), and coevolutionary adaptation (learning through experience in developing digital options)” (Sambamurthy et al., 2003:237). IT infrastructure improves coordination within the firm and the supply chain, which in turn facilitates the firm’s ability to acquire, sense, apply, and leverage knowledge for innovation benefit (Benitez et al., 2018:141).

Innovation: “An idea, practice, or object that is perceived as new” (Rogers, 1995:12).

Innovative Business Environment: Includes an environment characterised by:

- i) A new process of production, social and technical systems, the substitution of a cheaper material newly developed for a given task in an essentially unaltered product, the reorganisation of production, internal functions, or distribution arrangements, leading to increased efficiency, better support for a given product or lower costs, improvement in instruments or methods of doing things (Kline & Rosenberg, 2010:177).
- ii) High volatility, uncertainties, complexity, and ambiguity (Oliva & Kotabe, 2019:1838).
- iii) Companies wanting to remain active and competitive in the future (Oliva & Kotabe, 2019:1839).

Knowledge sharing: “Dissemination and exchange of information” (Badawood & Albadri, 2020:600).

Knowledge Transfer: KT is a form of communication and is defined as the “active mental process through which one unit learns indirectly or vicariously from the experience of another unit” (Argote et al., 2022:2).

Social Media: “A tool to manage knowledge flows within and across organisation boundaries in the process of innovation” (Bhimani et al., 2019:251).

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Since the early 2000s, social media (SM) has grown in acceptance because of the opportunities it potentially offers to individuals and organisations. With knowledge being the commodity in the 21st century, the role of SM in KT needs further investigation. This research seeks to explore the innovative use of SM in KT in an innovative business environment. The chapter introduces the background, rationale for the study, problem statement, aim and objectives. The chapter also covers research questions, methodology, philosophy, methodological choice, strategy, sampling, data collection, analysis, and delineation of the study. The research assumption, public trust, citizen science, confidentiality, and headline findings are presented. Recommendations, contributions, the thesis layout, and summary conclude the chapter. Figure 1.1 provides an overview of Chapter One.

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1.2	Background
1.3	Rationale for the study
1.4	Research problem statement
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Figure1.1: Layout of Chapter One

1.2 Background

Over the past 10 years, many studies on knowledge transfer (KT) have ranged widely in scope and approach. Some focused on highlighting the fact that SM improves the way individuals and organisations create, share, transfer, and store knowledge (Hou et al., 2021). Industry captains are concentrating on redesigning the stakeholder's role, resource allocation and innovation (Ghazzawi, 2018). Wehn and Montalvo (2018) emphasise the importance of Information and Communications Technology (ICT) in facilitating speed sharing and transfer of data, information, codified, and tacit knowledge in organisations. There are, however, only a few studies linking SM to KT. Examples of studies linking SM's importance, innovation and KT include Anjum et al. (2021) and Gu et al. (2021).

Tawalbeh (2021) reports significant differences between the means of the respondents' estimates of the role of SM in KT among faculty members at universities. Anjum et al. (2021) studied the limitedness and practices barriers of KT in higher education institutions (HEIs). Anjum's study discloses that the primary barriers to KT include social interactions, training, and ICT. The study further postulates that there is inadequate management of KT barriers, which is negatively influencing effective KT. The results of Anjum et al. (2021) include that the most influencing factor for KT is social interaction as suggested by the social interaction theory.

Using bibliometric and visualisation research with the aid of *VOSviewer* software, Gu et al. (2021) observe that KT research is insufficient. Possible future research could include factors that influence innovation, such as motivation, efficiency, effectiveness, and performance (Gu et al., 2021). Bibliometric mapping is a way to visualise the status quo of research to identify the most cited influential topics and the conceptual structure of the topic using co-word analysis in databases, within a specific period range, and gain insights in the topic (Fabregat-Aibar et al., 2019:1). Most of the studies used quantitative methodological choices. However, this research also used the qualitative approach, as suggested by Gu et al. (2021). According to Moral-Muñoz et al. (2020:6) *VOSviewer* was developed by Leiden University in the Netherlands. The application is able to operate systems using Windows, OSX, and Linux. Using *VOSviewer* as a tool to find novelties in research, one can present a certain topic's impact, new trends, keywords, and the evolutionary process of the topic's frequency and bibliographic visualisations (Soegoto et al., 2022).

SM provides high-volume and real-time data, which has been broadly used in diverse applications such as in sales, marketing, disaster management, and health surveillance (Hou et al., 2021). However, differentiating between noise and reliable information can be thought-provoking, because SM (an online exchange of user-generated content system) has a large volume of users exchanging rich information in the form of short textual content embedded in

the images and videos. For instance, using data from Twitter to detect landslides and natural disasters includes three stages, namely: i) data processing, ii) data detection, and iii) data verification. The strategies to identify potential events involve the use of a detector as a dynamic event management system with a time sliding window to group tweets into candidate events. Because SM event detection platforms only analyse textual data, Hou et al. (2021) propose an automatic approach to efficiently build image classification networks for event detection purposes. Closely related text and images from SM offer a valuable text-image mapping, which can enable KT between two media platforms.

Parthasarathi and Kumari (2021) used mixed methods to investigate the impact of online peer groups on internet users. The study observed that SM is the medium for opinion formation, democratisation of the public sphere, influencing virtual peers, and online SM campaigns, reflecting that SM innovation is a platform that provides various affordances like campaigns, although organisational leaders still need to understand its management and how it facilitates KT.

Innovation is an important part of the contemporary business environment. Natário and Couto (2022) observe that the concept of innovation was developed by Schumpeter (1939) and expanded by the Organisation for Economic Co-operation and Development (OECD). “Innovativeness of an organisation from organisational and technical processes perspective means the ability to create and implement innovations that manifest themselves in the capability to introducing new or modernised products, technology or enhanced organisational and technical processes” (OECD/Eurostat, 2005:49). Parthasarathi and Kumari (2021:106) regard “individual innovation as the process of adoption of an idea viewed also as a new concept, behaviour, or product”. The innovation process encompasses five stages, namely: i) awareness stage, ii) interest stage, iii) evaluation stage, iv) trial stage and v) the adoption stage. In these innovative business environments, the diffusion of knowledge becomes critical for individual and organisational competitive advantages and sustainability.

SM platforms presents opportunities for innovation processes and the adoption of innovative business environments (Parthasarathi & Kumari, 2021). In relation to challenges, the use of regulations, collaborations, and anticipatory governance presents gaps to alleviate the challenges for emerging innovations (John, 2021). This means the management of emerging innovations such as SM in KT remains a challenge. According to Gu et al. (2021), future research ought to integrate different levels of factors such as countries’ organisational, culture, and social network-level factors to comprehend which factors support KT. For this research, there is a difference between challenges and factors affecting the use of SM in KT. Challenges are revealed as economic, technological, social, environmental, and political problems that

individuals, organisations, or systems face, calling for proactive measures (Sayogo et al., 2020:791). In contrast, factors are not difficulties but exist as internal or external broader organisational, economic, technological, social, environmental, legal, and political fundamentals that can have a positive or negative effect on an actual circumstance, result, or field (Sayogo et al., 2020).

The concept of KT was first proposed by Findlay (1978) and has since been interchangeably used as knowledge sharing, knowledge flow, and knowledge acquisition (Zhang & Jiang, 2015; Szilágyi, 2017). Obermayer et al. (2020) note that different types of motivation (extrinsic and intrinsic) are crucial for generating and transferring knowledge as an essential source for firms that use SM to be sustainable and to create a competitive advantage. Furthermore, the transfer of tacit knowledge (Nonaka & Takeuchi, 1995) within and between teams cannot be directly observed, and the output cannot be attributed to one particular employee. This necessitates managers to observe the result of knowledge generation and transfer in terms of output. In contrast, explicit knowledge (Polanyi, 1966), is tradable, prompting managers to observe how well workers with tacit knowledge have performed, and reward them accordingly.

Nonaka and Takeuchi (1995) regard KT as enthusiastically creating meanings in a specific context through social interaction among people. KT is furthermore regarded as involving “the knowledge transmission, the knowledge absorption, and the use of the knowledge” (Szilágyi, 2017:181). Marbun et al. (2020:2513) posit that the influence of a SM culture on KT and work performance is positive and significant. Leadership must rearrange strategies for efficiency, emphasising innovative technologies, and encompassing culture of sharing knowledge using SM. SM innovation for KT research should emphasise how the technology will improve efficiency in various disciplines.

This research asserts that KT is a complex concept, requiring one to understand the most effective transfer strategy related to individual and organisational capability as well as environmental characteristics. KT can continuously be used to change entities performance, in new situations, or after absorption. This study adopted the definition of KT as implicitly and explicitly influencing an entity by another, resulting in changes in performance, process, products, models, artefacts, training, and application (Davenport & Prusak, 1998; Argote & Ingram, 2000; Becerra-Fernandez & Sabherwal, 2010). KT influence is meant to leverage an entity’s capability, sustainability, competitiveness, innovativeness, flexibility and react to unexpected and expected changes.

1.3 Rationale for the study

This study does not only contribute to research but also to humanity’s understanding of the global field and systems of different disciplines. The rationale for this research has emerged

from three standpoints: i) commercial, ii) scientific, and iii) subjective. This research sought to explore the use of SM in KT in an innovative business environment. From a commercial perspective, SM is important in the communication of professionals who are still facing the issue of how to use emerging digital tools effectively (Men & Muralidharan, 2017). SM offers enhanced immediacy and accessibility, has heterogeneous audiences, and probably offers more low-cost access to KT globally than the print medium (Yemer & Wassie, 2020). Lauri (2021) emphasises that the dialogue of social innovation also emanates from businesses' strong desire for social change, generating the mentality that commercial organisations have an unselfish intervention through social changes, although there is a lack in such qualities. Dialogue or conversation is a setting for virtue (being pro-social or anti-social) (Ridley, 1997; Arthur, 2019). This means societal challenges are also solved through social innovation, social enterprises, and entrepreneurs. The current study assumes that the innovative use of SM in KT contributes towards the mindset and perception of what commercial organisations can contribute towards social change.

The scientific perspective contributes to supporting research on SM and KT. Chen and Kuo (2017) specify that although previous studies have explored the KT process using a positivist psychological standpoint, the effects of media tools on users can be often ignored. To add, literature related to KT behaviour is still limited and concentrates on SM usage and operational modes (Mount & Martinez, 2014; Chen & Kuo, 2017). SM use is also restricted to collaboration, open innovation, the creation stage instead of the Research and Development (R&D), and the commercialisation stage of the innovation process, according to Mount and Martinez (2014). Ghazzawi (2018) indicates that future research on innovation should include the extent of SM's role in the growth of organisations, and whether the lack of innovation has an impact on the downward spirals of organisations.

From a subjective viewpoint, the organisations where the researcher was employed (in the past ten years) were knowledge-intensive environments. These organisations were focused on having business partners, KM, and customer agility while remaining competitive in the South African Market. The SA market or population is reflected as becoming better informed, requiring a proactive approach to customer needs (customer agility), while creating an innovative business environment with high KT capabilities. Within a South African context, KT is imperative for a more informed opinion of the value of knowledge. SM may support the KT process and enable organisations to achieve business goals or enhance the leadership ICT capabilities. Such consideration may also enable capacity-building organisations in face of uncertainty, complexity, volatility, ambiguity, innovation, and when the world is fast becoming like a small marketplace (globalisation).

1.4 Research problem statement

SM implementation in the KT process has demonstrated to be challenging for organisations (Dalkir, 2016; Nijssen & Ordanini, 2020; Muninger et al., 2022). There is a lack of clear, effective leadership approaches in the KT of systems, business processes, and deep, tacit (knowledge embedded in the mind) and organisational knowledge (Dalkir, 2016; Muninger et al., 2022). This is despite the fact that the use of SM for innovation requires organisations to manage rapid information transfers, big data, and multi-techniques for communication. Additionally, SM for innovation is challenging for managers in terms of how to use these tools and outcomes for innovation (Nijssen & Ordanini, 2020; Muninger et al., 2022). The paybacks of effective SM applications have been acknowledged. SM facilitates knowledge sharing and communication in teams (Ali et al., 2020). Although a number of factors have been suggested as important fundamentals affecting the success of KT, the impact of the individual and organisational culture, trust, and technology aspects appears to be a common thread. To gain an understanding of the factors that impact knowledge management systems (KMS) to improve KT, Ncoyini and Cilliers (2020:7) used interviews in a study on the topic. The study found that the main factors impacting KMSs to improve KT include: i) organisational efficiency, ii) motivation, iii) trust, iv) reciprocity, v) organisational culture, vi) organisational structure, vii) people, and viii) technology. Unfortunately, little attention has been given to the use of SM for innovation within research dispersed across various disciplines, such as Marketing, Information Systems, and General Management (Nijssen & Ordanini, 2020). Ghazzawi (2018) indicates that future research should include the extent of SM's role in the growth of an organisation, and whether the lack of innovation has a major impact on sustainability. Additionally, it is difficult to transfer meta-knowledge (knowledge of who knows what, who knows who) and contextual knowledge (knowledge of others) via ICT-mediated interactions (Sun et al., 2019). ICT-mediated interactions require ICT capabilities, SM, and physical face-to-face interaction to transfer knowledge within organisations (Van den Berg & Verhoeven, 2017; Cotten, 2021). Furthermore, bibliometric and visualisation research on KT is also insufficient (Gu et al., 2021). The above issues highlight the statement of research problem for this study, which is:

Organisations find it challenging to use SM for effective KT across various departments, such as Marketing, Information Systems, Finance, and General Management.

1.5 Aim

This research aims to explore the use of SM in KT in an innovative business environment.

1.6 Objectives

The research objectives are:

- i) To identify factors affecting KT using SM in an innovative business environment.
- ii) To identify the factors that could facilitate effective KT using SM in an innovative business environment.
- iii) To ascertain challenges that could affect effective KT using SM in an innovative business environment.
- iv) To establish how SM can be managed for effective KT in an innovative business environment.
- v) To determine how knowledge can be transferred using designed SM platforms in an innovative business environment.

1.7 Research questions

Table 1.1: Main research questions and research sub-questions

Main research questions (RQs) and research sub-questions (RSQs)	RQ and RSQ
RQ 1	What are the factors affecting KT using SM in an innovative business environment?
RSQ 1.1	What are the factors that could facilitate effective KT using SM in an innovative business environment?
RSQ 1.2	What are the challenges that could affect effective KT using SM in an innovative business environment?
RQ 2	How can SM be managed for effective KT in an innovative business environment?
RSQ 2.1	How can knowledge be transferred using designed SM platforms in an innovative business environment?
RSQ 2.2	How can the use of SM facilitate effective KT in an innovative business environment?

*RQ – Research Question; RSQ – Research Sub-Question

1.8 Research methodology

Research philosophy comprises an ontology, epistemology, and research approach. For this study, a systematic literature review (SLR), participant interviews, and the Delphi technique were used as research strategies. In the first part of the SLR, bibliographic data were extracted from Harzing's *Publish or Perish* software to analyse research developments regarding SM and KT using the *VOSviewer* application. The keywords "social media" and "knowledge transfer" were used to access articles with titles, keywords, and abstracts. Journals used included top-ranked journals such as *MIS Quarterly*, *Information Systems Research*, *Communications of the Management Science*, and *Journal of MIS*. The research approach was based on individual and organisational use of SM in KT. Empirical and conceptual articles in the English language, written during the period 2000 to 2022, were explored. In total, the hundred (100) most cited

articles were found to be relevant from 1,000 papers downloaded. In the second part of the SLR, collected data were obtained from connected papers.com, automatically downloaded by Mendeley, hand-picked, and retrieved from other professional databases using the same types of journals, perspectives, and content as in the first part of the SLR. Articles in the English language from 2000 to 2022 were explored to answer specific research questions.

Interviews with 20 participants, which included four (4) chief executive officers, seven (7) managers, two (2) supervisors, and seven (7) experienced operational staff, were conducted to collect manageable data for coding, analysis, and reporting. The 20 participants formed the unit of analysis. The population suited for this study comprised individuals who were nominated using snowball sampling based on their background and knowledge of the use of SM in KT. The participants' interviews on the use of SM for KT represented the unit of observation.

The **Delphi technique** used the snowball sampling technique to obtain a sample from a population of participants with SM and KT backgrounds. The Delphi technique unit of analysis comprised a panel of 51 participants (Round 1) and then 31 participants (Round 2). SM use in KT was identified as the unity of observation. The unit of analysis, which determines whether a research project focuses on individuals, groups (e.g., a task force, profit centre, IS group), decisions, or an entire organisation using research questions, was the focus of this current study (Benbasat et al., 1987:372). A unit of observation is regarded as the "parts of the world about which data are collected: humans, groups, Information Technology, information systems, organisations, etc." (Boell & Cecez-Kecmanovic, 2014:266). In contrast, the unit of analysis is "the major entity researched (e.g.; an information system development, IT department, IT governance in an organisation, social networking site)" (Boell & Cecez-Kecmanovic, 2014:266).

1.9 Research philosophy

Scientific research should begin with the ontological assumptions as ontology informs the epistemological assumptions, which in turn inform the methodology and finally the data collection (Mack, 2010; Berman & Smyth, 2015). Mack (2010:5) regards one's view of reality as ontology, while the view of how one acquires knowledge is seen as the epistemology. Ontology, epistemology and methodology terms are considered as "parallel to the what, why, and how of research. What is to be researched, the ontology, or the reality of the context of the research problem, needs to be clear and bounded in order to establish a solid revelation for shared meaning and conceptual validity" (Berman & Smyth, 2015:130). This implies that the commencement point of any research is the identification of the ontology, epistemology, methodology and data collection.

There are five major philosophies in business and management: positivism (entails working with an observable social reality to produce law-like generalisations), critical realism, interpretivism,

postmodernism, pragmatism (Saunders et al., 2019:150), and design (Oates & Kuechler, 2004). These philosophies are explained in Chapter Four, section 4.2.

This study assumed objectivism and subjectivism ontology, idealism as the epistemological perspective, and a pragmatic paradigm, because pragmatism attempts to merge both objectivism and subjectivism, facts and values, accurate and rigorous knowledge, and different contextualised experiences using theory. A pragmatic stance was chosen because this research study accepts a person's world as informed in part by subjective and objective reality that brings accomplishments (pragmatism).

1.10 Research approach

In scientific research, there are various reasoning approaches usable in knowledge acquisition, depending on the research philosophy chosen. The main approaches are: i) deductive, ii) abductive and iii) inductive, as explained in Chapter Four, section 4.3.

Inductive reasoning is a theory-building process, starting with observations of specific instances and seeking to establish generalisations about the phenomenon under investigation (Saunders, et al., 2019). The inductive knowledge acquisition approach concentrates on patterns and associations resulting from observations of the world (from specific to general), while the deductive approach focuses on proposals or theories reached scientifically (from general to specific) (Adebesin et al., 2011). This research was conducted based on the pragmatic research paradigm, which assumes both the abductive and deductive approach.

1.11 Research choice

Mixed methods research is defined as “the type of research in which a researcher combines elements of qualitative and quantitative research approaches (e.g., the use of qualitative and quantitative viewpoints, data collection, analysis, and inference techniques) for the broad purpose of breadth and depth of understanding and corroboration” (Johnson et al., 2007:123). Mixed methods approaches emerged from a pragmatism viewpoint (Patton, 1990). This study used the mixed methods approach because of various reasons. The methodological design of the study considered the research aim and research questions, mapping out a triangulation approach, with both qualitative and quantitative methods being used. As knowledge management is a dual paradigm by nature (Gloet & Berrell, 2003) and this research project studied the humanistic side as well as the technical side, both quantitative data and qualitative data were required to address these issues.

1.12 Research strategy

There is no agreement among academics on the different strategies (philosophical beliefs) to research design and data collection (Smuts, 2012) usable in qualitative research. Qualitative

studies focus on participant descriptions of individuals; an event or social situation may also describe frequencies and dependencies of variables in samples or correlation studies. More so, the descriptions may then be in narrative form (Babbie & Mouton, 2001:81). Creswell (2014:54) advocates that there are five different research strategies for qualitative research, encompassing a continuum focus from a narrow to broad, as follows: i) narrative, ii) ethnography, iii) phenomenology, iv) case study, and v) grounded theory. This research used a multi-method qualitative research strategy to collect qualitative and quantitative data through i) SLR, ii) expert interviews, and iii) the Delphi technique, which are explained in detail in Chapter Four, section 4.5.

1.13 Sampling

1.13.1 Bibliometric mapping and systematic literature review (SLR)

For biometric mapping, the researcher selected a range of reviews of English papers published from 2000 to 2022. Before 2000, not much relevant information is available on the digital SM-KT concept. In total, 100 of 1,000 articles were found to be related to the research topic and most cited. The data related to SM and KT were obtained from Harzing's *Publish or Perish* software tool. A SLR is defined as "carefully organised, comprehensive, and transparent studies of previous research on a particular topic that follow written protocols that specify their central objectives, concepts, and methods in advance" (Littell & Corcoran, 2010:313). In the second part of the SLR, a total of 90 peer-reviewed papers were selected from databases like Scopus and Mendeley. Connected papers were recognised for their proximity to multi-domains-IS, Organisational Science, and IT. The focus was on answering the study's research questions. The type of content included empirical and conceptual articles (qualitative and quantitative). The strategy is further explained in Chapter Four, section 4.5.

1.13.2 Participant survey

In selecting the sample strategy, this study used snowball sampling. Snowball sampling, according to Babbie and Mouton (2001), involve approaching initial participants in a study, who then act as advisors recommending other potential people within the same criteria range as the original sample to be included in a research study. The sampling strategy is detailed in Chapter Four, section 4.5.3.2.

1.13.3 Delphi technique

The population from which the sample was drawn included 51 and 31 participants in (SM use) who participated in the Delphi technique in Rounds 1 and 2, respectively. The participants represented a cross-section of age, and strategic leaders from different departments and backgrounds. The research participants were not confined within the borders of South Africa, but across Germany, Australia, and the United States of America (USA), among others.

Once identified and selected, the participants were contacted to obtain their consent via email and online platforms such as Microsoft Teams. A supplementary extension on the unit of analysis was the individuals' "orientations", which included opinions, attitudes, motivation, and situation/context, culture, bridges, gaps, angst, outcomes, and the use of technologies in tasks (Dervin, 2003).

1.14 Data collection

1.14.1 Biographic data and SLR

SLR was concluded in two parts: a bibliometric analysis and using data from various databases to answer specific questions. Firstly, data were collected from *Publish or Perish* to analyse, through the *VOSviewer* application, research development related to SM use and KT. Bibliographic data were extracted from databases like Crossref, Web of Science, and Scopus, using Harzing's *Publish or Perish* software.

Secondly, to answer the research questions, data were extracted using available open online professional journal databases such as EBSCOhost, ProQuest, Emerald, Scopus, Springer, Sabinet, as well as hand-picked literature. Documents that were considered included the keywords "innovation", "social media", "innovative business environment" "knowledge transfer", among others. Top-ranked journals such as *MIS Quarterly*, *Information Systems Research*, *Communications of the Management Science*, and *Journal of MIS* were used. The documents were also filtered according to the English language, covering SM, KT, and IBE. The Mendeley academic tool was applied in the study to manage the academic articles. Mendeley is a free Web and desktop reference management application that helps to simplify reference management workflow so that one can focus on achieving research goals. *Connected Papers* (connectedpapers.com) was also used to find and explore academic papers.

1.14.2 Participant interviews

Data were collected through participant interviews. An interview protocol (Appendix H) and the MS Team application were to conduct the interviews. The recordings were listened to and transcribed to guide the researcher (Appendix H). The transcriptions were read several times to gain more understanding and insight into the perspectives of the interviewees in relation to their critical incidence and the study research questions. The researcher also activated the caption function on the MS Teams application to capture the interview sessions. This was important because the researcher did not require permission to do the interview transcriptions. Teams has built-in closed captioning that can be turned on using the meeting controls. To use live translated captions: i) turn on live captions in your meeting, ii) next to the meeting captions, select More-> Subtitles, iii) choose the language you want your captions translated to.

1.14.3 Delphi technique

The Delphi technique used open-ended questions to explore the use of SM in KT. The Delphi technique protocols (Appendix G) have elaborative questions related to the use of SM applications in KT. A five-point Likert style scale (Likert, 1932) was used for the questions to avoid confusion. The questionnaires were distributed using i) electronic Google Forms, and /or ii) e-mailed or shared via WhatsApp SM. During the COVID-19 pandemic (2019-2021), it was difficult to physically contact the research participants, as such, using online survey tools was deemed necessary. The benefits of using the Delphi technique are explained in Chapter Four, section 4.5.4.2.

1.15 Data analysis

1.15.1 Bibliometric analysis and SLR

In the first part, data collected through *Publish or Perish* were analysed using the *Publish or Perish* and *VOSviewer* applications. *Publish or Perish* reveals metric such as the number of papers, publications per author and per annum as well other indexes. The *VOSviewer* application is used to map different bibliometric indicators such as bibliographic coupling and co-occurrence, and to produce network visualisation of co-work maps and density maps of co-works.

In the second part, data from Connected Paper (connectedpapers.com), hand-picked literature, and other databases such as Scopus and Mendeley were uploaded to the ATLAS.ti application and thematically analysed. ATLAS.ti was used because the application enabled a researcher to code, annotate, and compare segments of information.

A simplified open coding scheme using ATLAS.ti for identifying and classifying the text to answer research questions was applied. The codes are valuable to comprehend complex, real-world data and organise them in a structured and significant way (Yamagata-Lynch, 2010). Finally, axial coding (Corbin & Strauss, 2008) was applied to find connections and relations between the initial codes and open codes. In axial coding, the researcher used core concepts in a visual model. The process involved identifying patterns and explanations related to other research questions in this study.

1.15.2 Participant interviews

The data collected through interviews with municipality managers and practitioners were analysed in a three-stage transcribing procedure, reducing the data into themes through coding and representation (Creswell, 2014). The transcriptions from the participant interviews were (individually) copied and pasted into a MS Word file, converted to PDF (Portable Document File), and then uploaded to the ATLAS.ti software for the data analysis. The first stage coding using ATLAS.ti was done with NVivo coding, which required the researcher to highlight a section

of text in the MS Word file where the data were copied and pasted. The second stage coding using ATLAS.ti required codes (similar to those used in stage one) to be grouped together, combined into **higher-order categories**, and continually compared and revisited. The third stage coding using ATLAS.ti used selective coding to construct multiple codes, linking quotations to create visual qualitative network diagrammes, and identify themes, concepts, and patterns. As a final point, hyperlinked diagrammes of quotations were created to analyse the proposition of the study.

1.15.3 Delphi technique

For Delphi technique, statistical techniques were used because the data (obtained from Google Forms) were both qualitative and quantitative. The statistics used included the measures of central tendency and level of dispersion (i.e., mean, median, standard deviation, and interquartile range), because the data were related to respondents' collective judgment to show the strength and direction of the relationship or correlation coefficient. The data analysis is detailed in Chapter Four, section 4.7.4.

1.16 Delineation

Distinguishing between limitation and delineation is important in research. Price and Murnan (2004:66) regard a delimited study design or instrument as "the systematic bias that the researcher did not or could not control and which could inappropriately affect the results". The lack of resources to interview all participants in the disciplines was beyond the control of the researcher in this study. Technical issues in accessing the Internet for one participant was beyond the researcher's control as well. Two participants in the study dropped out for unknown reasons after completing the demographics section.

1.17 Assumptions

In conducting this research, it was initially assumed that participants would be representative of dedicated, credible, knowledgeable, reliable users in SM use and KM. These assumptions were crucial in the collection of relevant data to understand the phenomenon under study. An additional assumption was that the participants answered honestly or gave answers to the best of their ability. A lack of integrity or inaccurate information affects the credibility and derail the principles of ethical research findings. A further assumption was that the environment of the interviewees and the Delphi Technique panellists would be favourable. Lastly, also assumed, was that participants would be available for data collection during the period of the interviews and Delphi technique rounds.

1.18 Ethics

1.18.1 Public trust and citizen science

Chapter Four, section 4.10 states detailed scientific research requirements related to public trust (Committee on Science, Engineering and Public Policy 2009; Resnik, 2011), citizen science (Strasser et al., 2019), confidentiality and ethics (Mouton, 2001; Rice, 2008). The concept “public trust”/“society trusts” included scientific research results that were honest and accurate to reflect the researcher’s work (Committee on Science, Engineering and Public Policy 2009: ix). For the purpose of this study, citizen science involved the interactions among professional scientists and ordinary citizens in the conduct of research, avoiding ethical issues. Some of the ethical issues encountered were: i) data quality and integrity, ii) data sharing and intellectual property, iii) conflicts of interest, and iv) exploitation of non-volunteers in the data collection. To promote ethical research, it is important to clarify the guidelines for participating citizens in research, namely, to communicate effectively with participants at the outset, manage work, develop appropriate publication practices, take steps to address conflicts of interest, and provide lay-volunteers with training on the responsible conduct of research (Resnik et al., 2015).

1.18.2 Confidentiality and ethics

Individual ethics for environmental research are primarily concerned with requirements of professional ethics, i.e., i) the ethical norms, values, and principles that guide a profession, and ii) the ethics of decisions made within the profession, which are usually codes of conduct for various societies as well as universities’ professional requirements (Quigley et al., 2022:742). Additionally, the confidentiality of the participants and organisation was protected. With this study, it was important that the participants: i) understood what data were to be collected, ii) the timeframe requirements for participations, iii) why contributions were needed, iv) how the data were to be used, v) how participants would benefit, and vi) how the data would be used in future. With data collected using the MS Teams application, additional collection method issues were discussed prior to commencing with the interviews.

1.19 Headline findings

This section explains the headline findings used to answer RQ 1 and RQ 2. The factors affecting KT using SM include situations that involve people, organisational social-technical culture, and environmental situations. The use of SM in KT is challenged by factors that can mainly be categorised into knowledge valuation, knowledge sickness, KT measurement, lack of KT incentives, and knowledge value evaluation. SM facilitates effective KT through new ways of business processes, digital marketing management, cost reduction, links and forms, and unlimited geography digital access democracy. It is very important to extremely important to note that the use of SM facilitates problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation in organisations. The research

found that knowledge can be transferred using designed SM platforms through: i) individuals creating meanings from experience, ii) collaboration in communities, iii) conversations, iv) sharing meta-knowledge, v) online monitoring of conversations, vi) online forms, links, and instruction, as well as vii) online seminars, conferences, or training aids in KT when using SM.

1.20 Conclusion

This research concludes that various departments, such as Marketing, Information Systems, Finance and General Management, play a leading role in sensitising staff on factors affecting and facilitating KT using SM. The departments should devise integrated strategies, adequate to mitigate against factors, and affecting the use of SM in KT. The use of SM is getting the recognition it deserves, and organisations are beginning to adopt the innovation in organisational KT. This means that the structural position of SM in an organisation is crucial for KT. For researchers, it implies exploring in-depth the motivations and experiences of staff at operational levels while using SM applications for KT.

Given the KT challenges, the use of SM should not be seen as the ultimate panacea to all KT challenges. Institutions are leveraging SM to facilitate effective KT. To determine how knowledge can be transferred using designed SM platforms, this study concludes that knowledge is transferred via SM in the form of community of practice interaction, sharing, online sharing of common concern, individual conversation frame, a clue-frame link to create new knowledge, effective practice workshops, and cross-functional teams.

1.21 Contribution of the research

As with many research efforts, there are numerous contributions. Some of this study's contributions are theoretical, methodological, and practical in nature and related to the following fields: IS, SM, and KT, in an innovative business environment (Chapter Eight, section 8.2).

1.21.1 Theoretical contribution

The theoretical contribution lies in the introduction of a multidisciplinary approach, combining multiple theories with information systems and development. The theoretical contribution is directed to ICT academics in innovative organisations in the form of the conceptual framework on the use of SM in KT in an IBE. To explore the problem statement and fill the knowledge gap, the theoretical contribution includes exploration of the relationship between three different disciplines, namely: Information Science (knowledge transfer), Organisational Science (knowledge management), and IT (social media).

1.21.2 Methodological contribution

The study used Dervin's (2003) Sensemaking Theory to express how individuals engage in sensemaking through using SM in KT. The use of Dervin's sensemaking as part of the

development methodology showed how the theory could be used in an innovative business environment context. The methodology combined a SLR, expert interviews and the Delphi technique using the sensemaking theory of Dervin (2003) to inform the methodology.

1.21.3 Practical contribution

The outcome of this research is supportive to ICT researchers and novice researchers in developing new knowledge and KT strategies. Leadership needs to realise that not all SM platforms are a universal remedy for every organisational issue, factor, or challenge. Organisations need to consider SM platforms suitable and aligned with organisational vision, strategic objectives, and flexible to environmental changes. Organisations need to identify factors facilitating KT using SM and innovative KT strategies. The proposed framework serves as a practical tool for academics and practitioners alike to enable KT using SM.

1.22 Thesis layout

Table 1.2 illustrates the chapter layout of the thesis.

Table 1.2: Layout of thesis

Chapter overview	Summary of issues covered
Chapter One: Introduction, rationale of the research, problem statement, aim, objectives, theoretical overview, research design, sampling, data collection, analysis, contributions, and thesis structure.	Highlighted the introduction, rationale of research, problem statement, aims, objectives, theoretical overview of study, research design, sampling, data collection, analysis, contributions, and thesis structure.
Chapter Two: Literature review background to the research. The chapter provides the reader with baseline information on the topics to be explored in detail and expanded on throughout the succeeding chapters. It also answers the research questions related to the use of SM in KT in an innovative business environment (IBE).	Theoretical underpinnings, concepts, and systems integral to Information Science, Organisational Science, and Information Technology disciplines.
Chapter Three: Theoretical framework, review theories, dynamics, implications of Dervin's (2003) Sensemaking Theory, Weick's (1995) Organisational Sensemaking Theory, Trist's (1981) Socio-Technical Theory (STT), models, elements, and historical developments.	Investigated and examine Dervin's (2003) Sensemaking Theory, Weick's (1995) Organisational Sensemaking Theory, the STT framework of Trist (1981), theoretical issues, and implications of the use of SM in KT in an innovative business environment.
Chapter Four: Research design elaborates on the philosophy, approach, strategy, time horizon, data collection techniques, analysis of data, ethical considerations, techniques that were used in the study.	Study justification for using selected research philosophies, strategy, data collection, analysis, methodology frameworks, ethical considerations.
Chapter Five: Presentation of findings from the participant interviews and Delphi Technique on an individual and organisation perspective.	Presentation of findings to answer research questions.

Chapter overview	Summary of issues covered
Chapter Six: Discussion of findings in relation to the RQs, RSQs, and themes. Presenting the conceptual framework, justifications, explanations of elements and conclusions with a summary. The conceptual framework for this study is based on Dervin's (2003) individual Sensemaking Theory, Weick's (1995) Organisational Sensemaking Theory, and the Socio-Technical Theory (Trist, 1981; Sawyer & Jarrahi, 2014).	Discussed themes from findings and literature review. A framework was presented together with recommendations and the way forward.
Chapter Seven: Presents summary, conclusions and recommendations resulting from the study. The findings are linked to the research questions in this chapter.	The conclusion attempts to give a recommencement of the findings linked to the research questions.
Chapter Eight: Presents research contributions, limitations, future research, assessment of design, and reflection.	The research contributions, limitations, future research, assessment of design, and reflection.

1.23 Summary

Chapter One introduced the contents of the study and the background of the research. The problem statement highlights that organisations are finding it challenging to use SM for effective KT across various departments, including Marketing, Information Systems, Finance, and General Management. The aim of the research is to explore the use of SM in KT in an IBE. The research questions were formulated as follows:

RQ 1: What are the factors affecting KT using SM in an innovative business environment?

RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?

RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?

RQ 2: How can SM be managed for effective KT in an innovative business environment?

RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment?

RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?

This research ontologically assumed idealism, with both a subjective and objective perspective, while pragmatic epistemology was deemed appropriate. A mixed methodological choice and cross-sectional time horizon were adopted. The data collection techniques included SLR, participant interviews, and the Delphi technique. Both qualitative and quantitative data were collected. The data analysis assumed a bibliometric, thematic analysis for the SLR, thematic analysis for the participant interviews (qualitative data), and measures of central tendency for

the Delphi technique (quantitative data). The chapter also indicated the delineation, assumptions, public trust, citizen science, headline findings, recommendations, snapshot of contributions, and the thesis layout.

Chapter Two presents a review of the current literature on the research topic.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Organisations find it challenging to use social media (SM) for effective knowledge transfer (KT) across various departments, including Marketing, Information Systems, Finance, and General Management. This literature review chapter establishes the theoretical groundwork of the study. The review is divided into several sub-divisions based on literature focusing the use of SM in KT. Figure 2.1 illustrates the outline of Chapter Two.

2.1	Introduction
2.2	Definitions of concepts used in the study
2.3	Background
2.4	Social Media
2.5	Knowledge Management
2.6	Knowledge Transfer
2.7	Innovative Business Environment
2.8	Summary

Figure 2.1: Layout of Chapter Two

The literature review in this chapter (Figure 2.1) establishes the foundation of the research questions and illuminates new areas of exploration that this research reports on. The chapter provides the background to factors affecting KT, factors that could facilitate effective KT, and challenges related to the use of SM in KT.

The review is guided by the key words and concepts obtained from the thesis title, problem statement, research questions, research sub-questions, and the aim of the study. Databases including Google Scholar, Scopus, the online library of CPUT, Inciteful (inciteful.xyz), and connectedpapers.com were used to search for articles related to the study. The literature chapter comprises the following: i) introduction, ii) definition of key terms, iii) background to literature, iii) SM, iv) knowledge management (KM), v) KT, vi) innovative business environment (IBE), and vii) summary.

2.2 Definitions of concepts used in the study

2.2.1 Introduction

In this section, a definition of terms used in the study is provided, starting with the term *knowledge* in section 2.2.2. Section 2.2.3 defines *KT* and section 2.2.4 provides a brief overview of *innovation*. Section 2.2.5 defines *informatics overview*, while sections 2.2.6 and 2.2.7 define

IT and Organisational Science, respectively. Finally, in section 2.2.8, *knowledge management* is introduced.

2.2.2 Knowledge

Knowledge is considered as one of the most important production factors for the achievement of competitive advantage, continuity, and stability in the face of continuous developments and challenges of the contemporary environment (Tawalbeh, 2021:35). “Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices, and norms” (Davenport, Prusak, 1998:5). This means knowledge can be processes, experiences documented or embedded in the brain, values, and insights usable for the achievement of competitive advantage, continuity, stability, new experiences, and information.

2.2.3 Knowledge Transfer

KT is the “process through which one unit learns indirectly or vicariously from the experience of another unit” (Argote et al., 2022:2). “KT is about identifying (accessible) knowledge that already exists, acquiring it and subsequently applying this knowledge to develop new ideas or enhance the existing ideas to make a process/action faster, better, or safer than they would have otherwise been. So, basically KT is not only about exploiting accessible resources, i.e., knowledge, but also about how to acquire and absorb it well to make things more efficient and effective” (Liyanage et al., 2009:122). KT is also defined as the process or strategy of facilitating communication, knowledge absorption, change of behaviour and application by a recipient, in a given context using specific channel (Davenport & Prusak, 1998; Zhang & Jiang, 2015; Szilágyi, 2017).

The definitions highlight that KT is a complex process affected by the individual capabilities, the situation, organisational perspective, environmental factors, and facilitate communication, knowledge absorption, change of behaviour and application by a recipient.

2.2.4 Innovation

Innovation refers to “the introduction of new things, ideas or ways of doing something” (Oxford Learner’s dictionary, 2022). An example of innovation is the use of SM in processes. SM enables:

“(1) developments of SM Market territories that are used by organisations for gathering Market intelligence as well as for promoting products/services, (2) strategic engagements that are being used not only for tapping into diverse wisdom but also as a means of cultivating communities and enhancing product/service awareness before

their launch, (3) quicker promotion to productivity, (4) development of socialised commerce activities based on new Social channels, and (5) development of SM Market intermediaries” (Ram & Liu, 2018:94).

Innovation is also defined as “a series of changes in a complete system not only of hardware, but also of market environment, production facilities, knowledge, and the social contexts of the innovation organisation” (Kline & Rosenberg, 2010:173). Innovation for this study is bringing about changes in the physical environment, processes, and the mental models of people within organisations or societies.

2.2.5 Informatics

Oxford Learner’s dictionary (2023) describes informatics as “the study of processes for storing and obtaining information”, while the Cambridge Dictionary (2022) defines informatics as a discipline that “studies the structure, behaviour, and interactions of natural and artificial systems that store, process, and communicate information”. Informatics also refers to studies “...focusing on the quantitative aspects of information; includes the topics of scientometrics and bibliometrics” (Ma & Lund, 2021:1065). This study defines informatics as the use of manual artificial systems or symbols for seeking, collecting, processing, storing, and communication.

2.2.6 Information Technology

“Information Technology is the methods and techniques of organising, storing, processing, restoring, transmitting information that enhance people’s knowledge and expand their ability to manage technical and social processes” (Olimov & Mamurova, 2022:17). Information technology (IT) can support the exposure to different sources of knowledge for effective KT processes (Alavi & Leidner, 2001). The term *new technology* refers to “sustained social interaction that can be conceptualised as a technological frame” (Bijker, 1995:24). Low et al. (2011) and Al-Araibi et al. (2018:585) clarify that the elements of technology include: hardware, software, connectivity, security, flexibility of systems; technical skills and support; data centres; and cloud computing. This means without digital hardware, the innovation of processes and the achievement of organisational or national information requirements remain an issue.

2.2.7 Organisational Science

Organisational Science encompasses the study of individual behaviour, interpersonal behaviour, and the organisations themselves. Furthermore, intrapersonal behaviour covers aspects such as personality, attitude, perception, and learning. Opinion, motivation, job satisfaction, and stress management also cover interpersonal behaviour. Interpersonal behaviour furthermore encompasses group dynamic forces, team dynamics, intergroup conflict, and leadership. Lastly, i) communication, ii) transaction analysis, iii) formation, iv) structures, v) effectiveness, and vi) formal or informal organisations are part of Organisational Science

(Aswathappa, 2016:8). Weick (1979) emphasises that organisations are processes before they are structures. This means before organisations construct the brick-and-mortar structure, there has to be a system that represents the operational and strategic level.

2.2.8 Knowledge Management

KM is reflected as a significant concept with different characteristics. It is beyond the scope of this study to preview all definitions of KM, although it would be important to select some of these definitions. For instance, Sufyan et al. (2021:156) define KM as “steps such as creation, acquisition, sharing, and application”. KM refers to “studies focusing on the process of creating, using, disseminating, and management of knowledge within organisational contexts”. KM includes having various pillars that require coordination (Ma & Lund, 2021:1065).

Davenport and Prusak (1998:11) claim that KM aims: i) to make knowledge visible and show the role of knowledge in an organisation, mainly through maps, yellow pages, and hypertext tools, ii) to develop a knowledge-intensive culture by encouraging and aggregating behaviours such as knowledge sharing (as opposed to hoarding) and proactively seeking and offering knowledge, and iii) to build a knowledge infrastructure – not only a technical system, but a web of connections among people, giving space, time, tools, and encouragement to interact and collaborate.

To benefit from KM, organisations need establish policies, strategies to govern leadership, organisation, technology, and learning. Organisations need to review system reengineering, capabilities, organisational deployment, and behaviour management. KM is a multifaceted necessary process mainly affected by the behaviour of people, attitude or leadership, organisational processes approaches, technology, and learning capabilities.

2.3 Background

2.3.1 Introduction

This study uses the disciplines of Information Science (communication), Organisation Science (individuals) and Information Technology (IT) to guide the research.

Figure 2.2 is an illustration of the study’s contextual constructs. Information Science comprises exclusively of KT, Organisational Science is epitomised by KM, while IT uses SM as the enabling innovation to KT.

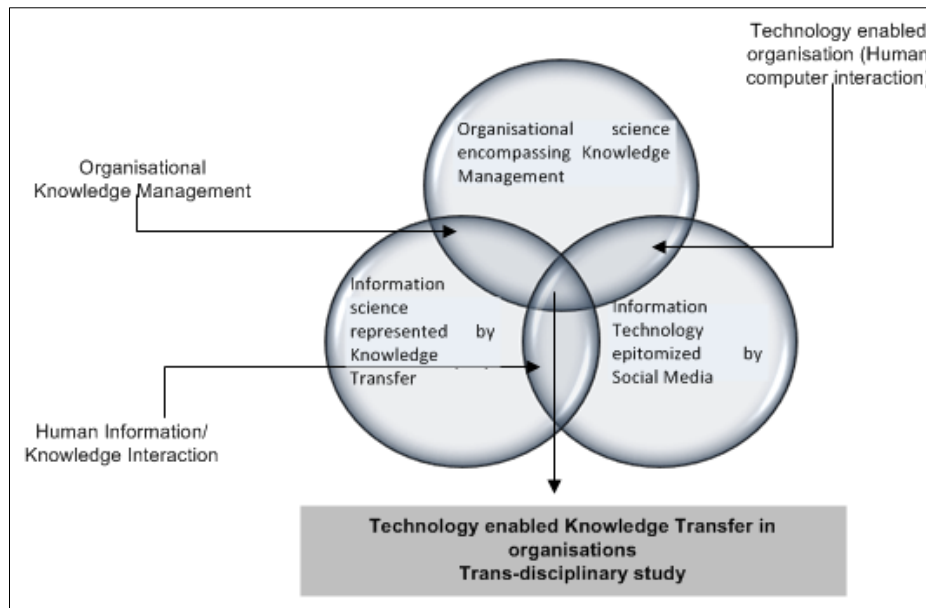


Figure 2.2: Study's contextual constructs

In Figure 2.2, Information Science is affected by factors at different levels of understanding from the past, present, social, organisational, cultural, and environmental situations and contexts (Ingwersen & Järvelin, 2005). Information Science encompasses the study of a variety of perspectives, people, processes, information management and contributions. According to Ingwersen and Järvelin (2005) and Wang (2009), the interdisciplinary domain consists of sub-domains such as cognitive psychology, social-linguistic communication, graphic art, logic, operational research, library science, management, social science (or human race research), and practical concepts. The Informatics discipline incorporates technologies, laws, and industries dealing with KT. The *Information Science* and *Informatics* disciplines are terms used interchangeably. Informatics and Information Science are closely related domains and even perceived in many countries as the same domain (Aithal et al., 2017). Therefore, Information Science is an interdisciplinary domain where the rational human uses technology for KM.

In sections 2.3.1 and 2.3.2, the SM concept is introduced. The relationship between IS and SM, IT and SM, Human Computer Interactions (HCI) and SM, and Human Information Interaction (HII) and SM is presented in sections 2.3.3 to 2.3.7. Section 2.2.8 concentrates on information seeking behaviour (ISB) and SM. Finally, sections 2.2.9 to 2.3.11 provide a brief overview of knowledge creation and SM, as well as SM and KT.

2.3.2 Social Media

A number of SM definitions exist in the contemporary literature. SM terminology emanates from social (human instinctual needs to connect with others) and media (technologies such as drums, bells, written word, telegraph, video, mobile phones, radio, television, email, web sites, photographs, audio, video, text message, used to make connect) (Safko & Brake, 2009:6). The

term *social media* is also referred to as “social networking” and “Web 2.0” (Imran et al., 2019). SM emanates from the integration of two areas of research: communication science and sociology (Wasserman & Faust, 1994). SM is used interchangeably with social medium. *Social* refers to the roles one plays in society, while *medium* refers to message or interaction (Tan, 2020:97). Thus, SM includes the effective use of connection technologies to reach and connect with other humans. The definitions emphasise that the SM is current, use the Internet, aid in access to information, and communicate using technology by actors to achieve specific objectives.

2.3.3 Information Science and Social Media

Many academics in IS (e.g., Zhou et al., 2018; Ghazzawi, 2018) IS regard the discipline as one of vital importance. Zhou et al.'s (2018) discipline aids in the accumulation and KT process. The accumulation and transmission happen through media as knowledge codified in books, while accumulated knowledge is taught in academic institutions. Libraries store and disseminate knowledge as movies and television, which visually display knowledge together with specialised journals and conferences, and transfer written and oral information and knowledge, respectively. Although knowledge accumulation and transmission are significantly taking place through discussed systems, the systems are inefficient in relation to the demanding contemporary innovative business environments (IBEs) (Ghazzawi, 2018; Zhou et al., 2018).

Information Science as discipline is faced with a variety of issues, including the inefficiency and ineffectiveness of systems such as books, libraries, knowledge management and trust (Borko, 1968; Ghazzawi, 2018; Zhou et al., 2018). These challenges necessitate the need for a practical solution such as knowledge management.

Trust is important because it facilitates cognition and prediction. Within human information interactions, trust rests on a relationship between two people or sources, personal expectations with respect to information, the propensity to trust, and features of the information itself. Features of information include information truthfulness, authenticity, reliability, and integrity of the source (Fell et al., 2020). Prediction is an essential instrument involved in cognition, action, and guaranteed safety, as a predictable environment fosters subjective human feelings of trust. It is vital to note that information is meant to “change the way the receiver perceives something, to have an impact on his/her judgment and behavior” (Davenport & Prusak, 1998:3). With an information-saturated environment, trust has never been more important because it lack results in substantial social issues (Gwizdka et al., 2019). Some of the social issues include increased division in socio-political dialogue (common in SM) and widespread misinformation in well-established sectors such as health practices. Social issues and misinformation affect novice information seekers who always navigate an information-saturated environment. Information

saturated-environments frequently require one to search and use SM as part of technology in contemporary information retrieval systems. To add, some larger SM institutions are working on surpassing the leading technological solutions to build trust with users. To solve the trust issue, Gwizdka et al. (2019) proposes the Cognitive Predicting Theory of Trust (CPTT) and a corresponding complex systems model that will benefit neuroscience within HII using online survey in WeChat (the notable popular SM platform in China) to investigate why users are willing to diffuse healthcare knowledge in SM by drawing on the communicative ecology theory (CET). WeChat is a SM concept, which is a concept also under investigation in this study. CET posits that cognitive actors' communicative behaviours result from a blend of factors across three layers of the communicative ecology, namely the discursive (content), social, and technological layers (Foth & Hearn, 2007; Jin et al., 2019). The discursive layer consists of communication content that involves conversational ideas or themes. The social layer is composed of people and social structures in the communication process. Trust is reflected as a major concern in an information-saturated environment even though literature reveals that technology can facilitate KT when using SM (Jin et al., 2019). Jin et al.'s (2019) research found interestingness, emotionality, and institution-based trust as the strongest qualifications for predicting the possibility of KT in healthcare, followed by usefulness, source credibility, and positivity. Although Jin's research focuses on healthcare, it gives a snapshot of how trust is important in the Information Science, information seeking behaviour, and retrieval. Trust is therefore a predictive behavioural response to the availability or lack of information truthfulness, authenticity, emotionality, source credibility, positivity, integrity, interestingness, and usefulness of the source (or discursive/social/technological element).

Lack of trust in organisational knowledge management as well as knowledge transfer in the Information Science and IT domain using social media calls for the ability to identify misinformation, *media literacy* through digital literacy, information literacy, and news literacy. The ability to identify misinformation leads to a reduction in conspiracy beliefs because of overloaded SM content (Craft et al., 2017; Vraga et al., 2020). Vraga and Tully (2021) applaud critical thinking, developing vigilance in terms of false information, being open-minded, and scepticism as protective shields that assist individuals to navigate through the complex SM or digital environment.

2.3.4 Organisational Science and Social Media

To show the relationship between Organisational Science and SM, Marbun et al. (2020:2513) explain that “nowadays SM has become part of the organisational culture in the workplace”. This means the use of SM is now more part of organisational processes. SM is now being used for improving productivity and efficiency. Moreover, SM is being used negatively – jealousy, backstabbing, leg pulling, harassment, conspiracies, and inequalities lead to pressure and

stress. Finally, with SM being part of culture, standards, mental models, and assumptions should embrace SM to leverage performance and productivity.

Organisational Science is reflected in literature by Burrell and Morgan (1979) and Hoyle and Wallace (2014) as interdisciplinary. The discipline's assumption that there is no 'single solution' answer to a problem contributes to organisational effectiveness and improvement. Organisational *effectiveness* refers to "as the ability to produce quality goods/services, that satisfy stakeholders at reasonable cost and earn profit at the same time" (Aswathappa, 2016:27). *Improvement* comprises a change in culture and leadership. Leadership can be transactional or transformational. Transactional leadership assumes efficiency by balancing between task and person in the relationship between leaders and those being led (Aswathappa, 2016:27). In addition, transformational leaders assess the context and lean on the contingency theory of leadership. Contingency theory of leadership stresses a balance in: i) organisational task demands, ii) members' needs, iii) environmental factors, iv) proactivity, and v) visionary leadership for change (Hoyle & Wallace, 2014). This implies that Organisational Science seeks to study "the behaviour of people and organisations to be effective and improve performance" (Aswathappa, 2016:27).

Organisations exist to increase the specialisation and division of labour, to be productive and efficient, to use automated large-scale production to save on costs, and to manage the external environment (King, 2009). More so, organisations exist to have economies of scope, expert power, and control. Furthermore, organisations exist to increase their value (Aswathappa, 2016). The organisational cost savings that result when underutilised resources are more effectively shared across several different products or tasks are referred to as *economies of scope*. Studying Organisational Science enables one to obtain knowledge about the world. Knowing the world is a methodological approach suited for interpretative qualitative case studies, perceiving organisations as social constructs. Studies that view organisations as social constructs focus on differing or conflicting perceptions of members in different groups in an organisation. The approach enables the uncovering of conflict rather than making a prior assumption of the existence of conflict, i.e., it is a duality model, which allows for structuring through the institutionalisation of conflict as perceived by agents (Hoyle & Wallace, 2014). Organisational Science also have disadvantages, e.g., organisations are not contributing to improving employee relations – jealousy, backstabbing, leg pulling, conspiracies, harassment, inequalities, pressure, and stress are part of daily aspects (Aswathappa, 2016).

2.3.5 Information Technology and Social Media

SM is an example of a relatively recent development of IT (Marbun et al. 2020:2513). Marbun et al. (2020:2513) studied the effects of SM culture and KT on performance using a sample of

300 employees. Data were collected using a questionnaire. The results revealed that: i) the influence of SM culture on KT is positive and significant; ii) the influence of SM culture on work performance is positive and significant; and iii) the effect of KT on work performance is positive. Academics such as Brynjolfsson and Hitt (2000) and Wang (2009) also highlight IT as an essential discipline capable of facilitating organisational sustainability and leveraging performance. According to Asgarkhani et al. (2021:39), it is “estimated that the global IT expenditure in 2007 was 6% of the total Global Domestic Budget (GDB), and it has likely grown to 10% in 2012 and beyond.” This means continuous investment in IT may cause a proportional increase in positive culture in KT using SM sustainability and leveraging performance. A snapshot of the IT domain is shown in Figure 2.3.

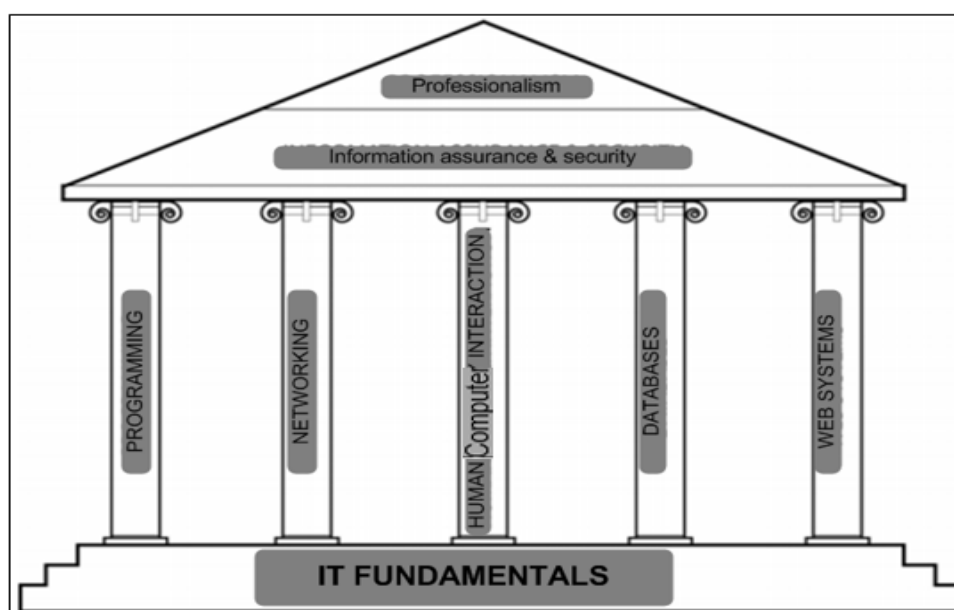


Figure 2.3: IT2017 content fundamentals (Lunt et al., 2019:6)

The IT pillars shown in Figure 2.3 include professionalism, cybersecurity, programming, networking, HCI, Databases, and web design. System issues are referred to as cybersecurity or information assurance and security (Lunt et al., 2019). According to Gündüz and Das (2020), cybersecurity is of crucial significance in designing information networks. Cybersecurity is part of IT innovation and IoT to improve organisational performance and needs further research to enlighten new researchers (Gündüz & Das, 2020). Cybersecurity advances ought to preserve the Internet’s societal and economic benefits, which are also relevant when one uses SM in KT.

Wang et al. (2016) stress that SM Apps (part of IT-Web systems) are widely used to facilitate individual communications although business-to-business (B2B) use are still growing. A model-based study on the Media Synchronicity Theory (MST) by Wang et al. (2016) used an empirical strategy to enable the understanding of how media facilitate KT. MST holds that communication performance is determined by the match between media capabilities and the underlying

communication process, which is required for the completion of a particular task (Dennis et al., 2008). Dennis et al. (2008:583) studied media capabilities to assess the relationship between B2B communication and the business performance capabilities of SM, which include transmission velocity, parallelism, symbol sets, rehearsability, and reprocessability. Wang et al. (2016) state that information security and control are some of the capabilities of SM. Transmission velocity reflects the speed at which a medium can transfer a message from a sender to many intended receivers; subsequently, marketing through velocity may cause a concern where information leakage is experienced. Parallelism refers to various simultaneous communications that can occur in several ways, where information can be encoded for communication using symbol sets such as pictures, videos, or emojis for comprehension (although these symbols can be mis-construed in terms of the tone of message) and delayed responses. Parallelism can be used in group communication, but it can become problematic when confidential data/information is transferred via a group. The solution to this problem is the use of a hierarchy of friends (Wang et al., 2016). Rehearsability is the degree to which the medium permits the sender to rehearse a message during encoding before transmission. Reprocessability refers to the extent to which the medium enables a message to be reprocessed (Dennis et al., 2008), which may be useful for documents and dialogue or online communication. Although the studies mentioned above were quantitative, there is also similarity in the use of interviews to obtain expert information on how SM facilitates communications and business performance, increases transmission velocity, enables parallelism, the use of multiple symbol sets, rehearsability, reprocessability and security, and controls authentication.

IT infrastructure and SM complement each other in exploring and exploiting organisational knowledge. Exploring and exploiting organisational knowledge help firms to maximise the value created from IT-enabled organisational capabilities, although firms are struggling to develop a cumulative base of IT capabilities faster than their competitors (Ennen & Richter, 2010). To add, “leveraging IT infrastructure improves coordination within the firm and the supply chain, which in turn facilitates the firm’s ability to acquire sense, apply, and leverage knowledge for innovation benefits” (Benitez et al., 2018:141).

The COVID-19 pandemic showed the world the value of IT (proactive publicly available inter-organisational data management), and that people and organisations should be proactive to effectively prepare for a time of disaster through open and collaborative platforms. This means SM may be used in KT during disastrous situations. COVID-19 effects in South Africa could have been alleviated by developing IS. This is possible in the education system, for instance, or other sectors of the economy.

2.3.6 Human Computer Interactions and Social Media

HCI is “are scientific, professional disciplines with shared histories and practices that aim to support people’s performance and experiences by optimising human-system interactions” (Holden et al., 2022:119). Reliability and safety are important in developing safety-critical systems (SCS) as well as in HCI. In a study by Holden et al. (2022) data were collected via interviews with engineering students in India and Brazil and with experienced practitioners to investigate a perceived mismatch between education and employment on knowledge related to Requirements Engineering for Software-intensive Systems (RSE) in SCS. Analysis of the data revealed that graduate students do not have the required RSE knowledge perceived by recruiters as essential for the development of SCS. This research was paramount in terms of rethinking computing curricula—to include RSE-related topics although a multi-domain perspective could have given more insights into SCS. The necessity of HCI and SCS becomes obvious in organisational setups.

Developing interactive systems is a challenging task that involves concerns related to HCI, e.g., usability and user experience. Therefore, HCI design is a fundamental issue when developing such systems because it involves people with different backgrounds (e.g., Arts, Software Engineering, Design), which makes KT a challenging issue. Castro et al. (2021) found that ontologies are acknowledged as a successful approach to represent domain knowledge and support knowledge-based solutions. This implies that more research is required because of KT challenges, including system design which involves people with different backgrounds (Castro et al., 2021). More research may provide insight into how systems can be designed to suit people with different backgrounds using for example SM interactions.

An example of HCI in Health, IT and/or Information Science is the use of virtual reality (VR). VR can relax mental and physical health through managing stress and anxiety. An additional example of the virtual social world is the *Second Life* application, founded and managed by the San Francisco-based company Linden Research Incorporation. The application simulates everything possible in real life, such as speaking to other avatars (which involve KT), taking a walk, and enjoying the virtual sunshine. The *Second Life* application also allows users to create content (explicit knowledge transfer) and sell content to others in exchange for Linden Dollars. Linden Dollars is a virtual currency traded against the US Dollar on the Second Life Exchange Market (Kaplan & Haenlein, 2010). This means through VR games, with SM being part of HCI, people learn (through KT) as per interpretivist theories, Dervin’s (2003) Sensemaking Theory, and constructivist learning theories by creating individual meaning from experience, observed raw facts, processed data, interaction with others and the environment.

Technologies that could be used depend on individual, organisational and environmental benefits attainable. Some of the benefits are related to personalised individual health aids, satisfaction, and productive professionalism in organisations and the environment, which enable cost reduction and less work interruptions because of staff shortages and health access worldwide (Watson et al., 2017; Donker et al., 2019, Pitch-in, 2020).

Paul (2021:99) explains that “human-computer interaction talks about designing IT and computing technologies in the context of man-machine interaction. Man-machine interaction (MMI), human-machine interaction (HMI), usability experience design, and human-centered design are related areas for the design and development of the interface of electronics products, viz. computers, laptops, systems, mobiles, smart phones, etc.” Furthermore, the creation of HCI is required to create usable interactive computing systems, ATMs, public kiosks, etc. for digital context; thus, skilled manpower is required for successful implementation and realisation.

According to Paul (2021:99), different phases are important and valuable in user interface design and development depending on the project and in respect of user interface as most valuable and important:

- i) Functionality requirements gathering: A list of functional requirements is important and valuable, based on users' need.
- ii) User and task analysis: This is another form of research in Usability Engineering and similar affairs.
- iii) Information architecture: It comprises the better designing of information systems, including web pages. It is hugely depending on websites and web systems.
- iv) Prototyping: Prototypes are required for designing and planning good and healthy user systems.
- v) Graphical user interface (GUI) design: GUI is required for the user/researcher to find usability problems based on the type; thus, GUIs are highly required.
- vi) Usability inspection: Is considered to be less expensive to implement than usability testing, the development process, and evaluating prototypes or specifications for the system; here, cognitive walkthrough studying new users etc. are highly appreciated.
- vii) Usability testing: Testing of the prototypes with an actual user enables the designer to understand the design. Here, modern techniques are important and valuable.

The above implies that the HCI domain is important as the use of SM involves the use of computers in KT. Moreover, staff may need to be sensitised about the interface design of the computer for various tasks, benefits, and potential hazards of using computers while using SM. Thus, HCI is an interdisciplinary field that emerges from the areas of computing, IS, IT, applied psychology, sociology, and design.

2.3.7 Human Information Interaction and Social Media

HII is a complicated discipline that needs more research to fully understand the scope thereof. In every second of biological living thing there are variety of multidimensional information seemingly important for survival, hence the need for current and future interdisciplinary research (Fidel, 2012). To add, HII aims to specify the principles and ways of presenting information to facilitate effective human information interaction. Presenting multidimensional information effectively is important in the face of big data, the information explosion, and an upsurge of technology-based systems designed to solve problems. More so, HII is considered to be part of the Information Science discipline, more accepted in Library Information Science (LIS) (Fidel, 2012).

Raglin et al. (2018) maintain that human-agent teaming requires a fundamental understanding of humans' interaction with information because the current dynamics of HII are not fully understood or formalised (Raglin et al., 2018). Furthermore, the underlying forces of current and increasing future operations will require an integrated blend of humans and automated capabilities. Faster decision making and asymmetric views will depend enormously on the performance of these human-agent teams. Thus, this study proposes the use of SM in interaction, the paradigm shift, and cooperation. HII aims to comprehend the complex social interactions of people's use of and reaction to information to respond to what is meaningful and appropriate information in specific situations (Fidel, 2012). This means without comprehending people's use of and reaction to information solving organisational challenges remain difficult.

There are various factors that impact interactions within the HII field of study, including how and why people interact. Leigh (2021) indicates that archives present a complex information environment that has so far been relatively under-researched. Additionally, the key infrastructure for humanities researchers comprises of both physical and digital elements that pose an important and promising site of study for HII researchers. More so, this has led to a gap in understanding how researchers use archival information in knowledge production activities. Leigh (2021) also suggests further studies to understand information use both within archives and beyond because there is a lack of effective HII, which emphasises communicating information—interacting with, interpreting, and using information—not writing documents, not designing web sites, not generating content. Producing modern web-based information requires a solid understanding of HII to increase the success of creating information that is effectively communicated to all readers. Interaction is also affected by poor user experience (UX), network connection, multiple errors, and lack of subscription to academic publishers (Alturki, 2022). The information design and creation must be based on a clear understanding of a person's goals and information needs and how that people interact (Leigh, 2021). These elements form the

base of the need to understand the impact on HII and why it is important for individuals and organisations using SM in KT.

2.3.8 Information Seeking Behaviour, Information Retrieval and Social Media

Information Seeking Behaviour (ISB), Information Retrieval (IR) are a multifaceted part of HII, which necessitates the use of different approaches to understand these concepts. Ma and Lund (2021:1065) define information seeking as “studies focusing on the process or act of attempting to satisfy an immediate information need” and information retrieval as “studies focusing on the act of retrieving information from a system, including library catalogues/databases”. “Information taking, as getting hold of information, extracting, confiscating, deriving, abstracting, copying, choosing, stealing, bringing, receiving, studying, and beyond.” (Huvila, 2022:532).

The two main HII approaches usable to study include ISB and IR (Fidel, 2012). In HII, people who interact with information may be regarded as patrons in libraries, clients in organisations, actors, or user in HCI fields. The actors are affected by a communicative process, a cognitive process, the context, and the community of actors (group of actors doing the same type of tasks in a specific environment). The cognitive process during HII affects human information behaviour (HIB) research, while context mainly affect HII.

Huvila (2022:528) found that HIB and the human sensemaker are not only the producer of the information but also assumes the role of information designer and seeker (looking for information to index or select it or use it for other purposes). Additionally, information seeking or inquiry involves the conditions and practices of information seeking, appropriation, discovery, and retrieval as modes of taking, learning and information use. The human sensemaker does this without any assistance or training. This implies that without the human sensemaker, information, knowledge creation, and KT using SM challenges remain. Some of the challenges include less knowledge or information production, the nonexistence of a quality assurer, moderator, and custodianship. “Sensemaking involves humans being social while they interact with their environment and apply their reasoning capabilities to take action and to change the conditions to more favourable ones” (Turner et al., 2023:21). To add, Turner et al. (2023) found that methodologies for researching sensemaking, beyond theory building, include qualitative, quantitative, and mixed methods research. Furthermore, some of the common methods identified include, “ethnographic techniques, conversation, discursive analysis, intersystem views, observations, narrative analysis, grounded theory, mathematical modelling, social network analysis, action research, and storytelling” (Turner et al., 2023:7).

The SM platform is unique because it responds to real issues such as the quality of the information to ensure that optimal value is achieved from the information. The expert quality assessor must understand how it can be used differently by different persons and in different

situations (Huvila, 2022). This reveals that not using SM to respond to real issues such as information seeking and retrieval results in missing expert valued information.

HII has challenges related to information relevance and information seeking, which are, in turn, affected by subjective or objective relevance. HII and ISB are also affected by dynamic information or level of relevance. Dynamic information is always changing, resulting in changes in one's cognitive processes and views in relation to problems or consequences, while relevance of information refers to appropriateness (Ghazzawi, 2018; Zhou et al., 2018). Thus, HII challenges must be understood to mitigate the subjective biases, relevance, and dynamic information, resulting in changes in one's cognitive process when using SM in KT. Without assessing the appropriateness, information from SM becomes unusual.

Alturki (2022:182) conducted an information seeking behaviour (ISB) study with 193 students from Umm Al-Qura University) in the Kingdom of Saudi Arabia who were affected by the coronavirus (COVID-19). The study applied descriptive analysis. The results revealed that most of the students were facing difficulties when searching and retrieving resources from the university library website. The problems included poor user experience (UX), network connection, multiple errors, and lack of subscription to academic publishers. This highlights the relationship between ISB and SM/IT.

To understand how people decide whether information has sufficient value to counteract the cost of obtaining it, Jach et al. (2022) propose a conceptual model of information seeking that emphasised how personality traits and perceptions of situations may influence motivations to *seek* information, to *explore* (related to trait curiosity and openness/intellect, and situations evoking more positive emotions and opportunities for intellectual engagement), or to *feel safe* (related to trait uncertainty intolerance and neuroticism, and situations that evoke more negative emotions). Across two studies ($N=436$; $N=316$), information seeking was assessed using two widely used paradigms (advance knowledge of a reward outcome and answers to trivia questions), as well as two variations of the trivia paradigm. In all contexts, the available information was *non-instrumental*, having no practical utility within the context of the task. The study found that ISB and information retrieval by people is affected by both trait and context-dependent preferences for non-instrumental information, which are commonly overlooked in studies of information seeking. This means that ISB and information retrieval is affected by trait and context-dependent preferences for non-instrumental information. Furthermore, interaction with information, *information* seeking behaviour, and the mechanisms in response to user requests possibly through SM use, motivate people to learn (KT).

2.3.9 Knowledge creation and Social Media

Characterisation contradictions exist around the concept of *knowledge creation theory*. Polanyi (1966) pioneered the concept of knowledge creation through dynamic construction and establishing practices, internalisation, and challenges of articulating knowledge. Nonaka and Takeuchi's (1995) theory of knowledge creation in contrast to Polanyi (1966) considers KT as a process whereby an individual's tacit knowledge is transferred to the organisation through a continuous four-mode tacit-to-explicit-to-tacit knowledge conversion process. This process is referred to by Nonaka and Takeuchi's (1995:62) as the "Socialisation, Externalisation, Combination, and Internalisation (SECI) model". The model involves four modes with a circular relationship. *Socialisation* enables the conversion of tacit knowledge, thereby creating new tacit knowledge through pooled experiences. *Externalisation* converts tacit knowledge (embedded in the mind) to explicit codified knowledge (pictures, symbols, language, virtual algorithms) for sharing as the basis of new knowledge (Nonaka & Takeuchi, 1995; Nonaka et al., 2000). Internalisation is related to *learning by doing*, and is used to broaden, extend, and reframe the tacit knowledge of individuals that are part of the organisation. Once explicit knowledge has been *internalised* by an individual, it becomes part of that individual's unique tacit knowledge base and a valuable asset (Nonaka et al., 2000). *Combination* transfigures knowledge from an explicit state into more complex and systematic sets of explicit knowledge (Nonaka & Takeuchi, 1995; Nonaka et al., 2000). The SECI model provides a pivotal cyclical view of how knowledge is created and the role of tacit and explicit knowledge in the process (Figure 2.4).

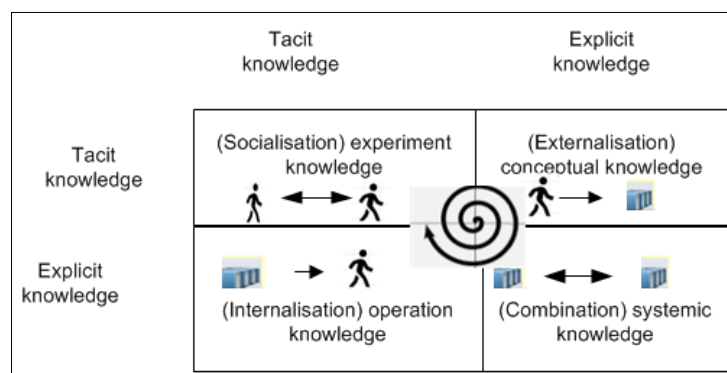


Figure 2.4: SECI conversion modes (Nonaka & Takeuchi, 1995:62)

What is striking about Figure 2.4 is Nonaka and Takeuchi's (1995:62) expansion of the knowledge generation process to include both explicit and tacit knowledge. This process consists of four modes for knowledge conversion through which tacit and explicit knowledge expands in quality and quantity. The knowledge-creating process is in terms of who participates and how participants share contexts. Knowledge needs a context "place", physical space ("ba") (in Japanese), which roughly means place. The context to provide the drive, efficiency, and

space for individual conversions and to move along the knowledge spiral is illustrated by Nonaka and Takeuchi (1995:71) in Figure 2.5.

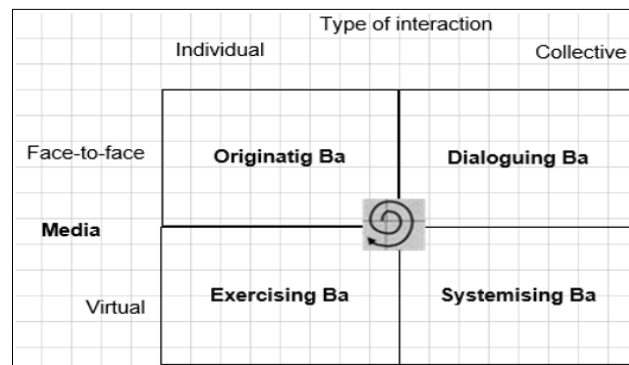


Figure 2.5: Four types of contexts (Nonaka & Takeuchi, 1995:71)

The different types of “ba” or contexts as illustrated in Figure 2.5 highlight the complexity, dynamics of knowledge, and knowledge creation process. Management needs to realise that knowledge is an asset and source of competitive advantage (Nonaka et al., 2000). This research avers that knowledge is generated at different levels (epistemological aspect) and ontological dimensions. Additionally, the ontological facets encompass individual, intra-organisational, inter-organisational, international, and intercontinental contexts where all these contexts influence each other. The different epistemological levels and ontological dimensions generate knowledge assets, which create value for organisations. Value creation is a practical process.

SM involves the use of a virtual platform where individuals, groups or organisations interact to exchange information and knowledge. Different media do not necessarily include interactions with the same protocols, motives, impact on society, processes, and outcomes. As a result, it is imperative for organisations to understand the four types of “ba” contexts, which include: *originating* “ba”, *exercising* “ba”, *dialoguing* “ba”, and *systemising* “ba”. Originating “ba” or context refers to individuals using face-to-face interactions to facilitate the sharing of experiences, feelings, emotions, and mental models. The context reveals socialisation, where one might seek care, love, trust, and commitment. The context forms the basis for knowledge conversion among individuals. Exercising “ba” reflects the context where the individual may use a virtual platform for interactions to internalise explicit knowledge that may be communicated. Dialoguing the “ba” contexts includes conscious community interaction by means of face-to-face encounters where individuals with same minds and related skills share, transform, and express ideas for externalisation. In contrast, systemising “ba” emphasises the collective face-to-face and virtual interactions to offer a context for the combination of existing explicit knowledge for easy transition to many people in a codified form. Online networks, groupware, documentation, and databanks present a computer-generated collaborative context. SM aspects are reflected as fitting the systemising “ba” because this study seeks to explore and

understand the use of SM in KT in an IBE. However, influences of the originating “ba”, exercising “ba” and dialoguing “ba” may not be exonerated.

Leung (2014) used the SECI model to express how stories and personalisation can lead to knowledge acquisition in knowledge sharing. Stories can convert specific explicit knowledge into tacit knowledge (internalisation) and create new tacit knowledge through stories and social interactions (socialisation). Liyanage et al. (2009) also used the SECI model to explain how knowledge is acquired at individual level rather than at organisational level. This means knowledge can be created when people post stories on SM, and receivers, who can be COP users, internalise the stories. Additionally, knowledge is created through SECI when using SM for KT, starting at individual level before it spreads to organisational level.

2.3.10 Social Media and Knowledge Transfer

Table 2.1 illustrates the SM and KT link. The table shows the KT process considered by researcher (Liyanage et al., 2009). SM is used in information gathering, ideation, collaboration, product service launches, marketing and CM as part of innovation (Müller & Christandl, 2019; Ho et al., 2020; Muninger et al., 2022). SM tools and functions are also revealed in relation to the KT process of Liyanage et al. (2009).

Table 2.1: The SM and KT link (adapted from Liyanage et al., 2009; Murphy & Salomone, 2013; Muninger et al., 2022)

Knowledge transfer	SM use	SM use in KT	SM tools and functions
Identification of problem	Information gathering	Meta-knowledge as in communication visibility	Social networking tools for communication of ideas and creations: YouTube, Twitter, Cube tree, Facebook, Myspace, Google buzz.
Awareness of valuable knowledge	Ideation	Meta-knowledge as in communication visibility	Wiki's, Virtual, Communities of Practice, Authoring tool like Wikipedia, word press in collaborative publishing.
Acquisition of knowledge from source	collaboration	Meta-knowledge as in communication visibility	Exchange information, ideas, resources, materials using social bookmarking, RSS, Virtual Communities of Practice. Examples include Facebook, Myspace, Stumble upon, Digg, RSS Feeds, Cube tree.
Transformation before transfer (SECI)	Product/ service test	Meta-knowledge as in communication visibility	Collect and/or present evidence of experience thinking over time using Blogs, Video blogs. Examples of tools include Google Docs.
Association (Link knowledge with internal needs)	Product launch	Meta-knowledge as in communication visibility	Wiki's, Virtual Communities of Practice, Authoring tool like Wikipedia, word press in collaborative publishing.
Application/use of useful knowledge	Product service launch	Meta-knowledge as in communication visibility	Create something new that can be seen/used by others using Mashups, learning worlds. Examples include: Amazon.com, Flickr, YouTube.
Liyanage et al. (2009)	Muninger et al. (2022)	Onwuegbuzie (2017)	Murphy and Salomone (2013)

Table 2.1 shows that the use of SM within an organisation can provide valuable insight into how knowledge is transferred within an organisation. Tortoriello (2015) explains how relationships between individual actors and clusters of actors within the same association, organisational units, or network positions affect and influence knowledge transfer.

2.3.11 Innovative Business Environment (IBE) and Social Media

An IBE refers to strategies that release the inventiveness and allow the prediction and redesigning of knowledge to reduce the uncertainties of a negative impact on the environment (Rothenberg & Zyglidopoulos, 2007; Kuratko et al., 2014). IBE is highly characterised by the impact of technological advancement, high transfer of capabilities, resourcefulness, innovative culture, research and development, adaptability, and innovative industries or organisations concentrated in one area (Aydalot & Keeble, 1988). However, the concentration in one area seems to be questionable given globalisation, IoT and other technological advancements (Mount & Martinez, 2014; Ooms et al., 2014). For innovation to take place, a favourable IBE is a central facet in leveraging organisational performance. The environment description emphasises the need for further research in KT using SM in an IBE. Thus, although SM is used innovatively, further exploration is required specifically in terms of business processes. Drachuk et al. (2016) conclude that practical activities are needed in short-term innovation. For example, it is necessary to analyse the actual state of development of innovative business and create a conducive environment. Drachuk et al. (2016) encourage the creation of scientific training by specialists in the field of innovation as well as the formation of a consortium. A consortium in innovation can be a specific time agreement between banking institutions, innovative enterprises, organisations, or research centres in terms of 'high-tech' and capital-intensive projects (Drachuk et al., 2016).

IBE relates to the use of SM in KT, because SM is innovative when people create content and share or edit videos. Sharing points to creating insights, predicting the future, and redesigning knowledge to reduce uncertainties or the negative impact on the environment. This implies that the use of SM is a form of technological advancement that is attributed to the number of people using SM worldwide. SM enables high transfer of capabilities and resourcefulness, thus motivating information seeking and adaptability. SM facilitates a new process of production, leading to increased efficiency, better support for a given product, or lower costs.

2.4 Social Media

2.4.1 Introduction

This section outlines a brief background on the classification of SM tools/platforms and functions in section 2.4.2. 2.4.3 presents a brief overview of SM in organisations. As a final point, in section 2.4.5, SM and KM link is introduced.

2.4.2 Classification of SM platforms and functions

This section elaborates the different SM application classifications. Yemer and Wassie (2020:4) found that SM fall into six different categories: i) collaborative projects, ii) blogs, iii) content communities, iv) social networking sites, v) virtual social worlds, and vi) virtual game worlds. This classification assists in understanding the uses of a given SM platform. SM is viewed as “an enabler, driver of innovation, platform for connections and relationships between firms and stakeholders, and represents one of the greatest assets for data-driven innovation” (Bhimani et al., 2019:251).

SM supports instructors’ empowering of the “educational process with active learning, creativity, problem-solving, cooperation, and multifaceted interactions as well as students’ using and improving their academic performance, inquiry, and alternative thinking skills” (Yemer & Wassie, 2020:19). Lastly, professional social networks include LinkedIn, Viadeo, Xing Plaxo and others (Cavazza, 2016). In contrast, SM is also categorised into egocentric, community, passion, media sharing and opportunistic sites (Parent et al., 2011; Archer-Brown & Kietzmann, 2018). Egocentric sites allow profiling and connections whereas community sites imitate natural groups based on faith and interest. Media sharing sites aid in sharing content while passion sites enable passion associations based on interest and leisurely pursuit. Opportunistic sites also facilitate business collaborations. SM provides high-volume and real-time data, which has been broadly used in diverse applications in sales, marketing, disaster management, health surveillance, etc. (Hou et al., 2021:1). Taprial and Kanwar (2017) classify existing SM tools as worthwhile given the numerous tools that exist, and it also allows one to gain insight into the way individual SM tools work. SM is furthermore classified based on theories and common characteristics as tabulated in Table 2.2.

Table 2.2: A theoretical classification of the SM tool (Kaplan & Haenlein, 2010:62)

	Instant contact		
	Low	Medium	High
High (individually)	Corporate blogs and fora	Social communities e.g., Facebook and Twitter	Virtual world, e.g. Second Life
Low (collectively)	-	Content communities e.g., YouTube and Flickr	Corporate virtual game

Kietzmann et al. (2011:1294) differentiate SM into seven honeycomb blocks of functions. Some of the functions include being present on SM to reveal identity, privacy, social standing in the form of reputation, and creating organisational groups (Parent et al., 2011). Furthermore, sharing multi-media content, conversation, and relationships are some of the SM functions labelled as passion, media sharing, and opportunistic sites (Parent et al., 2011). The honeycomb functional blocks of SM by Kietzmann et al. (2011) in Figure 2.6 present a significant

and universal challenge to organisational communication and KT in terms of selecting how to design the platform for specific functions.

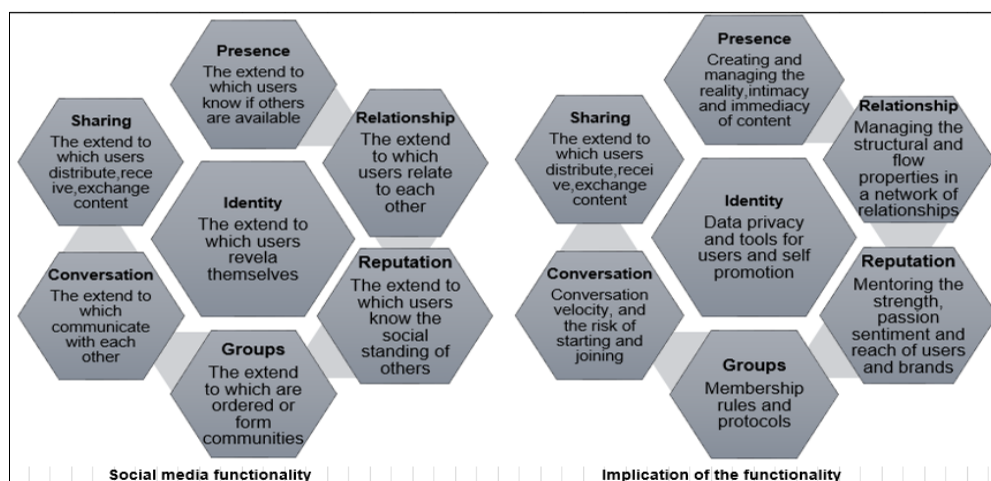


Figure 2.6: The honeycomb of SM functionality (Kietzmann et al., 2011:243)

Using the illustration of the honeycomb framework (Figure 2.6) to understand and develop SM platforms, and the SM landscape more generally, is important. Kietzmann et al. (2011:243) present a guideline relating to how firms should develop tactics for observing, understanding, and responding to different SM activities. The guideline includes the four (4) Cs which are: cognize, congruity, curate, and chasing. Safko and Brake's (2009) use of SM for entertainment is not related to any of Kietzmann et al.'s (2011) four (4) Cs guidelines to group the use of SM. Organisational SM use can be interesting and persuasive. The interest in and persuasiveness of SM can be significantly possible in situations where for instance a firm scans the SM environment, unveils the SM functionality, and reacts to customers' needs (Kietzmann et al., 2011).

The interpersonal SM type refers to tools that allow interpersonal communications with employees, customers, or prospects, among others. For example, Skype enables one to organise video conferences, discussions, or for chatting. Interpersonal SM tools are open for discussion in terms of classification. This is because they absolutely do not comply with the conditions of user generated content, or outside the professional routines and practices (Safko & Brake, 2009).

Related to interpersonal communication tools is content marketing (CM). Müller and Christandl (2019) and Ho et al. (2020) highlight that CM is becoming a common modern digital marketing tool, although literature on this is still limited, e.g., literature on the comparison of CM with other forms of content, like sponsored and user-generated content. Du Plessis (2015) conducted a thematic analytical review of 55 research articles, which resulted in the identification of six elements of CM: i) medium element: the nature of the platform for the content, ii) strategic

element: strategic approach to develop the content, iii) formation element: the construction of the content, iv) intrinsic element: nature occurrence of the content, v) communication element: the technique(s) used to convey the content, and vi) corollary element: the anticipated outcome of the content.

Understanding the timing of disclosure of sponsored content has an impact on conceptual persuasion knowledge and attitudinal persuasion knowledge. Furthermore, KT is an active process, where people think, analyse information or knowledge, and synthesis it to come up with a different mental model or positive or negative attitudinal persuasion knowledge.

2.4.3 Social Media in organisations

SM influences organisations positively and negatively. Positive aspects of SM include “SM market territories, strategic engagement, promotion to productivity, and socialised e-commerce” (Ram & Liu, 2018:104). SM market territories highlight the sphere of influence in terms of information sharing to build loyal SM communities that spread positive sentiments and gather market intelligence, promote products/services and brand awareness.

In terms of strategic engagement, SM enables organisations to access global talent for business development and identify needs of potential consumers to promote productivity in organisations. SM is facilitating rapid promotions into productivity using one-stop-solution technologies for customers to preview, purchase and pay for products/ services. Additionally, people are using one platform with mobile phones to preview and make sales 24/7. Socialised e-Commerce or Socialised Commerce using mobile computing is leading to development of innovative distribution channels called S-channels. These S-channels offer flexibility, ease, quick, cheap, and various new opportunities for cash generation. This means if organisations are not using SM, many opportunities are missed. Some of the opportunities include SM market territories, strategic engagement, enhancement of productivity, and socialised e-commerce.

2.4.4 Social Media and Knowledge Management

The use of SM is a form of innovation. The three important examples of innovation include i) architectural, ii) disruptive, and iii) incremental novelty (Leovaridis & Popescu, 2015:25). Architectural innovation encompasses taking lessons, general technology, skills and using them within a diverse market. The disruptive novelty consists of developing new goods or services to substitute present technologies and acquire a competitive edge. For instance, social media as explained in section 2.4 enables organisations to acquire a competitive advantage. The radical invention introduces a different meaning, possibly a paradigm shift. Incremental novelty is the most prevalent form of innovation that utilises the available technology and increases the value to clients through changes, features, and design within the existing market. Fundamental novelty entails producing new industries and the creation of revolutionary technology.

Thus, without sizing SM affordances, organisations will miss innovative information control and people management. Organisations will also forfeit the chance to improve organisational learning, growth, take, market penetration, and promotions. Not sizing SM opportunities will also result in missing lessons to learn, change in mentality, new market shares, and innovation in modern organisations.

KM (information control and people management) enables the development of effective mechanism that can access and organise information for fast retrieval and reuse (Areed et al., 2021:145). KM can sustain organisational learning, victory, growth, and innovation in modern organisations (Areed et al., 2021). Stankosky and Baidanza (2001) demonstrate that KM is affected by external political, economic, social, technological, and governmental factors. Figure 2.7 exemplifies KM in an engineering enterprise.

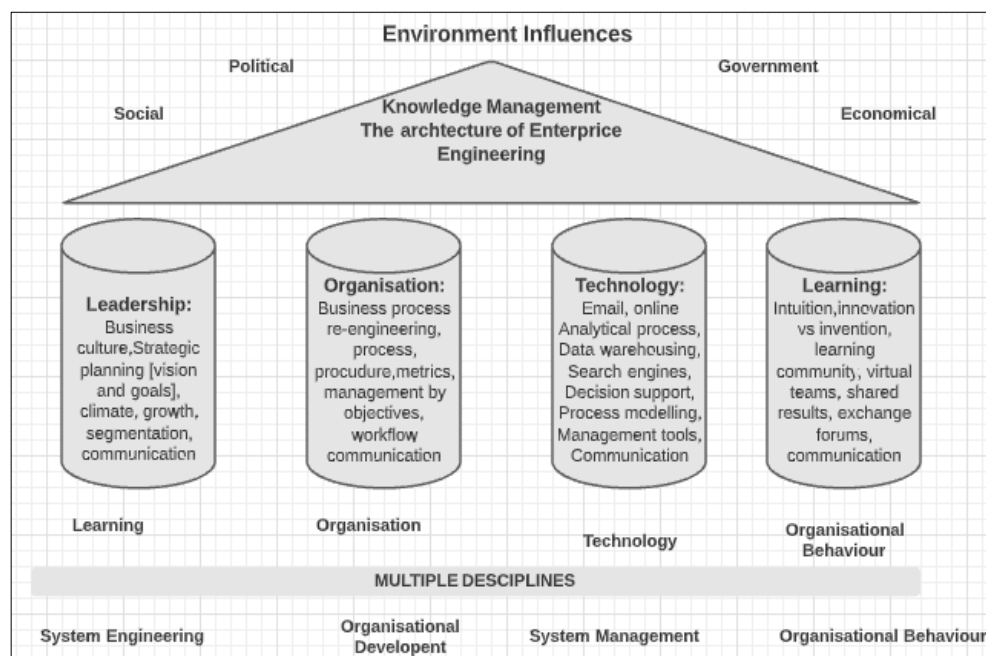


Figure 2.7: KM enterprise engineering (Stankosky, 2005:24)

The four KM pillars highlighted in Figure 2.7 are leadership, organisation, technology, and learning. Leadership emphasises the allocation of the organisation's knowledge assets to balance with the environment the strategies, enterprise-level decision-making processes involving the values, intents, knowledge rations, knowledge sources, prioritisation, and resources. The KM pillars also emphasise that based on systems thinking and approaches, there is in principle a need for integrative management principles and techniques. Organisations concentrate on the operations of knowledge assets, functions, processes, formal and informal organisational operations. The systems engineering principles and techniques enable a flow down, tracking, and efficient use of all the organisation's knowledge assets. Learning

emphasises the organisational behavioural aspects and social engineering, which focus on the principles and practices to facilitate individuals' collaborations and sharing.

“Effective knowledge management methods serve as important factors in making any organisation successful. Among which the concept of knowledge exchange is found to be significantly pertinent and requires a continuous interaction of explicit and tacit knowledge through socialising, combination, internalising and externalising” (Imran et al., 2019:688). Without KM, which facilitates knowledge, exchange organisations struggle.

2.5 Knowledge Management

2.5.1 Introduction

In this section, a brief background on KM is covered, starting with an introduction in section 2.5.1 and classification of knowledge in section 2.5.2. Next, section 2.5.3 explains the knowledge and CoP interconnection. Section 2.5.4 that provides a synopsis of the knowledge and SM connection.

2.5.2 Classification of knowledge

The two main extreme continuums to classify knowledge are tacit and explicit. Zhou et al. (2018) acknowledge that the sources of knowledge embrace two distinctive philosophies. One of the philosophies is the objective epistemology of knowledge, and the second being practice-based epistemology of knowledge. The objectivist epistemology of knowledge views knowledge as an object and as an absolute and universal truth. In this perspective, knowledge is something that can be stored, manipulated, and is separated from the knower. From this epistemological stance, knowledge is converted into explicit and tacit knowledge through “socialising, combination, internalising and externalizing” (Imran et al., 2019:688).

Chai-Arualert and Nakata (2013) specify that knowledge is generated through practice while knowledge will unleash high performance in organisations. Practice or work is a process channel that builds knowledge and necessitates knowledge to be effectively executed. This means without understanding the sources of knowledge implementing, an effective KM strategy for efficiency and effectiveness becomes a challenge.

2.5.3 Knowledge and Community of Practice

Community of Practice (CoP) refers to “a group of members who interact with a significant role in the codification of tacit knowledge and help people to effectively deal with their work tasks.” (Shortliffe & Chiang, 2021:4). CoPs is also a group of people that foster knowledge creation, KT, KS within business organisations, and is driven by globalisation to intentionally establish CoPs as a vital tool for knowledge management (KM) initiatives (Abobakr, 2016). Abobakr (2016) suggests that KM initiatives could consider using technology to enable knowledge

sharing in organisations. Using technology to enable knowledge sharing takes the same stance with CoPs. CoPs are useful in KM initiatives to facilitate knowledge sharing within the company. The absence of face-to-face, person-to-person, and social interaction is highly noticeable when technology is applied. Knowledge-intensive firms have compelled organisations to enhance the culture of knowledge sharing, particularly tacit knowledge sharing (Ideya, 2017, 2018).

Despite the importance of KM in organisational development, managing knowledge through information systems is not enough for the improvement of businesses (Wenger, 2004). Imran et al. (2019) argue that CoPs could provide a new approach for organisations so that employees interact socially to share their knowledge and learn from each other informally. Schenkel and Teigland (2008) acknowledge that levels of trust and confidence are reduced when individuals move to different locations to work. These levels increase when they meet face-to-face again. In contrast, Jeon et al. (2011) acknowledge that if there are no organisational supporting systems such as IS support, then knowledge sharing activities within CoPs may not be achievable. Figure 2.8 summarises aspects of CoP.

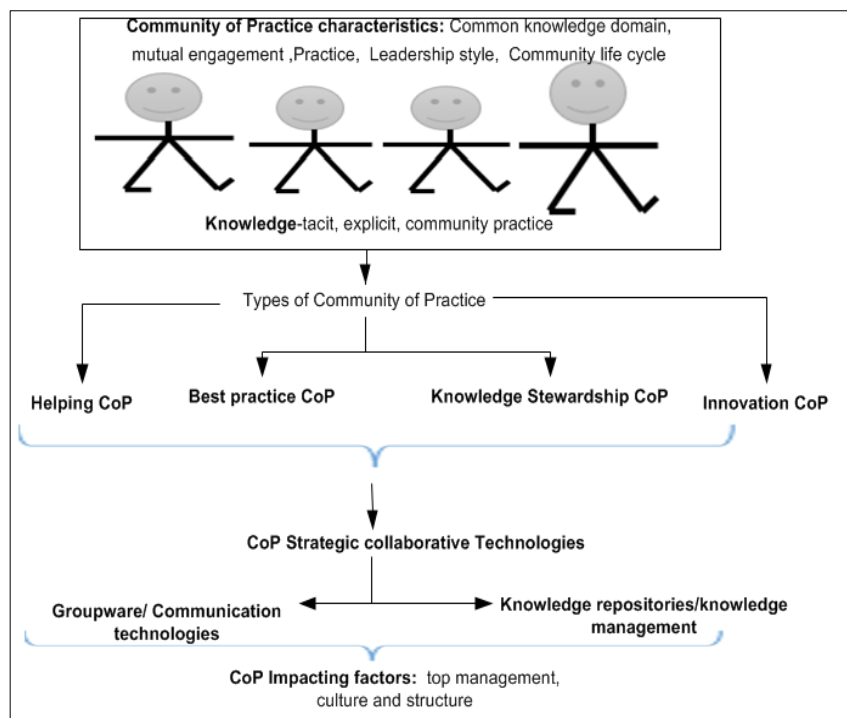


Figure 2.8: Community of Practice compositions

Closer inspection of Figure 2.8 shows that the use of SM may facilitate creation, recording, KT, storage, and retrieval in an innovative business environment. SM use may require flat structures to avoid bureaucracy, balancing virtual and CoP face-to-face meetings, and discuss cultural differences openly. Cultural differences in the team confine political activity, but it can also cause misunderstandings of the meanings in terms of which CoP actions to take.

Organisational leadership ought to understand that possible mismatch in structure and IT may possibly occur in the type of KM strategy used (Corcoglioniti et al., 2017; Ideya, 2017). A discrepancy may be in the way of tasks, collaborative structure, a particular technology in use (e.g., when a knowledge repository is so rigidly structured that it cannot evolve with the changes in a Community of practice (CoP) protocols (Ideya, 2017). This calls for clear leadership in CoP members to assess technology in use, applicable CoP, have clear objectives with targets, budgets, and timetables, and also identify new ways in which technologies can be applied.

Rwodzi et al. state that “SM is also convenient as individualised learning experiences. SM, thus, connects cultures through collaborative authorship and digitally connected and networked knowledge communities in a participatory culture” (Rwodzi et al., 2020:1). Organisations need to think about having a less centralised organisational configuration (Lippert, 2013) by working in more open environment structures (Baker & Sonnenburg, 2013).

Entrenching knowledge in CoP (Parlak et al., 2022) highlights an important aspect of Organisational Science to achieve competitive advantage, and sustainability, and should be promoted. This indicates that even if CoP is created face-to-face or via SM (web-based), CoP members’ interactions facilitate KT and KS to improve sustainability and performance.

2.5.4 Knowledge and Social Media

Understanding knowledge creation is important when using SM. Trust is also important when using SM. Trust is regarded as an important issue in the current information context because of to fake news, rebound chambers, filter bubbles, and verification biases (Fell et al., 2020). Verification biases, as a result, can cause disconnect between human trustworthiness expectations, making it difficult to establish a future space within which trust might be modelled. This means trust can be the lubricant to individuals’ and employees’ willingness to participate in organisational KT.

International product diversification aids organisations’ need to access international knowledge or talent and improve organisational performance (Arte & Larimo, 2022:1408). With the volume of information cumulating at an alarming rate, it becomes logical and essential for people to seek, relevant, useful, and applicable information. SM facilitates the information service, where users now interact with technology, information, and humans through the platform. Thus, without understanding how to analyse big data from SM use and the situation that causes the information seeking process, the context remains difficult. IT digitises the information and interactions between the information users and information within an organisation to facilitate value creation (Lim et al., 2018). This means without digitisation (such as SM use in KT), information or knowledge users and information within an organisation fail to create value.

KM includes courses taught in the fields of business administration, information systems, management, and library and information sciences. Other fields have started contributing to KM research, including information and media, computer science, public health, and public policy (Vătuțiu, 2017). This is significant because it implies that knowledge is evolving through continuous reengineering and innovation. This means without understanding the SM benefits and sources of knowledge, organisations struggle. One of these struggles is knowledge hoarding, where one is not sharing or transferring knowledge. This implies that a lack of trust results in knowledge not being transferred or shared in organisations.

Finally, without international products diversification, organisations will fail to notice international knowledge or talent to improve organisational performance. Product diversification and international markets are accessible through SM.

2.6 Knowledge Transfer

2.6.1 Introduction

In the ensuing section, a summary background of KT in organisations is covered. The section details KT in organisations and explains the association between KT and SM.

2.6.2 KT in organisations

Numerous significant studies, such as that of Findlay (1978), Davenport and Prusak (1998), and Chen and Kuo (2017) have been carried out on KT. The concept of KT was first proposed by Findlay (1978) and has since been interchanged as knowledge sharing, flow, and acquisition. Knowledge sharing consists of making knowledge available to others, while knowledge flow includes the drifts within the IS/IT knowledge bases. Knowledge acquisition includes internalising knowledge (Becerra-Fernandez & Sabherwal, 2010; Zhang & Jiang, 2015; Szilágyi, 2017).

Examples of KT channels include face-to-face, written, training, social interaction, meeting, codified and technology-assisted knowledge transfer (DeSouza & Paquette, 2011). Other channels include social networks, routines, personnel mobility, and organisational design (Argote et al., 2022:2). Immediate feedback can be provided through multiple information cues such as posture, facial expressions, and intonations when sending information. Cues are “simple, familiar structures from which people develop a larger sense of what may be occurring” (Weick, 1995:50).

KT is a form of communication (Liyanage et al., 2009:122). There are many models of communication; among these are Hall’s (1980) communication model, Liyanage et al.’s (2009) KT process model and Elleström’s (2018) medium-centred model of communication. Hall’s (1980:129) “encoding/decoding” model was designed basically for cultural studies. Hall’s model

emphasises that there are a few “determinate moments” in a complex communication system: the moments of “encoding” and “decoding” and the “message form”. Hall’s multifaceted version of communication entails some difficulties, including signs of similarity (icons) and signs of contiguity (indexes), which also create meaning. Furthermore, Hall does not emphasise all the modes of KT as reflected in Liyanage et al.’s (2009) KT process model. Hall’s model is not relevant for this study as it does not show KT among individuals, across organisational boundaries and sectors.

Elleström (2018) states that for almost a century, researchers from different backgrounds have tried to identify the important realistic and theoretical entities of human exchange of information and meaning. There are reasons why new models of communication are necessary. For instance, old and existing models only consider verbal meaning and ignore nonverbal meanings (Hall, 1980). This is because effective communication should include multidimensional aspects such as the individual’s or community’s verbal, media, and nonverbal communication. Individual or community verbal, media and non-verbal communication modelled by way of analogue-to-verbal meaning is incomplete, as such existing models need to include core concepts of communication. The basic media distinctions that are vital for differing communicative capacities should be followed to determine the complex communication system expressed by Hall’s communication model (Hall, 1980).

KT is also affected by information making and information taking, which is open for inquiry and contributes to the “makeability” (what helps to make information happen) or “takeability” (what makes it to be easily taken) of information in specific situations (Huvila, 2022:536). There are different views revealed on the KT process phases. The KT process model as reflected in Figure 2.9 shows five phases in the process. The five phases of the KT process comprises “awareness, acquisition, transformation, association, and application” Liyanage et al. (2009:126).

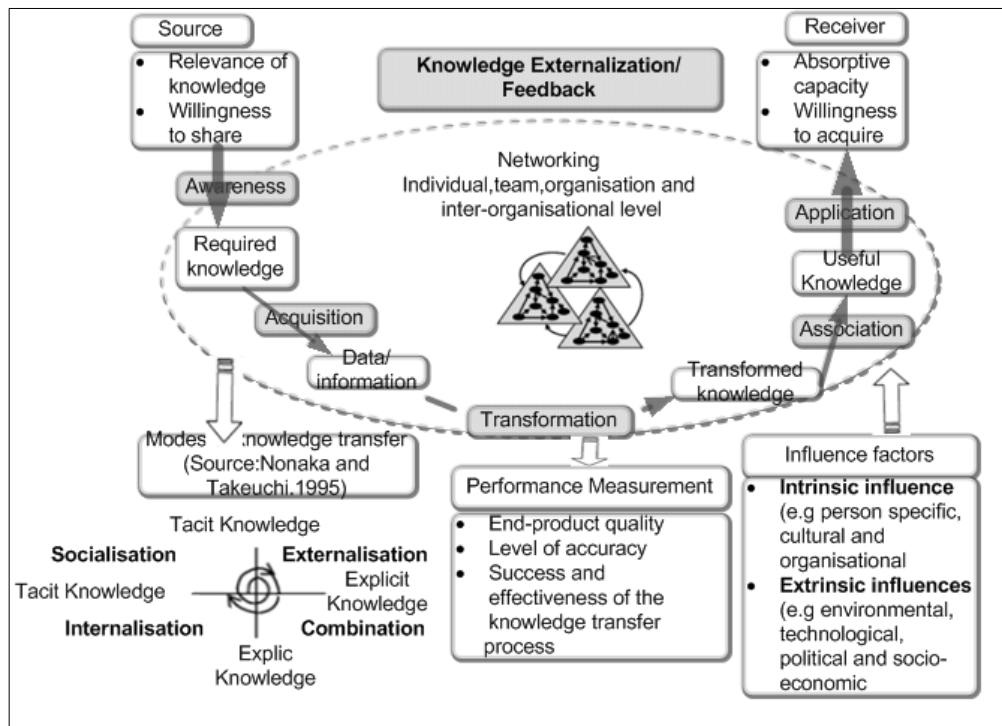


Figure 2.9: KT Process Model (Liyanage et al., 2009:126)

KT processes consist of five phases, although Liyanage et al. (2009) make an argument for six phases. The first phase involves problem identification, awareness, and communication; the second phase comprises knowledge/research development and selection. Acquisition and analysis are the focus of the third phase, with transformation and KT activities or interventions taking place in the fourth phase. The fifth phase is knowledge/research utilisation, also regarded as association and utilisation (Ward et al., 2009). Liyanage et al. (2009) use the '6 KT process model', where awareness of valuable knowledge forms the *first* phase, followed by the *second* phase where acquisition of knowledge from the source is the focus. The *third* phase is knowledge transformation before KT, which can happen through socialisation, externalisation, combination, and internalisation (SECI) (Nonaka & Takeuchi, 1995). Association takes place in the *fourth* phase, where the transferred knowledge is linked with the internal needs. The *fifth* phase is application where useful knowledge is put into practice by organisations in order to create value. The *sixth* phase involves feedback, which includes the building capability from the transferred knowledge.

Liyanage et al.'s (2009) model is relevant for this study as it shows factors such as source, receiver, transfer modes, measurement metrics for KT, and the environment influencing KT. Liyanage et al.'s (2009) model illustrates KT among individuals, across organisational boundaries, and does not over simplify the process. Liyanage et al.'s (2009) KT process model demonstrates the source as a willing sender or subject and the willing receiver as the destination

of KT. Studying KT, SM, and IBE need to be reviewed more in terms of theories, framework models, and benefits as encouraged by Elefant (2011) and Elleström (2018).

The way KT in organisations happens in different ways is illustrated in Table 2.3. The framework of transfer mechanisms within organisations are also shown.

Table 2.3: KT within organisations (Argote et al., 2022:1235)

	Social Networks	Routines	Search	Organisational Design	Mobility
Characteristics of Knowledge	Characteristics of knowledge can influence social tie characteristics.	Characteristics of routines as knowledge repositories can influence likelihood of transfer.	Characteristics of knowledge can influence the utilisation and subsequent transfer thereof.	Characteristics of knowledge can interact with organisational design to influence KT processes.	Characteristics of knowledge held by individuals influence the likelihood of transfer.
Exemplar Article	Aven (2015)	D'Adderio (2014)	Berchicci et al. (2019)	Karim and Kaul (2015)	Slavova et al. Castro (2016)
Characteristics of Context	Characteristics of contexts can influence network tie formation and subsequent KT.	Routine can shape the contexts in which knowledge transfers and how workers interact.	Knowledge repositories can create a context that enables transfer to occur.	Design elements (e.g., teams, proximity) create context within which transfer occurs.	Entry and exit of organisational members can create context to stimulate transfer.
Exemplar Article	Tortoriello et al. (2015)	Bertels et al. (2016)	Szulanski (1996) and Ringov et al. (2016)	Lee (2019)	Bunderson et al. (2014)
Characteristics of Source/ Recipient	Characteristics of network actors influence transfer,	Characteristics of sending and receiving units that influence routine transfer, and the ones that do.	Senders and receivers may vary in their expertise and categorical similarity, which predicts transfer.	Organisational design methods can influence how senders/ receivers transfer knowledge.	Senders and recipients of movers influence the knowledge that is transferred.
Exemplar Article	Reagans et al. (2015)	Greenwood et al. (2019)	Hwang et al. (2015)	Lungeanu and Zajac (2019)	Fahrenkopf et al. (2020)

Argote's et al. (2022) review identified 53 articles on KT in organisations, published in Organisation Science between 2014 and 2020. The studies examined how social networks, organisational routines, knowledge search, organisational design, and mobility serve as instruments for KT. The articles revealed how characteristics of the knowledge transferred, the context, and the sources/recipients affected transfer.

Lombardi (2019) assumes that if staff have senior management backing, attitudes concerning KT will be more positive, and staff will gain more confidence to share knowledge. Top managers' support of KM makes resource allocation for KT more effortless. According to Ncoyini and Cilliers (2020), an organisational structure should be strategically designed to support

knowledge activities because unintended structural barriers might hinder knowledge creation and sharing within the organisation. A strategically designed organisational structure results in an understanding of the importance for organisational sustainability of improvement of both the instruments for KT and the conditions under which KT is most likely to take place. Without understanding knowledge complexity, characteristics of the context, and the sources and recipients of knowledge, the problem of KT still remains.

2.6.3 Knowledge Transfer and Social Media

KT is a complex process and may be facilitated through the use of IT, specifically SM, as proposed in this study, because of SM affordances facilitate KT. For instance, Benitez et al. (2018) studied the impact of IT, IT-enabled knowledge influence on innovation performance, and the potential moderator role of SM capability on a sample that consisted of 100 small US firms. The empirical analysis proposed that IT infrastructure facilitates the exploration of new knowledge and exploits existing/new knowledge to further innovations. Benitez et al. (2018) also found that SM capability has a positive role where IT infrastructure and SM capabilities work together to enable KT.

KT is underpinned by several learning theories, including: i) the Behaviourist Learning Theory (BLT), ii) the Cognitivist Learning Theory (CLT), and iii) the Constructivist Learning Theory (CoLT) (Ertmer & Newby, 2013). For this research, the learner is the employee or actual student to whom the knowledge is transferred. The outcome of the learning (KT) is the diffusion of the knowledge (innovation) within IBEs.

According to Schunk (1991) and Ertmer and Newby (2013), there are definitive questions that serve to distinguish learning theories from each other. To some extent, a learning theory should answer at least five central questions:

- i) Who are the subjects of learning; how are they defined and located?
- ii) Why do they learn; what makes them do the effort?
- iii) What do they learn; what are the contents, basic assumptions/principles of this theory and outcomes of learning?
- iv) How do they learn; what are the key actions or processes of learning?
- v) Which factors affect learning?

Table 2.4 presents a summary of learning theories.

Table 2.4: Summary of learning theories (Schunk ,1991; Fosnet, 2005; Ertmer & Newby, 2013; Harasim, 2017)

	Behaviourism	Cognitivism	Constructivism
1. How does learning occur?	Changes in performance because of stimulus, response, and association.	Being actively mental in conceptualisation, the mind and how it obtains processes, and stores information.	Creating meaning from experience and interaction with others and the environment.
a) Explanation	Focus on empirical, observable, and measurable behaviour transfer or application of learned knowledge is done through generalisation.	Emphasis is more on complex cognitive processes such as thinking, problem solving, language, concept formation and information processing by students [cognitive information processing (CIP)] that could emulate the computer using the mind.	Express that people generate knowledge, learn, gain a deep understanding, find contradictions, and implement this in a learning environment as it develops from intervention, questions-answer sessions, creation-testing of own hypothesis, self-regulation of the learner.
2. Which factors influence learning?	Reinforces stimuli, student consequences, and environment.	Explanations, demonstrations, environment, capability to absorb, transform, rehearse, store and retrieve information, beliefs, attitudes and values.	Student, culture, context, and environment.
3. What is the role of memory?	Periodic practice or review to avoid forgetting.	To store or to organise information.	Understanding
4. How does transfer occur?	Generalisation (same situations applied similarly).	If Information is understood and stored in memory.	By involvement in authentic tasks supported by meaningful contexts, interpretation.
5. What types of learning are effectively explained by the theory?	Instructional cues, practice, recalling facts, defining and illustrating concepts, associations (applying explanations), and chaining (automatically performing a specified procedure).	Reasoning, problem-solving, information-processing, simplification, and standardisation.	It is impossible to isolate content and context according to a hierarchical analysis of relationships.
6. Basic assumptions/ principles of this theory	Observable and measurable outcomes [task analysis, criterion-referenced (pre)-assessment], cues reinforce performance.	Learner control, meta-cognitive training, emphasis on structuring, organising and sequencing information.	Identification of the context in which the skills will be learned and subsequently applied, learner control and the capability of the learner to manipulate information.
7. How should instruction be structured to facilitate learning?	Proper cues, stimuli, environment, encourage practice through presenting.	Making knowledge meaningful and helping. Learners organise and relate new information to existing knowledge in memory.	Have an active processor, interpreter and elaborator of information.
Proponents of the theory	Ivan Pavlov (1849-1936) by Tan and Graham (2010) Skinner (1904-1990) by Nevin (1992)	Jean Piaget and Robert Gagné - late 1950s and early 1960s by Marras (1983) An (2021)	Jean Piaget (1975) Marras, (1983) Levy Vygotsky (1896-1934) by O'Hara (2006) Jerome Bruner (1915-2016) by Myers (2021)

Table. 2.4 shows the definitive questions that serve to distinguish learning theories. Questions asked focus on how learning occur, factors influencing learning, the role of memory, how knowledge is transferred, and the types of learning effectively explained by the theories. Further

questions asked are the basic assumptions/principles of each theory and how instructions should be structured to facilitate learning. The theories analysed and compared are behaviourism, cognitivism, and constructivism. The main theory that emerged as appropriate in KT for this study is the Constructivist Learning Theory. Constructivism emphasises interpreting the world differently from many possible meanings created by other people's experiences and their minds (Ertmer & Newby, 2013; Harasim, 2017).

The discussion of theories is central in terms of guidelines to understand the learner's level of task knowledge and the level of cognitive processing required by any specific task. Theories explain the primary source of knowledge, who the subjects of learning are, how they are defined or where they are located, why subjects learn, why subjects make the effort to learn, and what and how they learn, including the factors affecting learning. The factors affecting KT in organisations therefore include the environment, technology, context, culture and individual factors. In these KT scenarios, practitioners, academics, and organisations need adaptive technological capabilities as well as high knowledge absorptive and disseminative capabilities to solve the lack of effective KT tactics. Practitioners, academics, and ordinary people need to understand the benefits, association between productive network power, and the mind, which interprets the world.

2.7 Innovative Business Environment

2.7.1 Introduction

Sections 2.7.2 and 2.7.3 provide a brief background on innovation in organisations and business environments.

2.7.2 Innovation in organisations

Innovation facilitates organisational performance. One example of innovation is individuals bringing novel expertise to their organisational units through intra-firm mobility vehicles for organisational learning and building new competences, thereby helping to diffuse best practice. This depends on whether this expertise and organisation-level factors in the recipient unit match the organisational performance (Tajudeen et al., 2022). Tajudeen et al. (2018) also found that the use of SM as an innovation in organisational processes results in cost reduction and positive customer relations. To add, SM facilitates information accessibility, marketing, easy interaction, branding, and an entrepreneurship attitude. This means without reducing the costs of innovations, positive customer relations, information accessibility, marketing, easy interaction, branding, entrepreneurship attitude will all be missed opportunities.

2.7.3 Innovation in business environments

There are many factors affecting innovations in business environments. The concept of innovation is related to and impacted by organisational culture, leadership, demographics, industry, paradigm shift, markets structures, social factors, and processes.

Aydalot and Keeble (1988) and Santocildes et al. (2018) point out that to understand the contemporary high technological (IBEs) characteristics, one has to identify the role of new developments. For example, the rural industrialisation, decline in material urban manufacturing, reversal of migration and knowledge diffusion are associated with high technology industries. Characteristic of high tech found by Aydalot and Keeble (1988), include new technology, scientific and high behaviour impact innovations. Additionally, more organisations are designing products with a focus on customer value although knowledge diffusion is still relevant. More so, knowledge diffusion is associated with high technology industries.

Drachuk et al. (2016) propose several activities to improve the IBE in the short term. Some propositions include: i) having a scientific training consortium, ii) creating the conditions for small businesses to reduce costs in order to improve competitiveness, iii) ensuring that small innovative businesses have access to various sources of funding to reduce the launching costs of innovative products and creating scientific training of specialists in the field of innovation. An example is attracting and developing professional leadership and implementing the legislation on venture capital funds. Attracting foreign investors and innovation funds collaboration support the development of IBEs. Additionally, IBEs emanated from the formation of innovative infrastructures such as research centres on high-tech and capital-intensive projects taking place in the Ukraine. The introduction of tax benefits for taxpayers is also important to improve existing equipment and technologies, the creation of innovative products, or importing equipment, which is imported duty free.

Thus, innovation culture creates a conducive environment for KT, efficiency and effectiveness and the achievement of stakeholder objectives.

2.8 Summary

The chapter defined terms used in the study's background to the systematic literature review. The chapter highlighted the main domains (IS, Organisational Science, IT, HII and HCI) as sources of the problem/gap, which this study endeavours to close. From the main domains emanated concepts such as SM, KT, and IBE.

Chapter Two furthermore explained that KT is supported by several learning theories, such as: i) Behaviourist Learning Theory (BLT), ii) Cognitivist Learning Theory (CLT), and iii) Constructivist Learning Theory (CoLT). For this research, a learner is defined as the employee

or actual student to whom the knowledge is transferred. The theories offer guidance in terms of the understanding level of task knowledge and the level of cognitive processing required by a specific task. Theories explain the primary source of knowledge, who the subjects of learning are, how they are defined or where they are located, why subjects learn, why subjects make the effort to learn, as well as what and how they learn, including factors that affect learning. The factors affecting learning in organisations therefore include the environment, technology, context, culture, and individual factors. This means the leadership needs to understand the benefits' source of knowledge, factors affecting how people transfer knowledge, and the mind, which interprets the world.

Chapter Three discusses Dervin's (2003) individual Sensemaking Theory, Weick's (1995) Organisational Sensemaking Theory, and the Socio-Technical Theory (STT) of Trist (1981).

CHAPTER THREE: UNDERPINNING THEORIES

3.1 Introduction

In this chapter, the three theories selected and the justifications for the choices are presented. Dervin's (2003) Sensemaking Theory, Weick's (1995) Organisational Sensemaking Theory, and the Socio-Technical Theory (STT) (Trist, 1981; Sawyer & Jarrahi, 2014) serve as the foundation for the conceptual framework proposed as lens for the research. Social media (SM) is associated with many important theories, such as social presence (1945), Goffman's (1959, (cited in Machado, 1961) presentation of self, Bourdieu's (1950, cited by Glenfell 2014) Social Capital Theory, Sartre's (1905-1980) existential project (Sartre & Kaufmann, 1975; Fell, 1980) and Heidegger's (1927/1962) "shared-world". Another theory related to the use of SM is the Social Presence Theory of Short et al. (1976).

This study aims to explore the use of SM in knowledge transfer (KT) in an innovative business environment. Figure 3.1 shows Chapter Three's structure.

3.1	Introduction
3.2	The theory of sensemaking
3.3	Dervin's Sensemaking Theory
3.4	Weick's Sensemaking Theory
3.5	Social-Technical Theory
3.6	The use of Social-Technical Theory in business research
3.7	Implementation of Social-Technical Theory in Social Media
3.8	The use of Social-Technical Theory in Knowledge Transfer
3.9	The integration of sensemaking theories and Social-Technical Theory
3.10	Proposed theoretical framework for the use of Social Media in Knowledge Ttransfer
3.11	Summary

Figure 3.1: Layout of Chapter Three

More than one theory (theory triangulation) was used for various reasons (Denzin, 1978; Ngulube et al., 2015). Some of the reasons include: i) enhancing the researcher understanding of the phenomenon under study, and ii) increasing the validity of the explanations. Other motives for theory triangulation include that some phenomena iii) may not be suitable, lack enough iv) literature to understand the theoretical framework of a discipline, v) informing methods, and can complement one another. There are a number of theories available for adoption in communication and IS, OS, and IT research to collect and analyse data. Theories explain the

behaviour of individuals' transactions, including the factors to consider understanding human behaviour.

The basis for the theoretical conceptual framework for this study is addressed by a discussion of the linkages among the chosen theories and the research questions used to guide this study. A conceptual framework is the justification for why a given study should be conducted. The conceptual framework; i) describes the state of known knowledge, usually through a literature review; ii) identifies gaps in understanding of a phenomenon or problem; and iii) outlines the methodological underpinnings of the research project (Varpio et al., 2020:7). In the current research, a visual representation was created from literature (a theoretical conceptual framework (see Figure 3.9) and refined to a proposed conceptual framework (Chapter Six, section 6.4).

In the following sections, sensemaking as a concept, definitions of sensemaking, and the theories selected as well as the reasons for selecting the theories are discussed.

3.2 The theory of sensemaking

3.2.1 Definitions of sensemaking

Various academic definitions on the sensemaking concept are presented. Sensemaking is defined as “the process of searching for a representation and encoding data to answer task-specific questions” (Russell et al., 1993:269). Kolko (2010:5) tabulates the landscape of sensemaking, using various authors as presented in Table 3.1.

Table 3.1: Abstract landscape of the sensemaking aspect (Kolko, 2010:5)

	Positions sensemaking as	Style of engagement	Effective for	Length of engagement	Highly dependent on
Hoffman, Klein, and Moon	Process of problem solving	Both personal and shared	Long-term socialisation of complex problems	Long period of time	Participant's perspective and interpretation
Dervin	Process of education	Personal and contingent on experience	Learning	Continually and forever	Participant's perspective and interpretation
Russell	Process of modelling	Personal	Specific tasks	Finite period of time	Participant's perspective and interpretation
Snowden	Quality of an artefact	Highly collaborative	Early stages of problem solving	Formal and finite period of time	Participant's perspective and interpretation
Weick	Conversational process	Highly collaborative	Organisational growth and planning	Both short and long term	Participant's perspective and interpretation

Table 3.1 shows the participants' perspectives and interpretation, environment, length of engagement, influences that all researchers concur that sensemaking ranges from short to infinite while the style of interaction may be through personal, shared, or collaborative means. Sensemaking in organisations may be processes based, of which a process needs inputs, transformation, and outcomes. Snowden (2002:104) also indicates sensemaking as emanating from four domains, namely: bureaucratic/structured (low abstraction policies, procedures, and policies), logical trained professionals with high abstraction, informal/interdependent interactions were language for instance summarise knowledge. Lastly, sensemaking can be uncharted through innovative means of learning with low abstraction. "Social, retrospective, founded in identity, narrative, and enactive" is how sensemaking is best described (Sandberg & Tsoukas, 2015:36). Sensemaking theory was used because the research considered various influences, different approaches, and purposes in life. Sensemaking theory was used to synthesis ambiguities, changes, other than seeing the world in the form of categories and brands. This is related to the essential principle of hermeneutics (Klein & Myers, 1999:72), which proposes that "all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form". This study defines sensemaking as the continuous meaning construction when seeking and retrieving information in enacted ambiguous, problem-solving situations.

3.2.2 Sensemaking as a concept

The sensemaking concept is challenging to comprehend. Sensemaking also seeks to remove ambiguity and eliminate confusion by creating an acceptable explanation of the ambiguous occurrences (Weick, 1995). Thus, in order to lessen the ambiguity of situations, sensemaking is a social activity that involves exchanging interpretations, meaning through reflection, identity, enactment, and tales. Faisal et al. (2009:26) argue that in broad terms, "sensemaking is the process of finding meaning from information". Sandberg and Tsoukas (2015:12) present five categories of events that activate sensemaking, namely: i) a major planned event, such as a strategic change, ii) a major unplanned event, such as a crisis, iii) minor planned events, such as expert meetings, iv) minor unplanned events, such as misunderstandings between group members and v) a combination of triggering events. Furthermore, sensemaking processes include creation, interpretation, enactment for outputs like restored sense or action, no-sense, or restored sense, and lastly, affected by context, identity, frames, emotions, and politics (Sandberg & Tsoukas, 2015:12). Mason (2014) concludes that in many contexts, sensemaking and meaning making are interchangeable. For example, the understanding of how to respond when surfing the internet and a stranger sending you symbol, is the same as making sense and understanding the meaning of the symbols. Other meta-cognitive skills include: i) collecting, ii) organising, and iii) comprehending information on SM about an organisational issue, KT, solutions to issues, and having insights.

There are many examples where sensemaking occurs. For instance, there has been an increase in information explosion from the Web, the library and information sciences, as well as human-computer interactions (HCI). In this information explosion scenario, one can make sense of the multitude of information resources available. For this study, sensemaking activities include understanding or explaining the SM landscape, costs, SM service plans, and trade-offs in SM use in KT decision-making (e.g., buying data bundles or payment to access the Internet).

According to Mason (2014:206), sensemaking involve: i) understanding of complementary and independent concepts supporting learning ii) diagnosing and suggesting connections, iii) suggested connections, iv) inference of meaning for knowledge creation, and vi) connection, causation, process, analysis, as well as probing. The complementary and independent aspects recommend opportunities intended for developing technologies specific to supporting sensemaking to be regarded as sensemaking technologies (Mason, 2014). Figure 3.2 illustrates the sensemaking practice world, levels, types, sense, and organising from an organisational perspective.

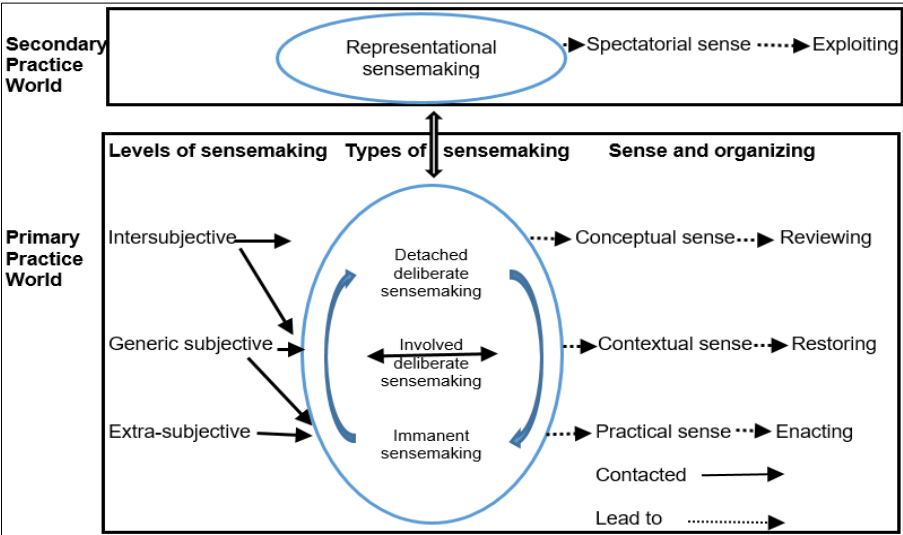


Figure 3.2: Sensemaking: The logic of organising (Sandberg & Tsoukas, 2020:23)

In the sensemaking practice world, the various levels and varieties of sensemaking as well as the types of senses in each practice world, are depicted in Figure 3.2. Sensemaking encompasses a variety of complex features. According to Sandberg and Tsoukas (2020:9), sensemaking features include the use of i) language, ii) sense, and iii) action connection. The action nexus is a merged ongoing response to the specific aspects related to the situation as well as temporality.

Figure 3.2 shows that there are different types of sensemaking as one gets involved in different organisational activities as for example SM and KT. The types include immanent sensemaking, involved-deliberate, detached-deliberate sensemaking, and representational sensemaking.

Immanent sensemaking enables new ways of organising and stabilising. The sense generated is contextual, attempting to get a contextual grasp of what is going on, aiming to restore an interrupted activity from the “inside”. Involved-deliberate sensemaking enables staff to develop a contextual sense of new skills and routines required if an organisation is to acquire a new direction. If the interrupted organisational activity persists, gets worse, or in some extraordinary situations even comes to a standstill, manager shifts may aid the situation to have new perspectives. Shifting the mental structure from the manager’s primary practice world to an abstract-detached way of engaging with their activities, may lead to a detached-deliberate type of sensemaking. As involved-deliberate sensemaking is bodily and cognitive in character, it can generate higher flexibility in, and adjustment of, organising (Christianson, 2019). Sensemaking then, becomes mainly cognitive-discursive and involves engaged abstraction that generates a conceptual sense of the troublesome activity. Detached-deliberate sensemaking, because of its predominantly cognitive and discursive character, has the potential to generate a high degree of organisational reengineering. This is because the theory is not immediately involved in enacting the current way of organising. The targeted (i.e., unproblematic or problematised) organisational activity is abstracted from its original context, remodelled, and interpreted within the practical concerns of another practice world (Gallagher, 2017).

Sensemaking can be individual social sensemaking or discursive organisational sensemaking, retrospective, prospective, episodic, or continuous. There are different levels of sensemaking: i) inter-subjective (mainly intellectual and conversational character aimed at organisational reengineering or enacting the current way of organising), ii) generic subjective and iii) extra-subjective (Sandberg & Tsoukas, 2020:23). To explain generic subjective sensemaking is where the staff develop a contextual sense of new skills and routines to acquire new direction. Extra subjective is where organisations try to grasp what is going on to restore an interrupted activity. Understanding the levels is important to sensitise novice managers or academics on how sensemaking transpires in organisations. This means without different levels of sensemaking innovation, reengineering organisations remains difficult.

3.3 Dervin’s Sensemaking Theory

3.3.1 Introduction

Dervin (1998:36) described sensemaking¹ and sense-unmaking as “...a mandate of the human condition live in a world of gaps: a reality that changes across time and space and is at least in part ‘gappy’ at a given time-space, a human society filled with difference manifested in madness, culture, personality, inventiveness, tentativeness and capriciousness, a self that is sometimes

¹ In the research, sensemaking theory concepts include those of Dervin (2003) at individual and Weick (1995) at organisational level.

centered, sometimes muddled, and always becoming”. Pirolli and Card (2005:2) illustrate sensemaking as “a process of gathering information, creating a representation (schema) of the gathered information, utilising the created representation to build insight, and using the gained insight to create knowledge or lead to action”. This means sensemaking should result in knowledge creation. Shown in Figure 3.3 are the stages of sensemaking process.

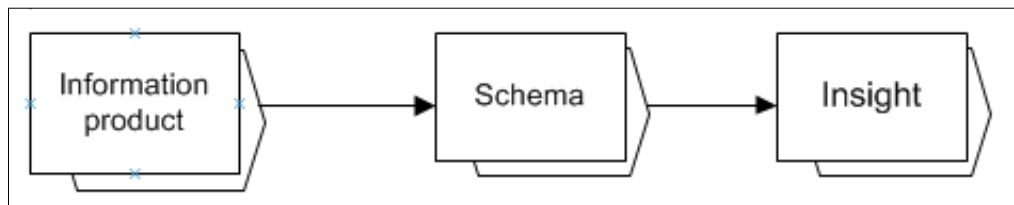


Figure 3.3: Sensemaking process (Pirolli & Card, 2005:2)

Pirolli and Card (2005:2) propose (Figure 3.3) that sensemaking entails a series of sequential actions, including i) information development, ii) the gathering of relevant information, iii) schema development and iv) the representation of obtained data in a diagramme that facilitates insight development. A schema is a unit of knowledge, understanding, and skill stored in the memory, characterised by general knowledge and experiences situations, objects, events, feelings, constantly evolving personal, and often contain inaccuracies and misconceptions (Clark, 2018:176).

The bridges that connect the past and future permit the person to move on areas listed as i) ideas, ii) cognitions, iii) thoughts, iv) attitudes, v) beliefs, vi) values, vii) feelings, viii) emotions, and ix) memories (Naumer et al., 2008:2). Outcomes can refer to information uses or discomforts that the individual puts into newly generated sense. The outcomes can be helpful to this person as any interpretive encounter (Dervin, 2003) may apply a form of hindrances, functions, dysfunctions, consequences, impacts, effects, and future horizons.

Figure 3.4 shows Dervin’s Sensemaking process as proposed by Naumer et al. (2008:2) to facilitate a person’s understanding and handling of information. Dervin’s sensemaking process emphasises how a person understanding and handling of information is affected by personal factors and the environment. “The intent of sensemaking is to provide general guidance for how to ensure as far as possible that dialogue is encouraged in every aspect of a communication campaign, research, design, and implementation”. (Dervin et al., 2003:236). Alsufiani et al. (2017), and Proskuryakova (2017) also believe that sensemaking includes; understanding, structuring, reducing confusion, uncertainty and ambiguity, gap discovering and bridging of ideas, emotions, attitudes, and memories from the past, present, and future moments.

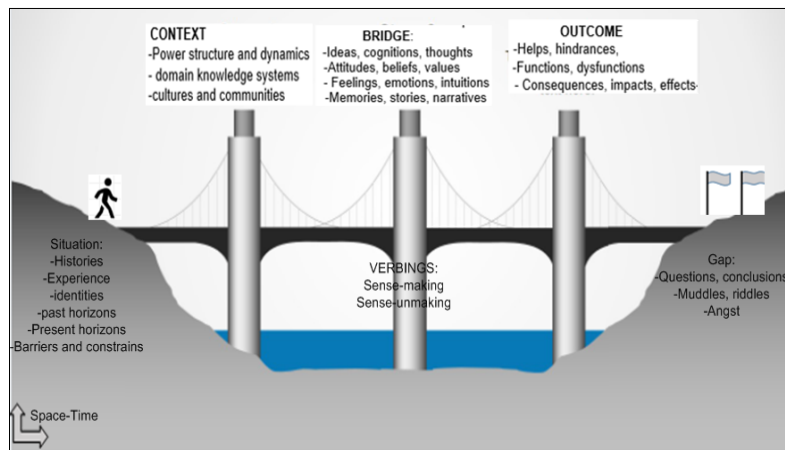


Figure 3.4: Dervin's individual Sensemaking Process (Naumer et al., 2008:2)

3.3.2 The shortcomings of Dervin's Sensemaking Theory

Although sensemaking is useful, and have merits, the theory is not dissociated from shortcomings. Sensemaking was developed predominantly as a methodology for dealing with complex organisational phenomena rather than as a practical information systems-based tool for improving decision-making in organisations (Namvar et al., 2018).

Even though the "sensemaking metaphor" focuses on an individual who seeks information, Dervin's (2003:236) Sensemaking Theory is a method "to study and implement communication unrestrained". Resultantly, it is not always about seeking information when people are communicating but also to communicate, retrieve and disseminate information. In addition, complex organisational phenomena may require more than one theory.

Sensemaking assumes that all communication is designed but that most designs, even when well expressed, are customary, implicit, and based on transmission assumptions. Sensemaking's intent is to "provide general guidance for how to ensure as far as possible that dialogue is encouraged in every aspect of communication campaign research, design, and implementation". (Dervin et al., 2003:236). Sensemaking development over the years has been missing technology affordances and innovation. Examples of some of the technology affordances include open technologies available to organisations and individuals include wireless networks (e.g., Wi-Fi and Bluetooth), mobile computing (e.g., smartphones), online media (e.g., YouTube) and SM (e.g., Twitter), on-demand online services (e.g., Uber), crowdsourcing (e.g., Mechanical Turk), and cryptocurrencies (e.g., Bitcoin), and more.

Sandberg and Tsoukas (2015:26) explain other shortcomings, including that the notion of "process" in sensemaking process remains relatively abstract. The concept of "sense" is insufficiently developed, and sensemaking does not consider the larger contexts (institutional and epistemic-individual social positions, like class, gender, and race) in which sensemaking

takes place. This study is related to how people use SM in KT in institutions and as a result, class, gender, and race are not considered.

Sensemaking emphasises the importance of two-way dialogue between the information provider and user to ensure that communications are effective and unconstrained. For this study, communication is an aspect reflected in KT which also includes i) sender, ii) receiver, iii) feedback, and iv) medium (Liyanage et al., 2009:126). Sensemaking requires a large amount of data to facilitate organisational learning communications, which is effective and unconstrained. Organisational learning enable organisations to acquire knowledge that becomes translated into action, and outcomes (Iyengar, 2015).

The consolidation of the concept and process of sensemaking outlined here, along with the ways forward for sensemaking as presented in the next section, contributes to some insights, and paves the way for future research to provide more elaborate thoughts predicated on empirical research to respond to this study's research questions.

3.3.3 Solutions for Dervin's sensemaking shortcomings

Sensemaking results in people understanding organisational complexity, which helps them make wise decisions for the organisation and its surroundings (Namvar et al., 2018). The modern corporate world is flooded with new, disruptive, and personal technology-enhancing businesses and data. It is possible to promote, enhance, or facilitate understanding of post-modern corporate environments by using sensemaking processes and information systems-based decision-support tools like business intelligence and analytics. This may lead to more knowledgeable business decisions. The deliberations may take place through the following: i) retrospection, ii) salient cues, iii) identifying construction (organisation), iii) ongoing projects, iv) representation, v) acceptability identity construction (individual) and vi) social context (Namvar et al., 2018:9).

3.3.3.1 Retrospection

Retrospection provides a feedback gap of one's actions, motivates relating previously learned skills from experience, and evaluates actions taken to line up new established bracketed cues, reciting a system of action (Sandberg & Tsoukas, 2015). Weick (1995) clarifies that retrospection after acting provides clarity on the appropriateness of bracketed cues and their practicality towards a credible explanation.

3.3.3.2 Salient cues

Cues represent evidence, partial outcomes from actions, and discoveries of data pieced together. They can be signals that are helpful, or noise that detracts from a solution. Sensemakers filter out noise from meaningful signals in the data they are analysing to develop

plausible outcomes (Weick, 1995). The internal and external environmental changes make it more difficult to gather data signals, which could result in decisions with poor data quality and ambiguity for many postmodern businesses. The volume, unreliability, and unpredictability of the data can be quickly reduced to a small number of pertinent signals, such as alerts, key performance indicators, metrics, and patterns, among other things. This can be mitigated by data modelling, aggregation, and clustering, business intelligence, and analytics tools. Then, things such as “key performance indicators, KPIs, and patterns to give meaning to unclear business situations and establish call-to-actions can be used” (Namvar et al., 2018:9).

3.3.3.3 Acceptability or plausibility

Plausibility is characterised by the creation of practical solutions to unstructured and intractable issues, and one should explain the situation and/or find resolution in the form of product, trend, conclusion, and support (Weick, 1995). The decisions, which are founded on poor quality, instability open data collected sources, are prone to substantial uncertainty and risk. The various risk factors and opportunities can be moderated by using credible models developed with predictive analytics methods. Predictive analytics methods provide decision-makers with measures to evaluate expertise and domain knowledge, especially in circumstances where not all the relevant factors can be merged into predictive models (Namvar et al., 2018).

3.3.3.4 Identity construction (individual) and social context

Team members' knowledge and experience can be accessed by decision-makers with the use of collaborative software such as Microsoft Teams and business SM such as Yammer. To add, sensemaking is a social activity in that credible stories are preserved, retained, or shared. Sensemaking is also an ongoing process, making individuals simultaneously shape and react to the environments they face. Identity “is constructed as a result of a person using learned skill sets developed over time in novel cases to create multiple meanings” (Weick, 1995:20).

Decision-makers' participation in the creation of reports and models is intended to alter the organisation's identity (or capacity) (Namvar et al., 2018:9). Weick (1995) specifies that, sensemaking is an ongoing social activity fulfilled in the company of others where shared meaning about an organisation or team drive and current situation are the main issues confronted by individuals in “normal course of business or routine” as interruptions.

3.3.4 Reasons for selecting Dervin's Sensemaking Theory

Many studies have utilised Dervin's (2003) Sensemaking Theory. According to Naumer et al. (2008), sensemaking is used in disciplines such as psychology, human-centered computing, naturalistic decision-making, audience reception studies, and organisational behaviour. The studies focused on users and audiences in phenomenological/interpretive ways, which was also used in this study.

The theory is selected because of some inherent strengths. Making sense of ambiguity and uncertainty is an organised approach that decision-makers can use (Weick, 1995). It is further suitable for constantly acquiring an understanding of innovative business environments and providing additional insights into decision-making processes. Sensemaking theory was used because it can aid as a lens for understanding factors that affect organisations and make informed decision-making (Namvar et al., 2018). Furthermore, sensemaking enables the transformation of complicated, complex, and chaotic organisational, marketplace data into the face of business acumen and realisation among decision-makers.

Sensemaking was used because according to Mason (2014), sensemaking needs further research from an academic perspective. Sensemaking does not conceptualise the individual human being as the research unit of analysis. Rather, the unit of analysis can be described in multiple ways, such as i) person-in-situation, ii) person-asking-question, and iii) person-evaluating-outcomes (Naumer et al., 2008:2).

The theory plays a role in shaping the research, framework, methodology, and practice. Dervin (1998) also calls for an ideology shift in the study of human communication, from descriptive studies (noun theorizing) to implementation studies (verb theorizing). The sensemaking approach used what, how, which, who and why questions (also used in this research). The theory is further used to reveal the elements of the individual sensemaking theory process, who have used it, reason for its selection and its limitations.

Section 3.4 introduces Weick's (1995) Organisational Sensemaking Theory.

3.4 Weick's Organisational Sensemaking Theory

The theory is presented as follows: i) defining Organisational Sensemaking Theory, ii) contextualising Organisational Sensemaking Theory, iii) Weick's historical development, iv) Weick's Sensemaking Theory shortcomings, and v) solutions to Weick's shortcomings.

3.4.1 Defining organisational sensemaking

"Organisational sensemaking involves ongoing, after-the-fact, consensually created, plausible stories that rationalise what is currently being done in the organisation" (Miles, 2012:247). Sensemaking in organisations includes having "organisational actors developing personal schema and mental representations through understanding a given event, circumstance or result of accomplishment." (Bajwa et al., 2020:97). Sensemaking enable people to notice and interpret equivocal events including coordinating responses such as those which may be from different SM users for clarifying what the events imply (Kudesia, 2017). For this study organisational sensemaking is defined as continuous creating organisational stakeholder's

mental model through enactment, cues, frame, cue interlink, selection, and retention of ecological changes.

3.4.2 Contextualising Organisational Sensemaking Theory

Organisations operate in a dynamic and uncertain environment, so it is important to make sense of the changes and developments occurring in the external environments to survive (Miles, 2012). Organisations generate new knowledge which can then be used in designing new products and services, or in enhancing their existing offerings, and improve the efficiency and effectiveness of organisational processes.

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With a similar focus on cognition to Dervin's (2003) Sensemaking Theory and Karl Weick's (1995) Organisational Sensemaking Theory emerged in the organisational communication and management fields. The focus of communication and Information Science (IS) in behaviour studies have shifted to user-oriented rather than system-oriented approaches. In addition, IS assume more interpretative or phenomenological assumptions about the nature of communication and the nature of human sensemaking (Sandberg & Tsoukas, 2015). There are four different types of organisational sensemaking which include: i) ecological change, ii) enactment, iii) selection, and iv) retention (Yao et al., 2011:4426). Sensemaking can be based on animation (extent to which stakeholders are engaged) and control (extent to which organisational leaders are involved) in the sensemaking process. Figure 3.5 illustrates the organisational sensemaking process.

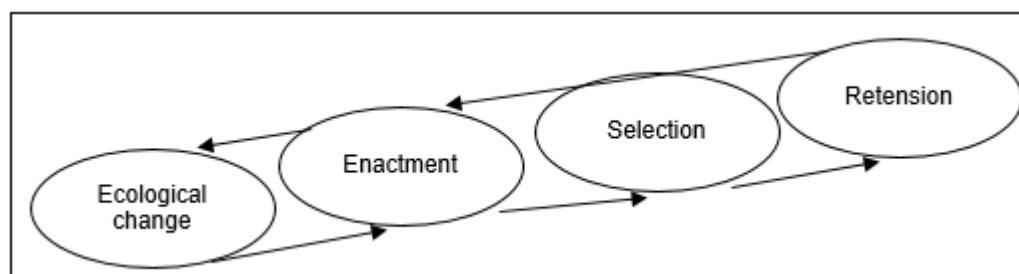


Figure 3.5: Organisational sensemaking process (Yao et al., 2011:4426)

As stated earlier, organisational sensemaking involve four phases (Figure 3.5): i) ecological change, ii) enactment, iii) selection and iv) retention (Yao et al., 2011:4426). Ecological change in the environment prompt the organisational members to sensemaking, determine the

significance of these changes, through enactment. Enactment generates ambiguous unprocessed facts about environmental changes. This result in isolation of some changes, selection selectively bracketing actions and texts, labelling them with nouns, and determining connections. The last portion of organisational sensemaking is retention that is keeping the outstanding knowledge frame of events for future use (Weick, 1979; Yao et al., 2011).

Seven characteristics distinguish sensemaking from understanding, interpreting, or attributing namely: i) sensemaking is grounded in the identity construction (individual self-identity and organisational identity are consensually constructed, and meaning is assigned when events occur now or in the future), ii) it is retrospective (sense and meaning are made about prior events, and they influence current and future behaviours) iii) it is enactive of sensible environments (people's actions help create their environments, and those creations influence meaning and actions), iv) it is social, based on collective action, v) it is an ongoing, continuous process, vi) it uses extracted cues (context, language, and vocabularies all affect cues and focus attention on events) and vii) plausibility or credibility is more important than accuracy (sensible stories about meaning are consensually created but may not actually reflect reality) (Kudesia, 2017:14).

Kudesia (2017:14) indicates that it is important to note how sensemaking occurs through the same enactment-selection-retention process and link of the organisational sensemaking process with each of the seven organisational sensemaking principles from (1) to (7):

- i) Enactment as part of noticing and bracketing information from the environment embraces: focusing on cues (6) and enacting sensible environments (3).
- ii) Selection consists of retrospection in nature (2) and seeking to find workable interpretations rather than completely accurate ones driven by plausibility (7).
- iii) Retention consists of grounding in identity (1), and how outputs are negotiated through interactions with others socially (4) and ongoing (5).

This means without understanding ecological changes, enactment, selection, and retention, organisational sensemaking is difficult. Furthermore, organisation's sensemaking background is diverse, with the goal of eliminating inefficiencies and ineffectiveness and better understanding the business environment. The different environments drive people to make sense of their environment for business sustainability. The next section elaborates on Weick's (1976;1995) historical development, definitions or organisational sensemaking, Weick's short comings and solution.

3.4.3 Weick's historical development

Over the past four decades, sensemaking matters have emanated from cognitive, discursive, and phenomenological perspectives. As an example of the historical development, Helms et al.

(2010:190) found that the critical sensemaking framework takes a very complex combination of variables. These variables include social psychological properties, discourse, organisational rules, and the formative context in which organisations exist and offers an analysis of how these forces combine to allow individuals to make sense of their environments and act on a day-to-day basis. This means critical sensemaking aims to understand how individuals make sense of their environments, why some voices are heard over others, or the socio-psychological properties involved in behavioural outcomes. Additionally, people go through a frame, collect, organise, and structure information to assist in understanding a problem. A frame is an active perspective that both describes and perceptually changes a given situation. is, simplistically, a point of view in technical situations. This point of view is deemed “irrelevant” or “biased” because it implicitly references a non-objective way of considering a situation or idea (Kolko, 2010:2).

The concept of sensemaking was coined in the academic community when Weick (1995) published his standard text, *“The social psychology of sensemaking”*, in which Karl proposed that changes in the environment are sources of a disruption in the flow of information processing by individuals. This means Weick is actually the leader in sensemaking other than Dervin. Environmental changes in turn compel people to go through a cyclic process (organising) of enactment (individuals interactively undertake action), selection (slicing lived experiences into meaningful labels and connection), and retention (retaining cognitive “source records”, crucial aspects of tasks) (Sandberg & Tsoukas, 2015; Kudesia, 2017).

3.4.4 Weick’s Sensemaking Theory shortcomings

There is a lack of clear academic consensus on the definition of the Weick Sensemaking Theory. Sensemaking research has not examined a wide range of organisational circumstances. Most research on sensemaking has been conducted under conditions of organisational crisis or periods of intense pressure, such as the 2019 COVID pandemic. The theory is downplayed because managers are not focusing on reality but rather on possible, probable, or plausible meanings of events.

To conclude, academics ought to understand the shortcoming of Weick sensemaking. Some of the flaws include an unwillingness to pause and reflect, being overly retrospective, and focusing on reality other than the plausibility of narrators. This means, academics may not be focusing on reality but rather on possible, probable, or plausible meanings of events other than being prospective oriented. Sensemaking is not examined across a wide range of organisational circumstances such as when organisation is not under pressure (simple-static and under dynamic-complex environments). Having a one-sided perspective without using logical deductions or other people’s perspectives is also another aspect of the theory’s limitations.

3.4.5 Solutions to Weick's shortcomings

Miles (2012) clarifies that solutions for the theory short comings include managers helping employees to create meaning about important events through conversations. Conversations could be related to the organisation's ideology, philosophy, paradigms, traditions, rituals, and stories. This avoid having similar metal-model, wipe out the ignorance to learning. Managers ought to demonstrate to employees how valuing speed, accuracy, efficiency, cleanliness, or cost-cutting to reflect the sense giving. This is because the organisational frame serves as a point for departure for concentrating on important cues, events, and new information emerging from the environment. In relation to frames (mental model of people) Zimmermann et al. (2022) studied on how members of multi-stakeholder initiatives use shared frames to tackle within-frame conflicts over sustainability issues. The research found that multi-stakeholder initiatives (MSIs) can be used in tackling complex sustainability issues, depending on understanding of stakeholders' different perceptions. MSIs perspective is related to Weick's (1995) Organisational Sensemaking Theory because not one individual is involved in decision making. Thus, without organisational frame sensemaking, insights and KT remain a big challenge.

Employees often fail to individually make sense of events but rely on the sense-giving manager in acceptable interpretation and understanding of events. Conversation facilitate sense giving and making on acceptable behaviours and to achieve a specific vision, mission, strategies, and goals.

Organisational sensemaking is not examined on a wide range of organisational circumstances. This short coming can be solved by for instance by sensemaking in conversation in a developing society and developed society as indicated by Jia et al. (2019). Jia et al. (2019) conducted comparative case studies on the practices of managing heat stress on construction sites. The context included a developed society (Hong Kong) and a developing society (Chongqing in mainland China). The study used an ethnographic approach to data collection and a grounded theory approach (which generate concepts, categories, and theories using data from interviews, observations, or documents). The study compared the socially constructed meanings of construction safety as outcomes of sensemaking in the systemic and cultural contexts. Jia et al. (2019) found that in the context of Chongqing, safety means workers' self-interest and employers' benevolence, while in the context of Hong Kong, both employers and workers make sense of safety as compliance to rules. The study reveals how managers can facilitate continuous learning and sensemaking in different contexts. Jia et al. (2019) proposed a forward-thinking or prospective, reflective sensemaking approach to address Weick's' organisational sensemaking which emphasise retrospection for sensemaking. To that end, the concept of "sense" should be developed, considering in a larger context (institutional and epistemic-

individual social positions, like class, gender, environment, and race) in which sensemaking takes place.

3.4.6 Reasons for choosing Weick's Sensemaking Theory

Weick's theory was selected for various reasons in this study. Weick's Sensemaking Theory has been applied to understand personal, small group, organisational, national, and global communication practices. For this research KT is a form of communication. This versatile theory has been used by constructivists as the framework for asking neutral questions via interview techniques. There is still a lack of empirical studies that draw specifically upon Weick's framework as a method of analysis (Helms et al., 2010:192). Through human stories that review cognitive and affective motivations to contextualise information behaviour, sensemaking and narrative analysis offer the potential for discovering new landscapes of information behaviour (Fisher et al., 2005). The versatility of Weick's (1995) theory has prompted the use in this research which selected the pragmatic paradigm.

3.5 Socio-Technical Theory (STT)

3.5.1 Introduction to the Socio-Technical Theory

Socio-technical systems (STS) are complex systems composed of autonomous subsystems (participants), which are either technical (software) or social (humans and organisations) (Paja et al., 2013:1). Trist and Bamforth's (1951) research in the British coal mines is commonly reflected as the initial point of the socio-technical systems approach (Miner, 2006:171). The Socio-Technical Theory (STT) suggests that to achieve co-optimisation, the relationship between social and technical elements should lead to the emergence of productivity and well-being. STT is based on two main principles, namely: i) interaction of technical factors, and ii) social factors (Trist, 1981). The interaction of social and technical factors provides a framework for prosperous (or fruitless) organisational performance. This interaction includes some linear "causal relationships" (typically "designed" relationships) as well as some non-linear and complex unpredictable relationships (often unexpectedly good or bad relationships) (Bostrome & Heinen, 1977).

STT points to the interaction between the complex infrastructure of society and human behaviour. Proponents of the theory include Harold Levitt, Albert Churns, Ken Eason, and Enid Manford (Trist, 1981). At the centre of STT is the design and performance of organisational systems that can only be understood and improved when both "social" and "technical" aspects are integrated and treated as interdependent parts of complex systems. When social and technical elements are used, whether designed or not, both types of interactions occur (Cartelli, 2007). The theory is still useful. This is because MuJinga et al. (2019) presented a validated socio-technical information security (STInfoSec) framework for the development of online

information security (InfoSec) applications. The framework addresses both social and technical aspects of information security design, hence the theory was also used in this study because in the aim of exploring the use of SM in KT, security is critical for effectiveness. Figure 3.6 synthesizes the STT and its components (Bostrome & Heinen, 1977).

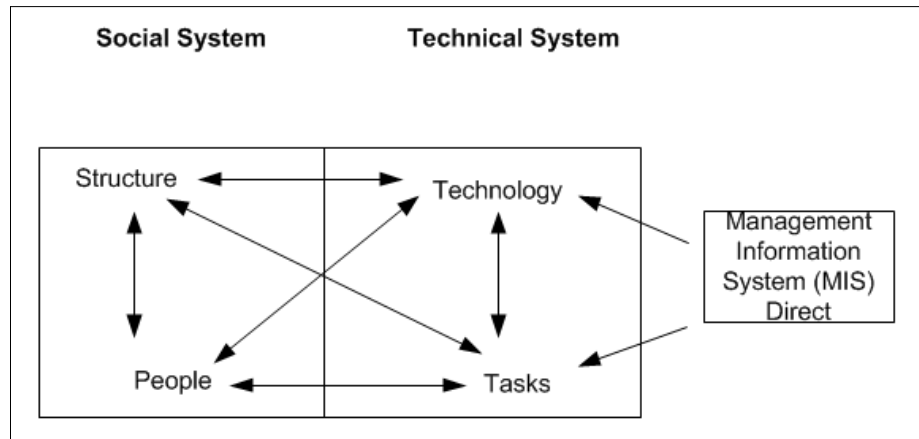


Figure 3.6: Socio-Technical Theory (Ncoyini & Cilliers, 2020:5)

The basic elements of STT that impact organisations are depicted in Figure 3.6. For this inter-discipline study, STT elements assisted in analysing, interpreting, and solving the 'what', 'why', and 'how' problems for IS. The social subsystem of a work system is comprised of the individuals and organisations that interact with the system, including their unique social attributes (Paja et al., 2013). The technical subsystem can also be viewed as an integration of technologies, policies, and practices that describe the modes of production and users' actions when performing tasks (Bélanger et al., 2013).

The basic elements of STT environment include strategic leadership, organisational infrastructure, technological infrastructure, organisational learning, and knowledge culture (Sajeva, 2010:772). Referring to Sekgweleo et al. (2017), most IS studies are primarily concerned with investigating and understanding the roles of people, technology, and process, what, why, and how IS/IT impacts an organisation. The technical subsystem comprises of processes, tools and technologies that empower users to transform inputs into outputs and complete specific tasks within the system. The social subsystem comprises the users, knowledge, values, relationships, and reward systems. These subsystems can work together to produce optimised outputs (Tajvidia et al., 2018).

To summarise, STT is a theory with a long history meant to reveal that organisational systems can be understood and improved when both "social" and "technical" aspects are integrated and treated as interdependent parts of complex systems.

3.5.2 Definitions of Socio-Technical Theory

STT “constitutes the relations and interactions between information and communication technologies, structure and people” (Sajeva, 2010:770). This research accepts Lu et al.’s (2011) definition on STT. Lu et al. (2011:813) define STT as “the three basic factors that affect an organisation include people, techniques and tasks”. In STT the significance of technology and a socio-technical perspective in organisations is highlighted by academics such as Trist and Bamforth (1951), Bijker (1995), King (2009), and Nguyen (2020).

3.5.3 Technical subsystem

A system consists of a set of inputs, processes, and outputs connected together to form a complete functioning product or service, such as information systems. Information systems are built with the use of technologies. The collection, filtration, and processing, creation, and distribution of data can be enabled by the complementary network of hardware, software, and people in organisations. The STT (Figure 3.6) reflects that organisations are information processing systems that embody the technical system, which involves the processes, tasks, structure, people, and technology required to convert inputs such as raw materials to outputs such as products (Bostrome & Heinen, 1977).

3.5.3.1 People

People are part of the social system that impact organisations. Ncoyini and Cilliers (2020) state that knowledge cannot be efficiently transferred if employees (people) are not motivated to share it. Employees improve their efforts at work to share knowledge when they expect that their work performance will be rewarded and their success recognised (Nguyen & Malik, 2020). Bostrome and Heinen (1977:19) note that “people are poor information processors”. About organisations, this is an assumption of systems designers. Hence the assumption leads to the thinking that “information flow downward can be controlled”. To elaborate, the designer’s assumptions about people and organisations affect the design options that are considered and chosen as well as influence the change strategies chosen. This implied that people play an important role in organisational improvement when they are involved in socio-technical processes.

3.5.3.2 Technology

Technology includes knowledge, tools, and techniques that facilitate the conversion of inputs into organisational finished products (Daft & Lengel, 1986). The use of SM reflects an instance of the use of technology and interactive media that have given rise to increased competition. Information Technology plays a positive role in KT. Community knowledge can also be shared using technology (Saeed et al., 2019). Technology facilitate i) knowledge creation, ii) acquisition, sharing, and iii) application influence organisational innovation in multiple ways (Areed et al.,

2021:157). This imply that without technology knowledge creation, acquisition, sharing, knowledge application, and innovation will be difficult.

3.5.4 Social subsystem

The social system encompasses relationships, structure, and communication. In contrast to the technological approach to KM, social-based KM stresses that knowledge can be attained and shared through socially interactive processes, such as “experts, reciprocal relationships in communication, and trust among employees”, to support KM activities (Sajeva, 2010:770).

3.5.4.1 Relationships

Collaboration lubricates relationships, adjusts organisational service offerings, and avoids isolation through relationships within a social system. Additionally, connectedness, content, duality of interest, communication, and collaboration in the context of IS studies are enforced by relationships (Sajeva, 2010:770). Sawyer and Jarrahi (2014:47) premise that “socio-technical research is premised on the interdependent and intimately linked relationships between the features of any technological object or system and the social norms, rules of use, and participation by a broad range of human stakeholders”. Relationships are created through conversations and finally aid in sensemaking through various ways. As an example, Facebook can be used for applying operating systems knowledge to record and upload a video, group promotion of content access, and interactive and cooperative learning (Saeed et al., 2019).

3.5.4.2 Structure

The term *organisation structure* is described at three assemblage levels: i) the organisation consists of a set of groups, and each group consists of the roles in that group. Additionally, ii) the set of groups, and iii) each group consists of the roles in that group, to facilitate the connections between roles and between groups are possible (Jonker & Treur, 2021:4). Moreover, the organisation is realised by agents fulfilling roles. This structure might be exemplified, for instance, by an organisational chart (Creswell, 2007; Jonker & Treur, 2021). Top managers’ support of KM makes resource allocation for KT more possible, which will motivate employees’ enthusiastic attitudes towards KT. KT also improves organisational efficiency. Thus, without structure, KS, and KT, information flow will be a challenge.

3.6 The use of Socio-Technical Theory in business research

STT is an important theory in reflecting the theory elements such as people, tasks like the use of SM in KT and the socio-technical elements in business. Work systems or tasks may be at the departmental, cooperative, or sector level. One of Trist’s (1981:42) old STT technical imperatives regards “man as an extension of the machine, while the new paradigm regards man as a resource and complementary to the machine”. The old paradigm accepts maximum external control (supervisors, specialist staff) on task breakdowns and simple narrow skills,

while the new paradigm accepts internal control (self-regulating subsystem), optimum task grouping, and multiple broad skills. To add, the old paradigm promotes autocratic leadership style, competition, following organisational purposes, alienation, and taking low-risk stands. Therefore, people (such as system designers), tasks and the technology play a significant role in business. In contrast, the new paradigm recognises flat structures, participative leadership style, collaboration, collegiality, members, and society's purposes, including committed innovations (Imanghaliyeva et al., 2020). Table 3.2 shows a synthesised set of socio-technical system design principles.

Table 3.2: Synthesised set of socio-technical system design principles (Imanghaliyeva et al., 2020:670)

	Principle	Proposition
1	Multifunctionalism	Human agents* should be skilled in more than one function.
2	Flexible specification	Human agents* should be provided with the outcome to be achieved, but with the means to achieve it minimally critically specified.
3	Congruence	System designers should ensure that support systems and subsystems are consistent with the basic system design.
4	Joint optimisation	System designers should give equal consideration to the role of humans and technology in systems.
5	Participation	System designers should match democratic work structures with democratic design processes.
6	Designing design	System designers should recognise that the design process for social technical systems (STS) is in itself a STS and can be treated as such.
7	Experimentation	System designers should treat design iterations as 'experiments', and act on the results of those experiments.
8	Flux	System designers need to recognise that systems are by their nature dynamic and never 'complete', and this requires continuous re-evaluation.
9	Responsibility	Human agents* should be given responsible autonomy for carrying out tasks.
10	Values	System designers should express the aspirations and needs of people within their design criteria.
11	Boundaries	System designers should ensure that system boundaries do not interfere with the exchange of information and learning.
12	Constraints	System designers should identify social, technical, and political issues, which constrain or enhance choices.
13	Multidisciplinary	System designers should draw from a diverse range of expertise, skills, and perspectives.
14	Resource flows	System designers need to ensure that information is provided at the point at which it required.
15	Uniqueness	System designers should recognise that each system is different, and these differences should not be neglected.
16	Variance control	System designers should enable variances to be controlled from the point where they originate.
17	Functional purposes	System designers should ensure it is designed to support the fundamental reason it exists; that fundamental reason needs to be made explicit.
18	Job characteristics	System designers should design human roles within systems that involve a full, coherent, and meaningful cycle of activities.

	Principle	Proposition
19	Simplicity and scale	System designers should minimise complexity and maximise ease of use and understanding.
20	Self-regulation	System designers should examine the conditions under which individuals or groups become self-regulating and try to optimise those conditions.

Table 3.2 clarifies that the STT seeks to provide criteria for manipulating organisational structures, group work, and work processes. Furthermore, STT clarifies principles for designing, technology, and individual tasks are used as criteria to evaluate a set of existing ergonomics methods (Imanghaliyeva et al., 2020). The socio-technical principles encourage the leaders to have a mandate to understand the standards for designing organisational structures, group work, work processes, design processes, and technology. Furthermore, leaders must understand that individual tasks and criteria for evaluating a set of existing ergonomics methods are some of the principles for organisational structure design tasks (Imanghaliyeva et al., 2020). Thus, the standards for designing tasks and existing ergonomics methods may improve organisational agility, expected changes or in business.

For this inter-discipline study, the STT elements assist in analysing, interpreting, and solving the ‘what’, ‘why’, and ‘how’ problems for business and information systems.

3.7 Implementation of Socio-Technical Theory in Social Media

STT is a useful framework for understanding people’s relationships with technology. The implementation of SM technology in organisations is shown in the literature as a complex process, and the increasing use of new technologies is increasing the complexity.

As an example of the use of STT in SM, teaching and learning methods are concentrating more on theory than practice as teaching and learning is one of challenge of technology (Bagarukayo, 2018). In teaching and learning tools such as SM technology affords sharing learning experiences, research, academic events and getting the latest information. The research found that to promote content access, and interactive and cooperative learning SM can be used. SM for example Facebook (FB), the technology facilitates a task of students’ such as applying operating systems knowledge to “record and upload a video installing a virtual machine and operating system onto a group” (Bagarukayo, 2018:211).

Ammirato et al. (2019) studied the use of SM for knowledge acquisition, absorptive capacity, and dissemination in business-to-business (B2B) companies. The study found that SM adoption is still in an initial stage of growth. In relation to the B2B use of SM, there is still a lack of theoretical understanding of the psychological mechanisms of gamification irrespective of the growing scientific interest in clarifying how gamification supports positive affect and motivation,

behaviour change and learning (Krath et al., 2021). Competition in B2B, which affects knowledge sharing and necessitates multi-tailor-made communication channels, increases complexity in the adoption of B2B SM strategies (Habibi et al., 2015). Other SM differences between B2B and B2C include the study of Itani et al. (2023). Itani et al. (2023) explored the impact of business-to-business sales people's SM use on value co-creation and cross/up-selling: the role of social capital. The study found that SM use facilitate resource acquisition, enhance social capital, which, in turn, is critical for value co-creation and cross/upselling performance. However, B2B sales people still doubt about the benefits of SM (Itani et al., 2023). This means without understanding the importance of SM in B2B transaction organisation miss the affordance offered by SM technology.

To use SM for KT, one needs the know-how or knowledge. Knowledge is one of the important factors driving innovation in the current business environment (Grant, 1996; Wong et al., 2020). In addition, changes in how people interact and communicate enable the usage of information technologies when accommodating the needs of a new generation entering the workforce (Nguyen, 2020).

The selection of the STT can guide individuals and organisations on the important aspects necessary to implement technology (SM) for knowledge acquisition, improve absorptive capacity, and dissemination or KT. STT stresses the importance of "understanding the impacting factors of people, structure, tasks, and technology" (Kietzmann et al., 2011:243). The honeycomb of SM functionality elucidates how organisations and individuals may select SM depending on their intended use or functions. Some of the functions of SM include groups, conversation, sharing, identity creation, relationships, and reputations. Kietzmann et al. (2011) provide guidance on some useful technology for specific purposes. As an example, LinkedIn is used primarily for identity creation, Facebook for relationship creation, YouTube for sharing content, while Foursquare is for revealing one's presence on the SM platform. Additional important aspects of technical sub-systems and social sub-systems were also explained in section 3.7. to clarify the importance of the STT in SM. Lin (2022:1) also identified the four types of SM support functions that include collaborative planning, namely: i) including information sharing, ii) social networking, iii) citizen participation, and iv) communication. STT aids in the prediction and understanding of the use of technology such as SM in KT. For instance, people can make sense on SM, send content, lead on the platform, and create relations to lubricate sensemaking and KT. For effective KT to take place, structure is important as one must understand if managers' tasks are to promote, regulate activities or change the mental models of staff member's tasks.

3.8 The use of Socio-Technical Theory in Knowledge Transfer

The STT is an insightful theory in KT of systems and organisational processes through the factors which affect organisations: people, tasks, and technology. Using the STT, Cartelli (2007) found that ICT can enable socialisation, externalisation, combination, and internalisation of knowledge. Cartelli (2007) adds that this could be on web sites and the SECI cycle ends with new tacit knowledge, new processes, IS and new software procedures are needed. KM is considered essential to sustaining a firm's competitive advantage and success (Bidgoli, 2021). KM strategies are used to identify how a firm implements knowledge activities and where knowledge resources are located in a firm. According to Sajeve (2010), the general socio-technical perspective on KM embraces efforts meant to increase the value of organisational knowledge. Figure 3.7 illustrates the SECI model.

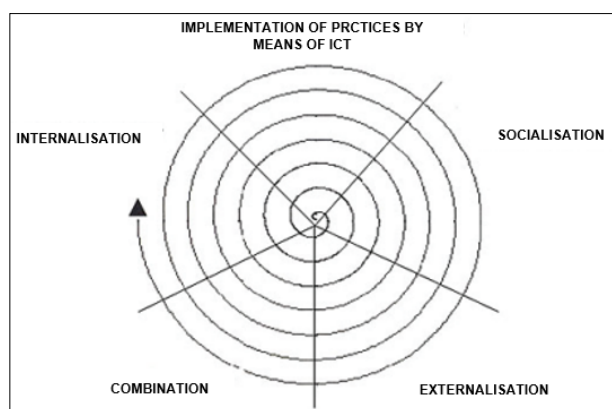


Figure 3.7: The hypothesis of knowledge construction and evolution in an organisation (Cartelli, 2007:7)

Information and KM is a “front-runner in the knowledge economy, an economy constructed on the knowledge people and organisations have and use to generate revenue” (Stamou, 2017:321). Information and KM focuses on the social, behavioural, psychological, and information-source elements of how people engage, process, and utilise information (Wong et al., 2020:364). Information and KM aims to improve the way people encounter information (Wong et al., 2020:364). It can be argued to improve the way people encounter technology, leadership must understand the impacting factors (as in STT) in the form of people's behaviour, mental models, and credibility. Other factors include the tasks' engagement, process and utilisation, and use of technology (in the form of hardware or software, for instance). This means without understanding the interaction among people, task and technology organisational sustainability and improvement of performance becomes problematic.

3.9 The integration of sensemaking theories and Socio-Technical Theory

Environmental (context) changes caused by inefficiencies, ineffectiveness of the economy, social, culture, and technological aspects are illustrated in Figure 3.8. Environmental or

individual situations change, chaos, past organisational or people behaviours (specific mental model and interpretations) prompt sensemaking, seeking for information objects, and knowledge. Other changes also originate from planned, unplanned events, ambiguity, and uncertainty (Weick, 1995; Miles, 2012; Sandberg & Tsoukas, 2020).

Kudesia (2017) argues that Organisational Sensemaking Theory emphasises that theoretical entities, such as people, identities, interpretations, and environments are not different from each other. STT emphasise that people, techniques, and tasks impact organisation. STT emphasise treating social and technical aspects as integrated and interdependent leads to understanding and improving the design and performance of organisational systems. This is part of sensemaking represented by verbing. Verbing includes using various ideas, cognition, attitudes, beliefs, values, feelings, emotions, intuitions, memories, stories, narratives, selects retrospection extracts, to empower people with relevant expertise. The schema, information product is used in verbing to aid enactment and selection of changes meaning by individuals and organisations.

Figure 3.8 illustrates the theoretical integration of Dervin's (2003) Sensemaking Theory, and Weick's (1995) Organisational Sensemaking Theory, including the Socio-Technical Theory of Trist (1981), used in this study.

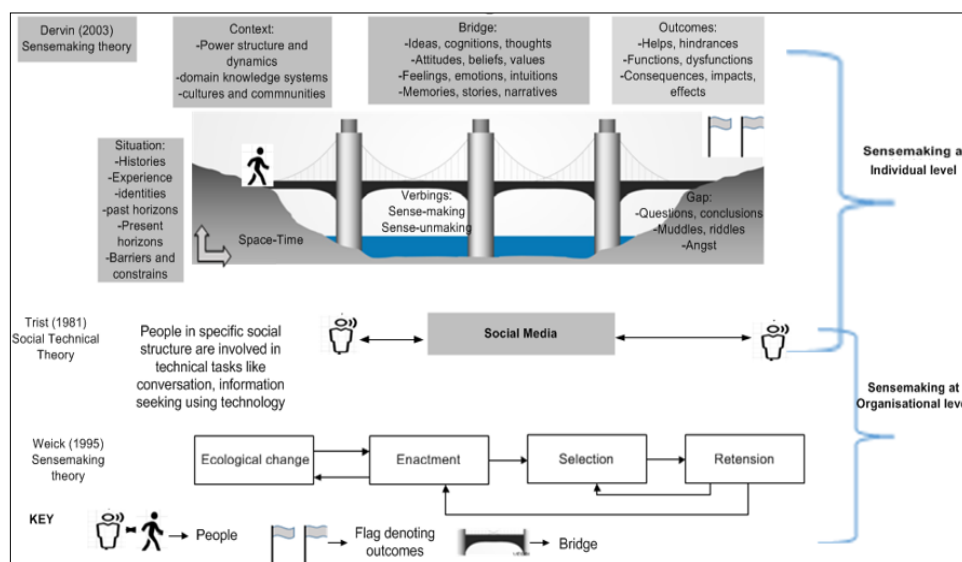


Figure 3.8: Theoretical integration of sensemaking and theories (adapted from Trist, 1981; Weick, 1995; Dervin, 2003)

Illustrated in Figure 3.8 is a theoretical integration of STT and sensemaking theories. The research adopted the theories to highlight how sensemaking happens at individual level through people, tasks, and technology such as SM. The research adopted the organisational sensemaking of Weick (1995) with the way how sensemaking and KT transpires at

organisational, when individuals cannot efficiently make sense of environmental changes and transfer knowledge. At individual level, the Dervin Sensemaking Theory integrated into the STT reveals factors that should be considered in sensemaking and KT using SM. When situation is too dynamic and complex, individual sensemaking fall short to organisational sensemaking using people, with technology in different tasks.

Environmental/ecological changes, changes situations, necessitating individual and organisational verbining or sensemaking and need for KT. Changes in the environment leads to enactment or adjustment of the environment, interpretation, and selection of meaning. Selection of meaning is retrospective-based uses schemas, information, past experiences, or history, feelings, stories and more. The results or outcomes are in form of insights, goods, services, efficiency, efficacy, gaps, angst, and conclusions. Other outputs include riddles, retention, restored sense, restored action, non-sense, no restored action, and mental. Further results include doubts, conclusions, confusion, puzzles, and stress.

To summarise, sensemaking is a difficult process in which unique circumstances and alterations in the organisational setting prompt individuals and groups to look for information and knowledge. For instance, when creating and undoing changes, people use their feelings and instincts. Individual and sensemaking theories highlight the factors which impact sensemaking of situations and environmental process (Weick, 1995; Dervin, 2003). Additionally, the theories aid the understanding of social and organisational sensemaking. The STT of Trist (1981) highlights what the leadership in organisation shoulder consider in processes (people, tasks, and socio-technical aspects).

3.10 Proposed theoretical framework for using Social Media in Knowledge Transfer

This section elaborates on the proposed theoretical conceptual framework for the use of SM in KT in an innovative business environment. The research is limited to the IT discipline (SM), Organisational Science (KT), and Information Science (KT). These disciplines were discussed in Chapter Two, section 2.3.

Organisations need to be innovative to manage resources, for example through KM, which is one aspect of Organisational Science. To be innovative, organisations need the enabling technology in the form of SM for KT (Information Science). First-hand and normative knowledge is the foundation of SM. Knowledge, people, and technology are seen as “inputs” into the system. Communication and KT using SM and the synthesis of interpretation is regarded as the “process” of the system. The outputs are effective KT, generalisations, and changes in performance. Other outputs included changes in behaviours, communication, innovation, adaptability, and sustainability. Additional outputs include meeting expectations, efficiency, a framework for the use of SM in KT and achieving competitive advantage (Figure 3.9). Figure

3.9 presents the proposed theoretical framework of technology-enabled KT either between or among individuals in organisations that emerged from three specific domains (Chapter Two, sections 2.3.2 to section 2.3.11), and the triangulation of these theories (Chapter 3, sections 3.2 to 3.5).

Social interaction leads to articulation and productive dialogue (one which leads to self-distinction from customary ways of practice and depends on unanimity for common objectives). The dialogue can happen in various ways of which one is SM. Self-distinction leads to new knowledge through conceptual change (conceptual combination, expansion, or new distinction, reframing in the form of classifications). The dialogue is initiated by organisational issues, which leads to dialogue, and dialogue results in new frames of mind with new distinctions entering the organisational background. The dialogue facilitates the creation of new insights and new knowledge. This is also reflected in the human cognitive dialogue in the theoretical framework (Figure 3.10). Mathiassen and Sorensen (2008) used socio-technical theory to understand how people and Information Technology interact to, in seeking information needs for a specific purpose in information environments.

Huvila (2022) also highlights that it is difficult to establish the use value of online information because the users are invisible to the service provider if no feedback mechanism is included in the service to identify the user, for example, when paying for the service. This implies that information needs, business-to-business or business-to-consumer transaction, different purposes like lack of knowledge and value prompt people to use SM. The roles of human actors, invisible or cognitive actor involved in data, information provision are the authors of information content, the information seeker as the invisible users or cognitive actors, the designers of database systems, the human indexers, and the selectors of information relevant (Lim et al., 2018:121). For this study, information and data were used to create knowledge that needed to be transferred using SM for organisational efficiency. Bidgoli (2019) regards data as the information that is presented in some format available to the invisible user as the only thing that exists. Information then is the outcome of the invisible users' sensemaking process with mental models as part of a cognition process to internalise the data based on previous knowledge and experiences.

For this study, knowledge was internalised in the transfer process. According to Robson and Robinson (2013:187) the information and sources need to have a utility value (be useful, relevant, available, accessible, and easy to use) and be credible (be trustworthy, have authority, be reliable and bias free). Information (knowledge for this study) providers include originators or authors of information, reviewers; publishers, colleagues, experts and opinion leaders, libraries and information centres, producers and suppliers of databases, websites and other

computerised, information sources (Robson & Robinson, 2013:185). The enabling technology (SM in this case) does not replace human-to human interactions because the cognitive invisible actor will interact with the SM platform and with the social actors of the SM at the same time refer to illustration by Hultgren and Goldkuhl (2013:106).

Section 2.3 in Chapter Two elaborated on the intersection of IS and Organisational Science, where knowledge creation is explained. Additionally, IS overlap into IT results in having human-computer interaction contributions and issues. Likewise, the overlap (Venn-diagramme in framework Figure 2.2) between IT and Organisational Science was discussed with the Human information interaction. Lastly, the interlink of the disciplines' contributions and inefficiencies was demonstrated in Chapter Two, section 2.3. The central section of the three overlapping domains represents the technology-enabled KT in organisations in Figure 2.2 and Figure 3.9. This happens through SM conversation, which is the cognitive actors' communication result in KT. Figure 3.9 represents the proposed theoretical conceptual framework of technology-enabled KT either between or among individuals in organisations.

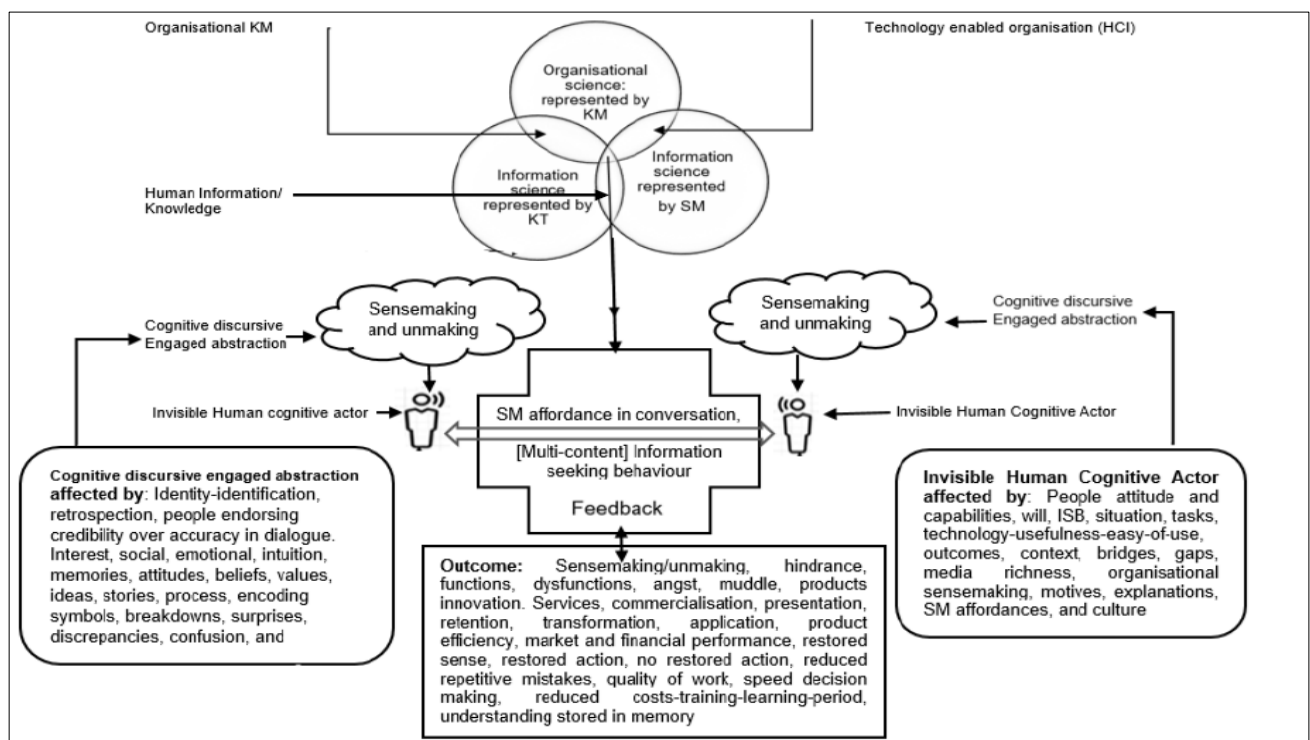


Figure 3.9: Proposed theoretical conceptual framework for the use of SM in KT in an organisation

In Figure 3.9, the Venn diagramme shows the multi-domains: IS, Organisational Science, and IT, which were discussed in Chapter Two, sections 2.3 to 2.8. Changes in the environment, inefficiencies in three domains motivate information, knowledge seeking and conversation or dialogue by human cognitive actors. The central section of the Venn diagramme represents a point where there is information seeking and retrieval enabled by technology, shown by the

arrow pointing downwards. In relation to seeking information and knowledge, information retrieval, research needs to be extended to capture more context (Järvelin & Ingwersen, 2004).

Information seekers need help to solve the problem of how to retrieve information efficiently and effectively. Furthermore, information-seeking research should be expanded to include both the task context and the information systems context (Järvelin & Ingwersen, 2004). For example, SM search is not a single coherent platform but looks different for other cognitive actors, tasks, and domains. Thus, much research is needed that explores information seeking in various task and actor contexts when transferring knowledge using SM.

The central part of the Venn diagramme reflects common contributions and issues in the three domains. Figure 3.9 shows a proposed framework for the use of SM in KT in organisation. A proposed framework for the use of SM in KT in organisation is related to relevant information or content seeking behaviour for feedback by human cognitive actors. Information-seeking behaviour refers to seeking, using, and communicating information (Orlu et al., 2016). Ingwersen and Järvelin (2005:259) define information-seeking behaviour as “generating, acquiring, managing, using, and communicating information as well as information seeking”. Orlu et al. (2016) found that researchers study information seeking without regarding to any contexts. Libraries and communication are also vital in the use of SM in KT in an innovative business environment. When using SM in KT, much of this information seeking, use, and communication takes place in the context of conversation or dialogue, frames, clues, and practice, which have played a significant role in influencing information behaviour in Information Science, Organisational Science, and IT domains (Chapter Two, section 2.3).

This implies that the processes of sensemaking and unmaking may differ per human cognitive actor. For example, policies, rules, regulations may reflect valuable on SM use principles, ethics, and standards when considering the information activities associated with SM use in KT, the differences in context need to be considered.

3.11 Summary

Chapter Three explained Dervin' (2003) Sensemaking Theory, Weick's (1995) Organisation Sensemaking Theory, and the Socio-Technical Theory (STT) of Trist (1981). The chapter concluded with a proposed conceptual framework for the use of SM in KT. The proposed conceptual framework for the use of SM in KT highlights that changes in the environment and individual situation results in issues like angst, uncertainties, inefficiency, ineffectiveness, and issues. Changes in the environment, Organisational Science, IS, and ID domains or individual situation prompt people to seek for information, solve problem, various sensemaking types. Sensemaking is a cognitive process which begins with the individual language. Sensemaking aim to find information objects; create representations and insights and resultantly knowledge.

Sensemaking is characterised by the fact that it is social, identity, retrospect, cues, ongoing, plausibility and enactment. On identity-sensemaking develops from perspective, some frame of reference. In relation to STT, to improve the way people interact with technology, leadership must understand the socio-technical factors impacting organisations. Some of the factors include people, relations, tasks, and technology. The next chapter details the research methodology of the study.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 Introduction

This chapter details the methodology that was used for the study. The research methodology, philosophy comprising the ontology and epistemology, research approach, methodological choice, research strategies, data collection, data analysis, and time horizon are explained. The research evaluation, public trust, citizen science, and summary are also presented. Figure 4.1 shows the structure of Chapter Four.

4.1	Introduction
4.2	Research philosophies
4.3	Rresearch approach
4.4	Methodological choice
4.5	Research strategies
4.6	Data collection
4.7	Data analysis
4.8	Time horizon
4.9	Research evaluation
4.10	Ethics, public trust, and citizen science
4.11	Summary

Figure 4.1: Layout of Chapter Four

The research design of this study draws on a delineation of the “onion approach” of Saunders et al. (2019:130). Burrell and Morgan (2016, cited in Saunders et al., 2019) investigate research philosophies through research paradigms that point to the ideological orientation of the researcher. This research explores the use of SM in KT in an innovative business environment.

Scientific research should indicate the research paradigm approach to theory development, methodological choice, research strategy, time horizon, techniques, and procedures for data collection and analysis. This chapter is presented as follows: i) research philosophy, ii) research approach, iii) methodological approach, iv) methodological choices, v) research strategies, vi) data collection, vii) data analysis, viii) time horizon, ix) research evaluation, x) ethics, and xii) summary.

4.2 Research philosophies

4.2.1 Introduction

Selecting one of various research paradigms before commencing the complex scientific research process is a difficult task, but it is needed for good research. Research paradigms signify the beliefs of researchers, especially in qualitative research. Examples of paradigms are: i) post-positivism, ii) constructivism, iii) advocacy/participatory, and iv) pragmatism.

Research philosophy comprises ontology, epistemology, and axiology. Mack (2010:5) regards one's view of reality and being as ontology, while epistemology focuses on the view of how one acquires knowledge. Nayak and Singh (2015) argue for the selection of a research methodology by considering the paradigm, principles about the nature of truth and humankind (ontology), the philosophy of knowledge acquisition, which enlightens the research (epistemology), and how that knowledge is developed (methodology).

4.2.2 Research paradigm

4.2.2.1 Introduction

The term *paradigm* “refers to an overall theoretical research framework” (Mack, 2010:5), and was initially coined by Thomas Kuhn in his 1972 book titled, “*The structure of scientific revolutions*”. “Paradigms are revealed as philosophical frameworks that explain assumptions about ontology or reality, epistemology, axiology, methodology, quality criteria, and participants’ roles in research” (Allemang et al., 2022:40).

In the book titled, “*Sociological paradigms and organisational analysis*”, Burrell and Morgan (1979) combine the objectivist–subjectivist continuum. Subjectivists view social reality as constructed from the perceptions and subsequent actions of social actors (people), while objectivism considers social entities as physical objects of the natural world that exist autonomously of how people think of them, label them, or even are aware of them. The Burrell and Morgan (1979) continuum includes a regulation stance (which seeks to regulate societies and human behaviour), radical change (where research aims to mainly question the way things are done in organisations), a 2×2 matrix of four distinct and rival ‘paradigms’ of organisational analysis.

The matrix’s four paradigms represent four different ways of viewing the social and organisational world as shown in Figure 4.2.

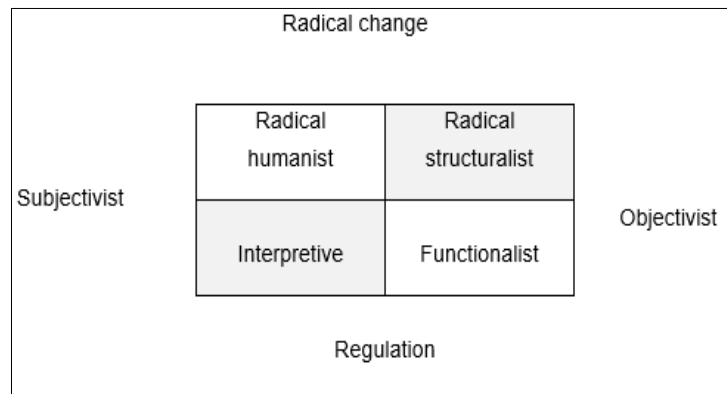


Figure 4.2: The 2×2 matrix of four distinct rival ‘paradigms’ of organisational analysis (Saunders et al., 2019:140)

The functionalist paradigm is concerned with balanced explanations and developing sets of recommendations within organisational structures at a particular point in time (Saunders et al., 2019). The structuralist paradigm, which mixes objectivist and radical change research with the aim of achieving important change, is based on an analysis of organisational phenomena such as a structural power relationship of participants and forms of conflict. The radical humanist paradigm, confined to the subjectivist and radical change dimensions, assumes a critical standpoint on organisational life, such as political nature and the consequences that one’s words and deeds have upon others (Kelemen & Rumens, 2012). This study assumed the pragmatic paradigm (radical humanist and structuralist). Pragmatism is described by Creswell (2009:10) as “the philosophical underpinnings of mixed methods research”. The philosophies are based on three pillars, namely: i) ontology, ii) epistemology, and iii) axiology, as described in the following sections.

4.2.2.2 Ontology

Ontology derives from two Greek words: *onto* (meaning, “to be”) and *logia* (meaning, “to know”) (meaning “science, study, or theory”) (Younus & Zaidan, 2022:65). Livari et al. (1998:172) regard ontology as a “structure and properties of what is assumed to exist i.e., building blocks that make up the phenomena or objects to be investigated....data, information, information systems, human beings, and society”. Independently, two philosophers, Rudolf Göckel (Goclenius) in his *Lexicon philosophical* and Jacob Lorhard (Lorhardus), coined the term *ontology* (or *ontologia*) in 1613 (Creswell, 2003). Ontology, therefore, is an intricate philosophy, structures of objects, properties, events, processes, and associations in every area of reality. Creswell (2014:54) distinguishes ontology, epistemology, and methodology by regarding ontology as the “nature of reality”, epistemology as “how we know what we know”, and methodology as “the process of research”.

i) Objectivism

Nayak and Singh (2015) reflect that objectivist ontology is acquiring knowledge based on the belief that one learns passively by receiving and assimilating knowledge from others. Objectivism believes in an independent reality for the researcher (Younus & Zaidan, 2022).

ii) Subjectivism

Subjectivism uses social actors' ideas/views, imaginations, beliefs, and interactions to result in information related to social life or social phenomena, insight, revelation, knowledge, and qualitative research (Bahari, 2010). The subjective ontology mainly uses an inductive approach to generate a theory, qualitative strategies, and interpretive epistemology (Allemang et al., 2022). Subjectivism was chosen for this study, because the research was not aimed at theory testing and developing universal statements, which aligns with objectivism. To add, the ontological stance was not to provide a "general" picture of an institutional situation but rather a specific picture of the use of SM in KT.

This study merges both objective and subjective ontology (quant + QUAL), because the research adopted mixed methods and the pragmatic paradigm, which both emphasise the same epistemological stance.

4.2.2.3 Epistemology

The term *epistemology* stems from the Greek word *episteme*, meaning knowledge (Nayak & Singh, 2015:11). Epistemology embraces the metaphysical (belief in the sole authority of God and religion) and the view that knowledge is Godliness (proximity to God's mind). Epistemology supports i) interpretivism, ii) positivism, iii) critical realism, iv) design science, v) postmodernism, and vi) pragmatism, to name a few.

i) Interpretivism

Interpretivism is based on several components, most notably i) hermeneutics, ii) phenomenology and iii) symbolic interactionism (Crotty, 1998:67). According to Mack (2010:6), interpretivist proponents include Wilhelm Dilthey (1833-1911) and Max Weber (1864-1920) as proponents. Different strands of interpretivism place slightly different emphasis on how to interpret the world in practice. For example, phenomenologists who study the way of life focus on participants' lived experiences; that is, the participants' memories and interpretations of those experiences. Hermeneutics focuses on the study of cultural artefacts such as texts, symbols, stories, and images. Symbolic interactionism is "all about those basic social interactions whereby we enter into the perceptions, attitudes, and value of a community, becoming persons in the process" (Crotty, 1998:8).

Interpretive epistemology seeks to create new, richer understandings and interpretations of social worlds and contexts (Oates & Kuechler, 2004). The paradigm accepts the idea that knowledge may possibly be obtained by studying behaviour from the 'inside', that is, by means of the thoughts, beliefs, intentions, and interpretations of people. Interpretivism is one of the main research paradigms choices in social sciences research. The interpretive research paradigm typically employs qualitative methods such as participant observation, interviews, case studies, and action research.

ii) Positivism

Positivism in social science refers to "objective, true, and scientific knowledge that could (allegedly) be gained by studying social behaviour from the 'outside'—i.e., 'outside' of the thoughts and beliefs of people" (Fleetwood, 2014:184). Positivist researchers' epistemological belief is that physical and social reality exist independent of the researcher and that the object of study possesses characteristics that can be measured objectively (Oates, 2006; Oates & Kuechler, 2004).

The main thinkers who advocate and influence the present positivist paradigm include: i) Aristotle's philosophy of deductive reasoning, ii) Descartes's philosophy of realism, iii) Galileo, who advocated for the scientific method, iv) Auguste Comte's positivism, v) Vienna Circle's logical positivism, and vi) Karl Popper's post-positivism (Mack, 2010:6).

This study did not assume an objective or aim to test quantitatively and measure events to make law-like generalisations.

iii) Critical realism

Related to interpretive research is the critical realism research paradigm, stating that what is observed in society is socially constructed. Furthermore, reality is historically created, produced, and reproduced by people, and focuses on oppositions, conflicts, and contradictions in contemporary society. The critical research paradigm supports the reality construction of political, cultural, and economic power relations among social actors and emancipating people from injustices (Oates, 2006). According to Mack (2010), the main proponents include Max Horkheimer (1895-1973), Herbert Marcuse 1898–1979, Theodore Adorno 1903-1969 and Jurgen Habermas (1929).

Although critical researchers often apply qualitative research approaches as used in this study, there were reasons why the paradigm was not preferred. One reason is that this study did not posit reality is historically created and did not focus on oppositions or conflicts. This study did not concentrate on highlighting contradictions to the status quo in society, nor did it pursue the removal of causes of estrangement and domination.

iv) Design science paradigm

Design science is a complex research paradigm that seeks changes to the world through the development of new artefacts. Design science research in the IS domain is well-situated as an identical, complimentary companion to the more predominant behavioural science research paradigm. To add, the paradigm is important because of the ability to improve organisational efficiency, effectiveness, solving real-world business problems related to people, and organisational and technical systems (Hevner & Chatterjee, 2010).

According to Bayazit (2004), design research is concerned with the expression of man-made things, how man-made things perform their jobs, and/or work. Design research pursues changes to the state of the world through the introduction of man-made artefacts (Oates & Kuechler, 2004). Hevner et al. (2004:76) describe design research as “essentially being a problem-solving paradigm, with the aim of creating innovations”. Ontologically, design researchers assume multiple, contextually situated world states. The ontological viewpoints shift in design research through the various circumscription cycles. The epistemological assumption of the design researcher is rooted in the concept of knowledge through making, experiments, expertise, products, and processes (Oates & Kuechler, 2004).

This research did not ontologically and epistemologically assume the design science paradigm or adapt the objective stance. Additionally, this study did not assume a developmental methodological position in a complex system.

v) Postmodernism

Many factors characterise the complex postmodernist paradigm. From the 1980s onwards, postmodernism was dominant and commonly referred to by terms such as *post-structuralism*, *social constructionism*, *relativism*, *continental philosophy*, *pragmatism*, or the *linguistic*, *cultural*, or *relativistic* turn (Fleetwood, 2014:185), because these terms have overlapping origins. Postmodernists go even further than interpretivism in their critique of positivism and objectivism, attributing even more importance to the role of language. Postmodernists reject the modern positivist and realist ontology of things, and instead emphasise the disordered predominance of unrest movement, uncertainty, and change. Postmodernists believe that any sense of order is provisional and without foundation and can only be brought about through language categories and classifications (Bell et al., 2019).

This study did not emphasise or propound on the disordered predominance of unrest movement, uncertainty, change, the important role of language categories, and ontological and epistemological classifications. Furthermore, this study did not underscore questioning recognised ways of thinking or providing viewpoints to different disregarded views in reality or

in terms of how knowledge is acquired. For these reasons, a postmodernist stance was not followed.

vi) Pragmatism

Pragmatism considers the idea of combining the inductive and deductive approach when necessary to satisfactorily produce desired results (Saunders et al., 2019). Pragmatism emphasises that perceptions are only relevant where they sustain accomplishment (Kelemen & Rumens, 2012). A pragmatic approach enables one to choose appropriate research methods such as qualitative and/or quantitative research (Kaushik. & Walsh, 2019:12). Pragmatism was coined in the late 19th and early 20th century in the USA through the work of philosophers Charles Pierce, William James, and John Dewey. Pragmatism attempts to merge both objectivism and subjectivism, facts and values, accurate and rigorous knowledge, and different contextualised experiences using theories, concepts, ideas, hypotheses, and research findings. The merge happens in terms of the roles of objectivism and subjectivism as instruments of thought, action, and practical consequences in specific contexts. More so, pragmatists are more interested in practical outcomes than abstract distinctions, research design, and strategy as the research problem to be addressed (Kelemen & Rumens, 2012).

The paradigm, chosen as the epistemology for this study, is sometimes implicit and sometimes explicit, rooted in an ontology of idealism. Idealism in sociology circles upholds that the (social and/or natural) world cannot be without someone observing it, knowing about it (tacitly or non-tacitly), or socially constructing it. In relation to this study's aim of exploring the use of SM in KT in an IBE, the study used pragmatism as paradigm because the research considered the use of both inductive and deductive approaches.

Table 4.1 shows the ontology, epistemology, axiology, and data collection techniques applicable to the pragmatic paradigm (Al-Ababneh, 2020:82).

Table 4.1: Pragmatic paradigm (Saunders et al., 2019:119)

Pragmatism	
Ontology (nature of reality or being)	Complex, rich, external 'reality' is the practical consequences of ideas, flux of processes, expert experiences and practices.
Epistemology (what constitutes acceptable knowledge)	Practical meaning of knowledge in specific contexts. 'True' theories and knowledge enable successful action. Focus on problems, practices, and relevance. Problem solving and informed future practice as a contribution.
Axiology (role of values)	Value-driven research initiated and sustained by researcher's doubts and beliefs. Researcher is reflective.
Typical methods	The following research problem and research question range of methods: mixed, multiple, qualitative, quantitative, action research. Emphasis on practical solutions and outcome.

vii) Justification for selecting pragmatism

This study is justified to be positioned within a pragmatic paradigm, as pragmatism allows flexibility in answering research questions without being concerned about the philosophical assumptions. Pragmatism also offers an epistemological justification (i.e., via pragmatic epistemic values or standards) and logic, thus, it uses the combination of methods and ideas that help the researcher to best frame, address, and provide tentative answers to the research questions for mixing the approaches (Johnson et al., 2007:125). The term *pragmatism* can also be described as doing what works best. As a result, Creswell (2009:11) states that “pragmatism opens the door to multiple methods, different worldviews and different assumptions, as well as different forms of data collection and analysis”. In this study, the main focus was the research problem and how best to solve this problem. When one paradigm cannot sufficiently attain the desired results, the strengths of two paradigms are combined. Romm and Ngulube (2015:167) explain that “bringing together both quantitative and qualitative research so that the strengths of both approaches are combined leads to a better understanding of the research problem than any alone”.

viii) Criticism of pragmatism

Being in the middle position was one main criticism against pragmatism, where the essential questions on what knowledge is in a reality perspective, are avoided. However, Maxcy (2003) contends that human experience is not foundational and cannot be categorised.

Another criticism is the concept of incremental change (where immediate solutions to societal issues are needed) (Johnson & Onwuegbuzie, 2004). Change through pragmatism is prolonged and not optimal for the natural sciences, e.g., the health sector, where efficiency and precision are important. Crotty (1998:63) comments pragmatism as “peaceable and certainly growth-full world because the paradigm has a better chance of bringing about the desired outcomes as it is not characterised by power struggles and instant gratification like in critical theory”.

Pragmatism is criticised for perceiving truth as what “*works*”, which might be regarded as a blue print of uncertainty. The researcher must explain what “*works*”, which can be vague when it comes to implementation (Johnson & Onwuegbuzie, 2004). The weakness on what works or is “workable” is presumed as “radical relativism in which anything goes” (Maxcy, 2003:62). Maxcy (2003) further criticises pragmatists for a lack of principles or standards, where knowledge can be situated between chaos and order, resulting in truth keeping or changing. This means to effectively use pragmatism, one must understand criticism such as occupying the middle position, issues where immediate solutions is needed, and the problem of workability.

ix) Other approaches for acquiring knowledge

Other approaches for acquiring knowledge include: a) intuition, b) authority, c) rationalism, d) empiricism, and e) science (Nayak & Singh, 2015:10):

- a) An intuitive system is also regarded as “a reflective system, which is ‘untaught’ and ‘experimental’, which leads to an automated way of thinking” (Marques et al., 2022:582).
- b) “An epistemic authority exerts an influential effect on individuals’ knowledge formation since they view knowledge received from epistemic authorities as valid” (Raviv et al., 1993:119).
- c) Rationalism includes “the source of some or all of our prior knowledge what is variously described as rational intuition” (Cassam, 2000:44) and is the most intentional and analytical part of the cognitive process (Marques et al., 2022:582).
- d) Empiricism is the acquisition of knowledge through experience and is used in science where one acquires knowledge through observation of a given phenomenon (Blaikie & Priest, 2010:94).
- e) Constructivism epistemologically emphasises the ability of the individual to construct meaning (Mack, 2010:7).

These approaches were not considered for this study and are therefore not further discussed.

4.2.2.4 Axiology

Axiology deals with values in carrying out research (Saunders et al., 2019). Values reflect how researchers “position themselves” (Creswell, 2007:18) in the research process. Values are introduced in studies by researchers and made explicit in qualitative research, resulting in axiological assumptions. The question is how researchers implement and admit the value-laden nature of research. As an example, according to positivists, objects have been in existence before researchers studied them and will continue to exist after completion of these studies. However, the truth can only be short-term (Crotty, 1998). “Truth” and “knowledge” are decided by dominant ideologies in postmodernism (Saunders et al., 2019). On the other hand, empiricists are more likely to adopt an idealist ontology, since they believe that researchers cannot be separated from the objects being studied. Research is value-laden, and the researcher’s influence cannot be ruled out.

Researchers are part of what is researched; thus, researchers are subjective, and their interpretations are key to contributing to research. This is because the researcher’s reflexive values help to explain the credibility, confirmability, transferability, and dependability of interpretive research. The researcher’s role is crucial because it influences the paradigm and methodology adopted. In the context of the current study, the researcher was actively involved, together with the experts, in generating actions for solving KT using technology (SM) problems.

Still, the researcher ensured that bias was avoided without being disconnected from the research.

4.3 Research approach

4.3.1 Introduction

Research testing or building a theory often requires different reasoning approaches. Research approaches are “different ways to examine and explain a study and its findings based on using numbers as a measure, a descriptive style, or a mixture of both” (Taherdoost, 2022:53). The selection of a research approach depends on the nature of the research problem to be addressed. There are three major types of research approaches (Creswell, 2014; Taherdoost, 2022), namely: i) inductive, ii) deductive and iii) abductive research. This current research adopted an abductive approach, thereby aligning to the mixed methods choice made.

4.3.2 Inductive approach

This research adopted an inductive/theory-building research approach, which maintains that true successive statements can lead to a likely precise conclusion or theory (Saunders et al., 2019). The inductive knowledge acquisition approach concentrates on patterns and associations resulting from observations of the world (from specific to general), while the deductive approach focus on proposals or theories reached scientifically (from general to specific) (Adebesin et al., 2011). Sensemaking studies have generally concentrated on defining the results of data collection in inductive ways to enrich and provide direction for future work (Ganon-Shilon & Schechter, 2017). More so, the sensemaking theory is built from observing practical reality to infer theoretical concepts and patterns from observed data (Harasim, 2017).

4.3.3 Deductive approach

Deductive reasoning is a theory-testing process that commences with the research question, traditional theory, or generalisation, and seeks to determine if the theory applies to specific instances (Hyde, 2000; Saunders et al., 2019). The deductive approach was not adopted for this research.

4.3.4 Abductive approach

This study adopted the abductive research approach because of various reasons. Timmermans and Tavory (2012) regard the abductive approach as perceiving a research phenomenon in relation to other observations. The observations of specific instances could be in the sense that there is a cause and effect hidden from view, that the phenomenon is seen as similar to other phenomena already experienced and explained in other situations, or in the sense of creating novel general descriptions. Abduction is the most abstract of the three approached because it seeks a situational fit between observed facts and rules. Adductive analysis is a qualitative data analysis approach aimed at generating creative and novel theoretical insights through a dialect

of cultivated theoretical sensitivity and methodological heuristics. Abduction is an integrative approach that reduces the limitations of the deductive and inductive approaches (Timmermans & Tavory, 2012).

Figure 4.3 illustrates the differences between the deductive and inductive research approach, where inductive reasoning follows pattern observation, hypothesis testing, and theory building. Deductive reasoning, in contrast, uses a theory to analyse data observed to build a theory.

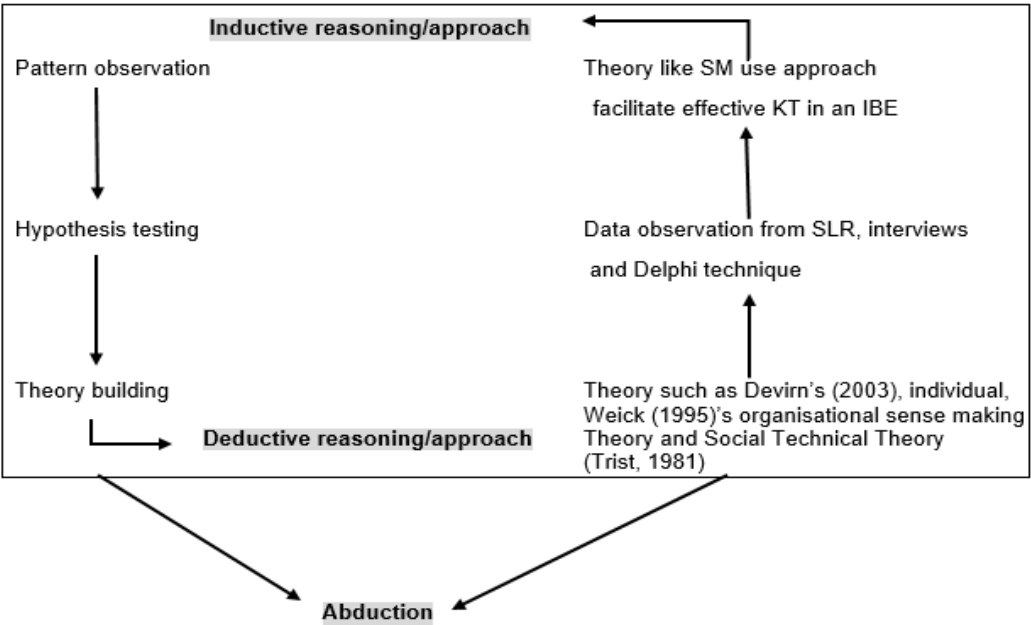


Figure 4.3: The deductive, inductive, and abductive approaches

Table 4.2 differentiates between inductive, deductive, and abductive research (Saunders et al. (2019:153).

Table 4.2: Deduction, induction and abduction (Saunders et al., 2019:153)

	Deduction	Induction	Abduction
Logic	In a deductive inference, when the premises are true, the conclusion must also be true.	In an inductive inference, known premises are used to generate untested conclusions.	In an abductive inference, known premises are used to generate test- able conclusions.
Generalisability	Generalising from the general to the specific.	Generalising from the specific to the general.	Generalising from the interactions between the specific and the general.
Use of data	Data collection is used to evaluate propositions or hypotheses related to an existing theory.	Data collection is used to explore a phenomenon, identify themes and patterns, and create a conceptual framework.	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework, and test this through subsequent data collection, and so forth.
Theory	Theory falsification or verification.	Theory generation and building.	Theory generation or modification; incorporating existing theory where appropriate to build new theory or modify existing theory.

4.4 Methodological choice

This section presents a discussion on the research method that was chosen. The term *research method* was adopted as it provides a clear indication of the researcher's preferences in terms of data collection and analysis techniques. Multiple methods were put forward by Tashakkori and Teddlie (2003) as a third methodological perspective in response to two key challenges of the qualitative and quantitative movements.

Several definitions of mixed methods can be found in the research body of knowledge. Greene (2006) defines the *mixed methods* concept as follows: "Mixed method inquiry is an approach to investigating the social world that ideally involves more than one methodological tradition and thus more than one way of knowing". A more complete and exhaustive definition is provided by Creswell and Clark (2011): "Mixed methods research is a research design (or methodology) in which the researcher collects, analyses, and mixes (integrates or connects) both quantitative and qualitative data in a single study or a multiphase program of inquiry". This latter definition was adopted in the context of this study.

Onwuegbuzie and Leech (2007:289) identify five instance objectives that can be used in linking the research choice. These are: i) exploration, ii) description, iii) explanation, iv) prediction, and v) influence. This research seeks to influence. The adoption of mixed methods has been growing in the scientific community. McKim (2017) emphasises that mixed methods research helps the researcher to understand the phenomena under study more deeply and accurately. Bamberger (2012) complements this vision by advocating that mixed methods research promote greater understanding of stakeholder perspectives on the nature of the intervention. Tariq and Woodman (2013:1) synthesize five reasons for its adoption: i) complementarily, ii) development, iii) initiation, iv) expansion, and v) triangulation.

In all cases the audience need to be considered: journal editors and readers, graduate committees, conference attendees, and colleagues in the field. The researcher bases the inquiry on the assumption that collecting diverse types of data provides a more complete understanding of the research problem than only quantitative or qualitative data. The study commences with a wide-ranging survey to generalise results to a population and then, in the second phase, the focus is on qualitative, open-ended interviews to collect detailed views from participants to help explain the initial quantitative survey (Creswell, 2014:48).

Schoonenboom and Johnson (2017) differentiate between sequential and concurrent design. Sequential design organises the process into two stages: in the initial stage, either the qualitative or quantitative data are collected; then, in the second stage, the other data type is collected. However, in concurrent design, both types of data are collected during the same stage.

Mixed methods notation enables researchers to easily communicate the phases. According to Creswell (2014:279), Morse (1991) originally established the notation, and it has been used by researchers such as Tashakkori and Teddlie (2003) and Creswell and Clark (2007), who propose the following:

- i) QUAL and QUAN (upper case) indicates an emphasis or priority on the quantitative or qualitative data, analysis, and interpretation of the study. In a mixed methods study, the qualitative and quantitative data may be equally emphasised, or one may be more emphasised than the other. Capitalisation indicates that an approach or method is emphasised. Lowercase indicates lesser priority or emphasis on the method. For this study, (QUAL) indicates an emphasis on the qualitative data.
- ii) qual and quan (lower case) means lesser emphasis on the qualitative and quantitative methods, respectively. For this study, the qualitative (qual) method was emphasised less.
- iii) QUAN + QUAL indicates QUANTITATIVE and QUALITATIVE convergence of methods with equal emphasis.

Figure 4.4 illustrates the method followed in this study to implement the mixed methods simple design.

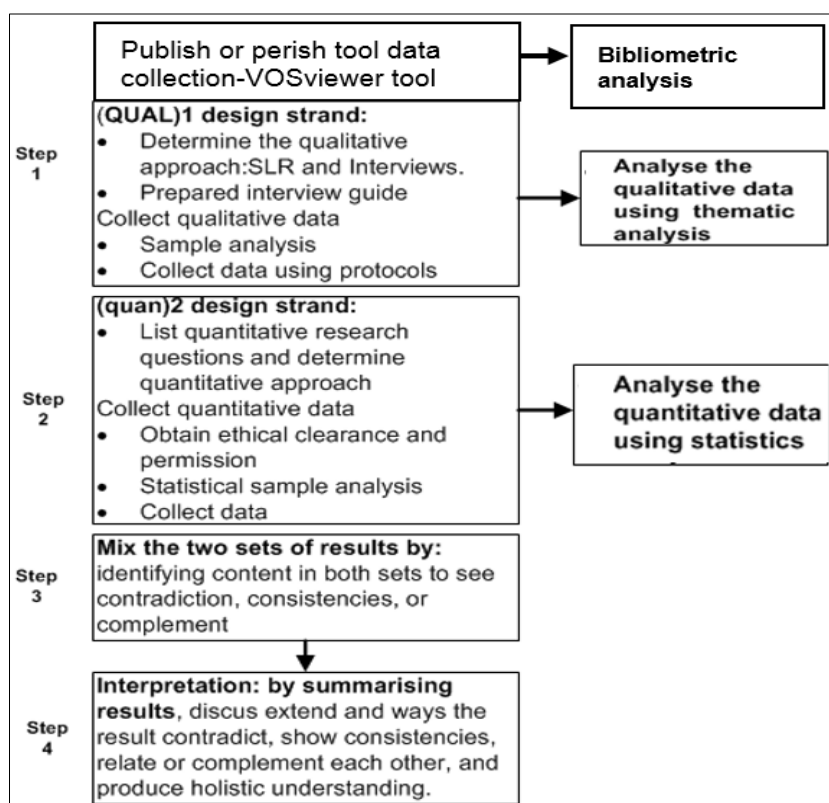


Figure 4.4: Procedure to implementing the mixed methods simple design

Two design strands were brought together after both datasets had been analysed separately. The findings from each component of the study were listed and considered whether findings

were in agreement (converging), inconsistent, or contradicting each other (O’Cathain et al., 2010). There are four main types of integration of quantitative and qualitative data in a mixed methods study, namely (Creswell & Zhang, 2009; Fetters et al., 2013): i) merging the data, ii) embedding the data, iii) building the data, and iv) explaining the data. In merging the data, the “distinctiveness of each database dissolves”, while embedding means that an investigator nests a supportive database within a main database to augment the main database. Building the data means that databases can be affected concurrently and independently at the same time in the study or implemented sequentially with one form of data building on the other. Explaining the data “involves an explanatory sequential design where the investigator first gathers and analyses quantitative data, and then uses a qualitative follow-up data collection and analysis to help explain the quantitative results” (Creswell & Zhang, 2009:613).

This study used the approach of “merging the data” (QUAL & qual) (Figure 4.4) for the data integration and interpretation process to compare the findings on the topic from the employees’ level to the directors’ level. This type of data integration allows each data set to occur as a single-method study, with the goal of integrating the results after both are completed (Creswell & Clark, 2007). At the stage of mixing, conclusions or inferences were drawn to reflect what was learned by combining, comparing, and synthesizing the study findings (Creswell, 2015). To determine how well the qualitative and quantitative data were integrated, data analysis processes and mixing were conducted.

4.5 Research strategies

4.5.1 Introduction

Research strategies are “predetermined instruments for data collection” (Bahari, 2010:18). This research used a multi-method qualitative research strategy to collect qualitative and quantitative data through: i) SLR, ii) expert interviews, and iii) the Delphi technique. The employment of mixed methods data collection was determined by the research problem, research questions including the ‘what’ and ‘how’ questions, and the pragmatic epistemology.

The next section elaborates on the following: i) the systematic literature review (SLR), ii) expert interviews, iii) the Delphi technique, iv) explanation of the process, v) sampling, vi) the unit of analysis, and vii) the unit of observation for each research method.

4.5.2 Systematic Literature Review

The SLR is reflected as a complex, rigorous research strategy that should be systematically applied to obtain valuable, credible, valid, and reliable research outputs. The SLR process is often misunderstood (Levy & Ellis, 2006; Okoli, 2015; Winberg & Winberg, 2021). SLR is a high-level overview of the primary research of a focused question that identifies, selects, synthesises, and appraises all high-quality research evidence relevant to the question (Winberg & Winberg,

2021). There are many SLR protocols proposed in literature, including that of Levy and Ellis (2006), Booker (2010), Creswell (2014), Borrego et al. (2015), Okoli (2015) and Page et al. (2021). For this research, SLR is defined as a complex, rigorous research strategy that necessitates the systematic exploration, retrieval, blending, and evaluation of academic literature to realise new insights based on a research question. SLR was used as a strategy to analyse literature on research developments regarding SM and KT, to answers the research questions, and to develop themes from the literature.

Firstly, to analyse research developments regarding SM and KT, paper for reviews were selected from the initial 1000 English papers published from 2000 to 2022. The data were abstracted using *Publish or Perish* software (Moral-Muñoz et al., 2020). *VOSviewer* analysed data related to SM and KT. Secondly, peer-reviewed journals from databases such as Scopus, Mendeley, and connectedpapers.com were used to answer the research questions. SLR is completed as part of the data analysis and results in Chapter Five, sections 5.1 and 5.2.

This study adapted Okoli (2015) and Page et al.'s (2021) processes and the PRISMA 2020 flow diagramme template for SLR. In the adapted process, the first phase included planning and identifying the purpose, databases usable, and how to be explicit to audiences. Table 4.3 illustrates the included drafted protocols.

Table 4.3: Included drafted protocols

Purpose	Databases used	How to be explicit
- To understand how SM facilitates KT in an IBE. - To understand research questions asking the impact and challenges related to the use of SM in KT in an IBE.	The following available open online professional journal databases were searched: EBSCOhost, ProQuest, Emerald, Scopus, Springer, Sabinet, as well as handpicks. Handpicks are papers received from other researchers in the ICT, KM area of specialisation, previous studies in line with KT, SM, and IBE research.	Articles that were considered are those which included the keywords “innovation”, “social media”, “innovative business environment” “knowledge transfer”, and others.
- To identify and internalise what the academics in the field have but think innovatively. - To identify the association between or among topics and recognise the central problems in various domains.	Top-ranked journal include MIS Quarterly, Journal of MIS, Information Systems Research, Communications of Management Science.	

The second phase comprised applying practical screening, where research studies were considered or eliminated without further examination, where records screened were stated, and where explaining and justifying the comprehensiveness of the search was excluded. A range of reviews was selected from English papers published from 2000 to 2022 because before 2000, very little relevant articles were published on digital use or the SM-KT link. The scope of this

study has been delineated to a limited period because SM research is still showing an upward growth. The peer-reviewed journals and other multi-content were recognised for their proximity to multi-domains-IS, Organisational Science, and IT. Focus was on individual and organisational perspectives. The type of content was empirical and conceptual, including relevant SM (or synonym) and innovation articles. Table 4.4 presents the inclusion and exclusion criteria used in this study.

Table 4.4: Inclusion and exclusion criteria (adapted from Page et al., 2021)

Phases	Numbers
Planning and record identification	1050
Screening	In total, 212 full articles with abstracts were executed; 886 were excluded. In terms of illegality, 103 articles were irrelevant, while 90 were fully relevant with title and abstract.
Execution or review writing for the included articles	In total, 90 articles were reviewed for writing up.

The third phase comprised the extraction and writing up of data, which included clarifying the inclusion criteria for all papers, depending on the research methodologies employed.

4.5.3 Expert interviews

4.5.3.1 Introduction

Expert interviews were another research strategy used. There are many advantages and disadvantages related to expert interviews chosen as a data collection strategy. Advantages include that the researcher can achieve a 100% response rate from the questions and decide on follow-up questions (considering whether they are appropriate) (Wilkinson & Birmingham, 2003). The disadvantages of expert interviews are that considerable time and cost are required in interview techniques and in training the interviewers (Wilkinson & Birmingham, 2003). Interpretations of interview data may differ between researchers unless rigorously controlled and can easily meander from the main subject. Expert interviews can be used in conjunction with SLR and the Delphi technique (triangulation).

4.5.3.2 Sampling of expert interviews

This research used both purposive and snowball sampling to select participants. This was done to find participants who were effectively placed and knowledgeable to provide reliable and rich data. Babbie and Mouton's (2001:166) propose that it is "appropriate to handpick a sample based on a researcher's knowledge of the discipline, the aims of the study, and a good knowledge of the available population". Merriam (2009:77) further adds that "the value of purposive sampling is that a researcher gets to select the participants on issues one can learn from". The limitations of purposive sampling highlighted by scholars are that it relies on the subjectivity of the researcher and could lead to bias.

“Snowball sampling includes that informants are accessed, or as an auxiliary mean, which assists researchers in stirring sampling clusters, and accessing new participants and social group participants when other contact avenues have dried up” (Noy, 2008:330). For this study, snowball sampling was used as an approach where the researcher was referred to or identified the initial research participant. The participant interviewed then selected or referred other potential participants for selection. Figure 4.5 demonstrates snowball sampling selection of the original/initial participants as well as the succeeding (first, second or third generation) participants according to Noy (2008).

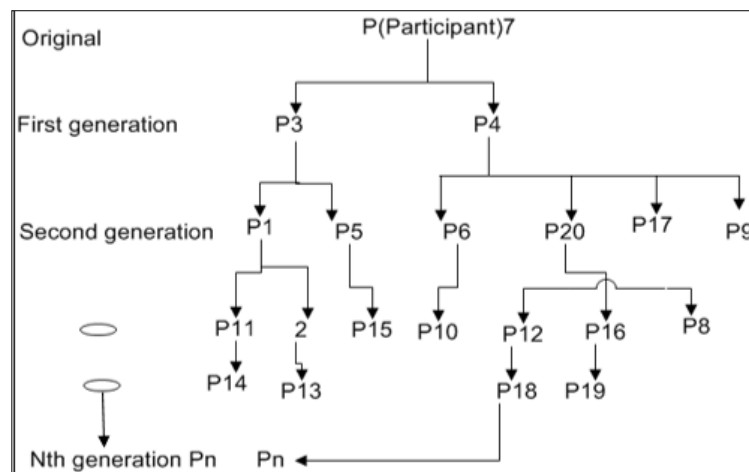


Figure 4.5: Snowball schema (populated with participants 1 to 20) (adapted from Noy, 2008:333)

Snowball sampling, as a result, should be systematically approached, where extra care is taken in selecting the critical first interviewees, or then the first-generation interviewees.

Understanding the different purposes and types of sampling is important to produce credible, reliable, ethical, and objective research. Some of the factors include the “lack of human resources, lack of precision, high expenses, inadequate equipment, and population dispersion” that prevent researchers from studying the entire population (Naderifar et al., 2017:1). Johnson et al. (2007) explain that in qualitative research, sample sizes should not be so small that it becomes difficult to achieve saturation, neither should the sample size be so large that it becomes difficult to embark on a deep case-oriented exploration. To estimate the number of sample participants needed for a non-probabilistic, purposive sampling approach, the standard criterion is theoretical saturation. Urquhart (2013:194) defines saturation as “the point in coding when you find that no new codes occur in the data”.

A minimum range of 20–30 participants may be adequate to facilitate ethnographic interviewing (Warren, 2002). Saunders and Townsend (2018:15) emphasise that “qualitative researchers in practice tend to use the expectations of the business and management community: previous experience; expert opinion; and replication of previous studies as justification of their research”.

Saunders and Townsend (2016) recommend between 15 and 60 participants. Smith et al. (2009) recommend having between three (3) and ten participants for studies based on interpretive phenomenological analysis, although the appropriate sample size depends on a number of factors specific to the study concerned, including the level of study for student work. Bernard (2013) proposes that 10–20 knowledgeable individuals are adequate to unearth and understand the core concepts in any well-defined cultural domain or study of lived experiences.

For this research, the research questions assisted in deciding how many interviewees were required and who were interviewed. Figure 4.6 shows question type versus sample size matrix.

0% Closed 100% Open Ratio Open/Closed	Emphasis is on in-depth understanding, More time per participants	Results in a large amount of data which is difficult to code, to analyse and to report
	Data is missing depth and Width and therefore less usefull	Emphasis is on generalisation using statistical methods
100% Closed 0% Open	Few Number of participants Many	

Figure 4.6: Question type versus sample size matrix (Brinkman, 2009:5)

Figure 4.6 illustrates how the type of research questions should be related to the number of participants. Brinkman (2009) highlights that if the research questions are 100% open, the number of participants will be small, which means the emphasis will be on expert understanding using more interview time per fewer participants. Additionally, if the research questions are 100% closed, the number of participants may be small, but there may be missing data, resulting in a lack of depth and width of the few participants per interview.

This research balanced the type of closed- and open-ended questions, with 20 participants to avoid having a large amount of data that is difficult to code, analyse and communicate. The participants included chief executive officers (4), managers (7), supervisors (2), and experienced operational staff (7).

The population that was deemed suited for this study included individuals who were nominated as experts because of their background and knowledge of the use of SM in KT (Chapter Five, section 5.3.5).

4.5.3.3 Unit of analysis

The unit of analysis for the research was identified as SM use SM in KT.

4.5.3.4 Unit of observation

The unit of observation was identified as chief executive officers (4), managers (7), supervisors (2), and experienced operational staff (7).

The next section elaborates on the third strategy, namely the Delphi technique.

4.5.4 Delphi technique

4.5.4.1 Introduction

The Delphi technique is reflected as a method common in the IS field. According to Laakso and Linturi (2010), the method was developed by Dalkey and Helmer at the Rand Corporation in the 1950s as a spinoff of a defined research project. To add, Delphi can be categorised as quantitative, qualitative, or mixed methods. Delphi studies aim to converge real-world expert opinions (Laakso & Linturi, 2010). Delphi is useful when the phenomenon under study is complex or when the topic is difficult to define, awkward to talk about, politically subtle, or the number of members in the focus group is relatively small.

The ensuing sections elaborate on the Delphi technique process. The Delphi technique comprises three phases: i) exploration, ii) distillation, and iii) results (Laakso & Linturi, 2010). However, Skinner et al. (2015) introduced a forth phase as follows: i) exploration, ii) distillation, iii) utilisation iv) and reporting.

In the next section, the following are discussed: i) motives for using the Delphi technique, ii) sampling and selection of participants for the Delphi technique, iii) unit of analysis, which was identified as SM use in KT, iv) unity of observation, which included a panel of experts for Round 1 and then a smaller panel of experts for Round 2, and the v) limitations of the Delphi technique.

4.5.4.2 Motives for using the Delphi technique

The Delphi technique was chosen for this study because of several benefits related to the method. Some of the benefits include (Hasson et al., 2000:1009): i) consensus building, ii) future forecasting, iii) bringing geographically dispersed panel experts together, iv) anonymity, and v) confidentiality of responses. Further characteristics identified included: i) participants in this study were from different locations, making in-person interviews costly, ii) participants involved in the study were busy experts who needed flexibility in participation – open questionnaires using Google Forms made participation possible, iii) the Delphi technique provided a worthwhile instrument for learning as much as possible from highly experienced experts in a short period

of time, and iv) participants could complete the Google Forms anywhere and anytime. The method was deemed appropriate to overcome the limitations of SLR and expert interviews.

4.5.4.3 Sampling and selection of participants for Delphi technique

The Delphi data collection technique included experts across South Africa, Germany, the United Kingdom, Russia, and the United States of America, using the non-random technique of purposive sampling to form a panel of experts with experience in the use of SM in KT (Etikan et al., 2016). According to Hasson et al. (2000:1010), the Delphi process “relies on experts to present all the options and supporting evidence for consideration”. For the panel to be effective, the experts needed to have diverse views in addition to possessing knowledge about the many complex issues involved. The criteria for the selection of experts in the study were set as follows:

- i) Adults over the age of 18 years, once employed across industries, using (or used) SM or working in the ICT industry, and possessing a relevant degree/certificate(s) (Lilja et al., 2011).
- ii) Having knowledge and experience in the field of SM and specialising in certain technological aspects.

Fifty-one (51) experts were selected using the set criteria by means of the snowball sampling technique. Once identified and selected, the experts were contacted to obtain their consent via email online platforms such as Microsoft Teams.

4.5.4.4 Unit of analysis

The unit of analysis was identified as the use of SM in KT.

4.5.4.5 Unit of observation

The unit of observation was identified as 51 experts for Round 1 and 31 experts for Round 2.

4.5.4.6 Multiple rounds

The aim of performing multiple rounds of analysis using the Delphi technique is to reach a consensus among experts (Sourani & Sohail, 2015) as well as improving precision by using controlled feedback and an iterative process (Hallowell & Gambatese, 2010). For the study, two iterations or rounds were sufficient because the experts reached the desired consensus.

4.5.4.7 Limitations of the Delphi technique

There are several constraints attached to the Delphi technique (Skinner et al., 2015). Limitations include: i) the administrative skills of the researcher, ii) an effective coding system to track respondents and their responses, iii) sending out reminders, iv) being biased, v) filling systems, vi) establishing a mail base, and vii) physical storage space (Hasson et al., 2000:1012).

4.6 Data collection

4.6.1 Introduction

Three research strategies were used to collect data:

- i) SLR
- ii) Expert interviews
- iii) The Delphi technique

In the next section, the data collection per strategy is discussed.

4.6.2 Data collection for SLR

4.6.2.1 Introduction to SLR

This section introduces the data collection of the SLR strategy, its importance, and the procedure for the practical implementation of the strategy. The SLR is a complex, rigorous research strategy that is systematic in delivering valuable, credible, valid, and reliable research outputs.

4.6.2.2 Data collection for bibliometric analysis and SLR

There is a lack of understanding the need for structure in the SLR process in IS (Levy & Ellis, 2006; Okoli, 2015; Winberg & Winberg, 2021). Okoli (2015:43) used Fink's (2005) definition of SLR, namely: "A systematic, explicit, [comprehensive] and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners". SLR focuses on questions that ascertain, pick out, synthesize, and evaluate high-quality research (Winberg & Winberg, 2021).

Firstly, bibliographic data were extracted from Harzing's *Publish or Perish* version 8 software to analyse research developments on SM in KT using the *VOSviewer* application. The *Publish or Perish* software, developed by Melbourne-based Tarmu Research software Pty Ltd (Moral-Muñoz et al., 2020:4), was applied on machines using Windows, Macintosh, Linux operating systems. and *Publish or Perish* data sources such as Web of Science (WoS), Scopus, Google Scholar (GS), and Microsoft Academic (MA).

Publish or Perish was developed to generate the h-index, search results, searching directly to GS, WoS, Scopus, Crossref and MA (Moral-Muñoz et al., 2020). Furthermore, the *Publish or Perish* software enables importing external data instead of performing the search. The tool also provides a performance analysis of the core of documents obtained from the indicated source. In that sense, it is interesting to highlight the possibility of obtaining the h-index average annual increase, age-weighted citation rate, and authors per paper indicators. *Publish or Perish* enables researchers to export data/output to BibText, CSV, EndNote, ISI Export, JSON Export, and RefMan/RIS.

The key concept ,“Social Media and Knowledge Transfer”, based on a topic area with titles, keywords, and abstracts, was used. An additional criterion was *research in progress* or *research not yet completed*. The type of journals used included top-ranked journals such as MIS Quarterly, Information Systems Research, Communications of Management Science, and Journal of MIS.

The study used a bibliometric content analysis. The findings suggested useful effects for researchers, ICT managers, and organisations. Type of content embraced empirical and conceptual articles in English written from 2000 to 2022. The 100 articles most cited were found to be relevant from a total of 1,000 papers downloaded. The mapping procedure was then completed using VOSviewer. Reference manager applications used included results obtained from *Publish or Perish* software as shown in Figure 4.7.

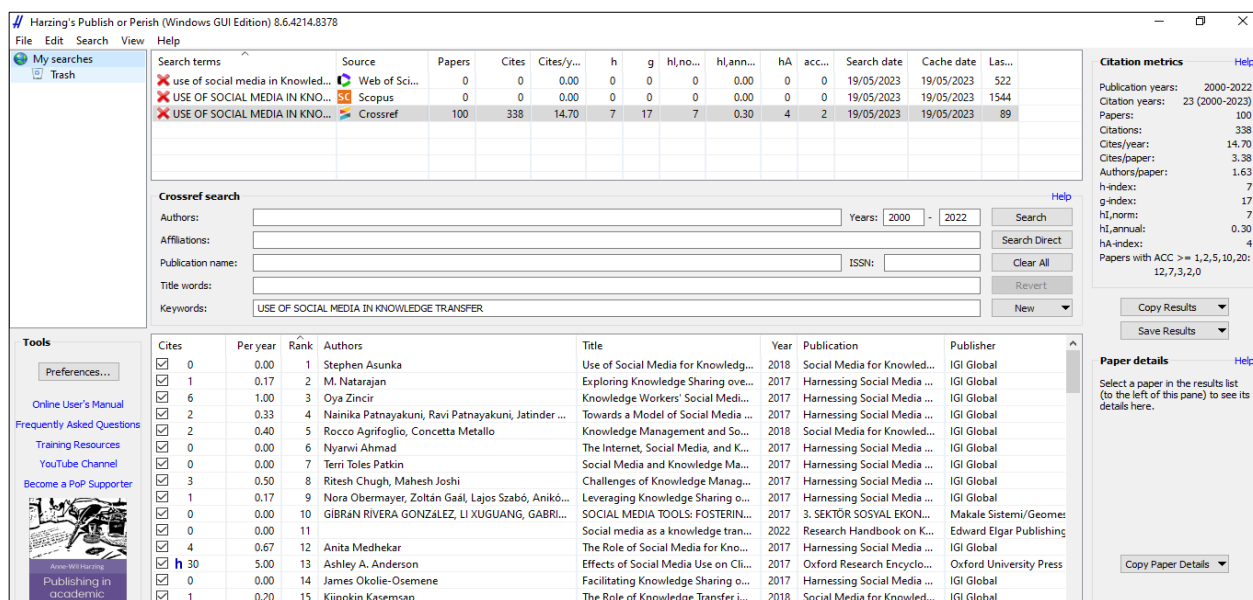


Figure 4.7: Publish or Perish application

Figure 4.7 shows data (downloaded using *Publish Or Perish* software) presenting the most selected cited papers [ticked *h* in Figure 4.7] in the field of KM, IS and IT. As already indicated, *Publish or Perish* software generates the h-index and search results through directly searching GS, WoS, Scopus, Crossref and MA (Moral-Muñoz et al., 2020), and import external data instead of performing searches. The tool also provides a performance analysis of the core of documents obtained from the indicated source. In that sense, it is interesting to highlight the possibility of obtaining the h-index average annual increase, age-weighted citation rate, and authors per paper indicators.

Hirsch (2005) concludes that the h-index estimates the importance, significance, and broad impact of a scientist's cumulative research contributions. The h-index combines two measures

(publications and citations) into one integer, thereby making it simple (Zhang, 2010). To add, bibliometric evaluation is meaningless and even dangerous at individual level and researchers should be cautious when using the h-index as it may lead to misleading and/or even wrong results (Zhang, 2010). Additionally, the h-index considers the cumulative impact of an author as a merit although the number of authors per article and early careers are not considered. For example, a researcher with an h-index of 22 has 22 papers that have been cited at least 22 times. Furthermore, h-index is a dichotomous size-dependent indicator – if it measures performance, it will do so only for a certain citation level. From a formal point of view, it cannot be a universal indicator of research performance (Brito & Navarro, 2021).

In contrast to the h-index, the g-index is “[given a set of articles] ranked in decreasing order of the number of citations that they received, the g-index is the (unique) largest number such that the top g articles received (together) at least g^2 citations”. This recognises the lowly-cited or non-cited papers while at the same time acknowledges the highly cited papers (usuhs.libguides). The g-index was meant to improve the h-index, the highest rank, calculated as cumulative sum of the number of citations received is larger than or equal to the square of this rank.

In the second part of the SLR, data were extracted based on the research questions established during the protocol phase, as emphasised by Okoli (2015). The research questions are stated in Chapter One, section 1.7. Data collection was constructed using available open online professional journal databases such as EBSCOhost, ProQuest, Emerald, Scopus, Springer, and Sabinet, and handpicks were also included. Documents that were considered included the keywords “innovation”, “Social Media”, “Innovative Business Environment” “Knowledge Transfer”, and others. Top-ranked journal such as MIS Quarterly, Information Systems Research, Communications of Management Science, and Journal of MIS were used. The documents were also filtered according to English language, covering SM, KT, and SM. Connectedpapers.com was also used to find and explore more relevant academic papers.

4.6.2.3 Data collection using expert interviews

4.6.3 Introduction to expert interviews

This section introduces data collection using i) expert interviews, ii) its importance, and iii) the process in the practical application.

4.6.3.1 Data collection using expert interviews

Data were collected via expert interviews and resulted in rich and multifaceted data. The interviews used an interview protocol (Appendix H) and included semi-structured questions designed around: i) themes of KT in everyday work and the support of technology (especially SM) for these activities, ii) SM perception and use in private and professional contexts, and iii)

the general organisational culture. The interviews remained open for emerging interesting topics from additional dialogue with the interviewees.

The first section of the questionnaire addressed respondents' demographic information, such as age, gender, and education. This section also asked respondents' job titles, how long they have been in the organisation, and other job-related information. In this part of the interview guide (Appendix H), questions related to organisational use of SM, issues from employees' perspectives, such as management support, and the reward structure were posed (O'Dell & Grayson, 1998). Demographic information is important because of the epistemic relativism aspects. Epistemic relativism holds that individual social position, for instance class, gender, race, being a researcher, or being researched, has an impact on the way individuals interpret the world, formulate concepts, and make claims about it (Fleetwood, 2014). Microsoft Teams was used to facilitate the interviews. All interviews (20) were recorded with the participant's consent. During this study, participants were asked to describe from their perspectives a successful past KT incident and the factors that made each incident either successful or unsuccessful. Participants were also asked to provide their definition of "social media" and "knowledge transfer", so that the researcher could understand how the participants made sense of positive or negative incidents.

From a preliminary analysis of the initial interviews, the researcher conceded that the saturation point was researched after interviewing 18 participants. To confirm achievement of saturation, the researcher interviewed two (2) more interviewees to test the existence of a related emergent theme, to conclude the qualitative data collection stage.

The recordings were listened to, transcribed to guide the researcher (Appendix H), and read several times. This was done to gain a better understanding and insight into what the interviewees were conveying in relation to their critical incidence and the study research questions. This ensured that the transcripts were thoroughly evaluated for accurate information, as recommended by Patton (2002).

4.6.3.2 Data collection using the Delphi technique

The Delphi technique employed open-ended questions to explore the SM in KT concepts. The Delphi technique protocols (Appendix G) have elaborate questions related to the use of SM applications in KT. A constant five-point Likert style scale (Likert, 1932) was used for the questions to avoid confusion. The forms of questionnaires used included: i) electronic Google Forms, ii) e-mail, and iii) the WhatsApp SM platform.

4.7 Data analysis

4.7.1 Introduction

The strategies used in this study were:

- i) SLR
- ii) Expert interviews
- iii) The Delphi technique

This study followed an abductive approach for the data analysis. Data analysis refers to the “management, analysis and interpretation of the data” (Bryman, 2012:13). Bryman adds that data analysis may be in the form of statistical analysis for the quantitative data and thematic analysis for the qualitative data.

The analysis in this study was conducted as mixed methods (simple). The expert data were analysed from a qualitative (QUAL) perspective and the Delphi technique from a quantitative (quant) perspective. Qualitative data analysis refers to the flow of activities that include data reduction (selecting, simplifying, abstracting, and transforming), displaying, and conclusion drawing or verification (Miles & Huberman, 1994).

This study also adopted Creswell (2009:151) recommendations about the research participants for data analysis, including:

- i) Reporting information on the number of members of the sample who did and did not return the questionnaire.
- ii) Discussing the method by which respondents' bias will be determined, i.e., the effect of non-responses on the survey estimates.
- iii) Discussing a plan to provide a descriptive analysis of the data.
- iv) Identifying the statistics and statistical computer program for testing the major inferential research questions.
- v) Presenting the results in tables or figures.

In the next section, the thematic analysis for the i) SLR, ii) experts, and iii) Delphi technique data are discussed.

4.7.2 Systematic Literature Review

There is no agreement among the academics on how to present the SLR analysis. Okoli (2015) concedes that findings are presented in a series of headings and subjects without any clear framework outlining the structure of the findings. The use of tables (with publication date, journal name, author(s), article name, RQ, answers and recommendations) to classify studies may also be considered. Furthermore, the conceptual or theoretical framework to structure the synthesis, a summary of key findings, and linking findings back to the literature was used in this study. The

use of frameworks and summaries can also be employed in domains like engineering (Winberg & Winberg, 2021).

SLR for this study was conducted in two parts: bibliometric analysis and using data from various databases to answer specific research questions. This was to identify the co-author analysis and collaboration, keyword co-occurrence analysis or frequency with which different keywords occur together, and any research developments related to SM use and KT. Many papers discussed bibliometric analysis, such as: i) digital learning (Al Husaeni & Nandiyanto, 2022), ii) computer science (Al Husaeni & Nandiyanto, 2023a), and iii) vocational school (Al Husaeni & Nandiyanto, 2023b). The Bibliometric analysis is a simple, logical, and scientific in analysis of research developments regarding SM and KT. Figure 4.8 show elements of VOSviewer.

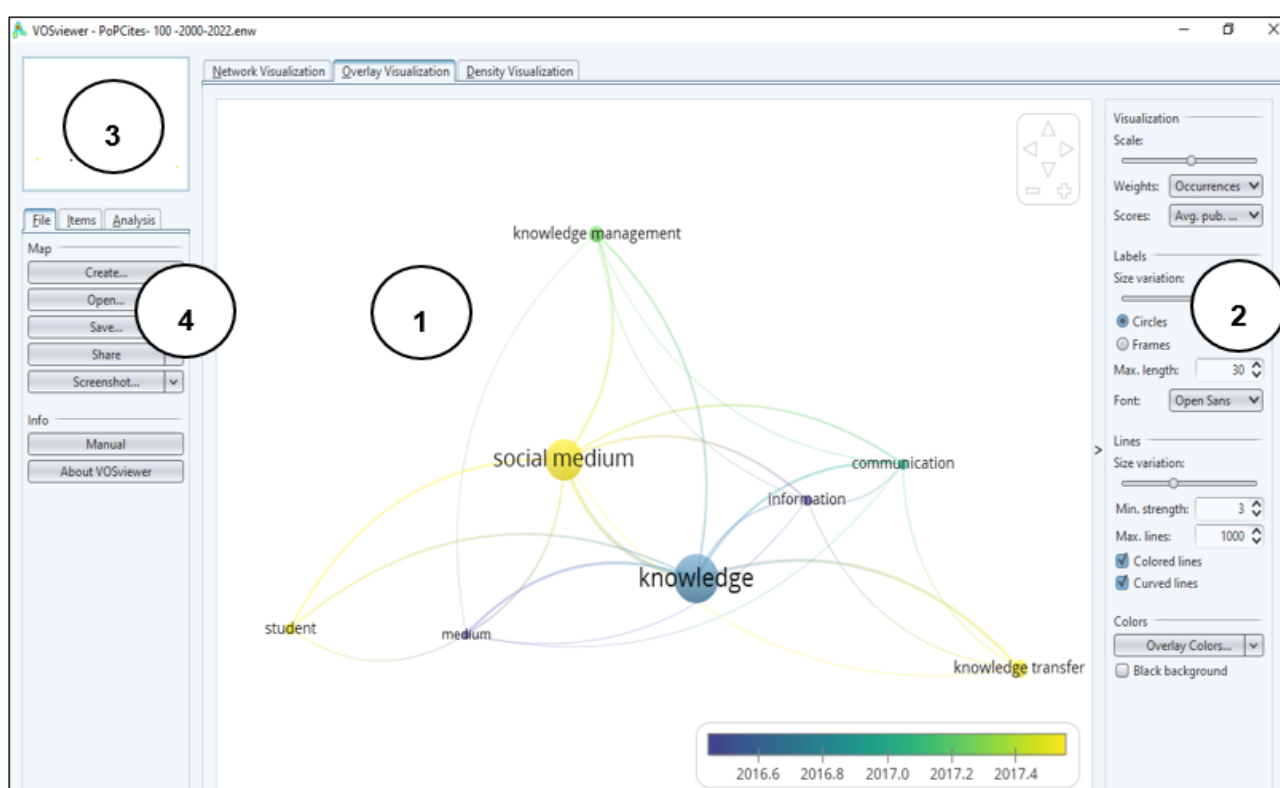


Figure 4.8: Main window of VOSviewer. The numbers designate (1) the main panel, (2) the options panel, (3) the overview panel, and (4) the action panel (Gu et al., 2021:4)

Figure 4.8 shows the main window of VOSviewer divided into 1, 2, 3, 4, and 5, which can be used and explored.

Figure 4.9 shows how the researcher started creating the maps by clicking on point 1 (create), and then point 2 (data source such as Endnote).

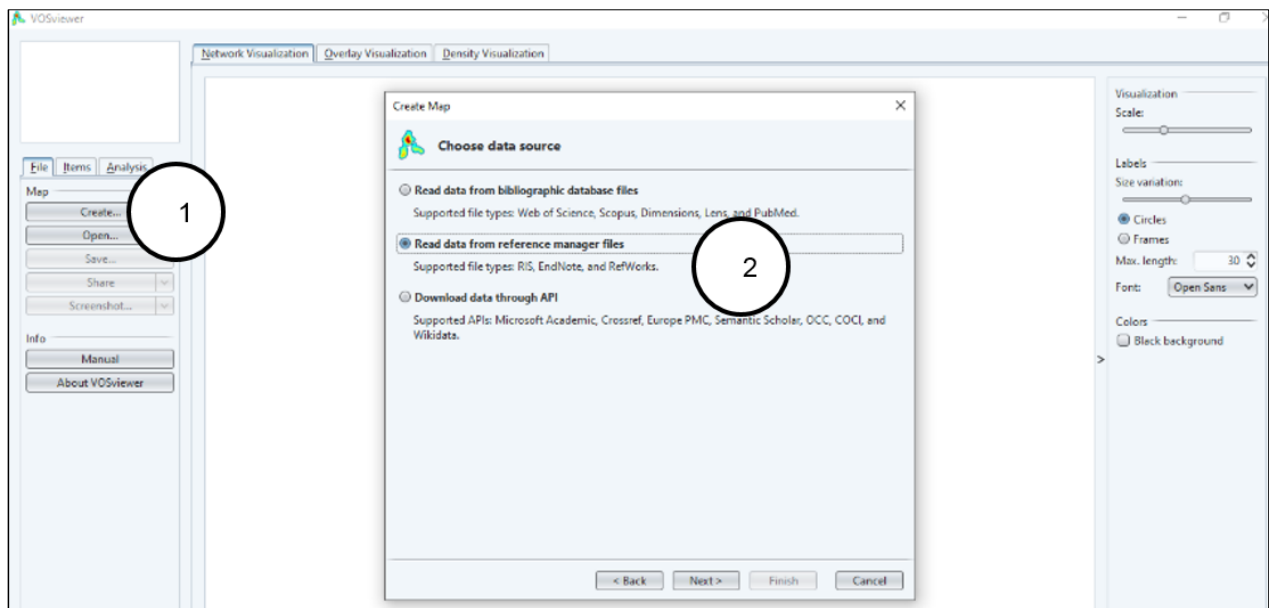


Figure 4.9: Creating the map using VOSviewer

Figure 4.10 illustrates how the Endnote files [1] from the *Publish or Perish* reference manager (stored on a storage space like desktop [2]) were uploaded [3] and [ok, 4] on VOSviewer.

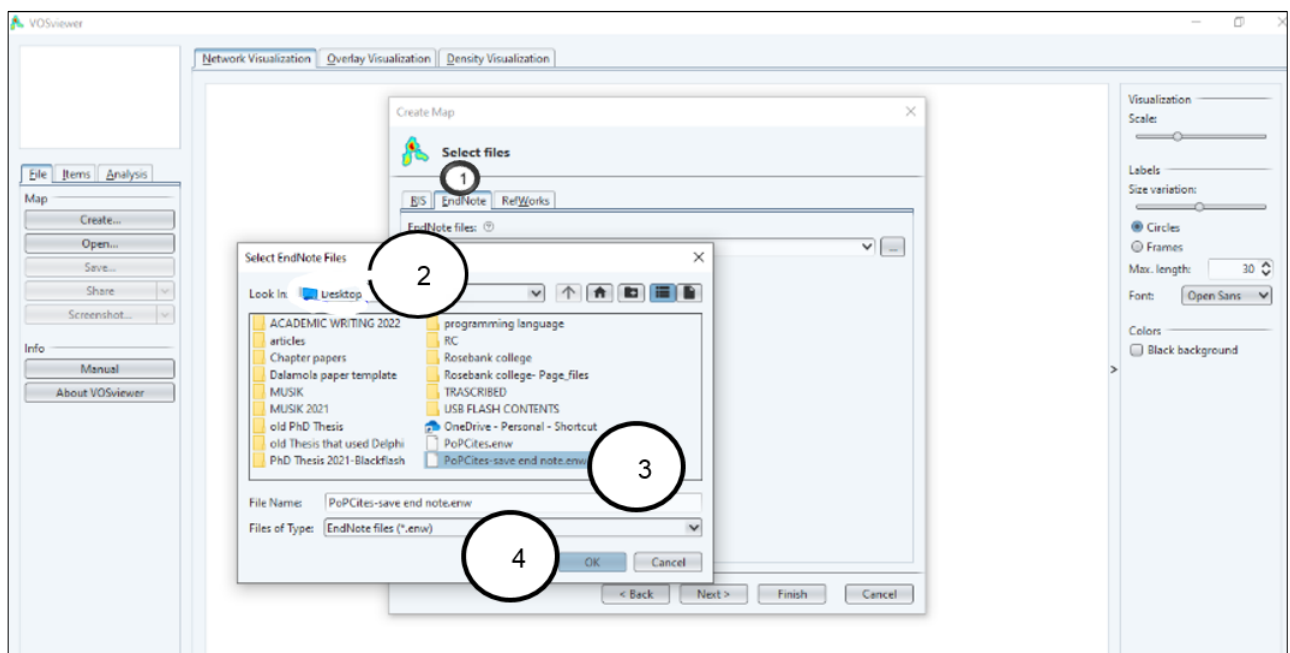


Figure 4.10: How the Endnote files were uploaded to VOSviewer

Figure 4.11 illustrates how the network visualisation was created using co-authorship as type of analysis and authors as unit of analysis, as encouraged by van Eck and Waltman (2021:5).

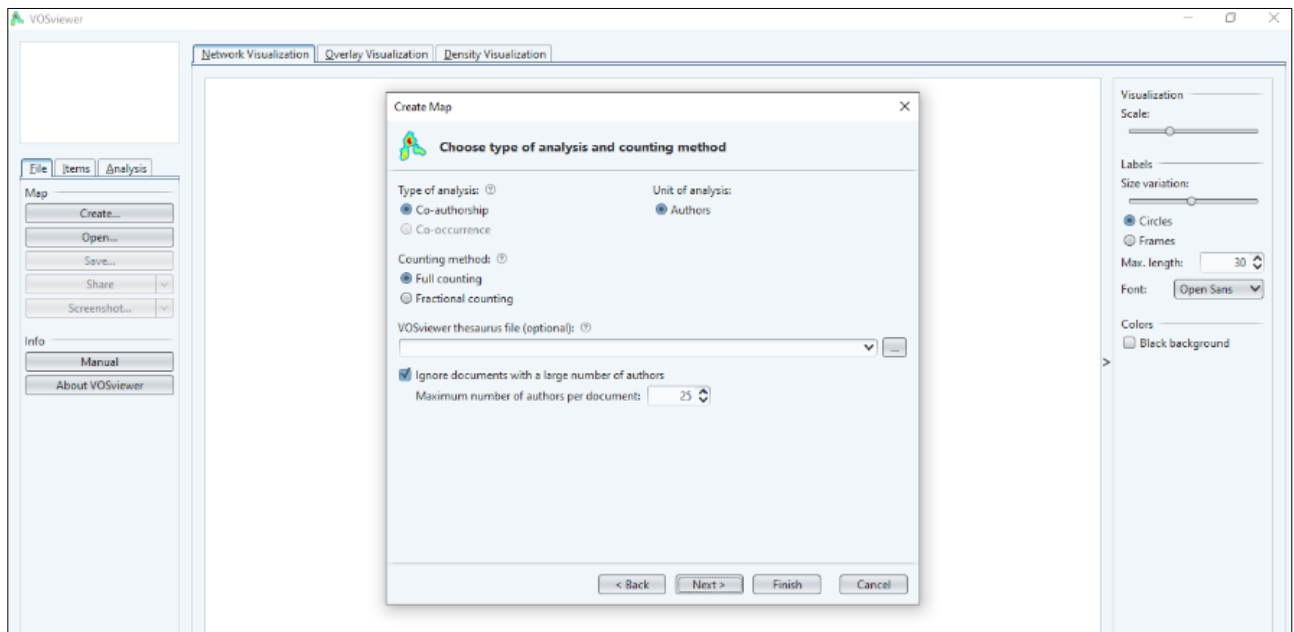


Figure 4.11: How the network visualisation was created using authors as unit of analysis

Publish or Perish and *VOSviewer* were used for data collection and analysis. However, there are other usable applications to choose from, according to Moral-Muñoz et al. (2020:14). For instance, general bibliometric and performance analysis can be done with *Explore*, *Publish or Perish*, and *ScientoPyUI*, among others. Furthermore, *BibExcel*, *BiblioShiny*, *BiblioMaps*, *CiteSpace*, *CitNetExplorer*, *SciMAT*, *ScP tool*, and *VOSviewer* are science mapping analysis tools. Lastly, libraries that can be accessed include *Bibliometrix*, *BiblioTools*, *Citan*, *Metaknowledge*, *sciento-Text*, and *ScientoPy*.

The *Publish or Perish* software data were analysed to show simpler measures, such as the total number of citations or publications. To reveal the scientific research impact of a scholar or a country, the h-index is available, showing that published papers have been cited in other publications at least a number of times (Chen et al., 2020).

The second part of the data analysis included a thematic analysis. Articles were uploaded to *ATLAS.ti*, a qualitative data analysis application. Research questions, a series of headings, summaries, subjects, and a theoretical framework were used to structure the SLR findings, illustration of key findings, and linking findings to the literature using *ATLAS.ti*. *ATLAS.ti* is available in Windows and Mac versions, with mobile versions for the iPad and Android. *ATLAS.ti* features allow for the creation of coding categories to be used in devising and identifying patterns based on coding structures. Attention was paid to the article abstracts and how they answered the research questions for this study. Reading the articles several times ensured that the articles were thoroughly evaluated for accurate information.

ATLAS.ti was used because the application enabled coding, annotating, and comparing segments of information. Codes could be 'dragged and dropped' within an interactive margin screen. Data segments and notes relevant to KT and SM could be searched, retrieved, and browsed rapidly. It enabled the building of unique visual networks to connect visually selected passages, memos, and codes in a concept map. Less computer memory is needed for ATLAS.ti compared to other software tools as it directly links data files to a project.

A simplified open coding scheme using ATLAS.ti was used to identify and classify the text which answered the study's research questions. The codes were valuable to comprehend complex real-world data and organise them in a structured and significant way (Yamagata-Lynch, 2010). Finally, axial coding (Corbin & Strauss, 2008) was applied to find connections and relations between the initial codes and open codes. In axial coding, the core concept was used in a visual model. The process involved identifying patterns and explanations related to other research questions in this study. Table 4.5 represents an example of the thematic analysis process (Brady's, 2015:4).

Table 4.5: The thematic analysis process (Brady, 2015:4)

Example of a question	1. Facebook 2. Swagger 3. Jira 4. Jack 5. LinkedIn 6. Zoom 7. Webex 8. TikTok 9. Module reporter 10. Google drive 20. Vimeo
Example response	Indicating SM applications considered as common tools for KT
Concepts (open coding)	Technology, systems, processes, objectives, relationship participants and communication applications in KT
Categories (axial coding)	Stage 2 of the organising process where emphasis was placed on identifying commonly used SM applications in organisations by experts used in organisations for KT
Category definitions (axial coding definitions)	Technology (SM)
Relevant/Final themes	Technology, SM

4.7.2.1 SLR – Stage 1 coding using ATLAS.ti

Using ATLAS.ti during Stage 1 comprised NVivo coding, which required the researcher to highlight a section of text in the pdf file. Figure 4.12 is a screenshot of the first stage of the NVivo coding.

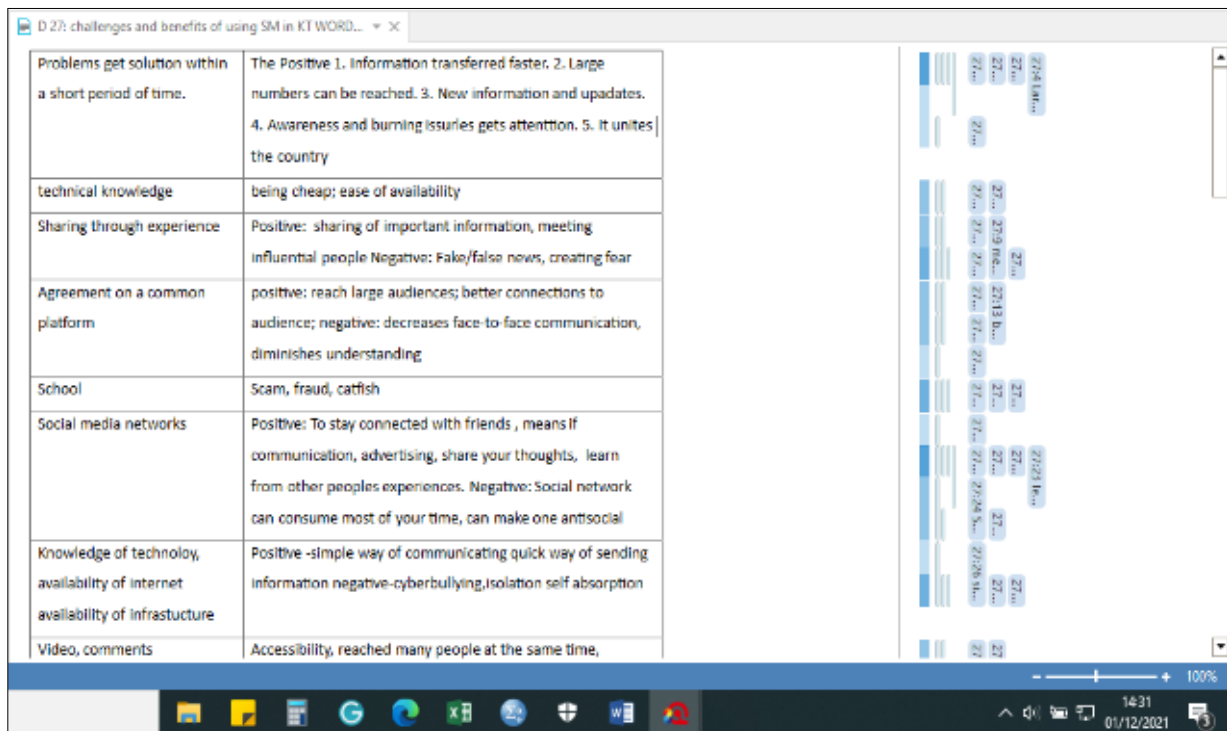


Figure 4.12: ATLAS.ti: Stage 1 NVivo coding screenshot

4.7.2.2 SLR – Stage 2 coding using ATLAS.ti

Stage 2 coding requires similar codes to be grouped together, combined into higher-order categories, and then continually compare and revisit these codes (Silver & Lewins, 2014). Expressions of everyday language were transformed to more practical terms predominant in the database. Codes that were alike or interconnected were fused. Uncommon, immaterial codes were excluded.

4.7.2.3 SLR – Stage 3 coding using ATLAS.ti

Selective coding was used, where data and codes were re-examined to construct multiple codes, semantically link quotations to create visual qualitative network diagrammes, and to identify themes, concepts, and patterns (Silver & Lewins, 2014). As a final point, hyperlinked participants of quotations were created to analyse the proposition of the study.

As an alternative to using a code, an entire quotation from articles were used to show patterns or themes in the data. Hyperlinking between quotations is a “more flexible way to track varied routes through the data” (Silver & Lewins, 2014:153). A hyperlinked quotation diagramme view and a network diagramme view are similar, although a hyperlink diagramme works well for a smaller number of concepts. In contrast, a network diagramme has a core concept as the starting point of the diagramme, which is linked to other quotations as a star or a chain (Lewis, 2017).

Visual network diagrammes were constructed to conceptualise the data by linking sets of related features (ATLAS.ti, 2020) as in Figure 4.13, by means of dragging, dropping, and moving concepts around to different positions, supporting the researcher in discovering patterns and associations in the data. Visual network diagrammes are concept maps. A concept map enhances meta-cognition in the form of illuminating complexity about knowledge (Frieze, 2014:219). Network diagrammes are also supportive for novice researchers (as demonstrated in Figure 4.14).

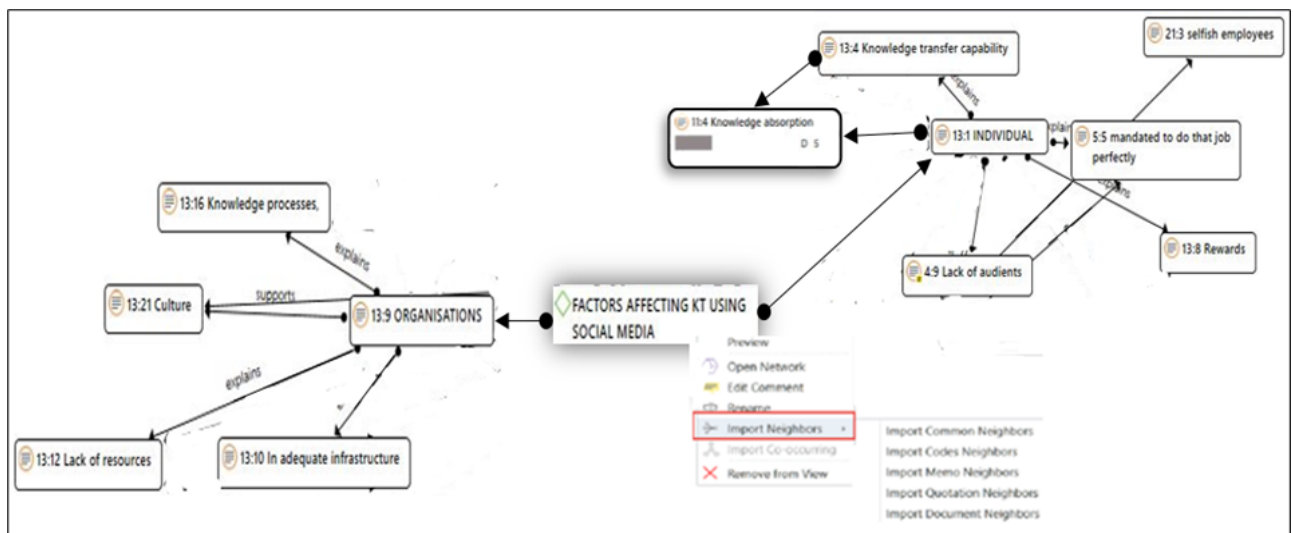


Figure 4.13: Network diagramme of factors affecting KT using SM in ATLAS.ti

In the network diagramme in Figure 4.13, note that quotation 4:9 (lack of audience) is linked to one entity that was imported (quotation 21.3). Quotation 11.4 is linked to one other entity (regarded as density-represented by D on quotation 11.4).

Figure 4.14 shows how entities, called neighbours, can be linked directly. The 'neighbours' can be imported by right-clicking and selecting the appropriate option from the context menu (import neighbours shown by a red rectangle) (ATLAS.ti, 2020). The entities that can be imported include codes, quotations, and document neighbours. Frieze (2019:xxi-15) differentiates between codes and quotations from a document: i) a code is a keyword linked to a quotation for describing data and retrieving data related to the class, while a quotation is a segment of the document considered interesting or important by the user; ii) furthermore, memos capture the researcher's analytical thoughts and ideas, while documents are data added to the ATLAS.ti project.

Figure 4.15 illustrates the hyperlink diagrammes using the core concept. The construction of hyperlink diagrammes utilising quotations reveals the associations in the data and tracks various courses through the data (Silver & Lewins, 2014). Figure 4.15 shows a hyperlink diagramme of the factors that could facilitate effective KT using SM.

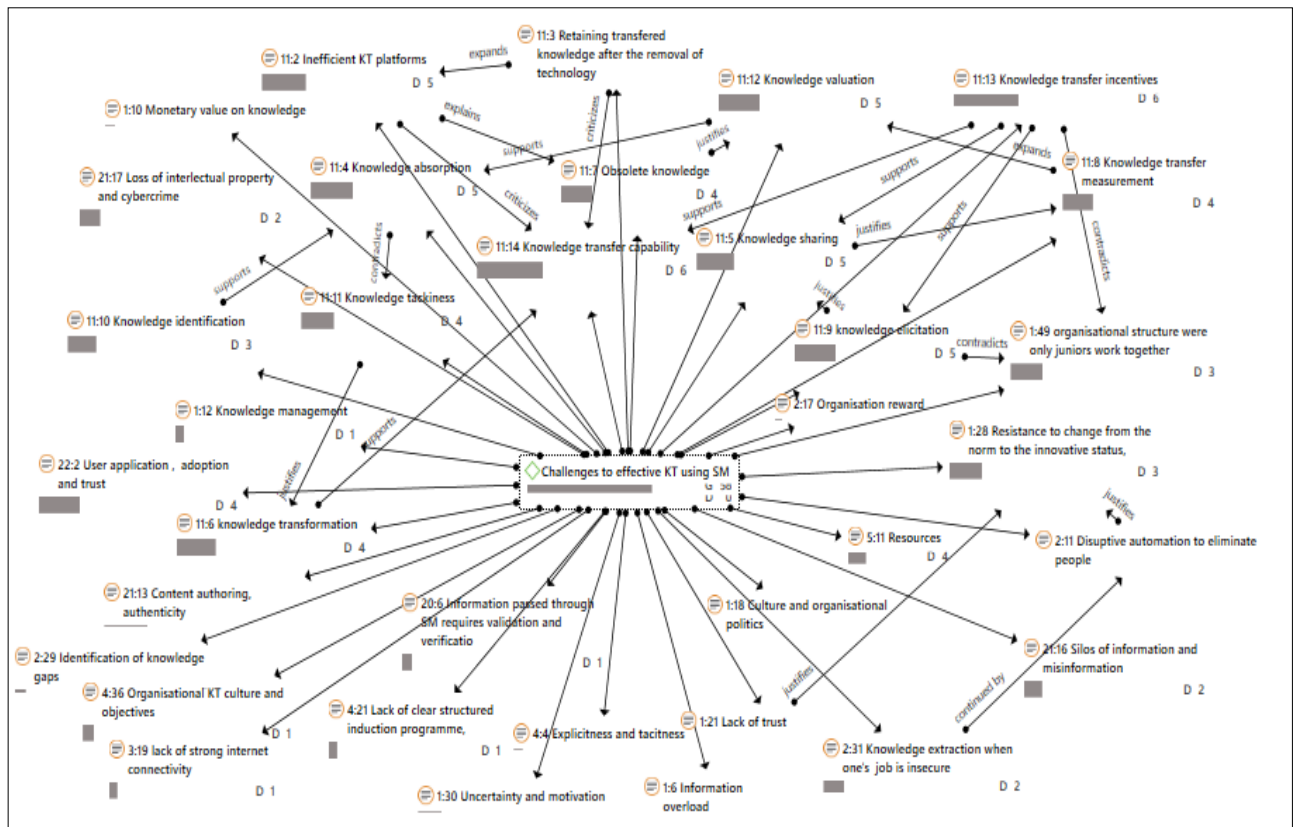


Figure 4.14: Challenges that affect effective KT using SM

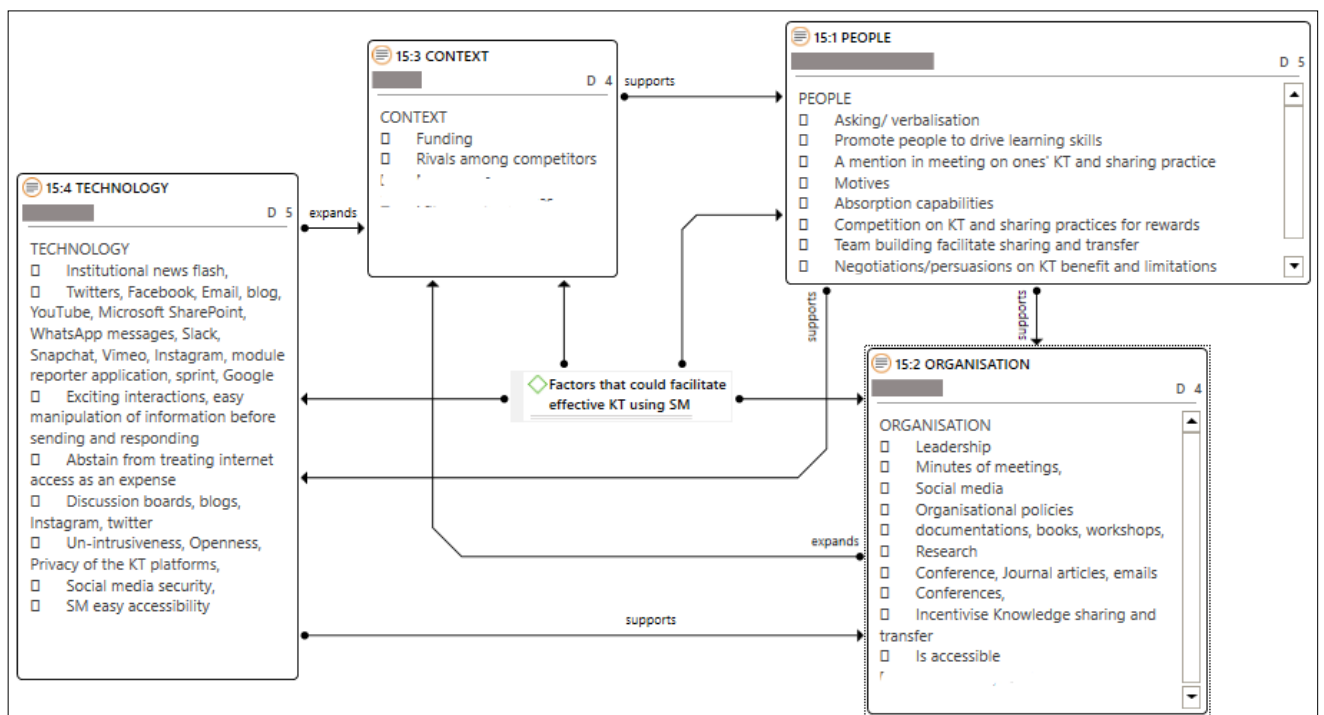


Figure 4.15: Factors that could facilitate effective KT

4.7.3 Expert interviews

4.7.3.1 Introduction to the thematic analysis of the expert interviews

After the interviews were conducted and transcribed, the transcriptions were uploaded to ATLAS.ti, a software tool that enabled the researcher to code, annotate, and compare segments of information in the same way as was done with SLR (Chapter Four, section 4.7.2). Data could rapidly be searched, retrieved, and browsed. The data segments and notes relevant to the research questions were used to build unique visual networks, enabling the researcher to connect visually selected passages, memos, and codes in a concept map.

In the data analysis stage, a categorisation scheme was developed to summarise and describe the data in a suitable manner without compromising the data comprehensiveness and precision. The first step was to code selected data segments based on the research aim and theoretical framework. The selection was part of the basic initial coding.

A simplified open coding scheme using ATLAS.ti for identifying and classifying the critical incidents and explanations of category placements was used in this study. The phenomenon of interest was critical incidents in experts' past experiences related to the use of SM in KT in their work setting. The codes were valuable to comprehend complex real-world data and organise the data in a structured and significant way (Yamagata-Lynch, 2010). Finally, axial coding (Corbin & Strauss, 2008) was applied to find connections and relations between the initial codes and open codes. For axial coding, the researcher used core phenomena in a visual model. The process involved identifying patterns and explanations related to other research questions in this study.

The qualitative aspect of this study, involving 20 expert interviews, was sufficiently manageable to permit a thematic analysis. Interview findings in Chapter Five, sections 5.3.7 to 5.4.2, were presented with verbatim quotations from the participants, arising from the interview transcripts, with the researcher's interpretation. This was to balance the two objectives of reflecting the participants voices while achieving an appropriate level of description and analysis (Patton, 2002).

4.7.3.2 Expert interviews – Stage 1 coding using ATLAS.ti

Using ATLAS.ti, Stage 1 involved NVivo coding, which required the researcher to highlight a section of text on the MS Word file with data copied and pasted. Figure 4.16 is a screenshot of the Stage 1 NVivo coding.

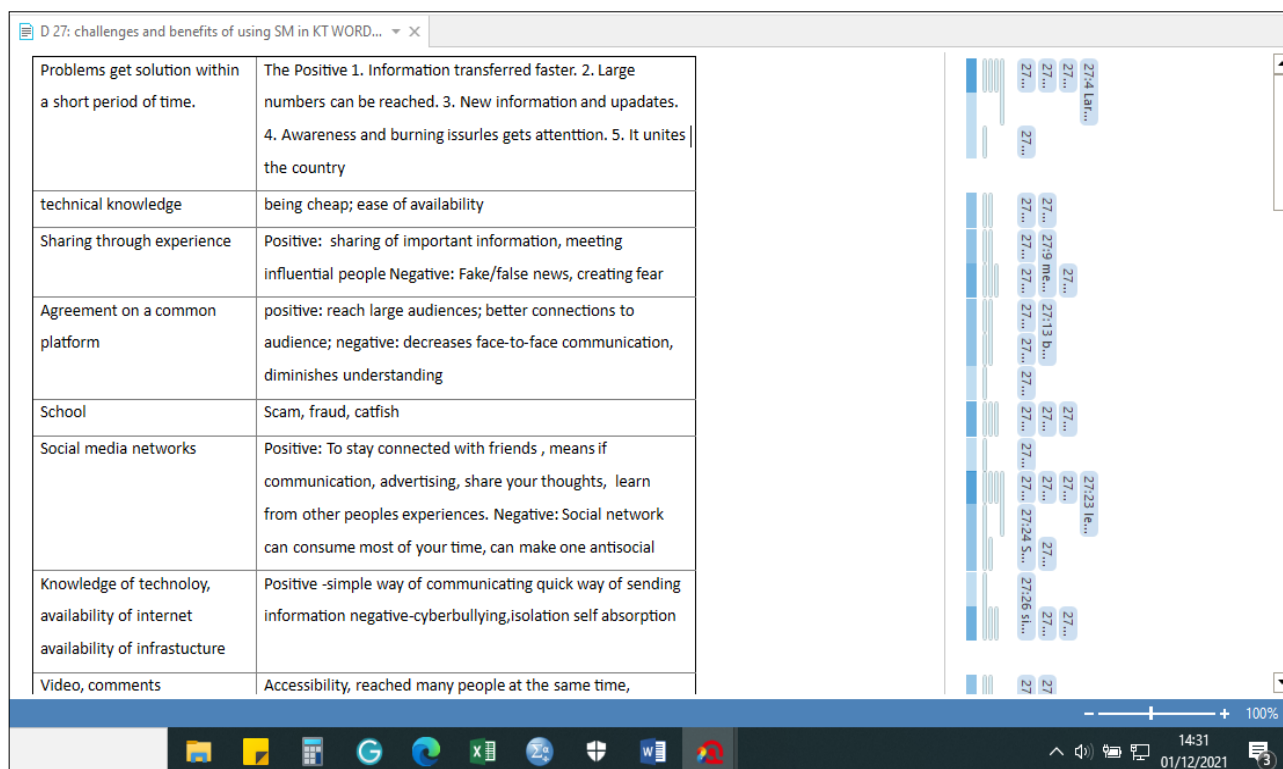


Figure 4.16: ATLAS.ti: Stage 1 NVivo coding screenshot

4.7.3.3 Expert interviews – Stage 2 coding using ATLAS.ti

Stage 2 required similar codes to be grouped together and combined into higher-order categories, while these categories were continually compared and revisited (Silver & Lewins, 2014). Expressions of everyday language were transformed to more practical terms that were predominant in the database. Codes that were alike or interconnected were fused. Uncommon, immaterial codes were excluded.

Figure 4.17 is an example of the analysis of the data and emergent themes on the Excel quotation browser report imported from ATLAS.ti for the second stage of the thematic analysis. The question addressed is, “What factors facilitate KT when using SM”.

The data were analysed using the ID (column A) for reference to original quotations, short quotations (columns B & C), precoding (column D), categorisation (column E), and emergent themes (column F) on the Excel quotation browser report. As already indicated, this Excel was exported from ATLAS.ti software, where the uploaded transcriptions from the interviews were initially upload. Data were also statistically analysed into a frequency table to calculate the mean, variance, and standard deviation.

Quotation Browser Report factor facilitating the KT using SM (3) - Excel (Product Activation Failed)

ID	Quotation Name	Quotation Content	Precoding codes	Categorisation	Emergent themes- Themes	Codes	Referer
5.4	seminars, during workshops, conduct some training sessions or during m...	seminars, during workshops, conduct some training sessions or during meetings.		Team building facilitate sharing and transfer		Factors that could facilitate effective KT using SM	1248 - 132
5.7	Objectives which are clear	Objectives which are clear	Motives	Negotiations/persuasions on KT benefit and limitations	People	How can Knowledge be transferred using SM	3408 - 34
5.8	trained individuals might suffice	trained individuals might suffice	Absorption capabilities	ORGANISATION Leadership		Factors that could facilitate effective KT using SM	3436 - 34
5.9	More interactions bring excitement, interest	More interactions bring excitement, interest	Exciting interactions, easy man	Minutes of meetings, Social media		Factors that could facilitate effective KT using SM	3536 - 35
5.10	To solve these challenges organisations can have free access to WIFI to operational members and abstain from treating internet access as an expense	To solve these challenges organisations can have free access to WIFI to operational members and abstain from treating internet access as an expense	Abstain from treating internet	Organisational policies, documents, books, workshops, Research		Factors that could facilitate effective KT using SM	4222 - 43
5.11	WhatsApp is now showing a message which says your "communication is no...	WhatsApp is now showing a message which says your "communication is no secure" which seem to imply that communication was not secure initially.	Social media security	Conference, Journal articles, emails		Factors that could facilitate effective KT using SM	4475 - 46
5.12	the top is Facebook, Email which is WhatsApp	the top is Facebook, Email which is WhatsApp	Easy accessibility	Incentivize Knowledge sharing and transfer		Factors that could facilitate effective KT using SM	5112 - 515
5.17	WhatsApp does not need logging in, then some form of, discussions board...	WhatsApp does not need logging in, then some form of, discussions board	Magazines	Is accessible Workshops, seminars, CONTEXT Funding	Organisational	Factors that could facilitate effective KT using SM	5172 - 52
5.18	funding to attend workshops	funding to attend workshops		Rivals among competitors	Content	Factors affecting KT using SM	5438 - 54
5.19	literature, magazines, official organisations, technology such as soci...	literature, magazines, official organisations, technology such as social media platforms		Funding Resources	Economic	Factors that could facilitate effective KT using SM	6696 - 67
5.20				TECHNOLOGY Institutional news flash, Twitters, Facebook	Environment	Factors that could facilitate effective KT using SM	18-4 - 112
5.21				Email, blog, YouTube, Microsoft SharePoint, WhatsApp messages, Slack, Snapchat, Vimeo, Instagram, module reporter application, sprint, Google	Technologi-SM	Factors that could facilitate effective KT using SM	17-14 - 11
5.22				Exciting interactions, easy manipulation of information before sending and responding		Factors that could facilitate effective KT using SM	
5.23				Abstain from treating internet access as an expense		Factors that could facilitate effective KT using SM	
5.24				Discussion boards, blogs, Instagram, ...		Factors that could facilitate effective KT using SM	

Figure 4.17: Example of analysis of data and emergent themes on the Excel quotation browser report imported from ATLAS.ti

4.7.4 The Delphi technique

This research followed thematic analysis using the quantitative data from experts' responses, which were copied from online Google Forms to an MS Word file, using the measure of central tendency to experts' agreement in terms of their responses. Thematic analysis was also used as qualitative analysis for the Delphi technique (adapted from Brady, 2015:4).

4.7.4.1 Introduction to the Delphi technique analysis process

The next section details the Delphi technique analysis process. The data analysis was divided into three phases.

4.7.4.2 Exploration or brainstorming: Phase 1

Phase 1 required experts to indicate the SM platform they use for KT and provide reasons if they were not using any SM platform. Exact duplication was removed from the questionnaire to remain with a finalised, understandable questionnaire. The Delphi technique questions were also reviewed and sent to experts for validation. Figure 4.18 is an example of one question posed, the number of responses, and the round number.

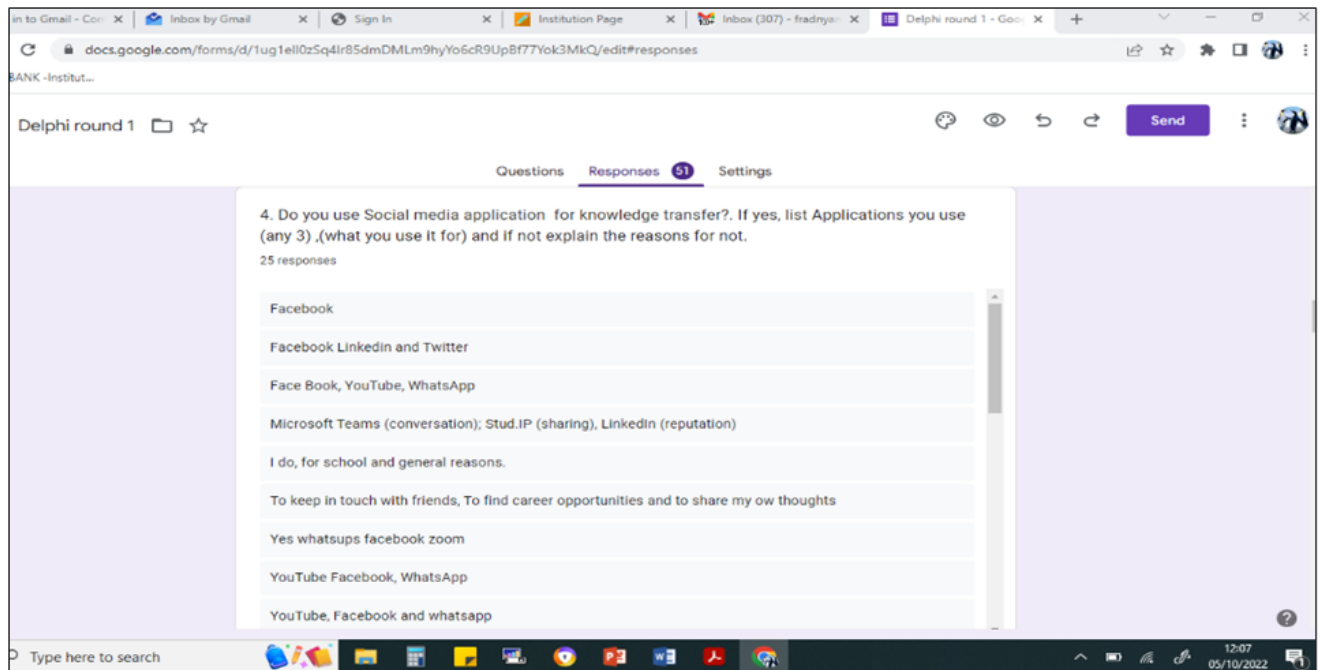


Figure 4.18: An example of a Delphi technique question used, showing the number of responses and the round number

4.7.4.3 Distillation and narrowing down: Phase 2

For the second phase of the Delphi technique, participants were allowed to check, via WhatsApp, the list they contributed during the first round of the analysis. A screen shot of Figure 4.19 was shared with the participants.

4.7.4.4 Utilisation by ranking and reporting: Phase 3

In the third phase, the respondents were asked to answer survey questions (Appendix G), aligned to the RQs in Chapter One, section 1.7. Descriptive statistics were used to measure agreement of expert responses. Where responses did not show agreement, the survey questions were taken to Round 2. Multiple ranking was used to reach an acceptable level of consensus. In Round 2, for instance, to answer RQ 1: What are the factors affecting KT using SM in an innovative business environment? the following survey question was used: *Survey Question 1: Rank from 1 to 4, in order of significance, [a] Individual capabilities, self-efficacy etc., as factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somehow average impact).* The consensus was measured by non-parametric statistics that included the mean, variance, and standard deviation, while Kendall's coefficient measured the concordance of participants' responses, although it was not explained in the thesis (the use of non-parametric statistics was part of the triangulation and qualitative multi-method).

This round aimed to offer the experts the opportunity to reconsider the contributions they provided in the first round. By analysing the results obtained in the first round, the Delphi

technique second-round questionnaire was developed using Google Forms. Round two questionnaires included only ranking order questions (Appendix G) based on feedback from the experts regarding certain ranking order questions posed in the first round.

In the utilisation phase, the researcher exported data from the experts' completed Google Forms into an Excel file. The Excel file data were captured into a statistical analysis tool, specifically IBM Statistical Package of the Social Science (SPSS) Statistics version 27. This was part of the triangulation to augment the reliability and credibility of the study. The use of these methods ensures that triangulation is fulfilled, which revealed a direct link between data triangulation and data saturation. The data analysis was divided into three sections: i) demographic information, ii) ranking factors by importance using a Likert-type scale, and iii) ranking factors impacting the use of SM in KT. To improve the vigour of the study, different variable analyses were applied before combining data to test for any substantially similar agreement among respondents.

When data are both qualitative and quantitative, Hasson et al. (2000) recommend that the main statistical techniques used in Delphi technique studies are measure of central tendency and level of dispersion (i.e., mean, median, standard deviation, and interquartile range) because this is the most effectively present information regarding the respondents' collective judgment. Lodico et al. (2006) express that if a relationship does exist, the strength and direction of the relationship are reported numerically in what is referred to as a correlation coefficient.

Brochhoff (1975), Couger (1988), and Al-Araibi et al. (2018) applied the measure of central tendency following the Delphi methodology. Delphi techniques were also applied in this current study, and the results of the different rounds were measured by means of the central tendency (Chapter Five, sections 5.4). The responses' degree of ranking agreement, standard deviations, and interquartile ranges were used to avail a more accurate measure of consensus. A declining standard deviation indicates a decrease in the difference between participants scores and the majority mean score. Perfect consensus reveals a zero (0) standard deviation. The interquartile range can also be used to measure dispersion or consensus (calculated as third quartile minus first quartile) (Couger, 1988). The credibility of results can be considered by assessing whether the degree of consensus is high. Variance in responses is empirical and used to measure consensus in Delphi.

Figure 4.19 is an example of how data were analysed for open string data. This was done to disclose for instance how SM facilitates effective KT in an IBE. The following survey question was used: *Survey Question 2.1.1: How can knowledge be transferred using designed SM platforms (List any 5 ways).*

Figure 4.19 is an MS Excel spreadsheet demonstrating how the use of SM facilitates effective KT.

	A	B	C	D	E
1	SOCIAL MEDIA USE	Observations	As a %	X-MEAN	X-Mean)^2
2	Alerts	1	2%	-2	3
3	Knowledge application	1	2%	-2	3
4	Business transactions	1	2%	-2	3
5	Collaborations	3	6%	0	0
6	Conversation	1	2%	-2	3
7	Education	1	2%	-2	3
8	Entertainment	1	2%	-2	3
9	ERP	1	2%	-2	3
10	Communication	11	22%	8	67
11	Gym	1	2%	-2	3
12	Sharing	8	16%	5	27
13	Reputation	1	2%	-2	3
14	Meeting	5	10%	2	5
15	Career opportunities	3	6%	0	0
16	Technical knowledge	3	6%	0	0
17	Learning	1	2%	-2	3
18	Google	6	12%	3	10
19	Workshops	2	4%	-1	1
20	Sum	51			143
21	Count	18			
22	Average (Mean)	3			
23	Variance				7
24	Standard deviation				3

Figure 4.19: Spreadsheet used to analyse the frequency of concepts

Figure 4.20 shows the formulas used to calculate the sum, count, mean, variance standard deviation (calculated from survey results using formula=STDEV (B2:B19)). The MS Excel 2016 application was used as a tool for financial and scientific data analysis to verify the accuracy of the calculations.

File

Home

Insert

Page Layout

Formulas

Data

Review

View

Developer

Inquire

PowerPivot

Tell me what you want to do...

fx

Insert Function

Σ

AutoSum

Recently Used

Financial

Logical

Text

Date & Time

Lookup & Reference

Math & Trig

More Functions

Function Library

Name Manager

Define Name

Use in Formula

Create from Selection

Trace Precedents

Trace Dependents

Remove Arrows

Evaluate Formula

Show Formulas

Error Checking

Formula Auditing

M27

	A	B	C	D	E	F	G	H	I	J
1	SOCIAL MEDIA USE	Observations	As a %	X-MEAN	X-Mean)^2					
2	Alerts	1	=B2/\$B\$20	=B2-\$B\$22	=D2^2					
3	Knowledge applications	1	=B3/\$B\$20	=B3-\$B\$22	=D3^2					
4	Business transactions	1	=B4/\$B\$20	=B4-\$B\$22	=D4^2					
5	Collaborations	3	=B5/\$B\$20	=B5-\$B\$22	=D5^2					
6	Conversation	1	=B6/\$B\$20	=B6-\$B\$22	=D6^2					
7	Education	1	=B7/\$B\$20	=B7-\$B\$22	=D7^2					
8	Entertainment	1	=B8/\$B\$20	=B8-\$B\$22	=D8^2					
9	ERP	1	=B9/\$B\$20	=B9-\$B\$22	=D9^2					
10	Communication	11	=B10/\$B\$20	=B10-\$B\$22	=D10^2					
11	Gym	1	=B11/\$B\$20	=B11-\$B\$22	=D11^2					
12	Sharing	8	=B12/\$B\$20	=B12-\$B\$22	=D12^2					
13	Reputation	1	=B13/\$B\$20	=B13-\$B\$22	=D13^2					
14	Meeting	5	=B14/\$B\$20	=B14-\$B\$22	=D14^2					
15	Career opportunities	3	=B15/\$B\$20	=B15-\$B\$22	=D15^2					
16	Technical knowledge	3	=B16/\$B\$20	=B16-\$B\$22	=D16^2					
17	Learning	1	=B17/\$B\$20	=B17-\$B\$22	=D17^2					
18	Google	6	=B18/\$B\$20	=B18-\$B\$22	=D18^2					
19	Workshops	2	=B19/\$B\$20	=B19-\$B\$22	=D19^2					
20	Sum	=SUM(B2:B19)			=SUM(E2:E19)					
21	Count	=COUNT(B2:B19)								
22	Average (Mean)	=B20/B21								
23	Variance				=E20/B21-1					
24	Standard deviation				=E23*0.5					

4. Step 5 shows the results (i.e., mean, standard deviation, mode, range, maximum, minimum, sum, and count).

4.8 Time horizon

This study utilised a cross-sectional time horizon instead of a longitudinal study. A cross-sectional study gathers data just once or over days, weeks, or months, while a longitudinal study organises collected data over years to answer research questions (Saunders et al., 2019).

4.9 Research evaluation

Efforts were made to ensure the trustworthiness of the research processes and findings presented, aligned to the five criteria for research evaluation of Shenton (2004:73), which are: i) validity, ii) reliability, iii) credibility, iv) transferability, and v) confirmability. In this study, incomplete ratings were deleted. Additionally, different responses from experts in different countries and in different rounds of the Delphi technique ensured stability, alternate-forms reliability, and inter-rater reliability, shown in concordance with experts' responses through Delphi technique calculations.

4.9.1 Validity

Validity indicates whether the test scores are measuring the 'right things' for a particular use of the test (Livingston, 2018). In quantitative research, there are various forms of validity, which include:

- i) Construct validity (a term also used in qualitative research) facilitates the identification of the correct research procedures, for instance, the proposal phase, data collection, and reporting (Saldaña, 2013).
- ii) Internal validity or credibility is revealed when the data analysis can demonstrate pattern matching, explanation building, triangulation (of domains, theories, data collection, analysis strategies), database audits, peer review, member checking, assessing then intention of participants, and negative case analysis.
- iii) As quantitative term, external validity is equivalent to transferability in qualitative research. Transferability is similar to external validity as it is concerned with the extent to which the findings of a given study can be applied in other contexts with other respondents from the perspective of the reader of the findings (Lodico et al., 2006). Transferability is evaluated by "looking at the richness of the descriptions included in the study as well as the amount of detail provided about the context in which the study occurred" (Lodico et al., 2006:275). Transferability refers to the degree of similarity between the research site and other sites as judged by the reader.

4.9.2 Reliability

“Reliability is the extent to which a procedure produces similar results under constant conditions on all occasions” (Hasson et al., 2000:1012). “Dependability or reliability refers to whether one can track the procedures and processes used to collect and interpret the data” (Lodico et al., 2006:275). Cronbach’s (1951) alpha coefficient was used to measure the reliability of the survey instrument. According to Gliem and Gliem (2003), the Cronbach’s alpha reliability coefficient generally ranges between 0 and 1, although there is no lower limit to the coefficient (George & Mallery, 2003:231). A high value for Cronbach’s alpha indicates good internal consistency of the items in the scale, it does not mean that the scale is unidimensional. The Cronbach’s alpha coefficient formula is $r_k / [1 + (k-1) r]$, where k is the number of items considered and r is the mean of the inter-item correlations. The size of alpha is determined by both the number of items on the scale and the mean inter-item correlations.

Table 4.6 is the summarised list of strategies for ensuring trustworthiness in qualitative research.

Table 4.6: Strategies for ensuring trustworthiness in qualitative research projects (Shenton, 2004:73; Hasson et al., 2000:1012; Lodico et al., 2006:276; Stoner, 2010: 28)

Quality criterion	Possible provision made by researcher	What the author of this study adopted
Reliability or dependability	The reliability and validity of the experts’ responses were assessed using a questionnaire and SPSS to represent statistics of some interview findings.	This study used internal consistency reliability to attain Cronbach’s alpha coefficient. Generally, coefficients are not less than 0.7, the internal consistency reliability is good. Employment of “overlapping methods”, respondent validation, triangulation, and the use of strong data collection methods and other strategies (SLR, interviews, Delphi technique).
Internal validity or credibility	Adoption of appropriate, well-recognised research methods. Development of early familiarity with culture of participating organisations. Debriefing sessions between researcher and superiors. Peer scrutiny of project, use of “reflective commentary”. Description of background, qualifications, and experience of the researcher. Member verification (checks) of data collected and interpretations/theories formed.	• Triangulation via the use of different methods (SLR, interviews, Delphi technique, different types of informants – from Germany, South Africa, Australia, Russia, and different sites. • Debriefing sessions between researcher and supervisor, participants. • Description of background, qualifications, and experience of the researcher (biography and list of publications). Member checks of data collected and interpretations/theories formed, sensemaking, STT theories).
Transferability, external validity	Provision of background data to establish context of the study and detailed description of phenomenon in question to allow drawing comparisons. This validation procedure was meant to check the content and general presentation, phrasing, spelling inaccuracies, logic, understandability, purpose, reflection of the survey questionnaires.	Provision of background data to establish context of study and detailed description of phenomenon in question to allow comparisons to be made to increase validity. The research used a large sample, 20 interviewees, 51 experts in Delphi technique Round 1, and 31 experts in Round 2.

Quality criterion	Possible provision made by researcher	What the author of this study adopted
Confirmability	First and second researcher's view on the data for any bias. Triangulation to reduce the effect of investigator bias. Admission of researcher's beliefs and assumptions, recognition of shortcomings in study's methods and their potential effects. In-depth methodological description to allow integrity of research results to be scrutinised and the use of diagrammes to demonstrate "audit trail".	Informal member checks were performed to establish credibility. After the interviews, the summarised notes/transcriptions were emailed to the experts to establish if these a true reflection of what was said during the interviews. Recognition of shortcomings in study's methods and their potential effects, in-depth methodological description (Chapter Eight, section 8.3, research limitations). Data collection through the Delphi technique, expert interviews, or selected experts (this was a triangulation strategy to reduce effect of investigator bias). The use of diagrammes to demonstrate "audit trail".
Promoting action and collaboration (catalytic authenticity)	According to Lodico et al. (2006:276), this refers to the criteria for evaluating qualitative studies. A method for meeting the promotion and collaboration.	Included: • Description of collaboration with participants (shown in Appendices A, B, C and D) of this study). • Description of ways the research changed the lives of participants (not shown in this thesis). • Co-authorship of publications (shown in biography and list of publications, page vi). • Sharing royalties and other benefits of publication (not shown in this thesis).

4.10 Ethics, public trust, and citizen science

The concept of "public trust"/ "society trust" was explained in Chapter One, section 1.18. Shamoo and Resnik (2009:14) define ethics as "standards of conduct that distinguish between what is right, wrong, good, and bad, ii) studies standards of conduct, iii) approach to decision making, iv) state of character". Resnik (2011:407) concludes that the public trust to support rules or policies for the conduct of research must clarify; i) which public is being referred to (e.g., the general public or a specific community or group); ii) expectations from scientists, iii) how the rule or policy will safeguard meeting the expectations, iv) why it is important to meet expectations, and v) clarification that trust facilitates interactions among the academics. Trust-based research reflects openness, confidentiality, carefulness, respect, stewardship, responsibility, and freedom. Shamoo and Resnik's (2009:26) viewpoints are important and facilitate the justification of rules and policies in scientific research. Trust-based research is also vital for social utility, respect for human rights, and objectivity.

Ethics also refers to "a code of conduct or expected societal norm of behaviour when conducting research" (Sekaran, 2003:17). Participants' rights to privacy and not to be harmed physically, psychologically, and emotionally (Mouton, 2001), were recognised through a consent form, which was part of the online Google Form's questions distributed to participants during execution of the Delphi technique. Research participants were not interviewed at night-time, forced to respond to long interview sessions, or during any unavailable time slots. The researcher also gave participants his contact details in case of emotional shock and

accountability. The purpose of applying various data collection methods was to prevent errors in the research results.

Ethical principles include honesty, avoiding bias, openness, integrity, caution, and respect, non-discrimination, competence, lawfulness, and precaution (Resnik, 2011). Belmont's (cited in Rice, 2008) report defines the three crucial ethics that monitor ethical human subjects' research, which are respect for persons, beneficence, and justice. In presenting the study to the participants, the participant consent form outlined the purpose of the study, the type of information to be gathered, the option to omit or terminate participation at will, the level of confidentiality involved, and all further uses of the data were provided prior to participation (Appendix G). Additionally, the confidentiality of the participants and organisation was protected. It was important that the participants understood the following: i) what data would be collected, ii) the timeframe requirements for participation, iii) why contributions were needed, iv) how the data would be used, v) how participants would benefit, and vi) how the data will be used in future. Participants were informed that they had the right to retract their input and information from the study without any prejudice. Data were kept confidential and relayed in an exempt form. After interpreting the data, the participants were provided feedback about the level of effectiveness in considering social constraints. The outcomes were presented to the participants to minimise misconceptions and miscommunications during data collection.

Silvertown (2009:470) adds that research needs to regard the principles of research, which include the following:

- i) Data collected by the public must be validated in some way.
- ii) Methods of data collection must be well-designed and standardised.
- iii) As many assumptions as possible must be made clear.
- iv) It is desirable to have a hypothesis in mind, even if it is only a question like: 'How is X changing?' or "How is Y distributed?"
- v) Volunteers must receive feedback on their contributions as a reward for participation.

Being allowed to withdraw at will without consequence is regarded as individual autonomy (the right to self-government of the disadvantaged or susceptible group) (Rice, 2008). Participants were informed of the purpose of the research, voluntary involvement, the risks involved, the researchers' details and address, anonymity, and confidentiality (Leedy & Ormrod, 2010).

In this study, the final conceptual framework in Chapter Seven, section 7.4, was sent to the experts who were involved in the interviews to confirm that the framework was illustrating what participants had contributed during the interviews. SLR was designed, and the guidelines of Levy and Ellis (2006), Bryman and Bell (2011), and Winberg and Winberg's (2021) were followed, which concede that researchers should know the contents of a specific field of choice

and identify mistakes of other academia. This study adapted Okoli's (2015) process of SLR and the PRISMA (Page et al., 2021) flow diagramme template for systematic reviews. For the expert interviews, this research used Brinkman's (2009) guideline to design an interview guide. This was done to ensure validation of the research and regarding the principles of research. Chapter Four, section 4.5.4 shows recent application of the Delphi technique adopted in this study.

Each interviewee's willingness to participate in the study was confirmed before their interview commenced. Participants' consent to participate is required in the ethical principles of research. Each interviewee was offered an interview guide prior to the interview to set them at ease and provide insight into the questions that would be posed to them. Additionally, the interviewees were also offered the opportunity to verify their interview transcript. Interviewees were addressed using their assigned pseudo name, i.e., Participant 1 (P1), Participant 2 (P2), etc., as the key to organising the recordings and transcriptions in an orderly and confidential manner. The interviews were transcribed by the researcher of this study. The researcher was the only person to have exclusive access to the consent forms, MS Teams interview recordings/captions, and all digital notes and paper copies of the interviews. Any names of individuals or organisation(s) mentioned by the interviewees were omitted from the transcripts before analysis commenced.

4.11 Summary

This chapter presented the research methodology used in the study. A mix of subjective and objective ontology, pragmatic epistemological assumptions, as well as the abductive research approach were adopted. The research strategies followed included: i) SLR (data collection was done from literature such as open online professional journals, conference papers, connectedpapers.com, using keywords), ii) expert interviews, and iii) the Delphi technique.

An abductive approach was followed. The methodological choice was mixed methods as the expert data were analysed from both a qualitative (QUAL) and quantitative (quant) perspective to ensure research credibility by triangulation. The study employed research instruments considered important, specifically: i) library and its resources, ii) the computer and its software, iii) measurement techniques, iv) statistics, v) the human mind, and vi) language. Data were analysed using thematic analysis and descriptive statistics (measuring central tendency). The study assumed a cross-sectional time horizon. Public trust, citizen science, confidentiality, authenticity, and ethics were considered. The study's trustworthiness was evaluated using Shenton's (2004:73) guidelines, namely: i) validity, ii) reliability, iii) credibility, iv) transferability, and v) confirmability.

The next chapter presents the data analysis and results of the study.

CHAPTER FIVE: DATA ANALYSIS AND RESULTS

5.1 Introduction

Chapter Five presents the data analysis and results of the research. The research questions, sub-questions, and processes are restated through a description of the participants'² response rate, profile, privacy, and identity protection. The summary of findings is presented through tables defining categories, properties, and details in section A (bibliometric analysis and SLR findings), section B (participants' interview findings), and section C (Delphi technique findings). The chapter concludes with a theme development and summary. Figure 5.1 provides the layout of the chapter.

5.1	Introduction
5.2	Section A: The SLR analysis and results
5.3	Section B: Participant data analysis and results
5.4	Section C: Delphi analysis and results
5.5	Summary of all findings (SLR, participants, Delphi technique)
5.6	Categories and theme development
5.7	Themes
5.8	Summary

Figure 5.1: Layout of Chapter Five

5.2 SECTION A: The SLR analysis and results

5.2.1 Introduction

This section presents the analysis and results of the systematic literature review (SLR). The results are indicated as follows: i) SLR stages 1, 2, and 3, ii) answering RQ 1 and RQ 2, and the summary. Reviews of English papers published between 2000 to 2022 were used for the analysis. The data were downloaded using Harzing's *Publish or Perish* software tool in the form of meta-data, not full-text, presenting the author's name, title, year, and the publishing journal. Furthermore, Harzing's *Publish or Perish* software tool was used to illustrate the h-index³ and g-index⁴, which estimated the productivity, significance, and broad impact of the researcher's cumulative research contributions.

² Participants and experts are used interchangeably.

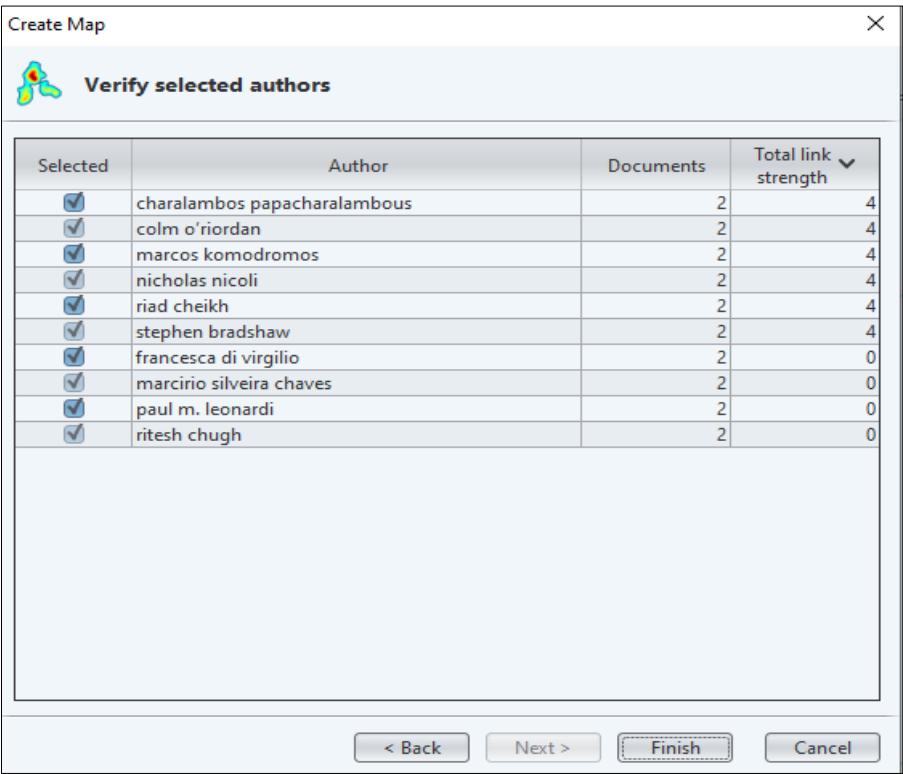
³ h-index=Hirsch-index

⁴ g-index=named after creator, Leo Egghe, a Belgian mathematician and information scientist (improvement of the h-Index)

In total, 100 English articles from 1,000 articles downloaded by Harzing's *Publish or Perish* software were selected (Chapter Four, section 4.6.2) based on the most cited per year, ranking, author, title, publication, and publisher. The h-index average annual increase and g-index (Chapter Four, section 4.6.2, Figure 4.7), age-weighted citation rate, and authors per paper were determined. The collective statistics of the selected 100 articles comprise 338 cites, 14.70 citations per year, 3.38 citations per paper, 1.63 authors per paper, an h-index of 7, and a g-index of 77.

An author analysis was done using the *VOSviewer* application, initially as part of the bibliometric analysis to provide insight into the structure and dynamics of research communities. The bibliometric analysis can influence individual researchers within communities to identify potential collaborations or link strength per author (6 of 10 show 4 links, while 4 of 10 have 0 links as indicated in Figure 5.2).

Figure 5.2 shows the collaborative relationships analysis among authors of scientific papers (two per author), for the publications period 2000 to 2022. Reflected are documents or papers per author.



The screenshot shows a 'Create Map' dialog box with a 'Verify selected authors' section. It contains a table with the following data:

Selected	Author	Documents	Total link strength
☒	charalambos papacharalambous	2	4
☒	colm o'riordan	2	4
☒	marcos komodromos	2	4
☒	nicholas nicoli	2	4
☒	riad cheikh	2	4
☒	stephen bradshaw	2	4
☒	francesca di virgilio	2	0
☒	marcilio silveira chaves	2	0
☒	paul m. leonardi	2	0
☒	ritesh chugh	2	0

At the bottom of the dialog box are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

Figure 5.2: Co-author analysis

Next, Figure 5.3 illustrates the analysis using the network visualisation of co-occurrence (occurrence of certain concepts together) of keywords (generated by authors of the selected 100 papers). One cluster was generated (constituting dots on each concept), showing 10 links

from the keyword analysis. The strength of the links reflects common interest, and how close the concepts are from other concepts, such as *knowledge* to *knowledge transfer (KT)*, and *knowledge* to *social medium*. SM is used interchangeably with social media, where SM is considered the message or interaction in this research. The concepts are explained in Chapter Two, sections 2.3.2, 2.3.3 and 2.3.4.

Figure 5.3 presents the network visualisation of co-occurrence of the researcher's keywords. The figure depicts the research developments in Organisation Science (represented by KT as part of knowledge management), Information Systems (IS) (knowledge and KT), and Information Technology (IT) (represented by technology and SM). Additionally, the thickness of a link between for instance technology and SM shows a stronger relationship than SM to KT. The proximity of terms, nodes and lines connecting the keyword co-occurrence expresses the strength of the relations of pairs of keywords. The nodes' colour represents keyword clusters, which, for this study, frequently contained co-occurring words that were interpreted as broad research topics. The distance between the circles (nodes) indicates the approximate relatedness of the keywords in terms of co-occurrence or co-authorship (Figure 5.3).

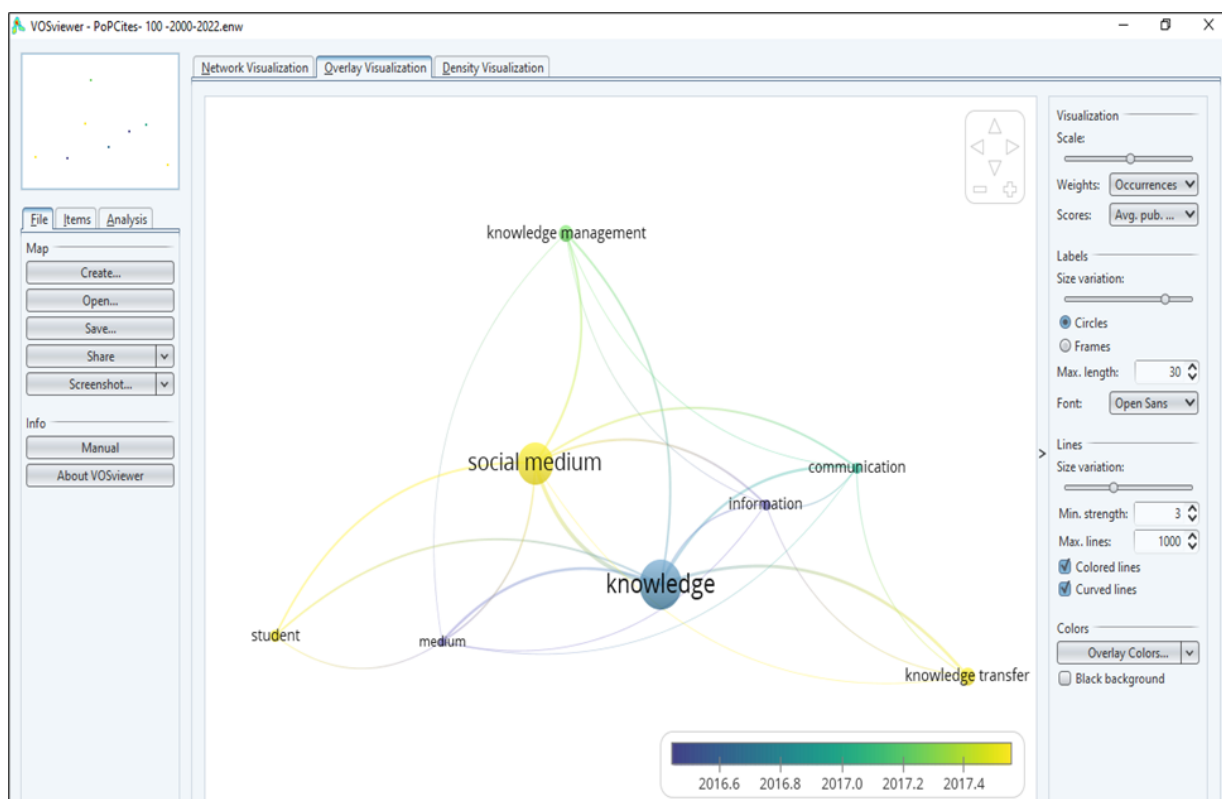


Figure 5.3: Network visualisation of co-occurrence of author keywords

Before showing the overlay visualisation maps of research developments, the verification of the selected terms, occurrences, and relevance from the papers uploaded to the *VOSviewer* application needs to be done (Figure 5.4).

Create Map ×			
Verify selected terms			
Selected	Term	Occurrences	Relevance ▼
☒	knowledge transfer	35	3.89
☒	knowledge	126	1.94
☐	medium	16	1.25
☐	factor	15	0.94
☒	social medium	103	0.77
☐	student	22	0.66
☒	communication	21	0.55
☒	knowledge management	32	0.53
☒	information	20	0.49

Figure 5.4: The verification of selected terms, occurrences and relevance

Figure 5.4 illustrates the verification of selected terms related to the topic, occurrences (35), and relevance (3.89), shown as *knowledge* (126, 1.94), *communication* (21, 0.55), *knowledge management* (32, 0.53), and *information* (20, 0.49). *Knowledge* reveals the highest occurrences, followed by *social medium* (16, 25). *Medium*, *factor* and *student* were not selected because of a lack of relevance to the use of SM in KT. The relevance of a term denotes the degree of significance to concepts, themes, and most in a domain, which assists the researcher with gaining insights into the key ideas and trends (e.g., concepts such as IT, OS, and IS).

Figure 5.5 shows the density visualisation of SM and KT.

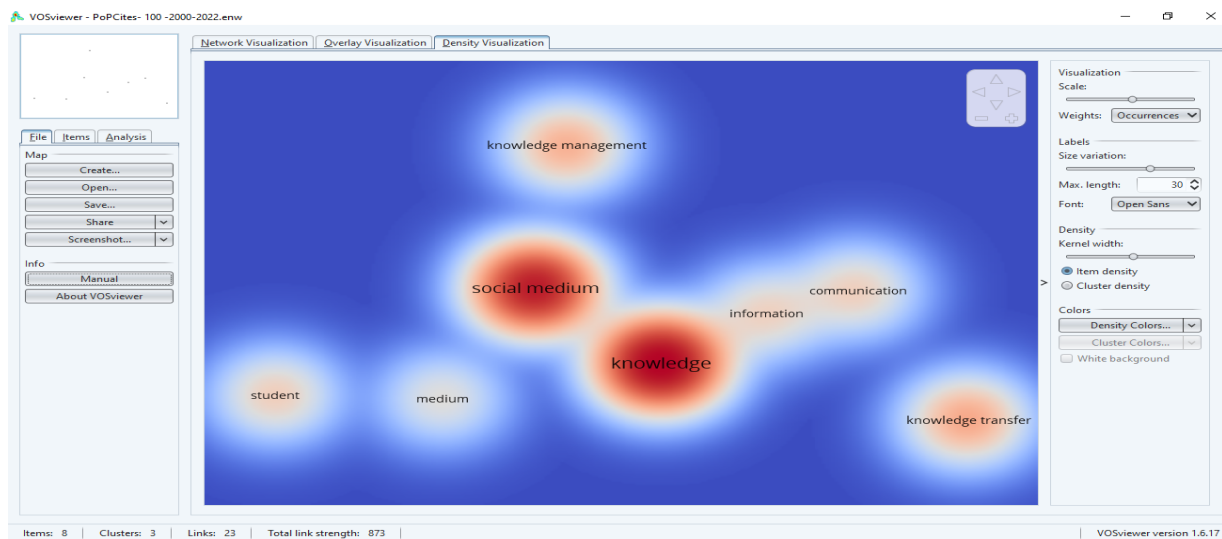


Figure 5.5: Density visualisation of knowledge, KT, and SM in the period 2000-2022

The density visualisation in Figure 5.5 shows that the darker the red colour and the larger the width of the circle, the denser the keywords, indicating that research has been done on this topic (e.g., *knowledge* and *social medium*). It also shows that SM seems to be more common than KT.

Finding 1: During the period 2000 to 2022, the attention of research shifted from information communication to KT and SM.

In Figure 5.6, the bibliometric analysis shows authors that have been contributing to research between 2000 to 2022. Figure 5.6 shows collaboration trends of authors on SM and KT.

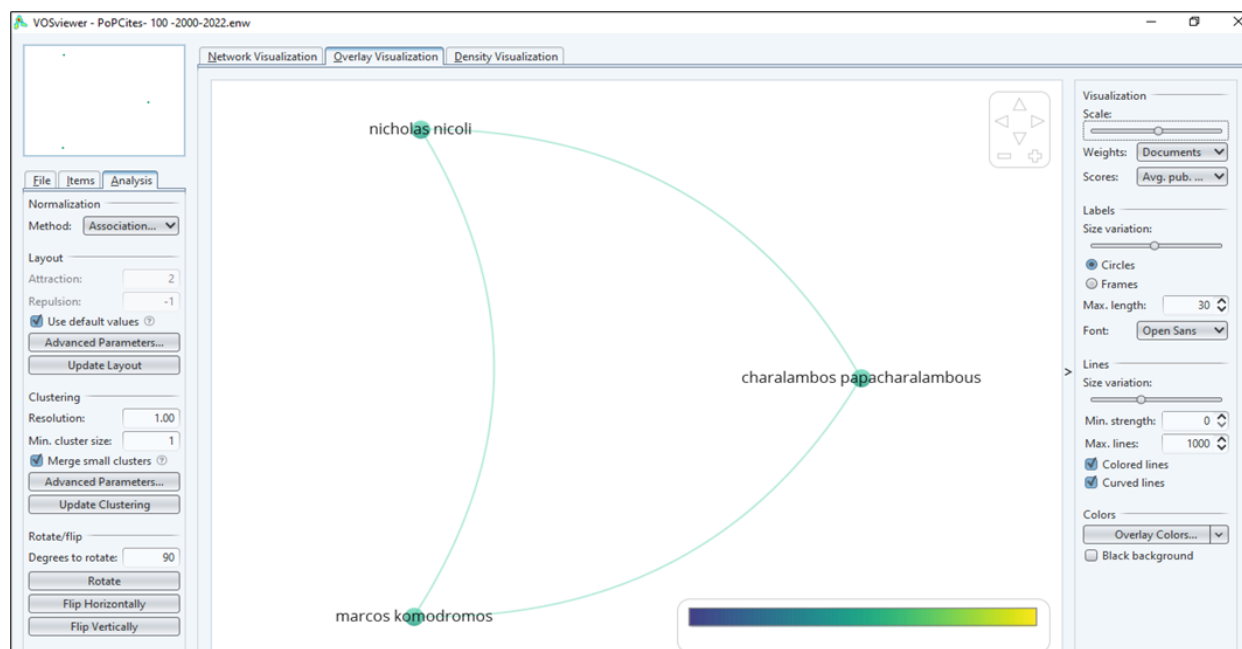


Figure 5.6: Collaboration trends in relation to SM use in KT

Authors that have been contributing to research between 2000 to 2022 include: i) Komodromos, ii) Nicoli, and iii) Papacharalambous (Figure 5.6) publishing at least 1.68 papers per year.

Finding 2: Collaboration is high on the agenda in relation to SM use in KT.

The second part of the SLR data analysis included a thematic analysis (Chapter Four, section 4.7.2). The next section discusses the analysis of stages 1, 2 and 3 of the SLR.

5.2.2 Stage 1: Analysis of SLR

This first stage of the article analysis was done by through NVivo coding (Chapter Four, section 4.7.2, Figure 4.12). The section of text in the pdf file was highlighted for use as NVivo code. As coding continued, certain codes became more frequently used, and it was easier to select from the code list presented in the Code Manager (Appendix O). This was done to be able to manage the analysis as more codes added too much complexity.

5.2.3 Stage 2: Analysis of SLR

In the second stage of analysis, similar codes were grouped together, merged into higher order categories, and continually compared and revisited (Chapter Four, section 4.7.2, Table 4.5).

Alfred Schutz's first and second order theory (1945-1955) was considered in the SLR. The first and second order constructs were used as lens (referring to the everyday understandings of ordinary people). The term *second order construct* refers to the constructs of the social sciences. Expressions or language of ordinary usage were transformed to more practical terms. Appendix J shows the merging of terms and language conversion. Codes (9) that were out of use or inappropriate were excluded during second stage coding. In merging the codes in ATLAS.ti, similar codes were selected (11) and merged with codes (8) from the menu (Appendix J).

From the second stage analysis, a total of 68 codes, 10 categories and five (5) themes were developed.

5.2.4 Stage 3: Analysis of SLR

Selective coding was used during the third stage of analysis, producing 68 codes. Then, 10 categories were used to develop five (5) themes (Table 5.8). During this stage, the data and the codes were revisited, searching for categories, themes, and relationships. The network diagrammes are qualitative visual representations of the data, which greatly assisted with third stage coding. Concepts, codes patterns, categories, and themes emerged from the network diagrammes (Brady, 2015:4) (Table 5.1).

Finally, hyperlinked maps of quotations were created, which assisted with the data analysis. Once the third stage coding was completed, lines of arguments were expressed for predominant themes and patterns (Chapter Five, section 5.3.4, Figure 5.7). Table 5.1 shows the codes in the thematic analysis process.

Table 5.1: SLR codes derived from analysis process

Question	Codes
RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?	Information Technology ease of use, usefulness, complexity, security, and IT capabilities (14:5) function as support for incentives, trust, infrastructure (15:4). People capabilities, values, privacy, knowledge tacit-ness, or explicitness, motives, trust, relations, academics goals or motives, incentives (15:1) support social organisational structure, culture, values, climate, and social systems (15:2). Situational changes, security, and climate (15:4) support technology (14:5) and organisational structure (15:2).
RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?	Incentives and motivation (11:13) support knowledge elicitation (11:9) and KT capability (11:14). Knowledge valuation (1:28) is justified by organisational culture (2:11). Knowledge complexity and 'stickiness' (11:5 & 11:11) justify having incentives (11:8), while knowledge absorption (11:4) motivates Internet access (22:3).

Question	Codes
RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment?	Communication (31:1)*, relationship (31:7), cognitive processing (31:8 & 31:12), culture (31:5), tasks (31:10), SM analytics (32:1) information accessibility, problem solving and innovations (34:1), socialisation (34:2), knowledge that is in accessible form (34:3), access of information and a media platform (38:1), meta-knowledge (39:1), procedures and guidelines (39:2), contacting a participant (39:3) social networking (40:2), SM conversation (40:1).
RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?	IT integration (16:10), online conversations (16:5), speed of information distribution (16:3), socialisation, interaction (16:12), SM affordance/elements (16:4 & 16:6), people (16:2), digital marketing (16:11).

* RSQ-Research Sub-Question; KT-Knowledge Transfer; SM-Social Media; IBE-Innovative Business Environment (numbers in brackets represent quotations from ATLAS.ti)

RSQ 1.1 resulted in 25 codes, RSQ 1.2 in 10 codes, RSQ 2.1 in 19 codes, and RSQ 2.2 in nine (9)9 codes (Table 5.10). After distilling these codes (Table 5.8), 68 codes were identified from which 10 categories and five (5) themes were developed.

In the next section, the RQs were asked to find answers in the literature.

5.2.5 RQ 1: What are the factors affecting KT using SM in an innovative environment?

5.2.5.1 RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?

Many factors could facilitate effective KT using SM in an IBE. Factors that could facilitate effective KT using SM are, for example: i) economical, ii) social, iii) political, and iv) technological factors in organisations. Table 5.2 shows the factors that could facilitate effective KT using SM.

Table 5.2: Factors that could facilitate effective KT using SM

Question	Codes developed using ATLAS.ti
RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?	IT ease of use, usefulness, complexity, security, and IT capabilities (14:5) function as support for incentives, trust, infrastructure (15:4). People capabilities, values, privacy, knowledge tacit-ness or explicitness, motives, trust, relations, academics goals or motives, incentives (15:1) support social organisational structure, culture, values, climate, and social systems (15:2), illustrated by links in Figure 5.8. Situational changes, security, and climate (15:4) support technology (14:5) and organisational structure (15:2).

Figure 5.7 presents is a hyperlink diagramme of the factors that could facilitate effective KT using SM in an innovative business environment.

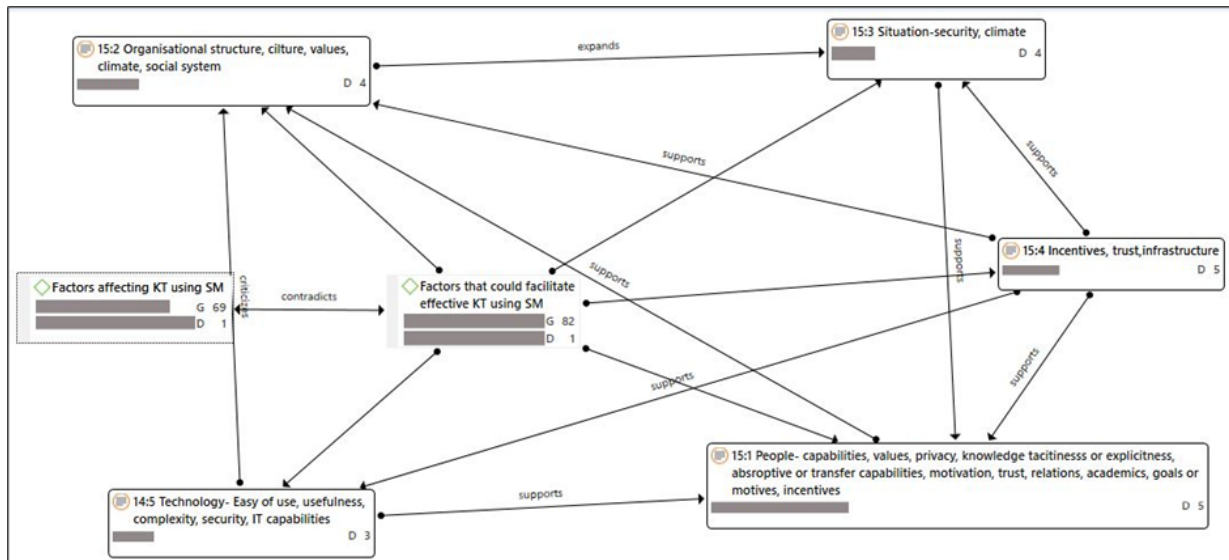


Figure 5.7: Factors that could facilitate effective KT using SM⁵ (the numbers, e.g., 14:5, indicate quotations highlighted from the papers in ATLAS.ti)

Figure 5.7 illustrates the factor codes that could facilitate effective KT using SM from a central point.

Finding 3: The factors that could facilitate effective KT using SM in an IBE are: i) people, ii) trust, iii) organisational social-technical culture, and iv) the technological environment.

Finding 4: People capabilities support organisational structure, values, and processes.

Finding 5: IT infrastructure supports people and organisational KT.

5.2.5.2 RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?

Many challenges could affect effective KT using SM. Table 5.3 illustrates challenges that could affect effective KT using SM.

Table 5.3: Challenges that could affect effective KT using SM

RSQ	Codes developed using ATLAS.ti
RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?	Incentives and motivation (11:13) support knowledge elicitation (11:9) and KT capability (11:14). Knowledge valuation (1:28) is justified by organisational culture (2:11). Knowledge complexity and 'stickiness' (11:5 & 11:11) justify having incentives (11:8), while knowledge absorption (11:4) motivates Internet access (22:3).

RSQ-Research Sub-Question

⁵ The meaning of each symbol is explained in Chapter 4, section 4.8.2.

Figure 5.8 shows an ATLAS.ti hyperlink diagramme on challenges that could affect effective KT using SM. Instance rewards support organisational structure or processes in the diagramme.

Figure 5.8: Challenges that could affect effective KT using SM⁶ (the numbers, e.g., 22.3, indicate the quotations highlighted from the papers in ATLAS.ti)

Finding 6: The challenges of KT using SM related to human characteristics are: i) motivation, ii) support on knowledge elicitation, iii) KT capability, iv) knowledge valuation, v) organisational culture, vi) knowledge complexity and stickiness, vii) having incentives, viii) knowledge absorption.

Finding 7: The challenges of KT using SM related to technology are: i) KT capability, ii) knowledge complexity, iii) IT policies and procedures, iv) available hardware, v) available software, vi) access to hardware, vii) access to software and x) internet access.

5.2.6 RQ 2: How can SM be managed for effective KT in an innovative business environment?

⁶ The meaning of each symbol is explained in Chapter Four, section 4.8.2.

5.2.6.1 RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment?

There are various means on how knowledge can be transferred using designed SM platforms in an IBE. Knowledge can be transferred through communication, conversation, cognitive process, culture exchange, SM analytics, problem solving, and procedure guidelines. Table 5.4 emanated from Figure 5.9 to show the development of the codes.

Table 5.4: Codes developed from the articles using ATLAS.ti

RSQ	Codes developed from articles via ATLAS.ti
RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment ?	Communication (31:1), relationship (31:7), cognitive processing (31:8 and 31:12), culture (31:5), tasks (31:10), SM analytics (32:1), information accessibility, problem solving and innovations (34:1), socialisation (34:2), knowledge that is in accessible form (34:3), access of information and a media platform (38:1), meta-knowledge (39:1), procedures and guidelines (39:2), contacting a participant (39:3), social networking (40:2), SM conversation (40:1).

Finding 8: Knowledge can be transferred through: i) communication, ii) SM monitoring tools, iii) access of information, and iv) a media platform to include v) knowledge in accessible form.

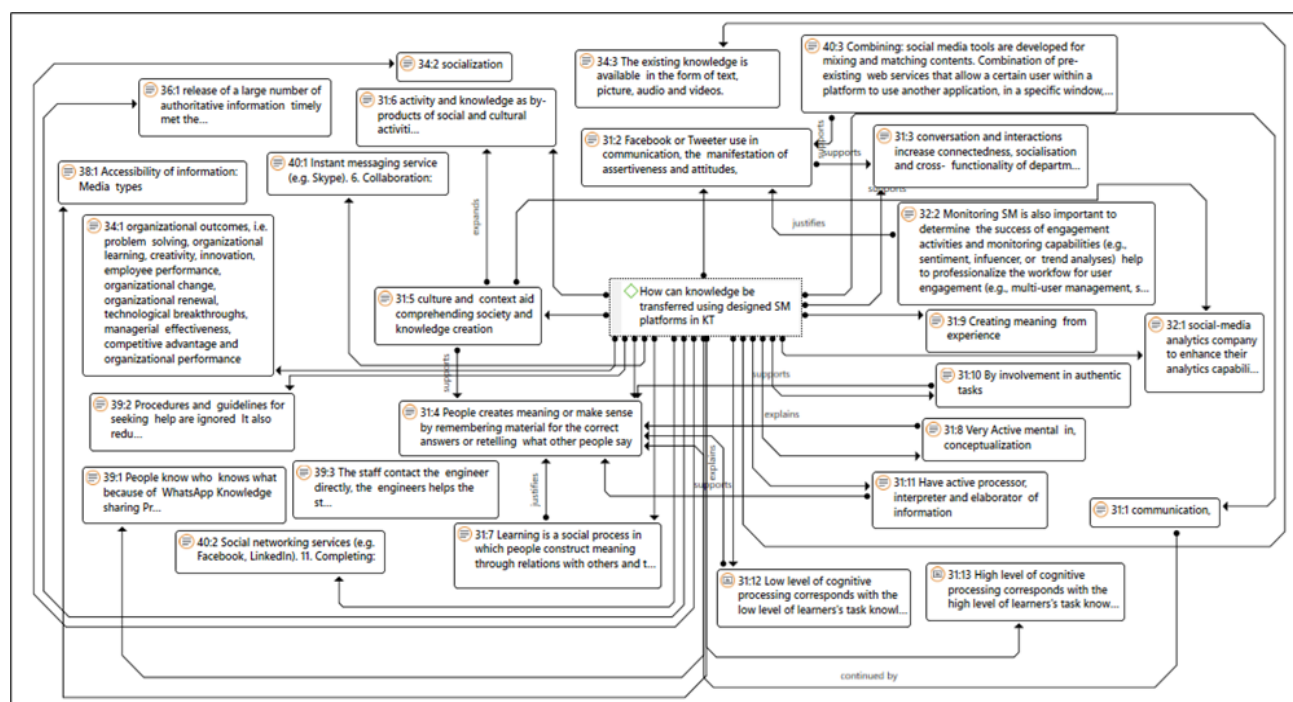


Figure 5.9: How knowledge can be transferred using designed SM platforms (the numbers, e.g., 39.2, indicate the quotations highlighted from the papers in ATLAS.ti)

Figure 5.9 illustrates how knowledge can be transferred using designed SM platforms. It addresses the concept: how can knowledge be transferred using designed SM platforms?

Finding 9: Communication, cognitive processing, culture, tasks, SM monitoring tools analytics, problem solving and innovations, and meta-knowledge facilitate KT in conversation.

5.2.6.2 RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?

Table 0.5: How can SM facilitate KT?

Figure 5.10 demonstrates how the use of SM can facilitate KT.

Figure 5.10: How SM facilitates KT ⁷ (the numbers, e.g., 14:5, indicate the quotations highlighted from the papers in ATLAS.ti)

The core concept, namely how SM facilitates effective KT, is shown in Figure 5.10. SM facilitates effective KT through IT integration and the speed of information distributed in the organisation, which is done by socialisation and interaction of employees in e.g., groups, or using SM elements, which, in turn, facilitates effective SM transfers.

Finding 11: SM facilitates effective KT through IT integration, online conversations, speed of information distribution, socialisation, interaction, SM affordance/elements, people, and digital marketing.

Finding 12: SM facilitates online conversation, digital marketing campaigns, and IT integration, thereby facilitating KT.

Figure 5.11 illustrate how SM can be managed for effective KT using SM.

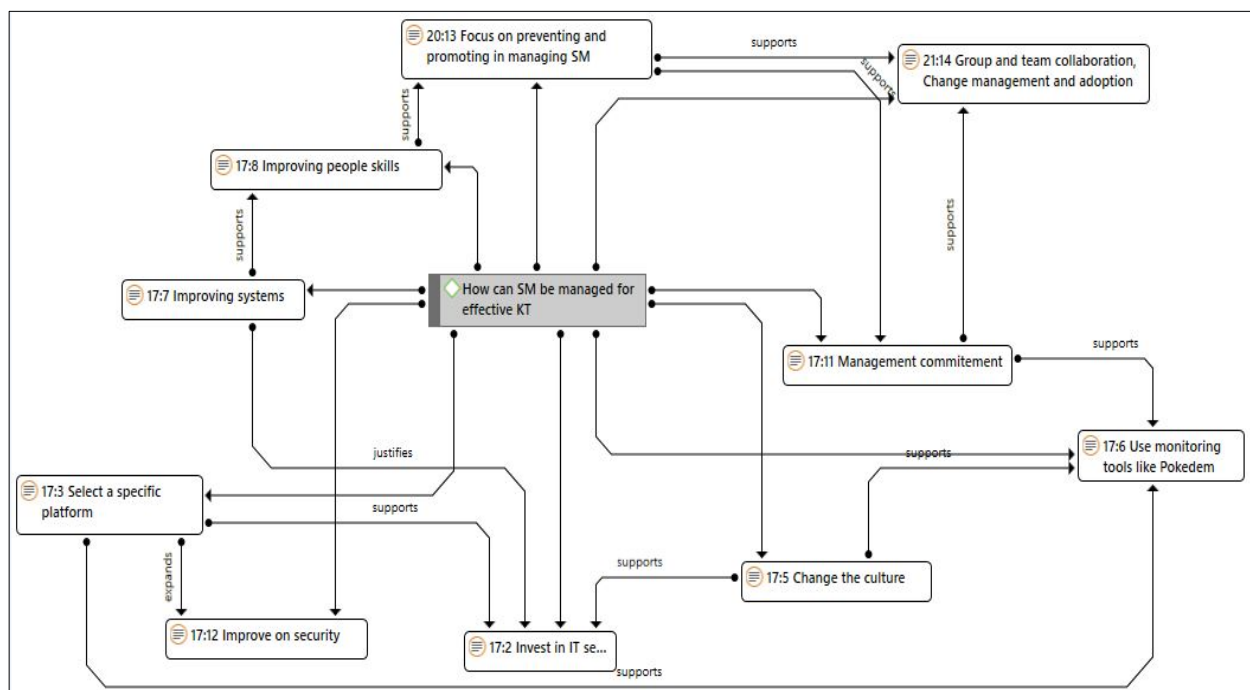


Figure 5.11: How SM can be managed for effective KT (the numbers, e.g., 14:5, indicate the quotations highlighted from the papers in ATLAS.ti)

Figure 5.11 illustrates relationships in the data related to how SM can be managed for effective KT. The relationships are illustrated via the arrows and quotation interconnections. Improving people skills (17:8) supports focusing on prevention and promotion in managing SM (20:13), which, in turn, promotes group and team collaboration, change management, and adoption (21:14). Furthermore, management commitment (17:11) should focus on group and team collaboration, change management, and adoption (21:14), and the use of monitoring tools such as Pokedem (17:6) to manage the use of SM in KT. Selecting a specific platform (17:3) requires improvement in security (17:12), and the use of SM monitoring tools such as Pokedem (17:6).

Table 5.6 illustrates SM management strategies found in literature.

Table 5.6: SM management strategies found in literature

SM management strategies extracts from articles using ATLAS.ti	Needs that people are seeking to satisfy		The nature of the goal or standard that people are trying to achieve		The psychological situations that matter to people	
	R	P	R	P	R	P
SM monitoring and using listening tools, impact of business-to-business salespeople's SM use on value co-creation and cross/up-selling (Taprial & Kanwar, 2017; Itani et al., 2023).		√		√		√
Strategy formation, profile creation, expanding the network, implementation or enjoyment, monitoring, measurement of SM metrics (Taprial & Kanwar, 2017; Namvar et al., 2018).	√	√	√	√	√	√
SM content should fulfil a specific need or motive other rather than fulfilling any need (Kaplan & Haenlein, 2010; Taprial & Kanwar, 2017).	√		√		√	
Novikova et al. (2020) outline the basic tools of knowledge and technology transfer as including: a) political, financial, infrastructure, qualification, information and communication.	√	√		√	√	√
IT Investment organising, storing, processing, restoring, transmitting information (Olimov & Mamurova, 2022).		√		√		√
Invest in risk assessment (Aramide et al., 2020).	√		√		√	
SM policy development Aramide et al., 2020).	√		√		√	
Personnel training, management strategies and other activities as well as technology management assessment (Aramide et al., 2020).		√		√		√
Audit trails, routine testing of system hardware, software, and procedures for measuring the readability, integrity, confidentiality, accuracy of data input and output (Aramide et al., 2020).	√		√		√	
Avoiding insecure tools and intrusive applications (Bidgoli, 2021).	√		√		√	
Enabling other than regulative policies to manage SM (Ford Motor Company, n.d.).		√		√		√
Managing technologies depends mainly on the size of the company and its organisational structure (Kaya et al., 2017).	√		√		√	√
The identification, selection, acquisition, operation, and protection of technology; Kaya et al. (2017:303) proposed a technology management framework.		√		√		√
Confidentiality and professionalism agreements should be clear on "internal use" of information, collaboration, transparency, diversity, respect, and quality (Van Looy, 2016; Bidgoli, 2021).	√		√		√	
Sandberg and Tsoukas's (2020:9) sensemaking features include the use of i) language, ii) sense, and iii) action connection.	√		√		√	

*R- regulatory strategies; P- promotional strategies

Finding 13: In SM management, people are not focusing on promotion or prevention.

Finding 14: SM management is not focused on group/team collaboration or change management technology.

5.2.7 Summary of SLR analysis and findings

The following is a summary list of findings of the SLR. Table 5.7 presents the summary on the bibliometric analysis and SLR.

Table 5.7: Summary findings of bibliometric analysis of the SLR

RQ and RSQ	Research strategy	Finding No.	Findings
RQ 1: What are the factors affecting KT using SM in an innovative business environment?			
RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?	BIO	Finding 1	During the period 2000 to 2022, the attention of research shifted from information communication to KT and SM.
	SLR	Finding 3	The factors that could facilitate effective KT using SM in an IBE are: i) people, ii) trust, iii) organisational social-technical culture, and iv) the technological environment.
		Finding 4	People capabilities support organisational structure, values, and processes.
		Finding 5	IT infrastructure supports people and organisational KT.
RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?	BIO	Finding 2	Collaboration is high on the agenda in relation to SM use in KT.
	SLR	Finding 6	The challenges of KT using SM related to human characteristics are: i) motivation, ii) support on knowledge elicitation, iii), KT capability, iv) knowledge valuation, v) organisational culture, vi) knowledge complexity and stickiness, vii) having incentives, viii) knowledge absorption.
		Finding 7	The challenges of KT using SM related to technology are: i) KT capability, ii) knowledge complexity, iii) IT policies and procedures, iv) available hardware, v) available software, vi) access to hardware, vii) access to software and x) internet access.
		Finding 14	SM management is not focused on group/team collaboration or change management technology.
RQ 2: How can SM be managed for effective KT in an innovation business environment?			
RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment?	BIO	-	-
	SLR	Finding 8	Knowledge can be transferred through: i) communication, ii) SM monitoring tools, iii) access of information, and iv) a media platform, including v) knowledge that is in accessible form.
		Finding 9	Communication, cognitive processing, culture, tasks, SM monitoring tools analytics, problem solving and innovations, and meta-knowledge facilitate KT in conversation.
		Finding 10	The use of SM such as Facebook facilitates KT in conversation.
RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?	BIO	-	-
	SLR	Finding 11	SM facilitates effective KT through IT integration, online conversations, speed of information distribution, socialisation, interaction, SM affordance/elements, people, and digital marketing.
		Finding 12	SM facilitates online conversation, digital marketing campaigns, and IT integration, thereby facilitating KT.
		Finding 13	In SM management, people are not focusing on promotion or prevention.
	SLR	Finding 11	SM facilitates effective KT through IT integration, online conversations, speed of information distribution, socialisation, interaction, SM affordance/elements, people, and digital marketing.
		Finding 12	SM facilitates online conversation, digital marketing campaigns, and IT integration, thereby facilitating KT.
		Finding 13	In SM management, people are not focusing on promotion or prevention.

*RQ-Research Question, RSQ-Research Sub-Question, BIO-Biometric Analysis

Table 5.7 shows the RQs and RSQs linked to the findings. The themes were developed by firstly summarising the codes (68), then categorising the findings into 10 categories. These 10 categories were used to develop four (4) themes, namely: i) people, ii) organisational socio-technical culture, iii) SM, and iv) KT. Table 5.8 shows the audit trail of the development of the themes.

Table 5.8: RSQs aligned with codes, categories and themes developed from the SLR

RSQ	Codes	RSQ	Categories	RSQ	Themes
RSQ 2.1; 2.2	access of information	RSQ 2.1; 2.2	communication	RSQ 1.2	KT
RSQ 1.2; 2.1	appropriability	RSQ 2.1; 2.2	communication	RSQ 1.2; 2.1	Organisational socio technical-culture
RSQ 1.1; 2.1	attitudes	RSQ 1.2	information	RSQ 1.2; 2.1	People
RSQ 1.1; 2.1	bridges	RSQ 1.2; 2.1	information	RSQ 2.1; 2.2	SM
RSQ 1.2	capabilities	RSQ 1.2; 2.1	information	RSQ 2.1; 2.2	
RSQ 1.1	change	RSQ 2.1; 2.2	information	RSQ 1.1	
RSQ 1.2; 2.1; 2.2	cognitive processes	RSQ 2.1; 2.2	information	RSQ 1.1; 2.1	
RSQ 2.1; 2.2	communication	RSQ 1.1	knowledge	RSQ 1.2	
RSQ 2.1; 2.2	contacting a participant	RSQ 1.1; 2.1	knowledge	RSQ 1.2	
RSQ 2.1	conversation	RSQ 1.2	knowledge	RSQ 1.2	
RSQ 1.1; 1.2; 2.1; 2.2	culture	RSQ 1.2	knowledge	RSQ 1.2	
RSQ 2.1; 2.2	digital marketing	RSQ 1.2	knowledge	RSQ 1.2	
RSQ 2.1; 2.2	elements	RSQ 1.2	knowledge	RSQ 1.2; 2.1	
RSQ 1.2; 2.1	elicitation	RSQ 1.2	knowledge	RSQ 2.1; 2.1	
RSQ 1.1	enactment	RSQ 1.2; 2.1	knowledge	RSQ 1.2	
RSQ 1.1; 2.1	experience	RSQ 2.1; 2.1	knowledge	RSQ 1.2; 2.1	
RSQ 1.1	fear	RSQ 1.2	kt	RSQ 1.2; 2.1	
RSQ 2.1; 2.2	guideline	RSQ 1.2; 2.1	kt	RSQ 2.1; 2.2	
RSQ 1.2; 2.1	hidden knowledge	RSQ 2.1; 2.2	marketing	RSQ 2.1; 2.2	
RSQ 1.1	history	RSQ 2.1; 2.2	marketing	RSQ 1.1	
RSQ 1.1; 1.2; 2.1	incentives	RSQ 1.1	organisation	RSQ 1.1;1.2; 2.1	
RSQ 1.2	information overload	RSQ 1.1; 1.2; 2.1	organisation	RSQ 1.1; 1.2; 2.1; 2.2	
RSQ 1.1; 2.1	infrastructure	RSQ 1.1; 1.2; 2.1; 2.2	organisation	RSQ 1.1; 2.1	
RSQ 2.1; 2.2	innovations	RSQ 1.1; 2.1	organisation	RSQ 1.1; 2.1	
RSQ 2.1; 2.2	interaction	RSQ 1.1; 2.1	organisation	RSQ 2.1	
RSQ 1.2	internet access	RSQ 2.1	organisation	RSQ 1.1	
RSQ 2.1; 2.2	IT integration	RSQ 1.1	organisation	RSQ 1.1	
RSQ 1.2	knowledge absorption	RSQ 1.1	organisation culture	RSQ 2.1; 2.2	
RSQ 1.2	knowledge capturing	RSQ 2.1; 2.2	organisation processes	RSQ 2.1; 2.2	
RSQ 1.2; 2.1	knowledge complexity	RSQ 2.1; 2.2	organisation processes	RSQ 2.1; 2.2	
RSQ 1.2	knowledge creation	RSQ 2.1; 2.2	organisation processes	RSQ 2.1; 2.2	
RSQ 1.2	knowledge elicitation	RSQ 1.1	people	RSQ 2.1; 2.2	
RSQ 1.1; 2.1	knowledge integration	RSQ 1.1	people	RSQ 1.1	
RSQ 1.2	knowledge stickiness	RSQ 1.1	people	RSQ 1.1	

RSQ	Codes	RSQ	Categories	RSQ	Themes
RSQ 1.2	KT	RSQ 1.1	people	RSQ 1.1	
RSQ 1.2; 2.1	KT measurement	RSQ 1.1	people	RSQ 1.1	
RSQ 1.2; 2.1	lack of challenge	RSQ 1.1	people	RSQ 1.1	
RSQ 2.1; 2.2	media platform	RSQ 1.1	people	RSQ 1.1	
RSQ 1.1	mental model	RSQ 1.1	people	RSQ 1.1	
RSQ 2.1; 2.1	meta-knowledge	RSQ 1.1; 2.1	people	RSQ 1.1	
RSQ 1.1	motives	RSQ 1.1; 2.1	people	RSQ 1.1; 2.1	
RSQ 2.1; 2.2	online conversations	RSQ 1.1; 2.1	people	RSQ 1.1; 2.1	
RSQ 1.1	organisational culture	RSQ 1.1; 2.1	people	RSQ 1.1; 2.1	
RSQ 1.1; 2.1	outcomes	RSQ 1.1; 2.1	people	RSQ 1.1; 2.1	
RSQ 1.1; 2.1	past horizon	RSQ 1.1; 2.1; 2.2	people	RSQ 1.1; 2.1	
RSQ 2.1; 2.2	people	RSQ 1.2	people	RSQ 1.1; 2.1; 2.2	
RSQ 2.1; 2.2	problem solving	RSQ 1.2	people	RSQ 1.2	
RSQ 2.1; 2.2	procedures	RSQ 1.2; 2.1	people	RSQ 1.2	
RSQ 1.1	receptive capability	RSQ 2.1	people	RSQ 1.2; 2.1	
RSQ 2.1	receptive self-efficacy	RSQ 2.1; 2.2	people	RSQ 2.1	
RSQ 2.1; 2.2	relationship	RSQ 2.1; 2.2	people	RSQ 2.1; 2.2	
RSQ 1.1; 2.1	reputation	RSQ 2.1; 2.2	people	RSQ 2.1; 2.2	
RSQ 1.1	retention	RSQ 2.1; 2.2	people	RSQ 2.1; 2.2	
RSQ 1.1	selection	RSQ 1.2	people	RSQ 2.1; 2.2	
RSQ 1.1	self-efficacy	RSQ 1.2; 2.1; 2.2	people	RSQ 1.2	
RSQ 1.1; 2.1	sensemaking or unmaking	RSQ 1.1; 2.1	SM	RSQ 1.2; 2.1; 2.2	
RSQ 1.1; 2.1	SM affordances	RSQ 1.1; 2.1	SM	RSQ 1.1; 2.1	
RSQ 2.1; 2.2	SM conversation	RSQ 1.2	SM	RSQ 1.1; 2.1	
RSQ 2.1; 2.2	SM affordance	RSQ 2.1; 2.2	SM	RSQ 1.2	
RSQ 2.1; 2.2	SM analytics	RSQ 2.1; 2.2	SM	RSQ 2.1; 2.2	
RSQ 2.1; 2.2	social networking	RSQ 2.1; 2.2	SM	RSQ 2.1; 2.2	
RSQ 1.2	socio-technical process	RSQ 2.1; 2.2	SM	RSQ 2.1; 2.2	
RSQ 1.2	socialisation	RSQ 2.1; 2.2	SM	RSQ 2.1; 2.2	
RSQ 2.1; 2.2	speed of information distribution	RSQ 2.1; 2.2	SM	RSQ 2.1; 2.2	
RSQ 1.2	succession plan	RSQ 1.2; 2.1	tacit knowledge	RSQ 2.1; 2.2	
RSQ 1.1	tacit knowledge	RSQ 1.1; 2.1	technology	RSQ 1.1; 2.1	
RSQ 1.1; 2.1; 2.2	task	RSQ 1.2	technology	RSQ 1.2	
RSQ 1.1; 2.1	trust	RSQ 2.1; 2.2	technology	RSQ 2.1; 2.2	

*RSQ-Research Sub-Question; SM-Social Media; KT-Knowledge Transfer

5.2.8 Themes

The themes developed (as depicted in Table 5.8) are:

- i) People
- ii) Organisational socio-technical culture
- iii) SM
- iv) KT

5.3 SECTION B: Participant data analysis and results

5.3.1 Introduction

Before starting the analysis, the participants' responses (Appendix H) were transcribed. The transcribed copies were mailed to the participants for validation. A copy of the responses was securely saved on Google drive. The ATLAS.ti application was used to analyse the transcribed data (Chapter Four, section 4.7.3.1). From the transcriptions codes (concepts), categories and themes were created.

5.3.2 Analysis of Stage 1

This first stage comprised NVivo coding where a section of text from the transcribed response was highlighted (Chapter Four, section 4.7.3.2, Figure 4.16). As coding continued, axial coding was used to explore and understand how the codes influenced each other and were related. Less-used and inappropriate codes (15) were excluded during the second stage coding. In merging the codes, similar codes were selected (70), resulting in six (6) categories, and five (5) themes (Table 5.21).

5.3.3 Analysis of Stage 2

In the second stage of the analysis, the identified codes and categories (6) were iteratively compared and revisited (Table 5.21 and Appendix J). Less-used codes that were out of use or inappropriate were excluded during the second stage coding.

5.3.4 Analysis of Stage 3

Selective coding was used during the third stage of analysis, and relationships of codes were also revisited. ATLAS.ti provided the ability to link quotations to create networks, which is vital to third stage coding. The network diagrammes with visual representations of the data assisted with the third stage coding. Examples include: i) Figure 5.13: Factors that could facilitate effective KT using SM, and ii) Figure 5.14: Challenges that affect effective KT using SM. Finally, hyperlinked maps of quotations were created as visual representations of the data (Figure 5.13).

The next section details the i) participants, ii) participant results, iii) summary, and iv) themes.

5.3.5 The participants

After the study's approval by the Faculty of Research Ethics Committee (FREC) of the Cape the Peninsula University of Technology, 25 participants⁸ were invited to take part in the study. Twenty (20) of the 25 participants volunteered to participate. After responding to the email and accepting to participate in the interviews, a second email was sent out to set up face-to-face

⁸ Participants represent experts; these terms are used interchangeably in Section B.

and Microsoft Teams meetings. After 18 interviews were conducted, transcribed, and analyses, a saturation point was reached, but a further two (2) interviews were conducted. Table 5.9 shows the country, position of participant, qualification, years of experience and applications used.

Table 5.9: Country, position of participant, qualification, years of experience and applications used

Interview P's Pseudo names	Country	Position	Qualifications	Years of experience	Applications used
P1	Australia	Chairman, Chief Executive Officer, Non-executive Director, Advisor	Master's degree	More than fifteen years' experience, with a Master's degree	Slack, MS Teams, SnapChat, Instagram, Facebook
P2	United Kingdom	Executive Director, Researcher	Doctoral degree	More than sixteen years as an executive director	Facebook, TikTok, email, Twitter, blog, SnapChat, WhatsApp, MS Teams
P3	South Africa	Senior Programmer, Supervisor	PhD	More than ten years as a software developer	Vimeo, Facebook Twitter, Instagram module reporter for journalist who needs to share knowledge
P4	South Africa	IT Project Manager, Researcher	PhD	More than nine years' experience	Email does not work anymore, involve more politics tool through CC, WhatsApp, Instagram
P5	Ireland	ICT Manager	Doctoral degree	More than fifteen years' experience in management, research, and ICT	Email, Twitter, blog, YouTube, Facebook, although it was not meant to be used to transfer knowledge in that space, WhatsApp
P6	Nether-land	Chief Executive Officer	Master's degree	More than five years to owning a company in a digital Marketing communication.	Facebook, Slack, everyone wants to kill one-way email using a blog of information, ineffective way to communicate and that's one of the big things that SM kills. Twitter, WhatsApp, and blog are some. The rigid, static wiki, on website, Google drive
P7	South Africa	ICT Researcher, Manager	Master in IT, PhD	More than fifteen years in the IT industry.	The one at the top is email, which is more private than WhatsApp (which is second) not needing to login, Facebook, discussion boards, blogs, Instagram, and twitter. Facebook is not very private because its open like WhatsApp
P8	South Africa	Chief Executive Officer	Master's degree	Eleven years in IT	Facebook, TikTok, email, twitter, blog, SnapChat, WhatsApp
P9	South Africa	ICT Networking Manager	B-Tech IT	More than twelve years in the IT industry	At the top is Facebook, email, WhatsApp, then the open WhatsApp does not need logging in, then some form discussion board
P10	Switzerland	ICT Manager	Master's current programmer PhD	More than fifteen years in the IT industry.	Facebook, email, Twitter, blog, SnapChat, WhatsApp

Interview P's Pseudo names	Country	Position	Qualifications	Years of experience	Applications used
P11	UK	ICT Researcher	PhD	More than four (4) years in the IT and education industry	WhatsApp is now showing a message which says you're "communication is now secure" which seems to imply that communication was not secure initially. Facebook, email, YouTube, Instagram, MS Teams
P12	German	Knowledge management, Researcher	PhD	More than 20 years in Knowledge management, researcher	It's mostly WhatsApp, Facebook, tactic, YouTube, MS Teams
P13	South Africa	Talent management and SM	Master's degree	10 years in Talent management and SM	Facebook, email, WhatsApp, YouTube, TikTok, LinkedIn, MS Teams
P14	South Africa	Software development, artificial intelligence	Master's degree	16 years in software development	Facebook, email, Twitter, blog, SnapChat, WhatsApp, MS Teams
P15	German	Education ICT	Master's degree, PhD	11 years in Education ICT	Facebook, Instagram, Zoom meeting use, MS Teams
P16	South Africa	Media, Marketing, Visual Streaming Manager	Honours in Marketing, Film and Visual Media, Degree in Communications and Cooperate Marketing, Advanced Diploma in PM	Five (5) years in ICT, Streaming in sport	Facebook, email, WhatsApp, YouTube, TikTok, LinkedIn, MS Teams
P17	South Africa	CEO, ICT Researcher, Training	Master of Business Administration	More than four (4) years of experience with the company	On website, week forum where we share information with our business partners and clients; internal social platforms like MS Teams where people share priority items, debate issues, impact of various items, Stack Overflow from a social perspective to pick up knowledge from other areas, MS Teams
P18	South Africa	Software development, ICT Manager	Master's degree	More than 10 years of experience	It's mostly WhatsApp, Facebook, TikTok, YouTube, MS Teams
P19	South Africa	Matric, Further Education Training Certificate in IT, Supervisor	Matric, Further Education Training Certificate in IT	More than five (5) years of experience	MS Teams, WhatsApp, LinkedIn
P20	South Africa	IT Diploma, Microsoft professional Certificate Windows, MCSE-Windows, 2003-2020	IT Diploma	More than 10 years of experience	MS Teams, WhatsApp, LinkedIn,

*P-Participant

Five (5) of the 20 participants mentioned that they use the Microsoft Teams application in their organisations, three (15%) use Facebook and WhatsApp as a useful application in organisations. Only two participants (8%) indicated that blogs and Instagram are useful in organisations. Figure 5.12 is a Tree map illustrating the SM applications being used in the participants' organisations.

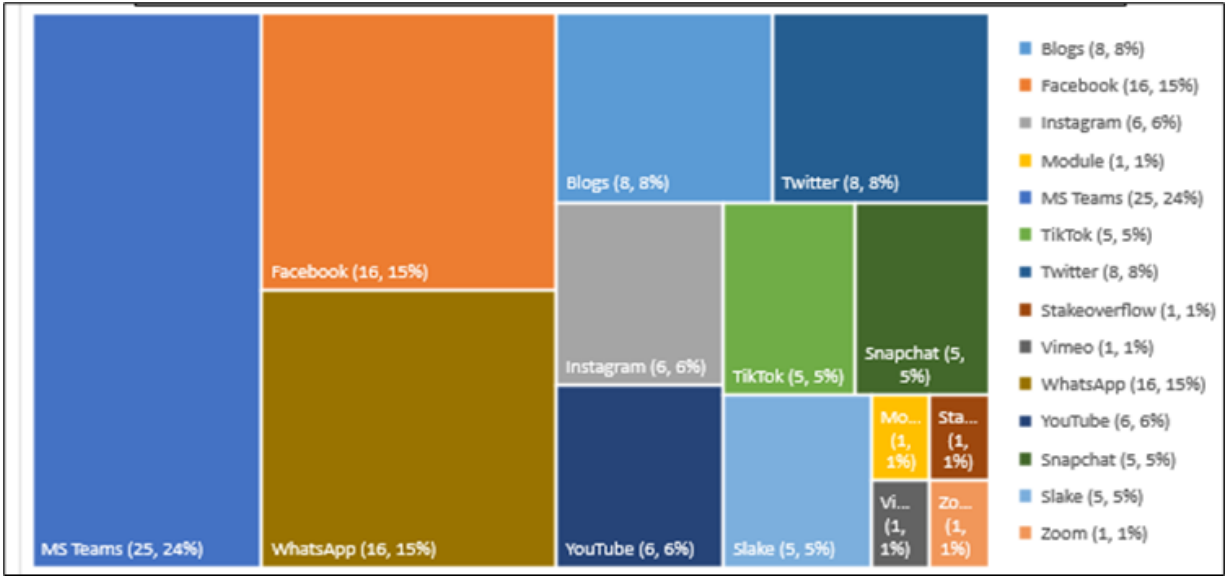


Figure 5.12: SM applications being used in the participants' organisations

Communication, collaboration, conversations, cooperation or groups, relations reputation, and one's presence can take place via SM in organisations as illustrated in Figure 5.12. What stands out in Table 5.9 is MS Teams as an application being used in organisations for KT. Facebook and WhatsApp are also used as a medium to transfer knowledge.

5.3.6 Participant data analysis and results

The next section outlines the findings linked to the introduction, RQs, RSQs, and the interview questions that were posed to the participants.

5.3.6.1 Introduction

To explore and understand the use of SM in KT in an IBE, two main research questions were posed: RQ 1: What are the factors affecting KT using SM in an innovative business environment? and RQ 2: How can SM be managed for effective KT in an innovative business environment? The ensuing segment presents the findings. The structure is presented as follows: i) the RQ, ii) the RSQ, followed by iii) the interview questions.

5.3.7 RQ 1: What are the factors affecting KT using SM in an innovative business environment?

5.3.7.1 RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovation business environment?

Interview Question (IQ) 1.1: Tick the primary source of innovation according to the continuum in the table (Appendix H).

Table 5.10 illustrates the different sources of innovation in relation to KT to answer RSQ 1.1.

Table 5.10: Sources of innovation in relation to KT

IQ 1.1: Source of innovation	Most important	Very Important	Equally important	Not important
The unexpected success	4(22%)	7(39%)	1(6%)	6(33%)
Incongruities	0(0%)	7(39%)	11(61%)	0(0%)
Process needs	1(6%)	8(44%)	9(50%)	0(0%)
Changes in the industry	5(28%)	9(50%)	3(17%)	1(6%)
Demographics	1(6%)	12(67%)	0(0%)	2(11%)
Changes in perceptions, mood and meaning	3(17%)	6(33%)	4(22%)	3(17%)
New knowledge	9(50%)	9(50%)	0(0%)	0(0%)
Strategy	8(44%)	5(28%)	0(0%)	0(0%)
Average	31%	63%	27%	12%
Total participants	20			

¹IQ-Interview Question

The importance of the sources of innovation in relation to KT (Table 5.11) is viewed by the participants on average as follows: Sixty-three per cent (63%) of the participants regarded all sources of innovation as very important to most important (31%). Twelve per cent (12%) regarded the source of innovation as not important.

Finding 15: Sources of innovation that facilitate KT include the incongruities, process needs, and changes in the industry, as well as new knowledge and strategy.

Interview Question 1.2: Show by a tick the organisational innovation capability measurement scale, which is composed of six items measured on a seven-point Likert scale [1–7] (Appendix H).

Table 5.11 displays the participants' responses related to the organisational innovation capability, comprising six items measured on a seven-point Likert scale [1–7]. The six measured items are the associated related number of responses who 1-strongly disagree, 3-disagree, 5-agree, 7-strongly agree as well as the percentage out of the total number of participants.

Table 5.11: Participants' responses related their organisational innovation capability

IQ 1.2: Show by a tick the organisational innovation capability measurement scale, which is composed of six items measured on a seven-point Likert scale	1-strongly disagree	3-disagree	5-agree	7-strongly agree
Your company frequently tries out new ideas	2(10%)	1(5%)	11(55%)	6(30%)
Your company seeks out new ways to do things	0(0%)	1(5%)	14(75%)	5(25%)
Your company is creative in its methods of operation	1(5%)	1(5%)	15(75%)	3(15%)
Your company is often the first to market new products and services	1(5%)	9(45%)	9(45%)	1(5%)
Your company perceives innovation as too risky and resists it	4(20%)	9(45%)	5(25%)	2(20%)
Your company's introduction of new products shows an increase over the last five years	1(5%)	1(5%)	17(85%)	1(50%)
Average	9%	24%	71%	18%
Total Participants	20			

*IQ-Interview Question

Shown in Table 5.11 are the results of the analysis on a continuum related to organisational innovation capability. The data on average reveal a 71% agreement that participants' organisations are seeking and trying out new ideas, ways to do things, operational methods, introducing new products to the market, and resisting risks. On average, 9% of the responses indicated disagreement. The main contribution towards having an innovative capability lies in i) seeking out new ways to do things, ii) creativity in methods of operation, and iii) the increase of new products over the last five years.

Finding 16: Organisations are seeking: i) new ways to do things, ii) to eliminate outdated processes, iii) new markets, iv) to launch new products.

Demonstrated in Figure 5.13 are the factors that could facilitate effective KT using SM.

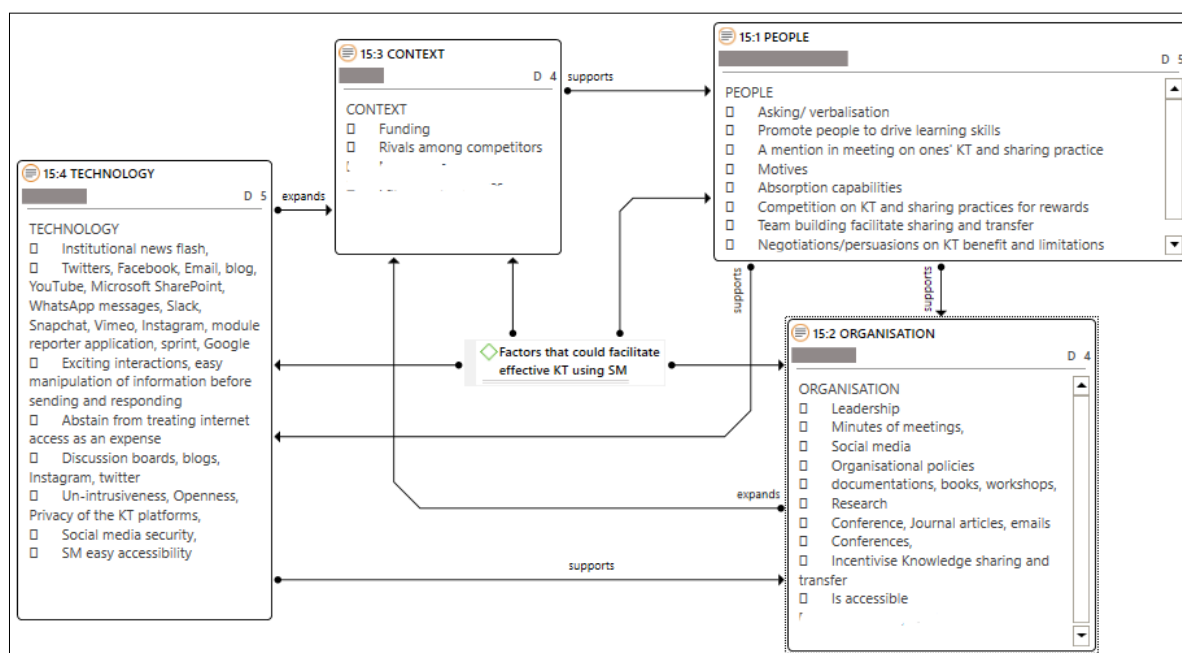


Figure 5.13: Factors that could facilitate effective KT using SM (the numbers, e.g., 15.2, indicate the quotations highlighted from the transcriptions in ATLAS.ti)

Figure 5.13 shows different routes through the data related to factors that could facilitate effective KT using SM in ATLAS.ti. The core code was factors that could facilitate effective KT using SM. Table 5.12 shows the factors that, according to the participants, can facilitate KT when using SM (obtained from figure 5.14).

Table 5.12: Factors that could facilitate KT when using SM

RSQ	Key concepts from interviews	Codes
	Institutional news flash (15.4)	Institutional news flash
	Twitter (15.4)	Twitter
	Facebook email (15.4)	Facebook e-mail
	Blog (15.4)	Blogs
	YouTube (15.4)	YouTube
	Microsoft SharePoint (15.4)	Microsoft SharePoint
	WhatsApp (15.4)	WhatsApp
	Slack (15.4)	Slack
	SnapChat Video (15.4)	SnapChat Video
	Vimeo (15.4)	Vimeo
	Instagram (15.4)	Instagram
	Module (15.4)	Module
	Reporter application (15.4)	Reporter application
	Sprint (15.4)	Sprint
	Google (15.4)	Google
	Interactions and easy manipulation of information (15.4)	Manipulation before transmitting
	Not treating internet access as an expense (15.4)	Internet not an expense
	Openness (15.4)	Openness
	Privacy (15.4)	Privacy
	Security (15.4)	Security
	SM accessibility (15.4)	SM accessibility
	Funding (15.4)	Funding
	Rivalry among competitors (15.4)	Rivalry between competitors
	Asking (15.4)	Asking
	Verbalisation (15.4)	Verbalisation
	Sharing (15.4)	Knowledge sharing
	Promote people to drive learning skills (15.4)	Incentivise people
	Motives (15.4)	Motives
	Absorption capacity (15.4)	Absorption capacity
	Competition on KT and sharing practices and rewards (15.4)	Sharing practices and rewards
	Team building facilitate sharing and transfer	Team building
	Negotiations on KT benefits and (15.4)	Negotiations
	Limitations (15.4)	KT limitations
	Leadership (15.4)	Leadership
	Minutes of meetings (15.4)	Minutes of meetings
	SM accessibility (15.4)	SM accessibility
	Organisational Policies (15.4)	Policies
	Documentation (15.4)	Documentation
	Books (15.4)	Books
	Incentivise knowledge sharing (15.4)	Incentivise
	Conference (15.4)	Conference
	Information accessibility (15.4)	Information accessibility

*RSQ-Research Sub-Question; the numbers (e.g., 15.2) indicate the quotation highlighted from the transcriptions in ATLAS.ti

Finding 17: MS Teams, Facebook, WhatsApp, News flash, SM security, HCI, and internet access facilitate effective KT using SM.

Finding 18: Organisational competitors, resources, leadership, minutes of meeting, policies, text, and KT incentives facilitate effective KT using SM.

Finding 19: Asking employees questions, promoting them to higher positions, mention the people involved in KT in a meeting, conferences, and research, facilitate KT using SM.

5.3.7.2 RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?

To answer RSQ 1.2, interview questions as shown in Appendix H related to RSQ 1.2 were posed to the participants.

Interview Question 1.2: What are the challenges that affect effective KT using SM in an innovative business environment?

Participants highlighted knowledge stickiness, the inability to identify what recipients are lacking, absorptive capability, lack of trust, knowledge valuation, knowledge capture, security, and resources. Seventeen (17) participants indicated that many challenges emanate from individual absorption, elicitation, transformation, awareness, trust, credibility, and transfer capabilities aspects. Six participants (P1, P2, P3, P4, P7 & P8, Appendix H) presented challenges related to organisational socio-technical culture.

The following excerpts outline some of the challenges that affect effective KT when using SM. Participant 4 in the excerpt below highlighted various challenges related to KT using SM.

“We are living [...] a thunderstorm and I am saying this is a tsunami. [...] problem with knowledge management is being hungry to get the knowledge, not being hungry to give the knowledge. [...] because people like sharing if they are asked by the right people. On tacit-ness and extraction: people are concerned about their job security and on the explicitness of knowledge aspects in documents, in databases; you know it is so important to keep those things up to date.... Structure in organisations destroys learning, why do we have juniors in organisations, working together, that closeness gives you that wisdom and gives access to your knowledge. Its information overload or a cultural thing that challenges, or political thing... If you expose yourself, if you make a mistake politics gets rid of you. They are feeling organisations want to get rid of people, while people do not have that safe feeling and very difficult to get their knowledge. I can tell you now more than ever knowledge is going to save us” (Appendix H, P4).

Participant 4's excerpt conveys the notion that challenges negatively impact on effective KT when using SM. As such, management should have mitigation strategies. Some examples of the participants' responses related to challenges affecting KT using SM are presented in Table 5.13.

Table 5.13: Responses related to challenges affecting KT using SM (from Figure 5.14)

RSQ	Key concepts from interviews (Appendix H)	Codes
RSQ 1.2: What are the challenges that affect effective KT using SM in an innovative business environment?	people capabilities (11:14)	people capabilities
	knowledge absorption (11.4)	knowledge absorption
	knowledge identification (11:10)	knowledge identification
	information overload (11:12)	information overload
	incentives (11:13, 2.17)	incentives
	lack of clear induction programs (21.17)	lack of clear induction programs
	knowledge stickiness (11.1)	knowledge stickiness
	knowledge elicitation (11.9)	knowledge elicitation
	knowledge valuation (11.2)	knowledge valuation
	knowledge elicitation capability (11:9)	knowledge elicitation
	organisational structure (1:49)	organisational structure
	resources (5.11)	resources
	knowledge transformation (11:6)	knowledge transformation
	KT measurement (11:8)	KT measurement
	innovative environment (1:28)	innovative environment
culture (4:36)	culture	
knowledge validation and certification (20.6)	connectivity	

*RSQ-Research Sub-Question; key concepts are shown in Appendix H; the numbers (e.g., 15.2) indicate the quotation highlighted from the transcriptions in ATLAS.ti

Finding 20: The challenges affecting effective KT using SM include: i) knowledge valuation, ii) people, iii) cognition, v) knowledge absorption capability, vi) unclear KT incentives structure and knowledge management, vii) resistance to change, viii) organisational socio-technical culture, ix) lack of resources, x) obsolete overload of knowledge, xi) stickiness, and xii) IT security.

Figure 5.14 presents the resultant challenges, associated relationships that affect effective KT using SM.

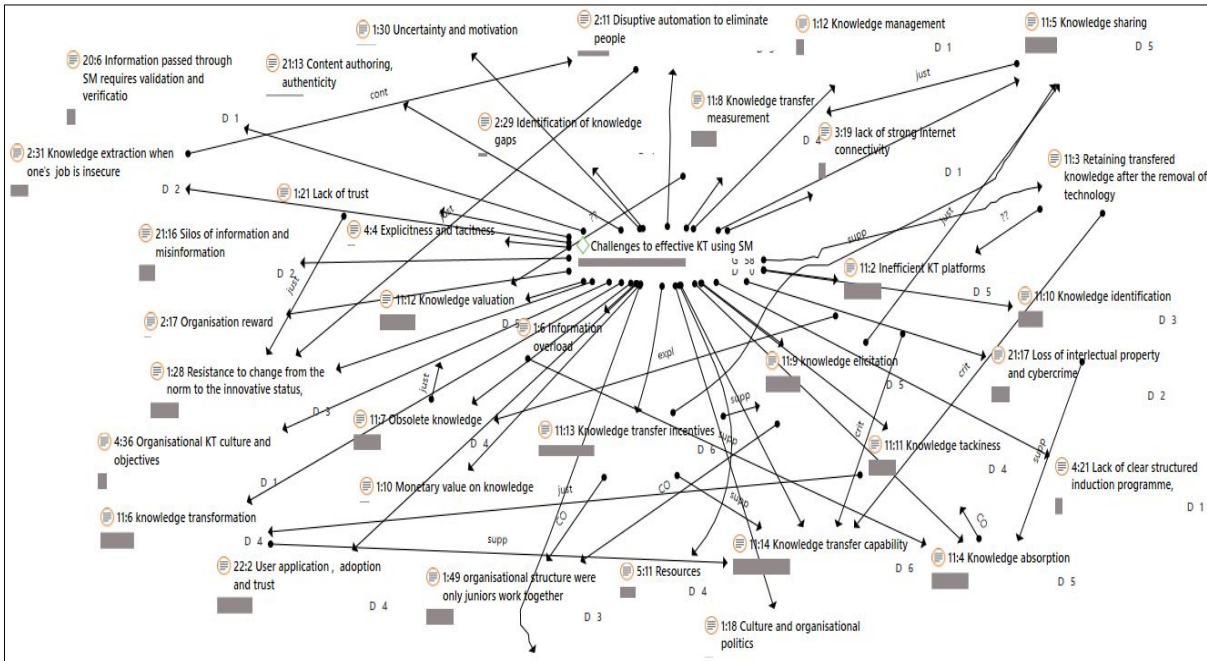


Figure 5.14: Challenges that affect effective KT using SM (the numbers, eg., 11:4, indicate the quotations highlighteds from the transcriptions in ATLAS.ti)

5.3.8 RQ 2: How can SM be managed for effective KT in an innovative business environment?

5.3.8.1 RSQ 2.1 How can knowledge be transferred using designed SM platforms in an innovative business environment?

Interview Question 2.1: What SM apps do you use in your organisation? If you use, how; if not, why?

Many strategies are applied to manage and improve the effectiveness of organisations in KT using SM. Some of the strategies are related to SM tools integration, Community of Practice (CoP), increased information overload, and content not properly structured or managed but necessary especially during the coronavirus pandemic period (2019-2021). This is evidenced by an example of participants' responses in Table 5.14.

Table 5.14: Key concepts of SM apps used in participants' organisations (Appendix H)

Interview Question	Key concepts from interviews (Appendix H)	Codes
IQ 2.1: What SM apps do you use in your organisation? If you use, how; if not, why?	"To be in front of competition ..."	information for competitiveness
	"easy to use"	ease of use
	"maintain confidentiality"	confidentiality
	"On Facebook we share videos"	sharing
	"...the dynamic Facebook platform using videos"	dynamic Facebook
	"rigid static wiki"	wiki

*IQ-Interview Question

Finding 21: At organisational level, SM tools such as module reporter, Jira, Jerk, sprint, Slack, Vimeo, week forum module reporter, and Stack Overflow are used in KT.

Finding 22: There is a lack of capability in choosing the correct specific application related to characteristics, purpose, strategy, and functionalities in organisations to manage SM in KT.

Interview Question 2.2: Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? If so, how; if not, why?

The interview question focused on assesses if organisations do have an established set of policies, regulations and legislation that enable content management or increased levels of ICT development. To highlight how SM can be managed to facilitate KT in an IBE, participants were asked if their organisations had any set of policies, culture, regulations, and legislation. The setting of policies, culture, regulations, and legislation enables content management or increases the levels of ICT development, thereby managing the use of SM. The ensuing quotations in Table 5.15 clarifies the IT management strategies usable in organisations.

Table 5.15: Organisational ICT policies, regulations and legislation (Appendix H)

IQ 2.2	Key concepts from interviews (Appendix H)	Codes
IQ 2.2: Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? If so, how; if not, why?	"buy LinkedIn"	LinkedIn
	"I spent R600 000 to buy LinkedIn"	IT investment
	"rolling share point"	SharePoint
	"R27 million ICT projects"	IT investment
	"standardised content management – Swagger"	Swagger
	"expensive management systems"	Expensive management systems
	"standardised content management"	Content management

*RSQ--Research Sub-Question

The results in Table 5.15 indicate that key ICT projects necessitate management, championship, appraisal, and avoiding investing in expensive management systems (which turns out to be 'scrapyards of claptrap'). Key ICT investments should not be destructive, lie idle, or become obsolete due to a lack of IT capabilities or awareness by the staff. Two (2) of 20 participant interviewee executives were restricted from revealing information on ICT investments, although some were at liberty to reveal the information.

Finding 23: Organisations' multi-content policies, regulations, and legislation aid the management of SM.

This means without understanding organisational IT/SM policies, regulations, and legislations, the management of SM and KT remains difficult. The results indicate that the lack of key ICT management, championship, appraisal, avoiding investing in incorrect expensive management systems (which turns out to be scrapyards of claptrap organisations) waste resources. Key ICT investments should not be destructive, lie idle, or become obsolete due to a lack of IT capabilities or awareness by the staff. Ten (10) of 20 participants (50%) or executives were strict in revealing information on ICT investments, although some were at liberty to reveal the information. This could probably be because of the confidentiality nature of the information or not being closely involved in the investment processes. For example, P10 said: "This one is [a] tricky issue..." (Appendix H). IT investment is a confidential aspect and the information related is difficult to access.

Finding 24: Organisational leaders lack awareness in terms of i) the need to champion for backup data, ii) avoid intrusive SM platforms, and iii) politics to facilitate effective KT in SM use.

Interview Question 2.3: How can knowledge be transferred using designed SM platforms in an IBE?

Participants mainly highlighted that individuals, group or team conversations, collaboration, sharing, and 'Googling', are strategies on how knowledge is transferred using designed SM

platforms in an IBE. Other means of KT using designed SM platforms include question-answer sessions, application integration, openness, and idea discussion/dialogue. Knowledge can be transferred through meta-knowledge, in business intelligence, campaigns, tasks, collaborations, enquiries, meetings, and business transactions or processes. Numerous factors that determine how knowledge can be transferred using designed SM platforms in an IBE are presented in Table 5.16 through participants' quotations.

Table 5.16: How knowledge can be transferred using SM (from Figure 5.14)

RSQ	Key concepts from interviews	Codes
RSQ 2.1: How can Knowledge be transferred using designed SM platforms in an innovative business environment?	labs and incubators where participants meet	labs
	online conferences (18.10)	conference
	conversation (11.11)	conversation
	pictures (18.12)	picture
	text (18.12)	text
	cultural activities (18.14)	culture
	Facebook (18.13)	Facebook
	cognitive process (18.17)	cognitive process
	slacking (18.8)	slacking
	Socialisation (18.7)	socialisation
	online via LinkedIn contact (18.16)	LinkedIn
	problem solving (18.5)	problem solving
	workshops (18.16)	workshops
	brainstorm and share ideas in meetings (18.15)	meetings

*RSQ-Research Sub-Question

Figure 5.15 shows the analysis of how knowledge can be transferred using designed SM platforms.

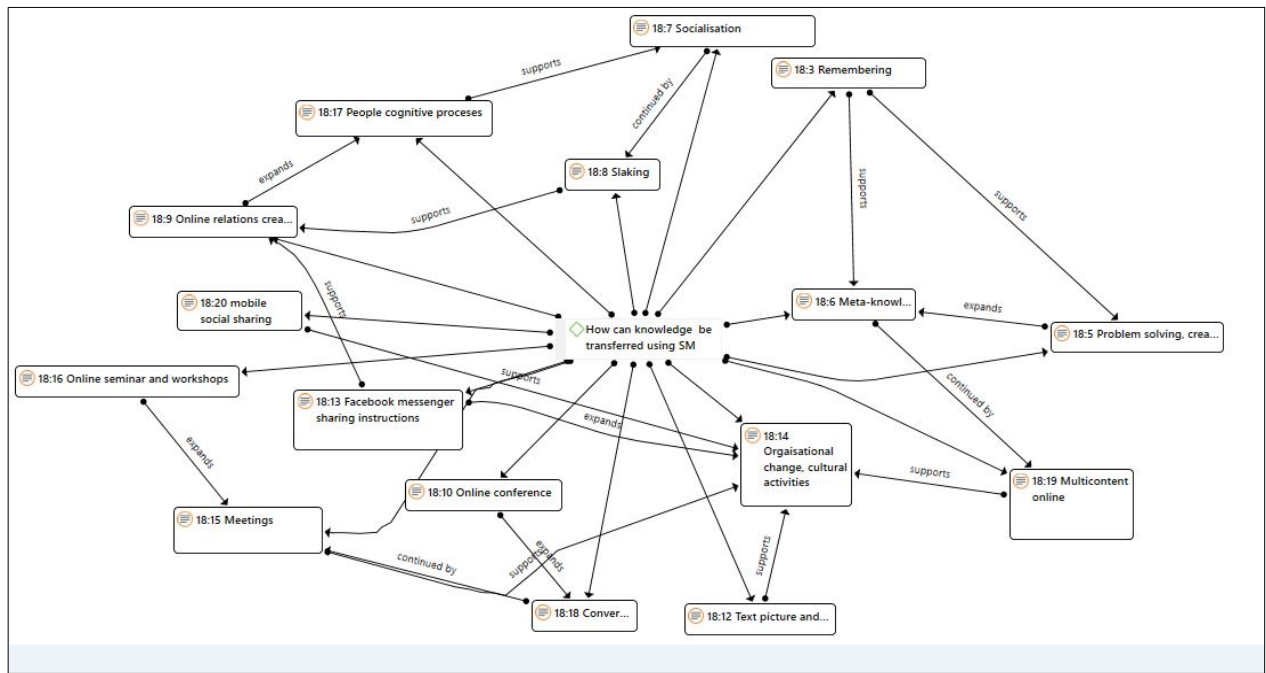


Figure 5.15: How knowledge can be transferred using designed SM platforms (the numbers, e.g., 19.4, indicate the quotations highlighted from the papers in ATLAS.ti)

Figure 5.15 demonstrates diverse tracks through the data related to how knowledge can be transferred using designed SM platforms.

Finding 25: There is a shift from traditional KT strategies to technology-centred KT that focuses on management and change in an IBE.

5.3.8.2 RSQ 2.2 How can the use of SM facilitate effective KT in an innovative business environment?

Interview question 2.2 was used to answer RSQ 2.2 asking how organisations can use SM to facilitate effective KT in an IBE.

Interview Question 2.2: How can the use of SM facilitate effective KT in an innovative business environment?

SM facilitates effective KT through various means. Some of the factors include that it enables the exchange of multi-content using a variety of SM tools. SM content from credible sources dominates the quantity or quality as a strategic tool and in KT. SM can extend the contact time, discussion of ideas, obtaining feedback instantly, and clients have access to data on active devices as it is now less expensive. The confirmation of how SM facilitates effective KT is visible in the following participants' extracts in Table 5.17.

Table 5.17: How SM facilitates effective KT

RSQ	Key concepts from interviews	Codes
RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?	prototype of a product and put it out on SM and people can comment activity	SM affordance
	information density (16.3)	SM affordance
	communities (16.3)	create communities
	improve capabilities (16.2)	improve capabilities
	SM facilitate bi-direction (16.11)	SM affordance
	groups (16.4)	groups
	conversation (16.4)	conversation
	identity creation (16.4)	identity creation
	SM presence (16.4)	SM presence
	internet democratisation (16.12)	open access
	used for promotion or campaigns	promotion
	WhatsApp, anywhere, anytime, for formal businesses	SM affordance
	SM is an open platform	open access
	Sharing, discussion (Table 5.17)	sharing
	Content management (Swagger) (Table 5.17)	Swagger
	promotion (LinkedIn, Instagram, Vimeo, Twitter, and Instagram) (Table 5.17)	LinkedIn, Instagram, Vimeo, Twitter
	reduced content (Instagram) (Table 5.17)	Instagram
	meetings (Slack, Microsoft Teams, Facebook) (Table 5.17)	Slack, Microsoft Teams, Facebook

*RSQ-Research Sub-Question

Table 5.17 highlights how the use of SM can facilitate effective KT. SM facilitates KT through its affordances. Some of the affordances include the ability to connect, communicate, produce knowledge, and consume knowledge. SM affords organisations the platform for promotion or

campaigns without any geographical or location limitations, and by so doing, it facilitates KT. The summarising quote is as follows: “I can use WhatsApp, anywhere, anytime, for formal businesses but I think it was primarily designed for social informal setups” (Appendix H, P4).

Finding 26: SM facilitates video tape recording, interactivity, eliciting emotional reactions, easy access, and bypassing protocols in KT.

Table 5.18 reveals the analysis done by the researcher on how innovative businesses use SM to facilitate effective KT.

Table 5.18: How innovative businesses use SM to facilitate KT

Organisational context (with departments such as IT, Marketing, Human Resources, Purchasing and Supply) as concepts	Example of participants' responses on the application as categories	Platform or tool used
To a community of practice or members on the platform	Immediate transfer of information, instructions, inquiries, feedback (Appendix H, P1).	Slack
To a community of practice or members on the platform	Having meetings, seminars, training, people sharing priorities issues, debate issues, and impact of various issues (Appendix H, P17).	Microsoft Teams
To a community of practice or members on the platform	Regular discussions, promotion to the growing number of users of the platform, new employees can interact with old to establish a community of practice, nurture insightful participant mindset, knowledge exchange, share videos, share articles, digital marketing communications sell SM. People pay money to run campaigns (Appendix H, P6).	Facebook
Committee teams, executive directors, departmental leader's team meetings	Discussion of problems, participation in management committee teams, executive directors, departmental leader's team meetings, sharing videos, animation, simulations improve understanding (Appendix H, P1).	WhatsApp
To a community of practice or members on the platform	TikTok videos clips, for instance in disaster periods like the COVID-19 pandemic in making visual stories of 90 seconds or 90 minutes long, visual stories, make the KT effective (Appendix H, P1, P2).	TikTok
Any individual or department, the team in an organisation	Rigid, static wiki videos and information facilitate KT (Appendix H, P6).	Wiki
Any individual or department, the team in an organisation	Sharing videos of success, articles (Appendix H, P6).	YouTube
Any individual or department, the team in an organisation	Journalists who need to share knowledge (Appendix H, P3).	Module reporter
Any individual or department, the team in an organisation	Used for campaigns, knowledge exchange using multidimensional content such as video clips (Appendix H, P3).	Vimeo, Twitter, and Instagram
Any individual or department, the team in an organisation	Has made content smaller, easy to use, maintain confidentially, less politics than an email that needs a formal session (Appendix H, P4).	Instagram
Any individual or department, the team in an organisation	In digital marketing communications, people pay money to run campaigns, one can join a company, be seen if you sent an email. LinkedIn has some good posts, tutorials, lecturers, academic posts, one can see profiles of whom people are dealing with, organisations	LinkedIn

	can monitor what someone does. LinkedIn allows one to be a professional while still marketing themselves. As a strategic marketing tool and for company posts, including motivation for others using it (Appendix H, P6, P20).	
Organisational website	Content management, standardised content management on a deep platform where organisations standardise documents for an empty project process or review them before distributing them, to customers (Appendix H, P17).	Swagger

*P-Participant

The extracts show that SM tools such as WhatsApp, MS Teams, and Facebook facilitate conversational clues, insights, reviews, visibility, editing, persistence, relationships, and access by all group members enable KT. SM enables group communication, integrates ideas through multi-content production and sharing, reduces the effects of lack of internet democracy, geographical limitations, lack of time, and socialising platforms when using SM. The innovativeness through new uses of existing tools, forms, links, and other documentary repositories facilitates KT. These findings show that entities and organisational leaders need to assess and appraise SM tools as a strategy or innovation, which facilitates effective KT. The extracts also clarify how innovative SM use facilitates tacit and explicit KT, business-to-business/consumer transactions, eliminating costs in an IBE.

Figure 5.16 presents in summary the interlinking of aspects to show how the use of SM facilitates effective KT in an IBE from interview transcripts uploaded to ATLAS.ti.

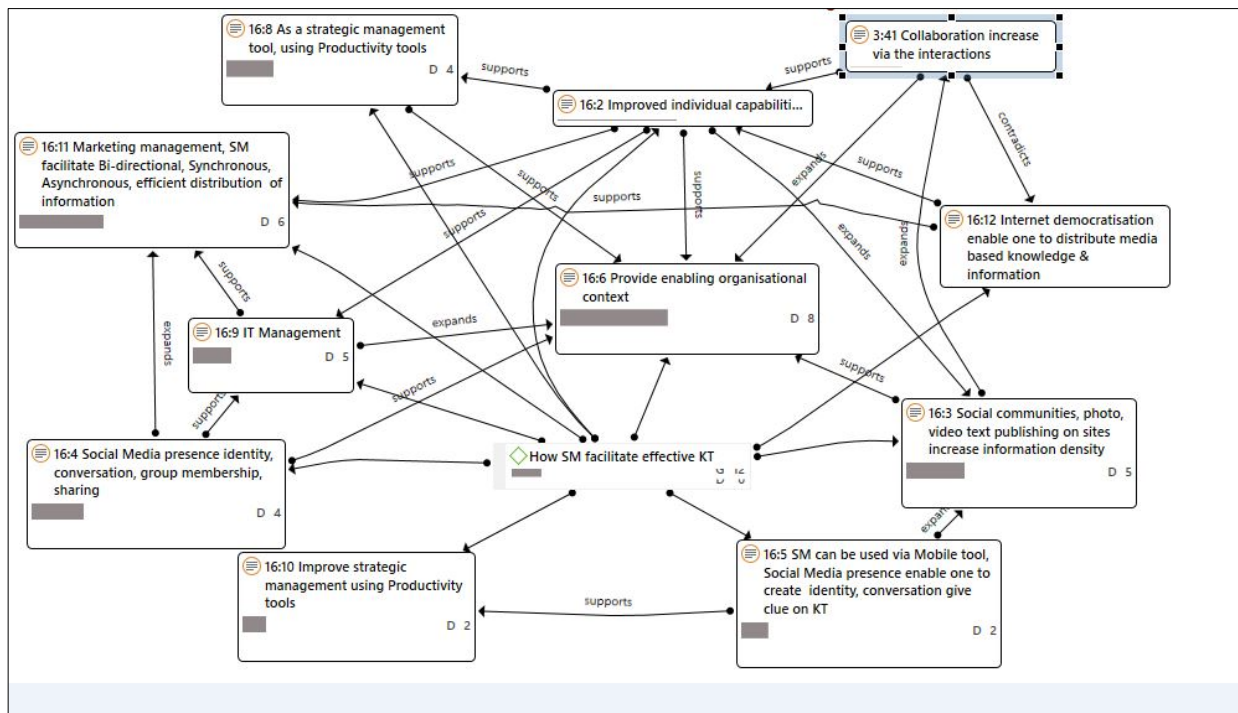


Figure 5.16: How the use of SM facilitates effective KT (the numbers, e.g., 16:5, indicate the quotations highlighted from the transcripts in ATLAS.ti)

Figure 5.16 shows how the use of SM facilitates effective KT. The transfer happens by means of SM affordances, creating an identity on SM, conversation, clues, people meta-knowledge, links, efficient information distribution, organisational policies, insights, business intelligence (BI), algorithms, and supportive leadership feedback.

The results suggest a shift from traditional KT strategies to technology-centred KT that focuses on management and change in this IBE. Participants emphasised the use of correct tools for every specific purpose. There was a high level of agreement on the importance of SM support for practical improvement and innovation. SM support should be driven by people, context, and organisational objectives. People, a context that applies new technological developments to add value to KT, should not be the endpoint but complementary in nature.

Finding 27: SM facilitates effective KT by means of SM affordances, meta-knowledge, links, information distribution, policies, insights, business intelligence, algorithms, and supportive leadership feedback.

5.3.9 Summary of the results

Table 5.19 is a summary of the findings linked to the RQs. In total, 13 findings emerged.

Table 5.19: Summary of the RQs linked to the findings

RQ and RSQ	Finding No.	Findings
RQ 1: What are the factors affecting KT using SM in an innovative business environment?		
RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?	Finding 15	Sources of innovation that facilitate KT include the incongruities, process needs, and changes in the industry, as well as new knowledge and strategy.
	Finding 17	MS Teams, Facebook, WhatsApp, News flash, SM security, HCI, and internet access facilitate effective KT using SM.
	Finding 18	Organisational competitors, resources, leadership, minutes of meeting, policies, text, and KT incentives facilitate effective KT using SM.
	Finding 19	Asking employees questions, promoting them to higher positions, mention the people involved in KT in a meeting, conferences, and research, facilitate KT using SM.
	Finding 21	At organisational level, SM tools such as module reporter, Jira, Jerk, sprint, Slake, Vimeo, week forum module reporter, and Stack Overflow are used in KT.
	Finding 23	Organisations' multi-content policies, regulations, and legislation aid the management of SM.
RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?	Finding 16	Organisations are seeking: i) new ways to do things, ii) to eliminate outdated processes, iii) new markets, iv) to launch new products.
	Finding 20	The challenges affecting effective KT using SM include: i) knowledge valuation, ii) people, iii) cognition, v) knowledge absorption capability, vi) unclear KT incentives structure and knowledge management, vii) resistance to change, viii) organisational socio-technical culture, ix) lack of resources, x) obsolete overload of knowledge, xi) stickiness, and xii) IT security.
	Finding 22	There is a lack of capability in choosing the correct specific application related to characteristics, purpose, strategy, and functionalities in organisations to manage SM in KT.
	Finding 24	Organisational leaders lack awareness in terms of i) the need to champion for backup data, ii) avoid intrusive SM platforms, and iii) politics to facilitate effective KT in SM use.
	Finding 25	There is a shift from traditional KT strategies to technology-centred KT that focuses on management and change in an IBE.

RQ and RSQ	Finding No.	Findings
RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment?	Finding 26	SM facilitates video tape recording, interactivity, eliciting emotional reactions, easy access, and bypassing protocols in KT.
RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?	Finding 27	SM facilitates effective KT by means of SM affordances, meta-knowledge, links, information distribution, policies, insights, business intelligence, algorithms, and supportive leadership feedback.

*RSQ-Research Sub-Question

Table 5.20 shows the RSQs aligned with the codes, categories and themes developed from the answers of the participants.

Table 5.20: The RSQs aligned with the codes, categories and themes developed from the participants

RSQ	Codes	Categories	Themes
RSQ 1.1	blogs	SM	SM
RSQ 1.2	clear induction programs	organisational socio-technical culture	KT
RSQ 1.1	conference	KT	Organisational socio-technical culture
RSQ 2.1	confidentiality	KT	People
RSQ 1.1	documentation	knowledge	IT
RSQ 2.1	ease of use	IT	
RSQ 1.1	funding	organisational socio-technical culture	
RSQ 1.1	Google	knowledge	
RSQ 1.1	Instagram	SM	
RSQ 1.1	institutional news flash	KT	
RSQ 1.1	KT benefits	KT	
RSQ 1.1	KT limitations	KT	
RSQ 1.1	leadership	organisational socio-technical culture	
RSQ 1.1	module	SM	
RSQ 1.1	motives	people	
RSQ 1.1	policies	organisational socio-technical culture	
RSQ 1.1	privacy	KT	
RSQ 2.2	promotion	knowledge	
RSQ 1.1	reporter application	SM	
RSQ 1.1	rivalry between competitors	organisational socio-technical culture	
RSQ 1.1	security	knowledge	
RSQ 2.1; 2.2	sharing	knowledge	
RSQ 1.1	Slack	SM	
RSQ 1.1	SnapChat Video	SM	
RSQ 1.1	Sprint	SM	
RSQ 1.1	Twitter	SM	
RSQ 1.1	YouTube	SM	
RSQ 2.1	cognitive process	knowledge	
RSQ 2.2	communities	knowledge	
RSQ 2.1	conference	Knowledge	
RSQ 1.1; 1.2	connectivity	knowledge	
RSQ 2.2	content management	knowledge	
RSQ 1.1; 2.1; 2.2	conversation	KT	
RSQ 1.2; 2.1	culture	organisational socio-technical culture	
RSQ 2.1	expensive management systems	IT	

RSQ	Codes	Categories	Themes
RSQ 1.1; 2.1	Facebook	SM	
RSQ 2.2	identity creation	people	
RSQ 2.2	improve capabilities	knowledge	
RSQ 1.2; 2.1	incentives	organisational socio-technical culture	
RSQ 1.2; 2.2	information overload	knowledge	
RSQ 1.2	innovative environment	IT	
RSQ 2.1	IT investment	organisational socio-technical culture	
RSQ 1.1; 1.2	knowledge absorption	knowledge	
RSQ 1.2	knowledge elicitation	knowledge	
RSQ 1.2	knowledge identification	knowledge	
RSQ 1.2	knowledge stickiness	knowledge	
RSQ 1.1; 1.2	knowledge transformation	KT	
RSQ 1.2	knowledge valuation	organisational socio-technical culture	
RSQ 1.2	KT measurement	KT	
RSQ 2.1	labs	knowledge	
RSQ 2.1; 2.2	LinkedIn	SM	
RSQ 1.1; 2.1; 2.2	meetings	KT	
RSQ 1.1, 2.2	openness	SM	
RSQ 1.2	organisational structure	organisational socio-technical culture	
RSQ 1.2	people capabilities	people	
RSQ 2.1	picture	knowledge	
RSQ 2.1	problem solving	KT	
RSQ 2.2	promotion	knowledge	
RSQ 2.2	prototype	knowledge	
RSQ 2.1; 2.2	reduced content	knowledge	
RSQ 1.2	resources	organisational socio-technical culture	
RSQ 1.1; 2.1	SharePoint	SM	
RSQ 2.1	Slacking	SM	
RSQ 2.2	SM facilitates bi-direction	SM	
RSQ 2.1	socialisation	knowledge	
RSQ 2.1	Swagger	SM	
RSQ 1.1	Vimeo	SM	
RSQ 1.1; 2.2	WhatsApp	SM	
RSQ 2.1	wiki	SM	
RSQ 2.1	workshops	knowledge	

*RSQ-Research Sub-Question; SM-Social Media; KT-Knowledge Transfer; IT-Information Technology

5.3.10 Themes

The themes developed from the participant data are: i) people, ii) organisational socio-technical culture factors, iii) SM, iv) KT, v) IT.

5.4 SECTION C: Delphi analysis and results

5.4.1 Introduction

In Section C, the Delphi data analysis, procedure, response rate, privacy, identity, and findings are presented. Of the 65 questionnaires distributed in Round 1, a total of 51 participants (Appendix M) responded. Of the 50 questionnaires distributed in Round 2, a total of 31 participants answered.

5.4.2 Round 1: Delphi procedure: Stage 1 to Stage 4

The section highlights the motives for the selection of the technique and some of its limitations. The Delphi technique in Round 1 comprised exploration (stage 1), distillation (stage 2), utilisation (stage 3), and results reporting (stage 4) (Laakso & Linturi, 2010; Skinner et al., 2015).

5.4.2.1 Stage 1 Exploration: Pilot study

In Stage 1, the questionnaire included a simple demographic set of closed and open-ended questions (Appendix G). The open-ended questions were the cornerstone of exploring specific information about each participant's experience and content area (questions guided by the preliminary themes identified in Chapter Five, sections 5.6 and 5.7). This questionnaire was used as the survey instrument for the first and second round of data collection, although it was modified (Appendix F & Appendix G) as the participants contributed along the process.

The first version of the survey questions was formulated, pre-tested, and mailed to the participants (Appendix F). After receiving the participants' responses, the collected information was organised into a well-structured questionnaire (Appendix G).

5.4.2.2 Demographics and questionnaire

Demographic information is important because of the epistemic relativism aspects. Epistemic relativism holds that individual social position, for instance class, gender, race, being a researcher, or being researched, affects the way individuals interprets the world, formulate concepts, and make claims about it. Appendix M tabulates the Delphi participants' country, management level, qualification, years of experience, and applications usable for KT.

Figure 5.17 illustrates the number of participants, gender, and age range using the Delphi technique.

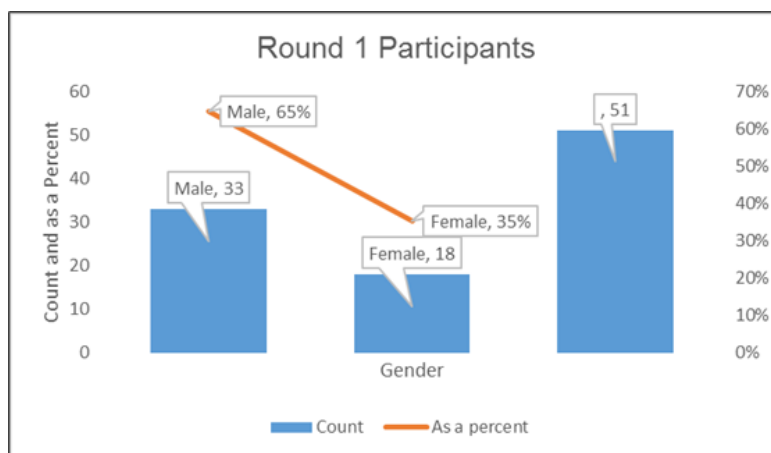


Figure 5.17: Percentage of 33 males, 18 females and 51 participants in Round 1

Next is the age range of the participants. Figures 5.17 and 5.18 highlight the female and male percentages and the panellists' age range at the time of the research was 18-24 (2, 4%), 25-34 (21, 35%), 35-44 (21 making 44%), and 55-64 (4, 8%), with no one older than 66 years (in Round 1).

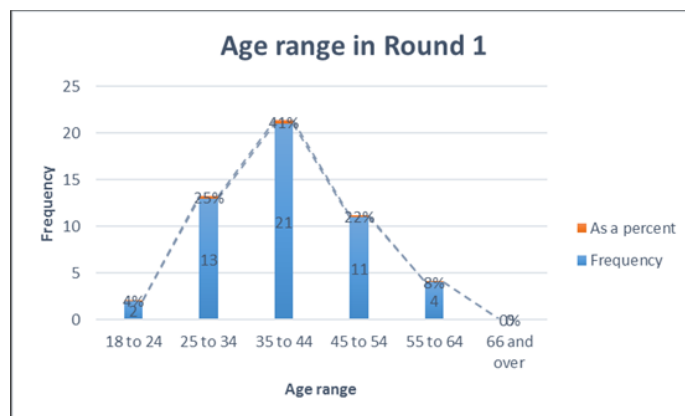


Figure 5.18: Participants' age range in Round 1

The ensuing section enlightens selected participants' professional qualifications. In Round 1, the majority of participants indicated that they possess a Master's and/or Bachelor's degree (Figure 5.19).

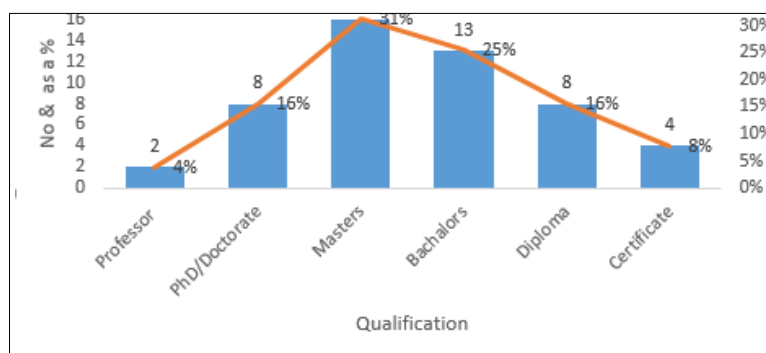


Figure 5.19: Educational qualifications in Round 1

The rest of this section highlights the reliability of Round 1, which was measured on all questions (except age and qualifications) and comprised the use of the Likert scale.

Table 5.21 shows the case processing summary.

Table 5.21: Case processing summary – number of participants who participated in the Delphi technique in Round 1

		N	%
Cases	Valid	51	100.0
	Excluded	0	.0
	Total	51	100.0

List wise deletion based on all variables in the procedure.

*N-Number of Responses

Table 5.21 shows number of participants (51) who met the expertise criteria in terms of KT and SM use and who consented to participating in the Delphi technique survey in Round 1. The survey design is more important in gauging the study's external validity.

Cronbach's (1941) alpha was applied to estimate the reliability (internal consistency) of the measurements and to obtain a sense of the validity and reliability of the particular scale that was related to the sample. Cronbach's alpha tests were conducted by assessing the degree to which the items (survey questions) measured agreement in terms of the participants' feedback of the transcriptions sent to them for validation; a 0.8 reliability of the survey questionnaire was determined. Table 5.22 show the reliability scale.

Table 5.22: Reliability statistics

Reliability Statistics		
Cronbach's alpha	Cronbach's alpha based on standardised items	N of Items
0.71	0.80	7

*N-Number of Responses

Reliability statistics show the reliability measurement of > 0.71 , which is acceptable.

The next sections concentrate on questions of the factors affecting the use of SM. Demographic questions were meant to 'hint' the research audience on the importance of the participants' profile and the credibility of the results. The study was narrowed to the use of the English language as part of validating the participants.

5.4.2.3 Stages 2, 3 and 4: Distillation, utilisation, and findings

Table 5.20 shows the RQs, RSQs, finding numbers, and findings in Round 1, guided by the survey questions in Appendix G. The distillation, utilisation and findings are presented next. To explain, the distillation process synthesised the participants' information and opinions to inform subsequent rounds of questioning and feedback.

5.4.2.4 RQ 1: What are the factors affecting KT using SM in an innovative business environment?

To answer RQ 1, the following RSQs were posed.

5.4.2.5 RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?

Survey Question (SQ) 1.1: What are the factors that could affect facilitating effective KT using SM?

Data were copied from Google Forms online to a MS Word file. Table 5.23 illustrates the interpretations of participants, categories, and final themes identified. Table 5.23 resulted from

codes (15) that were copied from Google Forms to create categories. Categories aided to the formulation of the final five (5) themes.

Table 5.23: Factors that could facilitating effective KT using SM

SQ 1.1: What are the factors that could affect facilitating effective KT using SM?			
N	Concepts	Category	Frequency of category
1	Ease of use for instance speed, convenience	task, technology	
2	Security	technology	7
3	Allow creativity	task	4
4	Ability to build reputation	identity and identification	5
5	Learning from the application	context	5
6	Network connection to the internet	technology	
7	Popularity	identify and identification	21
8	Environment	situation	
9	The will	people	
10	Capabilities in ICT	people and technology	
11	Trust	credibility	
12	Presentation of information in suitable format	encoding signals by people	
13	Data availability	technology	
14	The right platform	context	
15	Infrastructure	context	

*N-Concept Number

Table 5.24 shows the descriptive statistics results of factors facilitating effective KT using SM.

Table 5.24: Descriptive statistics of factors facilitating effective KT using SM

Statistics	Results in relation to factors facilitating effective KT using SM
Mean	4
Standard Error	0.707106781
Median	4.5
Standard Deviation (SD)	1.414213562
Sample variance	2
Range	3
Minimum	2
Maximum	5
Sum	16
Count	4

*KT-knowledge Transfer; SM-Social Media

The analysis (Table 5.24) shows that the SD of 1.4 is less than the mean score for this, which is 4. This shows that there was agreement between the participants on the factors facilitating effective KT using SM. The SD is also close to one (1) (perfect agreement) and less than the mean. This question was not taken to the next round of the Delphi technique because there was concordance of the participants' contributions.

5.4.2.6 RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?

To answer RSQ 1.2, shown in Table 5.25 are excerpts from Google Forms that were exported to Excel and then pasted to a MS Word document. The excerpts were responses from participants about *Survey Question 1.2 (SQ 1.2)*. Table 5.25 resulted from quotes (51) copied from Google Forms to create categories that support the construction of the themes.

Survey Question 1.2: What are the challenges that could affect effective KT using SM?

Table 5.25: Challenges that could affect effective KT using SM

SQ 1.2: What are the challenges that could affect effective KT using SM?			
N	Concepts (Appendix G)	Category	Frequency of category
1	Improving KT processes in personal and organisational productivity	knowledge conversation	6
2	KT processes	knowledge management	13
3	Transfer processes in personal and organisational productivity	knowledge conversation, organisational science	20
4	Creativity and security	security	12
5	Personal productivity	security	4
6	Creativity and security	security	4
7	Creating meaning from experience and interaction with others and the environment	sensemaking	80
8	Creating security	security	
9	KT	knowledge management	
10	Personal organisation	knowledge conversation	
11	Understanding, information interaction	knowledge conversation	
12	security	security	
13	Process, relationship, communication	organisational science	
14	Creating meaning from the environment	sensemaking	
27	Privacy and security	security	
28	False information, reputation being dented	authenticity	
29	Legal prohibitions; remoteness of some areas	accessibility	
30	Information overload	information overload	
31	Technology skills and support	personal capability	
33	Selecting detective equipment, loss of team members, incomplete transfer of knowledge, lack of recognition	incomplete KT	
34	Data bundles cost, lack of technology, access	accessibility	
35	Lack of connectivity	accessibility	
36	Network problems, restrictions of the platform, cyber fishing, exaggeration, social bullying	security, authenticity	
37	False information	authenticity	
38	Hacking, ethical issues, privacy and security, unproductive behaviour, lack of trust	security	
39	Loss of jobs	security	
40	Hacking, bullying, wrong information	security	
42	Sometime SM platforms might not be able to contain big videos or limited space. People in remote areas might have limited access to internet. Risk of security of information of people might be compromised.	personal capability, SM	
43	Privacy, confidentiality, and security understanding. The individual's propensity to SM.	personal capability	
45	Advert: speed, convenience, reliability, adaptability, and flexibility. Disadvantage: cost, connectivity issues, cyber terrorism, infringement of privacy, hacking.	IT	
46	Technology dependency, social skills impacted, health	IT assets, personal capability	
47	Presentation of information, cost of accessing SM and security issues when using SM	accessibility, lack of control	
48	Bad internet connectivity, load shedding, facilitator not sure who really pays attention in meetings	accessibility, lack of control	
49	limited IT skills of the knowledge provider and the knowledge receiver, language barriers, organisational policies, lack of interest in type of SM, content is usually not regarded as formal knowledge	SM, organisational science, content	
51	Connectivity issues, costs, device settings, lack of control	accessibility, lack of control	

*N-Concept Number

Finding 28: People, IT in the form of SM, ease of use, trust, credibility, people's will, identity and identification, and their attitudes facilitate effective KT using SM.

Table 5.26 presents the statistics of the challenges that could affect effective KT using SM.

Table 5.26: Statistics of challenges that could affect effective KT using SM

Statistics	Results in relation to challenges to effective KT using SM
Mean	9,833333333
Standard Error	2,587362449
Median	9
Standard Deviation (SD)	6,337717781
Sample Variance	40,16666667
Range	16
Minimum	4
Maximum	20
Sum	59
Count	9,833333333

*KT-knowledge Transfer; SM-Social Media

The analysis of the data presented in Table 5.26 shows a SD of 6.3, which is smaller than the mean of 9.8. The SD is also further away from (1) (perfect unanimity) at 6.3 with a variance of 41.166. The SD (6.3) is greater than 1.00, indicating that there was no consensus amongst the respondents in relation to the challenges related to KT using SM.

Because of lack of agreement on challenges related to KT using SM, the question was taken to Round 2 of the Delphi technique.

Finding 29: Challenges that could affect effective KT using SM include security, reliability and trustworthiness, culture, authenticity, reputation, IT infrastructure, information overload, velocity, convenience, volatile team governance, inadequate knowledge integration, and lack of control.

Survey Question 1.3: What are the factors affecting effective KT using SM?

Table 5.27 shows factors affecting effective KT using SM. Table 5.27 resulted from quotations (51) that were copied from Google Forms. Categories aided the formulation of the final five (5) themes. Table 5.27 shows the categories and frequency of categories.

Table 5.27: Factors affecting KT using SM

N	SQ 1.3: What are the factors affecting effective knowledge transfer using SM?			
	Concepts	Category	Frequency of category	Themes
1	IT, easy of transfer, people, knowledge	technology, transferability, people	34	Technology
2	People, willingness to transfer, skill, resources, medium	people, resources	1	Knowledge Transfer
3	Absorptive and transfer capability, tools, and time	people, resources	47	People
4	Platform, environment, culture	SM, environment, culture	14	Resources
5	Individual capabilities, organisation, environment	people, organisation, environment	16	Culture
6	Staff potential, books, internet, conversations	people, books, internet, conversations	112	
7	Google, interactions, tools, atmosphere	technology, people, culture		

N	SQ 1.3: What are the factors affecting effective knowledge transfer using SM?			
8	People, technology capability, sharing, meetings	technology, people, culture		
9	SM, training, charts	technology, people capabilities		
10	Online searches	technology		
11	Googling, sharing, training, online meetings, books	technology, people capabilities, resources		
12	Internet sharing, skills transfer, place to share in companies	technology, people capabilities, culture		
13	Tools, people, context in organisations	technology, people capabilities, culture		
14	Context, people, tools	technology, people capabilities, culture		
15	Online sharing, training in organisations	technology, people capabilities		
16	People, technology capability	technology, people capabilities		
17	sharing, meetings	technology, people capabilities		
18	Hard and soft copy books, skills sharing	technology, people capabilities, culture		
19	SM, teaching, on job training	people capabilities		
20	Application of learned skill	technology, resources		
21	Explorations online, in books	people capabilities		
22	Research actual activities	people capabilities		
23	Online research	technology, people capabilities, resources		
24	Skills transfer, hard and soft copy text, culture, technology	technology, people capabilities, culture		
25	Skills in using SM, cost of accessing SM and presentation of information	technology, people capabilities, culture		
26	YouTube, face-to-face interactions, training	technology, people capabilities, culture		
27	Content, popularity, or followers	technology, people capabilities		
28	Technical knowledge	technology, people capabilities, culture		
29	Sharing through experience	People capabilities		
30	Agreement on a common platform	People capabilities		
31	Schools	People capabilities		
32	SM network	technology, people capabilities		
33	Knowledge of technology, availability of internet and infrastructure	technology, people capabilities, resources		
34	Video, comments	technology, people capabilities		
35	Content, popularity, or followers	technology, people capabilities, resources		
36	Promoters' new ways of sharing ideas with other peers to gain knowledge	people capabilities		
37	Provide new ways of sharing knowledge and communication within the organisations	people capabilities		
38	Less communication in person	people capabilities		
39	Trust	people capabilities		
40	Willingness to participate by individuals and organisation	people capabilities		
41	The ability to ask the right questions and evaluate the various responses	people capabilities		
42	Access to people process and technology	technology, people capabilities		
43	Speed and convenience	resources		
44	Ease of use, resources availability	technology, people capabilities		
45	Skills in using SM, cos of accessing SM and presentation of information	technology, people capabilities		

N	SQ 1.3: What are the factors affecting effective knowledge transfer using SM?			
46	Solid internet connectivity, good sound interactivity	technology, people capabilities, resources		
47	Adequate IT skills of sender and receiver of knowledge, understanding the content	technology, people capabilities, resources		
48	Who is connected, how easy a platform is to use, how much it can be trusted	technology, people capabilities, resources, trust		
49	Wifi connection and technical skills	technology, people capabilities, resources,		
50	Providing support, locating knowledgeable people, providing a Virtual context	technology, people capabilities, resources, trust		

*N-Concept Number; SQ-Survey Question

Table 5.28 presents the statistical analysis of the first round of the Delphi technique, i.e., the results of the analysis of factors affecting effective KT using SM.

Table 5.28: Statistical results of factors affecting effective KT using SM

Statistics	Results in relation on factors affecting effective KT
Mean	22.4
Standard Error	8.090735442
Median	16
Standard Deviation (SD)	18.09143444
Sample variance	327.3
Range	46
Minimum	1
Maximum	47
Sum	112
Count	5

In Table 5.28 the SD equals 18.1. While the SD is less than the mean of 22.4, the SD is also further away from one (1) (perfect agreement) at 18.1 and a variance of 327.3. The SD is greater than 1.00, indicating that no scores were achieved. The lack of consensus among participants on the feedback of survey questions resulted in the question being forwarded to Round 2 of the Delphi technique.

5.4.2.7 RQ 2: How can SM be managed for effective KT in an innovative business environment?

5.4.2.8 RSQ 2.1 How can knowledge be transferred using designed SM platforms in an innovative business environment?

Survey Question 2.1: If you could use any SM platforms in KT, which would you use?

In managing SM for KT, organisations must choose the correct single SM platform carefully to run the core processes. This survey question aided in the identification of SM platforms to run processes such as KT. The participants' responses revealed that WhatsApp (16) is the leading choice, followed by YouTube (8), MS Teams (6), and Zoom (3), with blogs, Facebook, Slack, and Stud IP having only (1) mention each. Table 5.29 presents the results of the analysis of the participants' responses on SM platforms they may use for KT.

Table 5.29: Statistical results of participants on their platforms of choice

Statistics	Results in relation to how SM can be managed for effective KT using SM
Mean	3.875
Standard Error	1.059607407
Median	2.5
Standard Deviation (SD)	2.997022332
Sample variance	8.982142857
Range	7
Minimum	1
Maximum	8
Sum	31
Count	8

Table 5.29 shows a SD of 2.9, which is smaller than the mean score of 3.8. This expresses that there was agreement among participants' responses to SQ 2.1. The SD score of 2.9 is closer to 1.00 than the mean, indicating that there was consensus among the respondents. The SD is not further away from one (1) (perfect unanimity) at 2.9 and a variance of 8.9.

Finding 30: WhatsApp, followed by YouTube, MS Teams, blogs, and Facebook are SM platforms used in organisations for KT.

This SQ was not taken to Round 2 of the Delphi technique because of the consensus of the participants' feedback.

Survey Question 2.1.1: How can knowledge be transferred using designed SM platforms? (List any 5 ways).

Table 5.30 shows how knowledge can be transferred using designed SM platforms.

Table 5.30: Participants' responses to how knowledge can be transferred using designed SM platforms

SQ 2.2: How can knowledge be transferred using designed SM platforms?			
N	Concepts (Appendix G)	Category	Category Frequency
1	Alerts	alerts	1
2	Knowledge application	knowledge application	1
3	Business transactions	business transactions	3
4	Collaborations	collaborations	1
5	Conversation	conversation	1
6	Entertainment	entertainment	1
7	ERP	ERP	1
8	Communication	communication	11
9	Gym	gym	1
10	Sharing	sharing	8
11	Reputation	reputation	1
12	Meeting	meeting	5
13	Career opportunities	career opportunities	3
14	Technical knowledge	technical knowledge	3
15	Learning	learning	1
16	Google	technology	6
17	Workshops		2

*N-Concept Number

It was found that SM facilitates KT through communication (11 of 51 participants, 22%), sharing (8 of 51, 16%), Google/Googling/searching (6 of 51, 12%), meetings (5 of 51, 10%), collaborations, technology applications, career opportunity sites, technical knowledge application (3 of 51, 6%) and workshops (2 of 51, 4%). For how the use of SM facilitates KT, one (1) of 51 (2%) participants indicated alerts, knowledge application, business transactions, conversations, education, Enterprise Resource Planning (ERP), gym instructions/emoji signs shared, reputation, and learning. These aspects determine how knowledge can be transferred using designed SM platforms. The statistical analysis is presented in Table 5.31.

Table 5.31: Statistical results on how knowledge can be transferred using designed SM platforms

Statistics	Results on analysis of participants' responses on survey question 2.1.1 asking how knowledge can be transferred using SM
Mean	2.941176471
Standard Error	0.714711934
Median	1
Standard Deviation (SD)	2.946832796
Sample variance	8.683823529
Range	10
Minimum	1
Maximum	11
Sum	50
Count	17

*SM-Social Media

Table 5.31 shows the analysis of the overall SD of 2.9, which is equal to the mean score of 2.9. This shows that there was no agreement on participants contribution to how knowledge can be transferred using SM. The SD is also further away from one (1) (perfect agreement). Thus, the question was taken into Round 2 of the Delphi technique because of the lack of consensus among participants.

In using SM, knowledge can be transferred via conversations, sharing multi-content, searching knowledge, meetings, workshops, SM alerts, knowledge application, business transactions, processes, enterprise resource planning, a clue on emoji in chats, and learning/education explicit text.

Finding 31: There is a shift from traditionally centred KT to technology-centred KT.

5.4.2.9 RSQ 2.2 How can the use of SM facilitate effective KT in an innovative business environment?

Survey Question 2.2: How important is the use of SM in problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation in your organisation? (Where 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important).

Table 5.32 presents the case processing summary and descriptive statistics of SQ 2.2.

Table 5.32: Case processing summary

Case processing summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
How important is the use of SM in problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation in your organisation?	51	100.0%	0	0.0%	51	100.0%

*N-Number of Responses

Table 5.33 presents the frequency, percentage, and cumulative percentage of the experts' responses on the importance of using SM in problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation in their organisations.

Table 5.33: Frequency table for SQ 2.3

SQ 2.3: How important is the use of SM in problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation in your organisation?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely not important	1	2.0	2.0	2.0
	Not important	2	3.9	3.9	5.9
	Neutral	16	31.4	31.4	37.3
	Very important	9	17.6	17.6	54.9
	Extremely important	23	45.1	45.1	100.0
	Total	51	100.0	100.0	

*SM-Social Media

Table 5.34 presents descriptive statistics, with the overall mean of responses from the participants being 4.37 (4=very important), and the SD less than the mean, thus reflecting agreement of the participants' responses.

Table 5.34: Statistical results of the importance of using SM in problem identification, awareness, communication, socialisation and knowledge internalisation and externalisation in the organisation

Statistics				
			Statistic	Standard Error
How important is the use of SM in problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation in your organisation?	Mean		10.2	4.1
	95% Confidence Interval for Mean	Lower Bound	1.00	
		Upper Bound	23.00	
	Median		9.00	
	Variance		87.7	
	Standard Deviation (SD)		4.18	

The analysis presented in Table 5.34 confirms the possibility and importance of KT through problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation using SM. Most responses were scaled in the range 4 to 5 (4=very important and 5=extremely important). The overall SD of 4.1 is smaller than the mean score, which is

10.2, reflecting agreement among the participants on the importance of using SM in problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation in their organisations.

Finding 32: SM facilitates effective KT through problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation.

Survey Question 2.2.1: Knowledge can be transferred using designed SM platforms through a) individuals creating meaning from experience, b) collaboration in communities, c) conversations (where 5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree).

Table 5.35 is the is frequency table for SQ 2.2.1.

Table 5.35: Frequency table for SQ 2.2.1 (Delphi Round 1)

SQ 2.2.1: Knowledge can be transferred using designed SM platforms through a) individuals creating meaning from experience, b) collaboration in communities, c) and conversations.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	2.0	2.0	2.0
	Neutral	5	9.8	9.8	11.8
	Agree	22	43.1	43.1	54.9
	Strongly agree	23	45.1	45.1	100.0
	Total	51	100.0	100.0	

The analysis supports the agreement that knowledge can be transferred using designed SM platforms through i) individuals creating meaning from experience, ii) collaboration in communities, and iii) conversations. Table 5.36 show statistical results of Table 5.35.

Table 5.36: Statistical results of how knowledge can be transferred using designed SM platforms

Statistics		
Knowledge can be transferred using designed SM platforms through a) individuals creating meaning from experience, b) collaboration in communities, and c) conversations.		
N	Valid	51
	Missing	0
Mean		4.29
Median		4.00
Standard Deviation		.807
Variance		.652

*N=Number of Responses

From Table 5.36, the overall mean of responses from the participants is 4.29 (4=agree) (22 of 51, 43.1%), while 23 of 51 (45.1%) strongly agreed that knowledge can be transferred using designed SM platforms through a) individuals creating meanings from experience, b) collaboration in communities, and c) conversations.

The SD is near 1 (perfect concordance) at 0.81 less than the mean, reflecting the near-perfect agreement of the participants' responses, thus showing agreement.

Finding 33: People create meaning from experiences of SM use, thereby enabling collaboration in communities, and being involved in conversations.

Survey Question 2.2.2: How important is the use of SM in knowledge application? (Where 5=extremely important; 4=very important; 3=somehow important; 2=not important; 1=extremely not important).

Tables 5.37 is the frequency table for SQ 2.2.2.

Table 5.37: Frequency table for SQ 2.2.2 (Delphi Round 1)

SQ 2.2.2: How important is the use of SM in knowledge application?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely not important	1	2.0	2.0	2.0
	Somehow important	7	13.7	13.7	15.7
	Very important	21	41.2	41.2	56.9
	Extremely important	22	43.1	43.1	100.0
	Total	51	100.0	100.0	

The analysis indicates that it is very important to extremely important to use of SM in knowledge application to facilitate KT (Table 5.37). The frequencies were converted to percentage and cumulative percentage (calculated by adding each succeeding percentage to the previous percentage, starting with the initial percentage, until 100% is reached).

Table 5.38 presents the statistical results of SQ 2.2.2.

Table 5.38: Statistical results of how important the use of SM is in knowledge application

Statistics		
SQ 2.2.2: How important is the use of SM in knowledge application?		
N	Valid	51
	Missing	0
Mean		4.24
Median		4.00
Standard Deviation (SD)		.839
Variance		.704

*N-Number of Responses

In Table 5.38, the mean of the participants' responses is 4.24 (4=very important), with 21 of 51 (41.2%) agreed that the use of SM in knowledge application is very important in IBEs, while 22 of 51, (43.1%) strongly agree that it is extremely important to apply knowledge when using SM. The SD is 0.84, which is less than the mean, reflecting near-perfect concordance of the participants' responses.

Finding 34: It is very important to extremely important to note that SM affords people the ability to apply knowledge.

Survey Question 2.2.3: How important is the use of SM in sharing problems identified or knowledge you are aware of? Indicate your position (where 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important).

Table 5.39 is the frequency table for SQ 2.2.3.

Table 5.39: Frequency table for SQ 2.2.3 (Delphi Round 1)

SQ 2.2.3: How important is the use of SM in sharing problems identified or knowledge you are aware of? Indicate your position?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely not important	1	2.0	2.0	2.0
	Neutral	7	13.7	13.7	15.7
	Very important	16	31.4	31.4	47.1
	Extremely important	26	51.0	51.0	98.0
		1	2.0	2.0	100.0
	Total	51	100.0	100.0	

Table 5.39 shows that it is extremely important (frequency=26) and very important (frequency=16) to use SM in sharing problems identified or knowledge one is aware off. T

Table 5.40 show the statistical results of Table 5.39's analysis.

Table 5.40: Statistical results of how important the use of SM is in sharing problems identified

Statistics		
SQ 2.2.3: How important is the use of SM in sharing problems identified or knowledge you are aware of? Indicate your position?		
N	Valid	51
	Missing	0
Mean		4.41
Median		5.00
Standard Deviation (SD)		1.080
Variance		1.167

N=Number of Responses

In Table 5.40, the mean score from the participants' responses is 4.41 (4=very important), meaning 16 of 51 (31.4%) of the participants' regarded the use of SM in sharing problems identified or knowledge they are aware of as very important, while 26 of 51 (51.0%) regard it as extremely important. The SD is close to one (1) (perfect concordance) at 1.08, which is less than the mean, reflecting a near-perfect agreement of the participants responses.

In addition to the previous SQs in the section, SQ 2.2.4 below was posed to the participants in the process of answering RQ 2.2.

Survey Question 2.2.4: How important is building a reputation with acquired and applicable knowledge using SM? (Where 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important).

Table 5.41 presents the frequency table for SQ 2.2.4.

Table 5.41: Frequency table for SQ 2.2.4 (Delphi Round 1)

SQ 2.2.4: How important is building reputation with acquired and applicable knowledge using SM?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely not important	1	2.0	2.0	2.0
	Neutral	12	23.5	23.5	25.5
	Very important	22	43.1	43.1	68.6
	Extremely important	16	31.4	31.4	100.0
	Total	51	100.0	100.0	

*SM-Social Media

Table 5.41 sustains the range of very important (frequency=22) to extremely important (frequency=16) in terms of the use of SM in building reputation with acquired and applicable knowledge.

Table 5.42 presents the statistical results of how important building reputation is using the acquired or applicable knowledge using SM.

Table 5.42: Statistical results of how important building reputation is with acquired and applicable knowledge using SM

Statistics		
SQ 2.2.4: How important is building reputation with acquired and applicable knowledge using SM?		
N	Valid	51
	Missing	0
Mean		4.02
Median		4.00
Standard Deviation		0.86
Variance		0.74

*N-Number of Responses; SM-Social Media

The mean calculated from the participants' responses is 4.02 (4=very important), meaning 22 of 51 participants (43.1%) regarded the importance of building a reputation with acquired and applicable knowledge using SM as very important, while 16 of 51 (31.4%) regarded this as extremely important. The SD is close to one (1) (perfect correlation) at 0.86. The SD is also less than the mean, revealing concordance of the participants' responses.

Finding 35: It is very important to extremely important to use SM for building reputation with applicable knowledge acquired.

Finally, SQ 2.2.5 was posed to participants in the process of answering RQ 2.2.

Survey Question 2.2.5: How often do you use SM in groups or community conversations to reveal your presence, share, or create identity and relationships? (Where 5=daily; 4=weekly; 3=occasionally; 2=never; 1=not applicable).

Table 5.43 presents the frequency table for SQ 2.2.5.

Table 5.43: Frequenct table for SQ 2.2.5 (Delphi Round 1)

SQ 2.8: How often do you use SM in groups or community conversations to reveal your presence and create identity and relationships?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not applicable	1	2.0	2.0	2.0
	Never	2	3.9	3.9	5.9
	Occasionally	16	31.4	31.4	37.3
	Weekly	9	17.6	17.6	54.9
	Daily	23	45.1	45.1	100.0
	Total	51	100.0	100.0	

Table 5.43 shows that the majority of participants use SM in groups or community conversations to reveal their presence and create identity and relationships on a daily basis (frequency=23), occasionally (frequency=2), or weekly (frequency=9) in organisations. Table 5.44 shows the statistical results of SQ 2.2.5.

Table 5.44: Statistical results of how often participants use SM in conversations

Statistics		
SQ 2.2.5: How often do you use SM in groups or community conversations to reveal your presence, create identity and relationships?		
N	Valid	51
	Missing	0
Mean		4.00
Median		4.00
Standard Deviation		1.05
Variance		1.12

*N-Number of Responses; SM-Social Media

The mean calculated from the participants' responses is 4 (4=Weekly), meaning 9 of 51 (17.6%) participants indicated that they use SM in groups or community conversations on a weekly basis to illustrate their presence and create identity and relationships, while 23 of 51 (45.1%) specified they use SM daily, 16 of 51 (31.4%) indicated occasionally, two (2) of 51 (3.9%) said never, and only one (1) of 51 (2%) indicate the use of SM in groups or community conversations to illustrate their presence and create identity and relationships as not applicable to them.

The SD is close to one (1) (perfect concordance) at 1.05, displaying concordance of the participants' responses.

Finding 36: SM affords the ability to create groups or communities for conversations to reveal one's presence and create identity and relationships on a daily basis, occasionally or weekly.

5.4.2.10 Summary of Findings – Round 1

From the RQ, RSQs and findings, eight (8) categories and four (4) themes were developed, as presented in Table 5.45.

Table 5.45: Summary of Round 1 findings, categories, and themes linked to the RQs

RQ and RSQ	Research Strategy	Finding No.	Findings	Category	Theme
RQ 1: What are the factors affecting KT using SM in an innovative business environment?					
RSQ 1.1: What are the factors that could facilitate effective KT using SM in an IBE?	Delphi	Finding 28	People, IT in the form of SM, ease of use, trust, credibility, people's will, identity and identification, and their attitudes facilitate effective KT using SM.	People, SM affordances	IT
		Finding 30	WhatsApp, followed by YouTube, MS Teams, blogs, and Facebook are SM platforms used in organisations for KT.	SM management	Organisational socio-technical culture
RSQ 1.2: What are the challenges that could affect effective KT using SM in an IBE?	Participants	Finding 29	Challenges that could affect effective KT using SM include security, reliability and trustworthiness, culture, authenticity, reputation, IT infrastructure, information overload, velocity, convenience, volatile team governance, inadequate knowledge integration, and lack of control.	Organisational Science IT	Organisational socio-technical culture
RQ 2: How can SM be managed for effective KT in an innovative business environment?					
RSQ 2.1: How can knowledge be transferred using designed SM platforms in an IBE	Delphi	Finding 31	There is a shift from traditionally centred KT to technology-centred KT.	Organisational science	Organisational socio-technical culture
RSQ 2.2: How can the use of SM facilitate effective KT in an IBE?	Delphi	Finding 32	SM facilitates effective KT through problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation.	People, IT	People, IT
	Delphi	Finding 33	People create meaning from experiences of SM use, thereby enabling collaboration in communities, and being involved in conversations.	People, IT	People, IT
		Finding 34	It is very important to extremely important to note that SM affords people the ability to apply knowledge.	SM affordances	SM
		Finding 35	It is very important to extremely important to use SM for building reputation with applicable knowledge acquired.	SM	SM
		Finding 36	SM affords the ability to create groups or communities for conversations to reveal one's presence and create identity and relationships on a daily basis, occasionally or weekly.	SM affordances	SM

*RQ- Research Question, RSQ-Research Sub-Question, No-Number

In answering RQ 1 and RQ 2, as well as RSQs, in contrast to Round 1, Round 2 exploration stage was eliminated because Round 2 was meant to answer survey questions which failed to result in precise consensus of participant's responses. In the same way as in Round 1, participant's responses in Round 2 were also returned to the participants to confirm if their contributions were the correct ones.

5.4.3 Round 2: Delphi procedure: Distillation, utilisation, reporting (Stages 2, 3 and 4)

The Delphi technique Round 1 followed the following stages: i) exploration (only survey question which did not results in experts' response agreement using measure of central tendency were brought into Round 2 using SPSS and Excel applications to confirm the correctness of each tool result. The next stage was, ii) distillation, ii) utilisation, and iii) reporting of results. The next section briefly presents Round 2 participants demographics.

5.4.3.1 Delphi Participants demographics

Demographic information was important to reveal participants individual social position, class, gender, and race. This done because the research impacts the way individuals interprets the world, formulate concepts, and make claims about it. Appendix M tabulates the Delphi participants' countries, management level, qualification, years of experience and application used usable for KT.

Figure 5.20 shows the number of participants, gender, and age range.

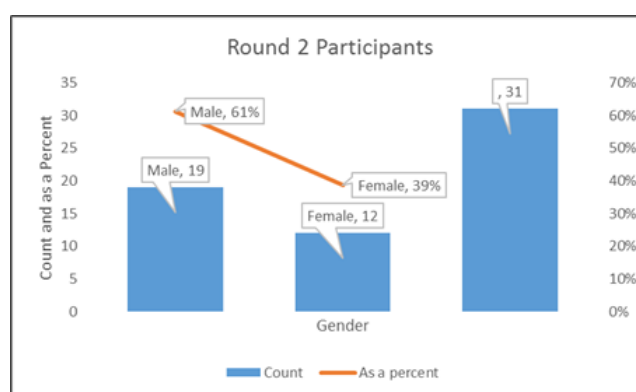


Figure 5.20: Percentage of 19 males, 12 females and 31 participants in Round 2

Figure 5.21 presents the age range of the participants. Most of the panellists age range at the time of this research was 18-24 (9%), 25-34 (23%), 35-44 (23%), 45-54 (32%), and 55-64 (16%), while there was no one over 66 years in Round 2.

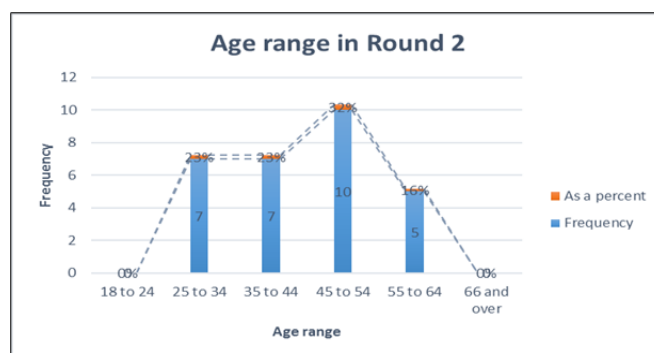


Figure 5.21: Participants' age range in Round 2

The remainder of the section focuses on the selected participants' professional qualifications. For Round 2, the majority of participants indicated that they possess a Master's and/or Bachelor's degree (Figure 5.22).

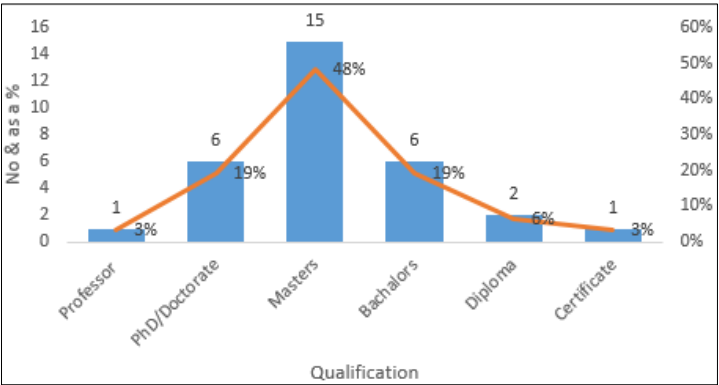


Figure 5.22: Educational qualifications in Round 2

Figure 5.23 shows the case processing summary, with 31 valid participants (i.e., those who met the expertise criteria for KT and SM use, and who consented to participate in Delphi technique Round 2). The data collection instrument was evaluated using Cronbach's alpha coefficient, also shown in Figure 5.23. The instrument was reliable (Cronbach's alpha=0.774).

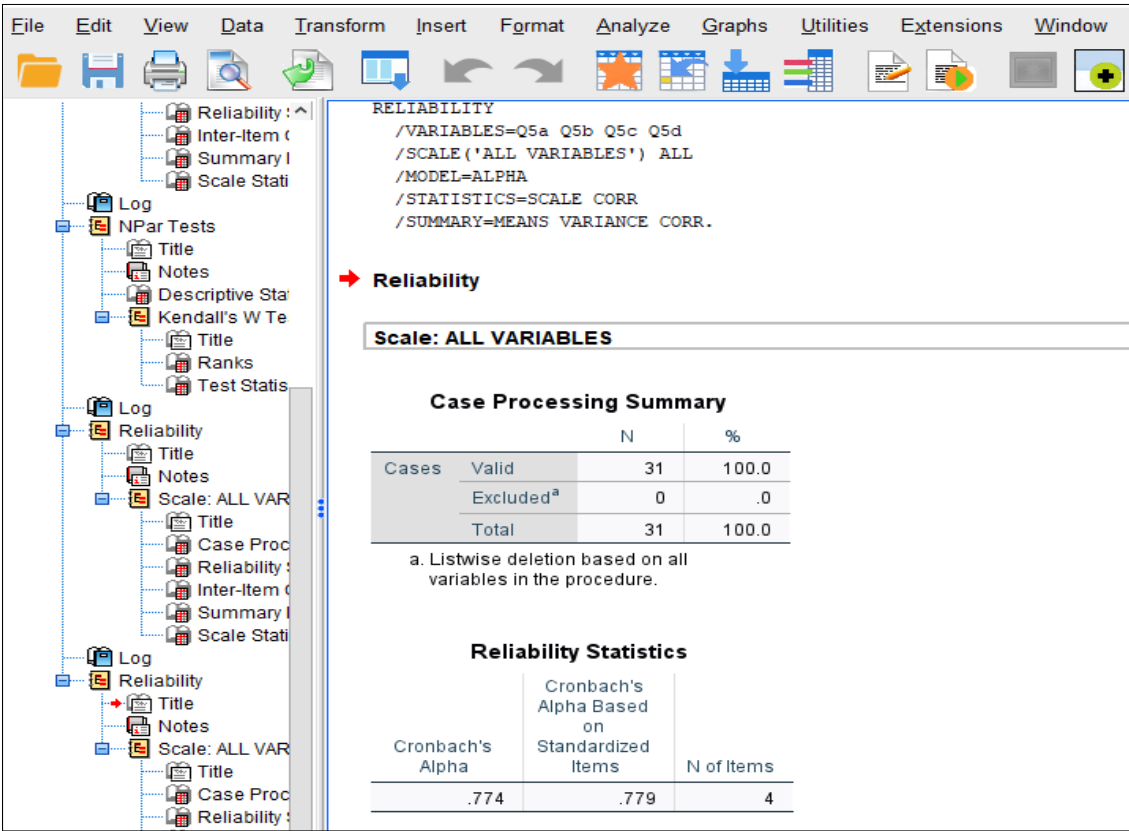


Figure 5.23: Cronbach's alpha reliability statistics

5.4.3.2 RQ 1: What are the factors affecting KT using SM in an innovative business environment?

5.4.3.3 RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?

Survey Question 1.1: Rank from 1 to 4, in order of significance, [a] individual capabilities, self-efficacy, etc., as factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somehow average impact).

Table 5.46 presents the frequency table for SQ 1.1.

Table 5.46: Frequency table for SQ 1.1 (Delphi Round 2)

SQ 1.1: Rank from 1 to 4, in order of significance, [a] individual capabilities, self-efficacy, etc., as factors affecting KT using SM.	Frequency
1=extremely significant impact	18
2=very high impact	4
3=significant impact	4
4=somehow average impact	3

*SQ-Survey Question; SM-Social Media; KT-Knowledge Transfer

Participants mainly indicated that individual factors such as individual capabilities and self-efficacy pose an extremely significant impact (frequency=18) on effective KT when using SM. Table 5.47 shows the statistical results of participants ranking individual factors for effective KT when using SM.

Table 5.47: Statistical results of participants ranking individual factors for effective KT when using SM

Statistics	Results related to individual factors affecting effective KT using SM
Mean	2.75
Standard Error	0.946484724
Median	3.5
Standard Deviation (SD)	1.892969449
Sample variance	3.583333333
Range	4
Minimum	0
Maximum	4
Sum	11
Count	4

The SD is 1.8, which is smaller than the mean (2.8). This shows agreement of the participants' contribution in terms of individual factors affecting effective KT using SM. The SD is also closer to one (1) (perfect agreement).

Finding 37: People have an extremely significant impact (frequency=18) on effective KT when using SM.

Survey Question 1.2: Rank from 1 to 4, in order of significance, [b] organisational ability to choose the correct platform for specific tasks, knowledge maintenance and transfer measurement, aligning goals to strategy, policies, ethics, etc., as factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somewhat average impact).

Table 5.48 presents the frequency table for SQ 1.2.

Table 5.48: Frequency table for SQ 1.2 (Delphi Round 2)

SQ 1.2: Rank from 1 to 4, in order of significance, [b] organisational ability to choose the correct platform for specific tasks, knowledge maintenance and transfer measurement, aligning goals to strategy, policies, ethics, etc., as factors affecting KT using SM.	Frequency
1=extremely significant impact	9
2=very high impact	11
3=significant impact	7
4=somewhat average impact	2

*SQ- Survey Question; SM-Social Media; KT-Knowledge Transfer

Participants mainly indicated that organisational factors have a very high (frequency=11) to extremely significant impact (frequency=9) on effective KT when using SM.

Table 5.49 shows the statistical results of participants ranking organisational factors affecting KT when using SM.

Table 5.49: Statistical results of participants ranking organisational factors affecting KT when using SM

Statistics	Results related to organisational factors affecting effective KT using SM
Mean	6.666666667
Standard Error	2.603416559
Median	7
Standard Deviation (SD)	4.509249753
Sample variance	20.33333333
Range	9
Minimum	2
Maximum	11
Sum	20
Count	3

*SM-Social Media; KT-Knowledge Transfer

Overall, the SD (4.5) is smaller than the mean (6.7). This shows agreement between the participants on the contribution of organisational factors affecting effective KT using SM.

Finding 38: Organisational factors have a very high to extremely significant impact on effective KT when using SM.

Survey Question 1.3: Rank from 1 to 4, in order of significance, [c] environmental factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somehow average impact).

Table 5.50 presents the frequency table for SQ 1.3.

Table 5.50: Frequency table for SQ 1.3 (Delphi Round 2)

SQ 1.3: Rank from 1 to 4, in order of significance, [c] environmental factors affecting KT using SM.	Frequency
1=extremely significant impact	9
2=very high impact	11
3=significant impact	7
4=somehow average impact	2

*SQ- Survey Question; SM-Social Media; KT-knowledge transfer

The participants mainly indicated that environmental factors have a significant (frequency=7), very high (frequency=11) to extremely significant (frequency=9) impact on effective KT when using SM.

Table 5.51 illustrates the statistical results of participants ranking environment factors affecting KT when using SM.

Table 5.51: Statistical results of participants ranking environment factors affecting KT when using SM

Statistics	Results related to environmental factors affecting effective KT using SM
Mean	6.666666667
Standard Error	2.603416559
Median	7
Standard Deviation (SD)	4.509249753
Sample variance	20.33333333
Range	9
Minimum	2
Maximum	11
Sum	20
Count	3

Overall, the SD (SD=4.5) is smaller than the mean (6.7). This shows agreement between the participants on environmental factors affecting effective KT using SM.

Finding 39: Environmental factors have a significant, very high, to extremely significant impact on effective KT when using SM.

Survey Question 1.4: Rank from 1 to 4, in order of significance, [d] security factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somehow average impact).

Table 5.52 presents the frequency table for SQ 1.4.

Table 5.52: Frequency table for SQ 1.4 (Delphi Round 2)

SQ 1.4: Rank from 1 to 4, in order of significance, [d] security factors affecting KT using SM.	Frequency
1=extremely significant impact	17
2=very high impact	5
3=significant impact	4
4=somehow average impact	3

*SQ- Survey Question; SM-Social Media; KT-Knowledge Transfer

Participants mainly indicated that security factors have an extremely significant (frequency=17) effect on KT when using SM.

Table 5.53 shows the statistical results of participants ranking security factors affecting effective KT when using SM.

Table 5.53: Statistical results of participants ranking security factors affecting KT using SM

Statistics	Results related to security factors affecting effective KT using SM
Mean	4
Standard Error	0.57735069
Median	4
Standard Deviation (SD)	1
Sample variance	1
Range	2
Minimum	3
Maximum	5
Sum	12
Count	3

*SM-Social Media; KT-Knowledge Transfer

Overall, the SD (1) is smaller than the mean (4). This shows perfect agreement among participants on security factors affecting effective KT using SM. The SD is also equal to one (1) (perfect agreement). This question was not taken into the third round of the Delphi technique because of the of consensus among participants on factors affecting effective KT using SM.

Finding 40: IT security has an extremely significant impact on effective KT when using SM.

5.4.3.4 RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?

Survey Question 1.2.1: Rank from 1 to 3, challenges to KT using SM in terms of [a] individual sources such as source credibility, perception on easy of technology use or usefulness, attitudes, and self-efficacy.

The challenges were ranked at: i) individual, ii) organisational and iii) environmental level.

Table 5.54 shows the frequency table of the participants ranking (from 1 to 3) the challenges affecting KT using SM at individual level. The attention needed for these challenges is also indicated.

Table 5.54: Frequency table for participants ranking from 1 to 3 the challenges of KT using SM at individual level

SQ 1.1.2.1: Rank from 1 to 3 the challenges of KT using SM in terms of individual sources.	Frequency
1=most extreme impact, urgent attention is needed	18
2=very high impact, attention is needed	12
3=average impact, less attention is needed	7

*SQ-Survey Question; SM-Social Media; KT-Knowledge Transfer

The participants' responses revealed the challenges of KT using SM in terms of individual sources having an average impact, where less attention is needed (frequency=7), a very high impact, where attention is needed (frequency=12), and most extreme impact, where urgent attention is needed (frequency=18).

Table 5.56 shows the statistical results of participants rating challenges that affect effective KT using SM at individual level.

Table 5.55: Statistical results of participants rating challenges that affect effective KT using SM at individual level

Statistics	Results on individual challenges
Mean	9.5
Standard Error	2.5
Median	9.5
Standard Deviation (SD)	3.535533906
Sample variance	12.5
Range	5
Minimum	7
Maximum	12
Sum	19
Count	2

Panellists showed consensus that challenges affecting effective KT using SM related to individual sources range from a very high impact, where attention is needed, to most extreme impact, where urgent attention is needed. The SD is 3.5, which is smaller than the mean (9.5).

Survey Question 1.2.2: Rank from 1 to 3, challenges of KT using SM in terms of [b] organisational factors such as leadership, tasks, IT, KT measurement, security systems, objectives, processes, culture, and trust.

Table 5.56 shows the frequency table of the participants ranking (from 1 to 3) the challenges affecting KT using SM at organisational level. The attention needed for these challenges is also indicated.

Table 5.56: Frequency table for participants ranking from 1 to 3 the challenges of KT using SM at organisational level

SQ 1.2.2: Rank from 1 to 3, challenges to KT using SM in terms of organisational sources	Frequency
1=most extreme impact, attention is urgently needed	15
2=very high impact, attention is needed	13
3=average impact, less attention is needed	2
Mean	10

* SQ- Survey Question; SM-Social Media; KT-Knowledge Transfer

Table 5.56 shows the ranking of participants' responses on challenges of KT using SM on organisational level. Participants' responses ranged from organisations posing a very high impact, where urgent attention is needed (frequency=13) to the most extreme impact, where urgent attention is needed (frequency=15). The results indicating panellists' concordance is evidenced by the SD (7.7), which is almost equal to the mean (7.5).

Table 5.57 shows the statistical results of participants rating challenges that affect effective KT using SM at organisational level.

Table 5.57: statistical results of participants rating challenges that affect effective KT using SM at organisational level

Statistics	Results on organisational challenges
Mean	7.5
Standard Error	5.5
Median	7.5
Standard Deviation (SD)	7.7781745593
Sample variance	60.5
Range	11
Minimum	2
Maximum	13
Sum	15
Count	2

* SM-Social Media; KT-Knowledge Transfer

Survey Question 1.2.3: Rank from 1 to 3, challenges of KT using SM in terms of [c] environmental factors such as IT, economic, social, cultural, and political advancement.

Table 5.58 presents the frequency table of the participants ranking (from 1 to 3) the challenges affecting KT using SM at environmental level. The attention needed for these challenges is also indicated.

Table 5.58: Frequency table for participants ranking from 1 to 3 the challenges of KT using SM at environmental level

SQ 1.2.3: Rank from 1 to 3, challenges to KT using SM in terms of environmental sources.	Frequency
1=most extreme impact, urgent attention is needed	9
2=very high impact, attention is needed	13
3-average impact, less attention is needed	7
Mean	10

* SQ- Survey Question; SM-Social Media; KT-knowledge Transfer

Table 5.58 shows the ranking of participants' responses on challenges of KT using SM on environmental level. Participants' responses range from environmental challenges posing a very high impact, where attention is needed (frequency=9), to the most extreme impact, where urgent attention is needed (frequency=15). The results indicating panellists' concordance is evidenced by the SD (4.24), which is smaller than the mean (10).

Table 5.59 shows the statistical results of participants rating challenges that affect effective KT using SM at environmental level.

Table 5.59: statistical results of participants rating challenges that affect effective KT using SM at environmental level

Statistics	Results on environmental challenges
Mean	10
Standard Error	3
Median	10
Standard Deviation	4.242540687
Sample variance	18
Range	6
Minimum	7
Maximum	13
Sum	20
Count	2

* SM-Social Media; KT-Knowledge Transfer

Finding 41: In relation to KT using SM, challenges posing a very high impact where most urgent attention is needed, emanate from the environment, followed by organisational factors, and lastly from people.

Survey Question 1.2.4: Rank from 1 to 4 the below most important and used KT strategies when using SM:

- a) *Online conversations*
- b) *Information seeking, library books, documents, etc.*
- c) *Seeking and organising information on the organisational web*
- d) *Knowledge application*

(Where 1=extremely important and useful; 2=very important and useful; 3=average importance and used; 4=not important and not useful).

Table 5.60 displays the descriptive statistics related to ranking the most important and used KT strategies when using SM.

Table 5.60: Descriptive statistics on ranking from 1 to 4 the most important and used KT strategies when using SM

SQ 1.2.4: Rank from 1 to 4 the most important and used KT strategies when using SM.	Frequency			
	a) Online conversations	b) Information seeking, library books, documents, etc.	c) Seeking and organising information on the organisational web	d) Knowledge application
1=extremely important and useful	16	10	8	8
2=Very important and useful	7	8	11	13
3=Average in importance and used	3	6	7	7
4=Not important and not useful	3	4	3	2

* SQ- Survey Question; SM-Social Media; KT-Knowledge Transfer

Descriptive statistics to note show: a) sixteen (16) of 31 (52%) participants considered *online conversations* to be extremely important and useful, while 7 of 31 participants (23%) found it very important and useful, thus 75% in total; b) ten (10) participants considered *information seeking, library books, documents etc.* to be extremely important and useful, while 8 participants found it very important and useful, totalling 58%; c) sixty-one percent (61%) of the participants considered *information seeking and information on the organisational web* to be extremely important and useful to very important and useful; d) sixty-eight percent (68%) of the participants considered *knowledge application* to be ranging from extremely important and useful to very important and useful. Thus, participants strongly agreed that all the KT strategies mentioned when using SM are very important and useful. Table 5.61 illustrates the statistical results related to SQ 1.2.4.

Table 5.61: Statistical results related to SQ 1.2.4

Statistics	Results related to SQ			
	a) Online conversations	b) Information seeking, library books, documents, etc.	c) Seeking and organising information on the organisational web	d) Knowledge application
Mean	7.25	7	7.25	7.5
Standard Error	3.06526236	1.290994	1.652018967	2.254624876
Median	5	7	7.5	7.5
Standard Deviation	3	2.581989	3.304037934	4.509249753
Sample variance	6.130524719	6.666667	10.91666667	20.33333333
Range	13	6	8	11
Minimum	3	4	3	2
Maximum	16	10	11	13
Sum	29	28	29	30
Count	4	4	4	4

*SQ-Survey Question, Std deviation/SD-Standard Deviation

Table 5.61 highlights that the SD for all the KT strategies are less than the mean in terms of: a) online conversations (mean=7.25, SD=3); b) information seeking, library books, documents, etc. (mean=7, SD=2.58); c) seeking and organising information on the organisational web (mean=7.25, SD=3.30); and d) knowledge application (mean=7.25, SD=3). The overall mean (29), which is less than the SD (13.39) shows a high level of consensus among the panellists.

Finding 42: The KT strategies using SM that are very important and useful include:

- a) Online conversations
- b) Information seeking, library books, documents, etc.
- c) Seeking and organising information on the organisational web
- d) Knowledge application

Survey Question 1.2.5: Rank from 1 to 9 the most important and used SM platforms in transferring knowledge:

- 1) WhatsApp
- 2) Slack
- 3) SnapChat
- 4) Blogs
- 5) wiki
- 6) Facebook
- 7) TikTok
- 8) Twitter
- 9) MS Teams

(Where 1=extremely important and used; 2=very important and in use; 3=important; 4 to 6=somewhat average in importance and in use; 7 to 9=least important and in use).

Table 5.62 shows the descriptive statistics related to the most important and used SM platforms in KT (from the provided list).

Table 5.62: Descriptive statistics on ranking from 1 to 9 the most important and used SM platforms in transferring knowledge

SQ 1.2.5: Rank from 1 to 9 the most important and used SM platforms in transferring knowledge.	1) WhatsApp	2) Slack	3) SnapChat	4) Blogs	5) wiki	6) Facebook	7) TikTok	8) Twitter	9) MS Teams
1=extremely important and used	9	4	3	2	3	3	3	5	10
2=very important and in use	7	8	6	10	7	2	5	6	11
3=important and in use	4	4	4	4	6	9	5	5	2
4 to 6=somewhat average in importance and in use	6	7	9	13	8	8	6	5	2
7 to 9=least important and in use	5	9	9	3	5	8	11	8	5

From Table 5.62, MS Teams shows the highest combination of 1=extremely important and used, 2=very important and in use (21), followed by WhatsApp (16), while Slack and Blogs (12) are in range in relation to both 1=extremely important and used and 2=very important and in use.

Table 5.63 illustrate the statistical results from Table 5.62.

Table 5.63: Statistical results on most important and used SM platforms in KT

SQ 1.2.5: Rank from 1 to 9 the most important and used SM platforms in transferring knowledge	a) WhatsApp	b) Slack	c) SnapChat	d) Blogs	e) wiki	f) Facebook	g) TikTok	h) Twitter	i) MS Teams
Mean	6.2	6.4	6.2	6.4	5.8	6	6	5.8	6
Standard Error	0.86	1.03	1.241	2.159	0.86	1.449	1.342	0.583	1.924
Median	6	7	6	4	6	8	5	5	5
Standard Deviation	1.924	2.302	2.775	4.827	1.924	3.24	3	1.304	4.301
Sample Variance	3.7	5.3	7.7	23.3	3.7	10.5	9	1.7	18.5
Range	5	5	6	11	5	7	8	3	9
Minimum	4	4	3	2	3	2	3	5	2
Maximum	9	9	9	13	8	9	11	8	11
Sum	31	32	31	32	29	30	30	29	30
Count	5	5	5	5	5	5	5	5	5

SQ-Survey Question

Table 5.64 demonstrate that the highest mean score for this scale is Blogs as the dominant application for KT, reflecting a mean of 6.4 and SD of 4.827. Furthermore, The highest range is Blogs (11), followed by MS Teams (9), and TikTok (8). Thus, the respondents agreed that these SM platforms are (2)=very important and in use in KT. In addition, results highlighted that the SD for all the SM platforms are less than the mean.

To summarise, the participants' rating of the platforms mainly used for KT is in agreement in Delphi Round 1 and Round 2, because the overall standard deviation (25.596) is less than the mean (54.8), reflecting agreement or concordance of the participants' contributions.

Finding 43: TikTok, SnapChat, Facebook, and Twitter represent very important SM platforms for KT.

5.4.3.5 Summary of findings – Round 2

Table 5.64 presents the summary of Round 2's findings related to each RQ. Only questions that did not results in participants' agreement were taken to Round 2.

Table 5.64: Summary of findings – Round 2

RQ and RSQ	Research Strategy	Finding No.	Findings
RQ 1: What are the factors affecting KT using SM in an innovative business environment?			
RSQ 1.1: What are the factors that could facilitate effective KT using SM in an IBE?	Delphi	Finding 37	People have an extremely significant impact (frequency=18) on effective KT when using SM.
		Finding 38	Organisational factors have a very high to extremely significant impact on effective KT when using SM.
		Finding 40	IT security has an extremely significant impact on effective KT when using SM.
		Finding 41	In relation to KT using SM, challenges posing a very high impact where most urgent attention is needed, emanate from the environment, followed by organisational factors, and lastly from people.
		Finding 42	The KT strategies using SM that are very important and useful include: a) online conversations, b) information seeking, library books, documents, etc., c) seeking and organising information on the organisational web, d) knowledge application.
		Finding 43	TikTok, SnapChat, Facebook, and Twitter represent very important SM platforms for KT.

*RQ-Research Question, RSQ-Research sub-Question, No-Number

5.4.4 Delphi technique summary

Table 5.65 is a summary of the Delphi technique presenting the RQs, RSQs, findings (16), categories (5), and themes (5).

Table 5.65: The Delphi technique combined findings per RQ and RSQ

RQ and RSQ	Research Strategy	Finding No.	Findings	Category	Theme
RQ 1: What are the factors affecting KT using SM in an innovative business environment?					
RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?	Delphi	Finding 28	People, IT in the form of SM, ease of use, trust, credibility, people's will, identity and identification, and their attitudes facilitate effective KT using SM.	People, IT	IT
		Finding 30	WhatsApp, followed by YouTube, MS Teams, blogs, and Facebook are SM platforms used in organisations for KT.	Organisational Science	Organisational socio-technical culture
		Finding 37	People have an extremely significant impact (frequency=18) on effective KT when using SM.	People	People
		Finding 38	Organisational factors have a very high to extremely significant impact on effective KT when using SM.	Organisational Science	Organisational socio-technical culture
		Finding 39	Environmental factors have a significant, very high, to extremely significant impact on effective KT when using SM.	Environment	Environment
		Finding 40	IT security has an extremely significant impact on effective KT when using SM.	IT	Organisational socio-technical culture
		Finding 41	In relation to KT using SM, challenges posing a very high impact where most urgent attention is needed, emanate from the environment, followed by	KT, SM	KT, SM

			organisational factors, and lastly from people.		
		Finding 42	The KT strategies using SM that are very important and useful include: a) online conversations, b) information seeking, library books, documents, etc., c) seeking and organising information on the organisational web, d) knowledge application.	SM	SM
		Finding 43	TikTok, SnapChat, Facebook, and Twitter represent very important SM platforms for KT.	SM, KT	SM, KT
RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?	Delphi	Finding 29	Challenges that could affect effective KT using SM include security, reliability and trustworthiness, culture, authenticity, reputation, IT infrastructure, information overload, velocity, convenience, volatile team governance, inadequate knowledge integration, and lack of control.	Organisational Science	Organisational socio-technical culture
RQ 2: How can SM be managed for effective KT in an innovative business environment?					
RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment?	Delphi	Finding 31	There is a shift from traditionally centred KT to technology-centred KT.	Organisational Science	Organisational socio-technical culture
RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?	Delphi	Finding 32	SM facilitates effective KT through problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation.	People, IT	People, IT
	Delphi	Finding 33	People create meaning from experiences of SM use, thereby enabling collaboration in communities, and being involved in conversations.	People, IT	People, IT
		Finding 34	It is very important to extremely important to use SM in building reputation with acquired knowledge.	SM affordances	SM
		Finding 35	It is very important to extremely important to use SM for building reputation with applicable knowledge acquired.	SM	SM
		Finding 36	SM affords the ability to create groups or communities for conversations to reveal one's presence and create identity and relationships on a daily basis, occasionally or weekly.	SM affordances	SM

*RQ-Research Question, RSQ-Research Sub-Question, No-Number; SM-Social Media; KT-Knowledge Transfer; IBE-Innovative Business Environment

5.5 Summary of all findings (SLR, participants, Delphi technique)

Chapter Five presented the data analysis, comprising a bibliometric (BIO) analysis, participant interviews, a systematic literature review (SLR) and the Delphi technique. Table 5.66 outlines all the findings from BIO, SLR, participants and Delphi technique.

Table 5.66: Combination of findings to create categories and themes

RQ and RSQ	Research Strategy	Finding No.	Findings	Category	Theme
RQ 1: What are the factors affecting KT using SM in an innovative business environment?					
RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?	BIO	Finding 1	During the period 2000 to 2022, the attention of research shifted from information communication to KT and SM.	KT, IT	KT, SM
	SLR	Finding 3	The factors that could facilitate effective KT using SM in an IBE are: i) people, ii) trust, iii) organisational social-technical culture, and iv) the technological environment	People, Organisational Science	People, Organisational socio-technical culture, IT, Environment
		Finding 4	People capabilities support organisational structure, values, and processes.	People, Organisational Science	People, Organisational socio-technical culture
		Finding 5	IT infrastructure supports people and organisational KT.	People, Organisational Science	People, Organisational socio-technical culture, IT, Environment
	Participants	Finding 15	Sources of innovation that facilitate KT include the incongruities, process needs, and changes in the industry, as well as new knowledge and strategy.	People, Organisational Science	People, Organisational socio-technical culture
		Finding 17	MS Teams, Facebook, WhatsApp, News flash, SM security, HCI, and internet access facilitate effective KT using SM.	HCI	IT
		Finding 18	Organisational competitors, resources, leadership, minutes of meeting, policies, text, and KT incentives facilitate effective KT using SM.	People, Organisational Science	People, Organisational socio-technical culture
		Finding 19	Asking employees questions, promoting them to higher positions, mention the people involved in KT in a meeting, conferences, and research, facilitate KT using SM.	People	People, Organisational socio-technical culture
		Finding 21	At organisational level, SM tools such as module reporter, Jira, Jerk, sprint, Slake, Vimeo, week forum module reporter, and Stack Overflow are used in KT.	SM management	SM Organisational socio-technical culture
		Finding 23	Organisations' multi-content policies, regulations, and legislation aid the management of SM.	SM management	SM Organisational socio-technical culture
	Delphi	Finding 28	People, IT in the form of SM, ease of use, trust, credibility, people's will, identity and identification, and their attitudes facilitate effective KT using SM.	People, IT	IT
		Finding 30	WhatsApp, followed by YouTube, MS Teams, blogs, and Facebook are SM platforms used in organisations for KT.	SM management	Organisational socio-technical culture
		Finding 37	People have an extremely significant impact (frequency=18) on effective KT when using SM.	People	People
		Finding 38	Organisational factors have a very high to extremely significant impact on effective KT when using SM.	Organisational socio-technical culture	Organisational socio-technical culture
		Finding 39	Environmental factors have a significant, very high, to extremely significant impact on effective KT when using SM.	Environment	Environment
		Finding 40	IT security has an extremely significant impact on effective KT when using SM.	IT	Organisational socio-technical culture

		Finding 41	In relation to KT using SM, challenges posing a very high impact where most urgent attention is needed, emanate from the environment, followed by organisational factors, and lastly from people.	SM selection	SM
		Finding 42	The KT strategies using SM that are very important and useful include: a) online conversations, b) information seeking, library books, documents, etc., c) seeking and organising information on the organisational web, d) knowledge application.	SM, KT	SM, KT
		Finding 43	TikTok, SnapChat, Facebook, and Twitter represent very important SM platforms for KT.	SM selection	SM
RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?	BIO	Finding 2	Collaboration is high on the agenda in relation to SM use in KT.	KT	KT
	SLR	Finding 6	The challenges of KT using SM related to human characteristics are: i) motivation, ii) support on knowledge elicitation, iii) KT capability, iv) knowledge valuation, v) organisational culture, vi) knowledge complexity and stickiness, vii) having incentives, viii) knowledge absorption.	People, Knowledge Management	People, Organisational socio-technical culture
		Finding 7	The challenges of KT using SM related to technology are: i) KT capability, ii) knowledge complexity, iii) IT policies and procedures, iv) available hardware, v) available software, vi) access to hardware, vii) access to software and x) internet access.	KT People, Organisational socio-technical culture	KT, People, Organisational socio-technical culture
		Finding 14	SM management is not focused on group/team collaboration or change management technology.	KT Organisational socio-technical culture	KT, Organisational socio-technical culture
	Participants	Finding 16	Organisations are seeking: i) new ways to do things, ii) to eliminate outdated processes, iii) new markets, iv) to launch new products.	People, Organisational socio-technical culture	People, Organisational socio-technical culture
		Finding 20	The challenges affecting effective KT using SM include: i) knowledge valuation, ii) people, iii) cognition, v) knowledge absorption capability, vi) unclear KT incentives structure and knowledge management, vii) resistance to change, viii) organisational socio-technical culture, ix) lack of resources, x) obsolete overload of knowledge, xi) stickiness, and xii) IT security.	People, Organisational socio-technical culture	People, Organisational socio-technical culture
		Finding 23	Organisations' multi-content policies, regulations, and legislation aid the management of SM.	SM management	Organisational socio-technical culture
		Finding 24	Organisational leaders lack awareness in terms of i) the need to champion for backup data, ii) avoid intrusive SM platforms, and iii) politics to facilitate effective KT in SM use.	SM management	Organisational socio-technical culture
		Finding 25	There is a shift from traditional KT strategies to technology-centred KT that focuses on management and change in an IBE.	HCI	Organisational socio-technical culture
	Delphi	Finding 29	Challenges that could affect effective KT using SM include security, reliability and trustworthiness, culture, authenticity, reputation, IT infrastructure, information overload, velocity, convenience, volatile	SM affordances	Organisational socio-technical culture

			team governance, inadequate knowledge integration, and lack of control.		
		Finding 41	In relation to KT using SM, challenges posing a very high impact where most urgent attention is needed, emanate from the environment, followed by organisational factors, and lastly from people.	KT, SM	KT, SM
RQ 2: How can SM be managed for effective KT in an innovative business environment?					
RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment?	BIO	-	-	-	-
	SLR	Finding 8	Knowledge can be transferred through: i) communication, ii) SM monitoring tools, iii) access of information, and iv) a media platform, including v) knowledge that is in accessible form.	People,	People, Organisational socio-technical culture
		Finding 9	Communication, cognitive processing, culture, tasks, SM monitoring tools analytics, problem solving and innovations, and meta-knowledge facilitate KT in conversation.	IT innovation	KT, IT, SM
		Finding 10	The use of SM such as Facebook facilitates KT in conversation.	IT	IT
		Finding 25	There is a shift from traditional KT strategies to technology-centred KT that focuses on management and change in an IBE.	IT innovation	KT, SM
	Delphi	Finding 31	There is a shift from traditionally centred KT to technology-centred KT.	HCI	Organisational socio-technical culture
RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?	BIO	-	-	-	-
	SLR	Finding 11	SM facilitates effective KT through IT integration, online conversations, speed of information distribution, socialisation, interaction, SM affordance/ elements, people, and digital marketing.	SM affordances	KT, Organisational socio-technical culture, SM
		Finding 12	SM facilitates online conversation, digital marketing campaigns, and IT integration, thereby facilitating KT.	IT, SM	IT, SM
		Finding 13	In SM management, people are not focusing on promotion or prevention.	IT	SM
	Delphi	Finding 33	People create meaning from experiences of SM use, thereby enabling collaboration in communities, and being involved in conversations.	People, IT	People, IT
		Finding 34	It is very important to extremely important to note that SM affords people the ability to apply knowledge.	SM affordances	SM
		Finding 35	It is very important to extremely important to use SM for building reputation with applicable knowledge acquired.	SM affordances	SM
		Finding 36	SM affords the ability to create groups or communities for conversations to reveal one's presence and create identity and relationships on a daily basis, occasionally or weekly.	SM affordances	SM

*BIO-Bibliometric, Section A (SLR findings), Section B (participants' interview findings), Section C (Delphi technique findings), SLR-Systematic Literature Review; RQ-Research Question, RSQ-Research Sub-Question, No-Number; SM-Social Media; KT-Knowledge Transfer; IBE-Innovative Business Environment; IT-Information Technology

Answering RQ 1, "What are the factors affecting KT using SM in an innovative business environment?" resulted in seven (7) findings for SLR, 12 findings for the participants, and 10 for

the Delphi technique. In contrast, to answer RQ 2, “How can SM be managed for effective KT in an innovative business environment?” there were six (6) findings for SLR, four (4) findings for the participants, and four (4) findings for the Delphi technique.

Most of the findings overlap. Findings 3, 6, 7 and 20 epitomise RQ 1. Finding 3 states that the factors that could facilitate effective KT using SM in an IBE are: i) people, ii) trust, iii) organisational social-technical culture, and iv) the technological environment. Finding 6 indicates the challenges of KT using SM related to human characteristics, which are: i) motivation, ii) support on knowledge elicitation, iii) KT capability, iv) knowledge valuation, v) organisational culture, vi) knowledge complexity and stickiness, vii) having incentives, viii) knowledge absorption. Finding 7 indicates the challenges of KT using SM related to technology, namely: i) KT capability, ii) knowledge complexity, iii) IT policies and procedures, iv) available hardware, v) available software, vi) access to hardware, vii) access to software and x) internet access. Finding 20 discloses that the challenges affecting effective KT using SM, are: i) knowledge valuation, ii) people, iii) cognition, v) knowledge absorption capability, vi) unclear KT incentives structure and knowledge management, vii) resistance to change, viii) organisational socio-technical culture, ix) lack of resources, x) obsolete overload of knowledge, xi) stickiness, and xii) IT security.

Furthermore, most of the findings were complementary to each other. Findings 8, 9 and 25 answered both RSQ 2.1 and RSQ 2.2.

RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment? Finding 8 discloses that knowledge can be transferred through communication, SM monitoring tools, access of information and a media platform to including knowledge that is in accessible form. The transfer happens by means of SM affordances, conversation, meta-knowledge, links, information distribution, policies, insights, business intelligence, algorithms, and supportive leadership feedback (Finding 27). Finding 9 clarifies that communication, cognitive processing, culture, tasks, SM monitoring tools analytics, problem solving and innovations, and meta-knowledge facilitate KT. Finding 25 also reveals that there is a shift from traditional KT strategies to technology-centered KT that focuses on management and change in an IBE to facilitate KT.

RQ 2 was answered by RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment? Findings 27 and 32 answered RSQ 2.2. As indicated in the previous paragraph, Finding 27 discloses that SM facilitates effective KT by means of SM affordances, meta-knowledge and links, and information distribution, policies, insights, business intelligence, algorithms, and supportive leadership feedback. Finding 32 states that SM facilitates effective KT through problem identification, awareness, communication, socialisation, and knowledge

internalisation and externalisation. The themes for SLR, the participants, and the experts participating in the Delphi technique are: i) people, ii) organisational socio-technical culture, iii) KT, iv) IT, v) SM, and vi) environment.

5.6 Categories and theme development

In Table 5.66, the RQs, RSQs, research strategies, finding numbers and findings are presented. In total, 43 findings emerged from the data analysis. Table 5.66 was used as platform for the development of the 18 categories, 12 subthemes and six (6) themes. The category development was done first, aligning the research strategies to the RQs and findings (Table 5.67). From the 18 categories, and six (6) main themes were developed (Table 5.69).

Table 5.67: Categories developed and aligned to the research strategies and RQs

Strategy	RQs	Categories
Participant	2	Communication technology
SLR, Delphi	1, 2	Culture
Participant	2	Emotional reaction
SLR, Participants, Delphi	1, 2	Environment
Participant	1	HCI
SLR, Participants, Delphi	1, 2	ICT
Participant	1	Innovation
SLR, Participants, Delphi	1, 2	IT
SLR, Participants, Delphi	1, 2	Knowledge
SLR, Participants, Delphi	1, 2	KT
SLR, Participants, Delphi	1, 2	Organisational Science
Delphi	2	Organisational culture
SLR, Participants, Delphi	1, 2	People
Participant	2	Policies
SLR, Participants, Delphi	1, 2	SM
Delphi	2	SM affordances
Participant, Delphi	2	SM management
SLR, Participants, Delphi	1, 2	Socio-technical

*SLR–Systematic Literature Review; RQs–Research Questions; HCI–human Computer Interaction; ICT–Information and Communications Technology; IT–Information Technology; SM–SM;KT–Knowledge Transfer

Table 5.68 shows the categories and RQs aligned to themes.

Table 5.68: The RQs aligned to the categories and themes developed

RQs	Categories	RQs	Themes
2	Communication	1, 2	People
2	Emotions	1, 2	Organisational socio-technical culture
1, 2	Environment	1, 2	Environment
1	HCI	1, 2	Knowledge
1, 2	ICT	1, 2	ICT
1	Innovation	1, 2	SM
1, 2	Knowledge		
1, 2	Organisational culture		
1, 2	People		
2	Policies		
1, 2	SM		
1, 2	Socio-technical		

**SLR–Systematic Literature Review, RQs–Research Questions, HCI–Human Computer Interaction, ICT–Information and Communications Technology, IT–Information Technology, SM–Social Media, KT–Knowledge Transfer

5.7 Themes

In this study, from the data analysed in the SLR, individual interviews and the Delphi technique, the following joint themes were identified: i) people, ii) organisational socio-technical culture, iii) environment, iv) ICT, and v) SM use in KT. These themes are discussed in Chapter Six.

5.8 Summary

The chapter presented the analysis and findings on the use of SM in KT in an IBE. The first part of the data analysis included the academic online tool, Harzing's *Publish or Perish*, using the *VOSviewer* application. In the second part of the analysis, as explained in Chapter Four, section 4.7.2, ATLAS.ti was used to analyse the data downloaded from Mendeley, Connected Papers, handpicks and other databases, using thematic analysis.

To answer RQ 1, "What are the factors affecting KT using SM in an innovative business environment?" eight (8) findings from SLR, 11 from the participants, and 11 from the Delphi technique. To answering RQ 2, "How can SM be managed for effective KT in an innovative business environment?" six (6) findings emerged from SLR, two (2) from the participants, and five (5) from the Delphi technique.

The factors that could facilitate effective KT using SM in an IBE are: i) people, ii) trust, iii) organisational social-technical culture, and iv) the technological environment. The challenges of KT using SM are: i) motivation, ii) support on knowledge elicitation, iii) KT capability, iv) knowledge valuation, v) organisational culture, vi) knowledge complexity and stickiness, vii) having incentives, viii) knowledge absorption; ix) KT capability, x) knowledge complexity, xi) IT policies and procedures, xii) available hardware, xiii) available software, xiv) access to hardware, xv) access to software and xvi) internet access. Further challenges include: i) knowledge valuation, ii) people, iii) cognition, v) knowledge absorption capability, vi) unclear KT incentives structure and knowledge management, vii) resistance to change, viii) organisational socio-technical culture, ix) lack of resources, x) obsolete overload of knowledge, xi) stickiness, and xii) IT security.

In addition, when asked how SM can be managed for effective KT in an IBE, 14 participants disclosed that people are not focusing on the promotion or prevention of organisational socio-cultural and technical factors. The use of SM to facilitate effective KT in an innovative business environment can be facilitated through problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation, SM affordances, meta-knowledge, links, information distribution, policies, insights, business intelligence, algorithms, and supportive leadership feedback.

The themes derived from the SLR, the interview participants, and the experts participating in the Delphi technique are: i) people, ii) organisational socio-technical culture, iii) environment, iv) ICT, and v) SM use in KT.

Chapter Six discusses the themes that emerged in Chapter Five.

CHAPTER SIX: DISCUSSION

6.1 Introduction

Chapter Six discusses the themes identified in Chapter Five. Chapter Six's layout is presented in Figure 6.1.

6.1	Introduction
6.2	Themes
6.3	Research Question 1 and Research Question 2
6.4	The sources of the proposed conceptual framework
6.5	Explanation of the final conceptual framework elements
6.6	Outcomes of the proposed conceptual framework
6.7	Summary

Figure 6.1: Layout of Chapter Six

In this chapter, the implications of the findings are explained by presenting the results as themes (Chapter Five, sections 5.2 to 5.5). The themes highlight the study's importance and how it shapes an understanding of the research problem. All the RSQs are linked to relevant themes. The chapter ends with a proposed conceptual framework and a summary.

The findings suggest that social media (SM) facilitates knowledge transfer (KT) in an innovative business environment (IBE). The use of SM in the transfer of knowledge is affected by people, context, situations, experiences, cognitive processes, organisational socio-technical culture, and the environment. The study aimed to explore the use of SM in KT in an IBE. The research was guided by theory triangulation, using Dervin (2003), Weick (1995) and Trist's (1981) theories (Chapter Three). This chapter integrates the results of SLR with those of the experts interviewed and the Delphi technique strategy. The study was guided by the RQs and RSQs, which are outlined below for the convenience of the reader:

- i) RQ 1: What are the factors affecting KT using SM in an innovative business environment?
- ii) RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?
- iii) RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?
- iv) RQ 2: How can SM be managed for effective KT in an innovative business environment?

- v) RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment?
- vi) RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?

This discussion answers the research questions that guided the study (Hussey & Hussey, 1997; Tharenou et al., 2007).

6.2 Themes

The themes identified from the data analysis presented in Chapter 5 are discussed in this section. The themes are: i) people, ii) organisational socio-technical culture, iii) environment, iv) Information and Communications Technology (ICT), and v) SM use in KT.

6.2.1 Theme 1: People

SM is becoming more and more popular, especially social network platforms such as Facebook, Twitter, Google, and LinkedIn (Statista, 2021). More than two (2) billion people around the world are using at least one social network on average, while two (2) hours and 23 minutes by SM users are spent on SM per day globally (Statista, 2021). As indicated in the SLR, expert interviews, and the Delphi technique, people are a significant factor affecting KT using SM in an IBE. The people theme addresses RQ 1 and RQ 2. In relation to answering RQ 1 and RQ 2, one of the experts (P4) argued that,

“.....its processes, processes are made up of people and technologies. Quite often they say that in organisations people are their most valued assets but people are not, it's actually the worst in the people, so it actually goes deeper than the knowledge that actually goes to them than what people can do. If I say people are not the thing I mean what is valued is the knowledge in their minds and most organisations are also spending more on technology to be successful as they try to automate people out” (Appendix H, P4).

People facilitate KT through sensemaking (intra-personal cognition). Sensemaking is a dynamic, ongoing process of repetitive meaning construction without a beginning or formal end, in which “past experience is projected upon possible futures” (Weick, 1995:43). The sensemaking process includes understanding connections, structuring, reducing confusion, uncertainty, ambiguity and discovering gaps, technology, systems, processes, objectives, relationships, and communication. People's lack of insight, understanding of connections, gaps or structures, technology, systems, processes, objectives, relationships, confusion, uncertainty, and ambiguity affect KT. According to King (2009), two dimensions that influence tacit KT are ease of use and the motivation to transfer knowledge. The ease of transfer and cognition are determined by the capability of the recipient to receive tacit knowledge and the capability of the

source as a sender. The motivation to transfer, being behaviourally focused, is the willingness of the source to engage in the transfer process. This could mean that people's cognitive thinking and tacit knowledge affect KT. P7 clarifies how people can negatively affect KT:

“To add people are the most inefficient means for KT because they hide knowledge, most researches [sic] are insignificant and information is now easily available but knowledge is hidden: In terms of innovation, human beings are the most inefficient means for KT, as they need to learn how to manage knowledge” (Appendix H).

In relation to KT, the “absorptive capacity of the organisation also plays an important role through which KT positively controls knowledge assets and innovative performance relationship” (Hasan et al., 2020:73). Without absorptive capacity, an organisation will fail to transfer knowledge from one unit to another and will not learn (Hasan et al., 2020:73). Learning from prior knowledge, individuals are more likely to identify the value of external knowledge when needed and are able to communicate with knowledge sources using shared knowledge-specific language or via a specific platform such as SM. Additionally, important capabilities of both the sender and the receiver include: i) technical competence, ii) mentorship, iii) KM, iv) management of KT processes, v) financial resources, and vi) absorptive capability (Wehn & Montalvo, 2018:63). The type of knowledge, context, and national culture plays a role in determining the effectiveness of KT within organisations.

The roles of the human include: i) being authors, ii) information seekers, and iii) sensemakers when transferring knowledge via SM. The human as sensemaker is not only the producer of the information, but also assumes the role of information designer, quality assurer, moderator, and custodian. People are also involved in social and organisation sensemaking, creating knowledge in CoPs, monitoring the environment for changes, and create relationships to smoothen KT, HCI, HII, ISB, IR, and SM use.

People facilitate KT and present challenges to KT when using SM. As an example, there is a shift from information security to cybersecurity, such as: i) increased internal threats, ii) ‘wiki-leaks’ incidents (people leak information), iii) data breaches, iv) malicious attacks from within organisations, v) extensive use of mobile devices, and vi) SM networks with an increasing mobile workforce (Spremić & Šimunic, 2018:2). This negatively “affect[s] individuals, institutions, organisations, corporates, nations financially through downtime, business processes, data breach, lack of privacy, stolen identity, regulatory penalties, loss of reputation and a bad public image” (Spremić & Šimunic, 2018:2). It is important to understand that people present factors affecting KT and bring in strategies to manage the use of SM in KT. Although people present challenges by being involved in information security challenges and cybercrime, sensemaking

by people on KT within the organisation is important because of the social dynamics and available ICT infrastructure within the context of organisational culture.

6.2.2 Theme 2: Organisational socio-technical culture

Organisational socio-technical cultural factors were identified during all three analysis techniques applied (SLR, expert interviews, Delphi technique) in this study as a significant factor affecting KT using SM in an IBE. The organisational socio-technical culture theme addresses all the RSQs. Organisational socio-technical cultural factors identified include the fact that organisations are made up of systems that are continuously making sense of environmental changes at operational and strategic level within the framework of social, technical, and cultural factors. Marbun et al. (2020:2513) explain that “nowadays SM has become part of the organisational culture in the workplace”; thus, SM is now part of organisational processes, which include aspects such as sensemaking, organisational sensemaking, business transactions, socialisation, and KT in processes.

Wehn and Montalvo (2018:63) regard culture as “related to senders and receivers expected outcomes”. KT for both the sender and the receiver is expected to gain insights and improve staff morale, business development, performance, and leadership. The discussion of the findings highlights that culture is important for KT although its impact might not be effective to all people or for motivation within organisations. On culture, Participant 9 argued the contrary: “Culture is not important: if you are intrinsically motivated with your unknown cultural beliefs then you will share knowledge and find knowledge regardless of whether you are incentivised to do that or not” (P9, Appendix H).

Hofstede (1980:24) defines culture as “the collective programming of the mind which distinguishes the members of one human group from another”. Culture refers to a set of “values, ideas, artefacts and other meaningful symbols that help individuals communicate, interpret and evaluate as members of society” (Keinänen & Kuivalainen, 2015:713). Taking these definitions into consideration, it can be argued that if people are culturally distinct, the impact on KT when using SM as interpretation of the receiver might affect KT. Collegial culture and a trusting social norm convey a pleasant environment, which nurtures a positive setting for knowledge sharing and transfer among colleagues. The implication of not identifying factors such as culture affecting KT using SM is that organisations will struggle to identify alleviating strategies for addressing KT challenges.

Similar observations in terms of people, organisations, technology (SM), and KT processes using SM were made in studies by Kotler and Keller (2012), Schultz et al. (2012), Huie et al. (2020), Marbun et al. (2020), and Ncoyini and Cilliers (2020). Participant 6 answered the question on how the use of SM facilitate KT by saying:

“.... you can find clients in a small town, aged 35 to 45 and in need of tractors in Free state by giving them a link to someone they can contact, filling a form or use a YouTube video. That KT component when it comes to KT in advertising communications has impacted quite dramatically in the way organisations communicate about products and also the way consumers understand how products are launched into Markets and sell to them. It's no longer a thirty second Television (TV) advert to communicate a new product, one has to review on it, which is half an hour, coupled with a two minutes' video, thirty second advert, plus six second bumper. So the amount of content that is used to create that knowledge, the cost has to be strategic....” (Appendix H).

Ncoyini and Cilliers (2020) emphasise that organisational structure should be strategically designed to support knowledge activities, because unintended structural barriers might hinder knowledge creation and sharing within the organisation. KT succeeds in terms of organisational structure that supports the ease of information flow, knowledge sharing, and fewer boundaries between divisions. Furthermore, people make sense of different events and organisational changes.

The Weick (1995) Organisational Sensemaking framework includes retrospection, dialogue, and narrative sensemaking and the continuous process of social activity, using symbols to encode insights. This means organisational sensemaking provides insight and schemes that are important for KT. Referring to Huie et al. (2020), organisations need implicit knowledge for a strong organisational knowledge base and improving the efficiency level.

Marbun et al. (2020) found that a culture of SM is known to affect KT and work performance. Thus, management must rearrange its strategies for human development focusing on Information Technology. A culture of sharing knowledge using SM might increase the knowledge and skills of workers. The consequences of ignoring reality may hinder future organisational achievements. The findings imply that the failure to understand the factors that could facilitate affective KT, may lead to missed opportunities and benefits related to knowledge, KT, KM, technology, and SM by organisational leadership.

Research on organisational challenges with similar findings include those of McFarland and Ployhart (2015), as well as Ncoyini and Cilliers (2020). SM is part of technology, which in turn is an element of the environment. According to McFarland and Ployhart (2015:1653), SM decreases people's: i) concentration, ii) changes to socialising routines, iii) the ways of expressing opinions, iv) weakened cognitive processes, v) mental vocabulary, vi) obstructed reflection ability, vii) critical thinking, viii) fake news and ix) imagination. Ncoyini and Cilliers (2020) researched the factors that influence knowledge management systems to improve KT in a governmental institution using interviews. Ncoyini and Cilliers (2020) found challenges in organisations that relate to culture of knowledge hoarding in an attempt to enhance personal

importance or worth. The recommendation was that KM must be aligned with the organisational strategy, developed, and aligned to organisational strategies to ensure that top management makes and shares a plan for a vision.

The STT indicates that organisations improve operations through considering socio-technical factors. By using technology such as SM, KT can be developed and improved. Organisational social subsystems are developed and encompass relationship creation to pave the way for KT, structure a group or team role allocation using organograms, and communication. This implies that a lack of understanding organisational socio-technical cultural factors results in organisations struggling to minimise the factors affecting KT using SM, including strategies on how to manage SM for effectiveness.

6.2.3 Theme 3: Environment

The environment in which SM can be used in KT comprises: i) intra-personal, ii) inter-organisational, and iii) inter-national or inter-continental environments where context plays an important role. Duncan (1972:315) explains that “environment encompasses events, organisations, and problems outside the organisation that may be reference for adaptation, strategy design and sustainability”. Alyoubi et al. (2018:13) state that the environment can be: i) highly competitive, ii) uncertain, iii) favourable and iv) rapidly changing. The external environment includes social, economic, cultural, and political forces and laws governing SM use. The external environment applies direct influence on organisations through representation. In relation to challenges that affect KT using SM, a dynamic and complex environment necessitates individual, organisational, societal continuous and episodic sensemaking (Bajwa et al., 2020).

Sensemaking in a dynamic and complex environment involves social and group level sensemaking problems that require group thinking, continuous sensemaking, and complacency. Weick (1995:3) proposed that “as anomalies become shared, sensibleness should become stronger”. In dynamic and complex environments, managers should attempt to create a learning environment in organisations that could help understand and predict unusual future situations to reduce panic, associated with the ever-changing external environment (Wright, 2005). Sensemaking is also episodic and prompted by precise deployment in events and terminates when reasonable order is restored (Sandberg & Tsoukas, 2020).

SM employment in KT practise has proven to be complex for organisations (Nijssen & Ordanini, 2020). The SLR findings correspond with the Delphi technique findings in terms of the environment. In relation to environmental factors that facilitate effective KT, the result of this study supports Elefant (2011) as well as McFarland and Ployhart (2015) in maintaining that SM affects the physical, political, social, technological, and economic environment by developing a

negative environment where people can be rude, destructive in social networks, plagiarism, piracy, and identity theft. Without managing political, social, technological, and economic factors as well as investments, security, and selecting the appropriate platform in the specific environment, KT remains an issue. The capacity to control one’s environment, to be aware, collect, transfer, share, and archive knowledge, depends on one’s ability to make sense of environmental changes. This is because of the many environmental factors impacting the use of SM in effective KT.

These results support the findings of Bajwa et al (2020:102), who clarify that sensemaking in the environment includes: i) social, ii) continuous process, iii) episodic, and iv) prospective organisational sensemaking, aiming for sensegiving by top management to shape how groups notice and interact. Technology includes principles, ethics, SM laws and policies, which portray the SM environmental factors facing the use of SM in KT. Context in the form of digital communication media (e.g., email) and physical (face-to-face) communication as well as politics and laws governing SM use also affect SM and KT (Elefant, 2011; McFarland & Ployhart, 2015).

Bajwa et al. (2020:99) follow the same stance on environmental dimensions as Duncan (1972) does and illustrate sensemaking that facilitates KT on the axis of simple/complex. An increase in the number of variables or pertinent factors increases the complexity of the process of sensemaking. Sensemaking becomes complex where individuals or collection sensemaking is insufficient in complex environments. Furthermore, low frequency of change (stable environment) or high frequency of change (dynamic environment) affect organisations. These four characteristics make four different types of environments. Figure 6.2 demonstrates the different facets of the sensemaking function in each of the four types of environments.

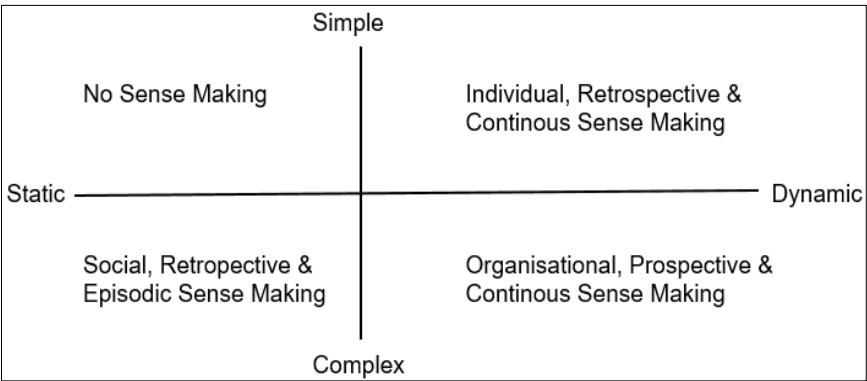


Figure 6.2: Sensemaking in the face of different environments and dynamics (Bajwa et al., 2020:99)

Finding 41 clarifies that in relation to KT using SM, challenges posing a very high impact where most urgent attention is needed, emanate from the environment, followed by organisational factors, and lastly from people. This means without understanding the environmental elements,

KT using SM remains a challenge. Failure to understand the factors that facilitate and the challenges that affect effective KT using SM, results in organisations struggling to achieve competitive advantage, sustainability agility, and to remain innovative.

6.2.4 Theme 4: Information and Communications Technology

IT adoption in organisational innovation and sustainability is becoming mandatory in organisations. In relation to the factors affecting KT using SM, Findings such as 3, 11, 13, 14, 22, 25, 28, and 37 epitomise the importance of IT. Finding 3 points to factors that could facilitate effective KT using SM in an IBE, namely: i) people, ii) trust, iii) organisational social-technical culture, and iv) the technological environment. SM also facilitates effective KT via IT integration, online conversations, speed of information distribution, socialisation, interaction, SM affordance/elements, people, and digital marketing.

Al-Araibi et al. (2018:585) indicate that technology is a “part of the environment which is a factor affecting KT using SM”. Technology is explained as including i) professionalism, ii) cybersecurity, iii) programming, iv) networking, v) HCI, vi) databases, and vii) web design (Lunt et al., 2019:6). IT encompasses digital aspects, hardware, and the innovation of processes aimed at achieving organisational or national information knowledge requirements. Technology further includes the hardware, software, connectivity, security, flexibility of systems, technical skills and support, data centres, and cloud computing. Al-Araibi et al. (2018:585) highlight that technology include: i) hardware, ii) software, iii) connectivity, iv) security, v) flexibility of the system, vi) technical skills and support, vii) data centres, and viii) cloud computing. Within these definitions of IT, and specifically technology, organisations use Slack, wiki, Blogs, WhatsApp, and MS Teams for KT. Technology further facilitates KT through the ease of use, speed, and convenience. This implies that IT is becoming increasingly important to facilitate business processes in the current IBE.

SM can be managed for effective KT through various means. For example, technology needs to be managed through the identification of applicable SM platforms. Participant 5 supports the selection of a specific platform as a management strategy for managing SM in KT:

“For example, I can use WhatsApp, anywhere, anytime, for formal businesses but I think it was primarily designed for social informal setups. You will see that most employees are using it to exchange official information although it becomes a distraction. Organisational tasks may not be done when sent via WhatsApp compared to if the same tasks are assigned via official channels” (P5, Appendix H).

Technology management includes the identification and evaluation of technological options, research and development (R&D) management, and determining the feasibility of projects and

the integration of technologies into the organisation's activities (Kaya et al., 2017). Technology management includes the implementation of new technologies in products and/or services, obsolescence management, and replacement of technology. The activities of technology management consists of five major activities, namely: i) identification, ii) selection, iii) acquisition, iv) operation and v) protection of the technology. Kaya et al. (2017:303) propose a technology management framework highlighting that identification includes technology forecasting and foresight of the future value of characteristics and performance of a technology. This is because technologies are embedded in products, where different measures of these products can be used in technology forecasting. The framework further includes selection, acquisition, operation, and protection. Kaya et al. (2017) conclude that managing technologies in enterprises depends mainly on the size of the company and the organisational structure. The framework of Kaya et al. (2017) reveals a correlation with this current study's findings that people (human resources on the framework), technology, and KT in processes as themes impact the use of SM in KT.

Security is one of the challenges in business-to-business (B2B) transactions, which encompasses severe information security risks, possibly restraining the use of SM. SM uses can be strained in ways that are not necessarily similar to business-to-consumer (B2C) transactions (Jussila et al., 2014; Khoa, 2020). Wang et al. (2016) state that information security and making a backup should be included in SM use. In relation to security, SM can be traced to all who post with comments, indicating the time of posting, and the location where posting from. This may result in people risking their private identity. SM content is to some extent undeletable because of electronic backup systems. Even when posts or pictures assumed to be deleted, the information might have been stored elsewhere and maybe usable in a profile for campaigns.

In relation to IT, technology facilitates i) knowledge creation, ii) acquisition, iii) sharing, and iv) application, which may influence organisational innovation in multiple ways (Areed et al., 2021:157). SM can also be managed to facilitate KT in a dynamic complex innovative business environment through a set of policies, culture, regulations, and legislation to enable content management or increase the levels of ICT development, thereby managing the use of SM. Although the use of SM in facilitating KT is acknowledged, there is limited guidance to organisations on how to prepare for SM adoption and management, what challenges and drivers for adoption to consider, and how to choose and sustainably implement SM use in KT (Pilař et al., 2021). Transfer, application, and the use of technology by organisations that continue using unconventional systems, struggle to manage SM. This suggests that a deficiency in understanding the factors affecting KT using SM technology, including strategies on how to

manage SM to achieve effective KT, more opportunities related to technology affordances, innovation, and the competitive advantage, will be missed.

6.2.5 Theme 5: Social Media use in Knowledge Transfer

SM affordances and online conversations can lead to digital marketing campaigns facilitating IT integration and KT. Challenges that could affect effective KT using SM include security, reliability, trustworthiness, culture, authenticity, reputation, IT infrastructure, information overload, velocity, convenience, volatile team governance, inadequate knowledge integration, and lack of control. In relation to KT using SM, challenges posing a very high impact where urgent attention is needed stem from organisational culture and people.

SM refers to “a collection of online communication channels where communities interact, share content and collaborate” (Oparaugo, 2021:15). SM is an online platform that enables KT, “drive innovation, connections and creation of relationships between firms and stakeholders...” (Bhimani et al., 2019:251). The lack of capabilities and the difficulty in managing and controlling knowledge are some of the challenges related to the SM use (Van den Berg & Verhoeven, 2017). SM use in the current era is challenging for academics, students, and local and global collaborators in producing, exchanging, and transferring knowledge (Min et al., 2017). To add, security risks, policies, ethics, cultural failure, recording, accessibility, affordability, accountability, measures for monitoring KT, and the lack of confidence contribute to these challenges. Other challenges are embedded in the ineffective communicative process, cognitive processes, context, and community of actors.

Literature is cognisant of the fact that SM innovation requires firms to manage rapid KT capabilities, big data, and multiway communication, although managers lack clear insights on the sensemaking of SM management strategies (Van den Berg & Verhoeven, 2017; Muninger et al., 2022). Facebook is the largest SM platform (2.4 billion users in 2019), while YouTube and WhatsApp, had 7.7 billion people worldwide, with at least 3.5 billion being online (Ortiz-Ospina, 2019). Additionally, YouTube, Instagram, and WeChat had over a billion users, while Tumblr and TikTok had over 500,000,000 users. These large numbers of users show that SM can present opportunities politically, economically, socially, and technologically.

The rapid and vast adoption of technologies is changing how people socialise, access information, and organise according to demand of political change. *Social* refers to the roles one play in the society, while *media* refers to the message or interaction (Tan, 2020:97). This means SM refers to role one play in information or symbolic content exchange using online or face-to-face means of communication. Without understanding the benefits of SM in commerce, effective KT remains problematic.

To benefit more from SM, the management of SM should be at the forefront in organisations. SM can be managed through IT investment, SM monitoring, enabling policies, and leadership support. SM can also be managed for effective KT in an IBE (Findings 10 & 27). The use of SM such as Facebook facilitates KT in conversation (Finding 10). SM also facilitates effective KT by means of SM affordances, meta-knowledge and links, information distribution, policies, insights, business intelligence, algorithms, and supportive leadership feedback (Finding 27).

SM facilitate KT through communication and SM monitoring tools that require the access to the Internet, including knowledge that is in accessible form. To add, SM tape-video-recording, eliciting emotional reaction, easily accessing, and bypassing protocols, can be used to facilitate KT. SM facilitates effective KT via IT integration, online conversations, speed of information distribution, socialisation, interaction, SM affordances/elements, people, and digital marketing. This finding supports the findings of Kaplan and Haenlein (2010), Jussila et al. (2014), Kaya et al. (2017), Al-Araibi et al. (2018), Bajwa et al. (2020), and Oparaugo (2021). SM extends communication and relationship among employees, leading to existing and new KT knowledge acquisition and sharing. Waddington (2012) highlights guidelines to consider when creating SM for an organisation. These guidelines include understanding staff expectations, why an organisation is using SM, detail on how employees can get involved, professionalism in terms of an acceptable profile picture, and communication appropriate within SM activities. Some of the effective management strategies include social monitoring and using listening tools online to track organisational publicity, brand, and products or services (Ideya, 2017; Taprial & Kanwar, 2017; Ideya, 2018). The management of SM use for KT should include strategy formation, profile creation, expanding the network, implementation or enjoyment, monitoring, and measurement of SM metrics on the effects of activities to produce reports. KT processes include conceptualisation, creating meaning from experiences of SM use, thereby enabling collaboration in communities, and being involved in conversations.

Findings of the SLR indicate that knowledge is transferred using SM platforms in an IBE through people's cognitive processes, socialisation, relations, remembering, meta-knowledge, problem solving, creativity, individual and organisational sensemaking, cultural activities, active processing, communication, SM analytics, experience, conversation, text, pictures, and videos sharing. The participants state that knowledge can be transferred using SM platforms such as WhatsApp, MS Teams, Facebook, conversational clues, insights, reviews, and visibility of saved content. Knowledge is transferred in edited content relationships, accessed by all group members.

From the Delphi findings, it is evident that many SM users are using SM in groups or community conversations to demonstrate their presence and create identity in relationships on a daily to

weekly basis in organisations. However, even if SM seems to grow and expand in organisations, some expressed that organisational leaders lack awareness of the need to champion for backing up SM, avoiding intrusive SM platforms and politics to facilitate effective KT in SM use (Finding 24).

Cognitive processes, the use of SM platforms, and conversation result in KT (Finding 6, 7, 16, 24 & 25). Sensemaking is a cognitive process, a social activity, an ongoing process, where people encode signals, co-sense situations and favour credibility over accuracy in accounts of events, thereby facilitating KT. Trist's (1981) Socio-Technical Theory shows that KT is affected by socio-technical aspects such as: i) social systems, which encompass people, relationships, structure and communication, and ii) technical subsystems (technology that includes SM affordances, systems, processes, tasks, objectives). Without recognising the importance and elements that facilitate KT, knowledge transfer remains a challenge.

SM facilitates KT by means of people and/or organisations trying to make sense of what is happening in their environments and conversations. A person's history, experience, horizons (past, present, future), constraints, barriers, habits, and skills can influence outcomes and skills (Dervin, 2003) if shared on SM, which, in turn, can facilitate KT. SM environments facilitate knowledge acquisition, accessibility, creation, interaction, storage, retrieval, classification, translation, decision-making, education, problem-solving, teamwork and research processes (Panahi et al., 2021). Parlak et al. (2022) studied the community-held KT into the world heritage site (WHS) management plans at UNESCO. The study found that local KT into WHS management plans was poor. Parlak et al.'s proposed method determined three levels of community KT to WHS, namely: i) determine how comprehensively the management plan addresses issues raised by the community focus groups, ii) a community focus group should provide local knowledge as the basis against which KT can be gauged, and iii) full KT is concluded when an issue raised has an action that rightly matches to output that evidently evaluates a response (Parlak et al. 2022:13). Thus, without focusing community KT on i) providing local knowledge as the basis against which KT can be gauged, and ii) considering that full KT is concluded when an issue raised has an action that rightly matches it, KT will be remain a challenge.

SM also extends conversation to those who cannot obtain first-hand contact, or to those who search, browse, replay, annotate, and visualise while affecting social, technical, legal, and management practices. Continuous and simultaneous human interaction, communication, and collective interpretation guide the next information conversion and result in knowledge creation. According to Yao et al. (2011), during the sensemaking process, organisational members identify which information is significant and deserving of their attention. They form potential

explanations of phenomena, shaped by past experiences. People exchange and discuss opinions to reach a collective interpretation, and this guides the next information conversion or knowledge creation. During knowledge creation, people share personal knowledge through meetings, training and other formal or informal channels. When employees have attained sufficient understanding and knowledge, the organisation is expected to select or design and evaluate a proper knowledge management strategy that is closely aligned with the overall organisational vision and goals.

Novikova et al. (2020:60) outline the basic tools of knowledge and technology transfer: i) political tools, ii) financial tools, iii) infrastructure, iv) qualifications, and v) information and communication. Political tools overcome various barriers to opportunities to develop an innovative climate and legislative decisions; sign long-term agreements on partnership and cooperation; and change trade and foreign investment policy, which includes exploring the possibilities of international organisations evaluating the technology. Financial tools involve the allocation of funds for infrastructure development grants, loans, subsidies, purchase of equipment, software, and services; credit guarantees; indirect financial support for innovation in the private sector, and more. Infrastructure tools include the availability of specialised technology, equipment, and software, while qualification tools are the availability of relevant qualification skills among specialists in innovation management. Bidgoli (2021:118) emphasises that an all-inclusive security system should include: i) both biometric and non-biometric security measures, ii) physical security measures, iii) access control, iv) virtual private network, v) data encryption, vi) e-commerce transaction security measures, vii) computer emergency response teams (i.e., teams that await responding to IT emergency issues), and viii) zero-trust security systems. A comprehensive security system should include a committee from all departments, security policies, awareness, passwords, software patches, revoking terminated employee passwords, physical security, limited computer access, communication billing-recording in-out calls, and installing antivirus software (Bidgoli, 2021:129). Without a comprehensive security system, organisational processes become inefficient, vulnerable, at risk, or outdated.

Watson (2018) states that co-creation, either within social networks or as a result of SM knowledge overflows and wisdom, is created and archived through crowd interaction. When invisible communication between employees in the organisation becomes visible to third parties, the latter could improve their meta-knowledge. Cognitive comprehension, language use, and social interaction from the past and present project into future experience, presenting strategies of how knowledge can be transferred when using SM. According to Sandberg and Tsoukas (2020:9), sensemaking features include “the use of language, senses, and action nexus” (merging ongoing response to the specific aspects related to the situation as well as temporality). Argote and Fahrenkopf (2016) encourage organisations to take advantage of

experiential learning, cross-pollination of experiences through internal structure and multinational organisational experiences, and digital (SM) entrepreneurship opportunities. The findings imply that failure to understand how knowledge is transferred, organisations will lose the knowledge assets and will struggle achieving a competitive advantage. Organisations will also find it difficult to motivate people to implement IT based-systems to manage knowledge and KT.

In the next section, answers to the RQs are discussed.

6.3 Research Question 1 and Research Question 2

The ensuing sections relate to the main factors affecting KT using SM in an IBE as identified in Chapter Five and illustrated in the proposed conceptual framework in Figure 6.1, RSQ 1.1, and RSQ 1.2 which answers RQ 1.

6.3.1 RQ 1: What are the factors affecting KT using SM in an innovative business environment?

6.3.1.1 RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?

The SLR revealed the following factors that could facilitate effective KT using SM in an IBE: i) people, ii) trust, iii) organisational social-technical culture, and iv) the technological environment. Other factors include IT infrastructure, people support, and organisational KT.

There is some literature available on how to design visualisations that support human sensemaking processes, but research focusing specifically on sequences of interaction and sensemaking as a process is scarce. This study could be valuable to inform the design of information visualisations in addition to being of theoretical interest. Naumer et al. (2008:3) regards effective communication as an aspect that “requires focusing on the 6Hs – head, heart, hand, habit, hegemony, and habitus”. Interacting with others requires a dialogic approach, and dialogue requires the disciplined communication techniques reflected in the interview questions and techniques. These techniques require giving participants the freedom to define and present themselves as flexible.

From an expert perspective, Findings 15, 18, 19, 21 and awareness of Finding 22 summarise the factors that could facilitate effective KT using SM in an innovative business environment. Finding 15 highlights the sources of innovation that facilitate KT, which include: i) incongruities, ii) process needs, iii) changes in industry, iv) new knowledge, and v) strategies. Organisational competitors, resources, leadership, minutes of meetings, policies, text, and KT incentives facilitate effective KT using SM. Furthermore, asking questions, promoting people to higher

positions, and mention (i.e., give recognition to) people involved in KT in a meeting, conference, and research facilitate KT using SM.

The Delphi perspective on factors that could facilitate effective KT using SM in an innovative business environment are more related to organisational processes. Research that supports the findings is that of Ghazzawi (2018). The Information Science discipline is faced with a variety of issues, including inefficiencies and ineffectiveness of systems such as books, libraries, and knowledge management (Ghazzawi, 2018). This means that without choosing the correct platform, the conducive environment that facilitate KT when using SM organisational innovations, survival remains a challenge. The challenges that affect effective KT using SM include: i) motivation, ii) support on knowledge elicitation, iii), KT capability, iv) knowledge valuation, v) organisational culture, vi) knowledge complexity and stickiness, vii) having incentives, viii) knowledge absorption, and ix) internet access.

TikTok, SnapChat, Facebook, and Twitter represent very important SM platforms for KT. For instance, meaning making and/or sensemaking (Dervin, 2003) involve both human, psychological, cognitive, and affective tasks to improve well-being and quality of life. The tasks can be information seeking and information interactions where people ask for information, hold discussions on important topics, or talk about their lives and their search for understanding a phenomenon. Meaning making includes creating information as a way of understanding one's situation. Self-expression is a process of bringing something deep and personal into the open for examination (Ruthven, 2019).

Meaning can emanate from people or community interactions globally in the form of facts (loss or gain), religious frameworks (spiritual information), and narratives (Ruthven, 2019:1). Information professionals and research systems play an important role in supporting meaning-making through appropriate interventions and helping individuals recover their sense of identity through collaboration. "Global meaning systems are schemas, feelings, and perceptions about how the world operates combined with global goals relating to desired states around interactions with the world and a subjective sense of purpose in life that corresponds to the feeling that ones' life has meaning" (Ruthven, 2019:2). Meaning making aims to eliminate uncertainty and improve wellbeing and quality of life through cognition, people, community systems, collaborations, research, and global systems.

6.3.1.2 RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?

The SLR revealed the following challenges affecting KT using SM: i), KT capability, ii) knowledge valuation, iii) organisational culture, iv) knowledge complexity and stickiness, v) having incentives, vi) knowledge absorption, vii) internet access.

Organisations lack new ways of doing things, using outdated processes, losing new markets, struggling to launch new products and markets, and become risk averse, all of which result in KT issues. Many organisations lack knowledge valuation, cognitive ability, and knowledge absorption capability; they have unclear KT incentive structures and knowledge management; they display resistance to change and a lack of organisational socio-technical cultural ecosystems, followed by a lack of resources, obsolete overload of knowledge, stickiness, and IT security.

The Delphi technique findings highlight the following challenges that present and could affect effective KT using SM: security, reliability, trustworthy, culture, authenticity, reputation, IT infrastructure, information overload, velocity, convenience, volatile team governance, inadequate knowledge integration, and lack of control. Challenges posing a very high impact where most urgent attention is needed, emanate from the environment, followed by organisational factors, and lastly from people.

Individual cognitive ability, organisational absorptive capacity, prior related knowledge, investment in expertise or research and development, and diversity of background affect organisational sustainability. According to Dervin (2003), Weick (1995), and Trist (1981), as explained in Chapter Three, KT is affected by people, organisational sensemaking processes, and socio-technical factors.

6.3.2 RQ 2: How can SM be managed for effective KT in an innovative business environment?

The following sections reveal the answers to RSQ 2.1 and RSQ 2.2, thereby answering RQ 2.

6.3.3 RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment?

People are not focused on the promotion or prevention of organisational, social, cultural, and technical factors. Furthermore, there is a lack of management focus on group and team collaboration, change management, SM monitoring, and the use of listening tools (Taprial & Kanwar, 2017). In addition, Taprial and Kanwar (2017) add strategy formation, profile creation, expanding the network, implementation of enjoyment, monitoring, and measurement of SM metrics as factors affecting KT when using SM. To clarify how knowledge can be transferred using designed SM platforms, Aramide et al. (2020) posit that transfer can happen through personnel training, management strategies and other activities, and technology management assessment. Additionally, communication and SM monitoring tools require the access of information and a media platform, including knowledge that is in accessible form, presenting how knowledge is transferred using SM platforms in an IBE. Using SM monitoring software is supported in literature. For instance, audit trails, routine testing of system hardware and

software, and procedures to measure the readability, integrity, confidentiality, and accuracy of data input and output are important (Aramide et al., 2020).

Participants indicated that knowledge can be transferred using designed SM platforms through tape-video-recording, eliciting emotional reactions, easy access, and bypassing protocols. In addition, the Delphi technique results show a shift from traditional-centred KT to technology-centred KT.

6.3.4 RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?

SM facilitates effective KT through IT integration, online conversations, speed of information distribution, socialisation, interaction, SM affordances/elements, people, and digital marketing. SM affordances, online conversation, and digital marketing campaigns facilitate IT integration and KT (Finding 12). Furthermore, SM links (connects) shared digital marketing campaigns by people in CoPs, thereby facilitating KT. Participants' responses to RSQ 2.2 emphasise that KT SM affordances, conversation, clues, people, meta-knowledge, links, information distribution, policies, insights, business intelligence, algorithms, and supportive leadership feedback using SM facilitate KT.

Min et al. (2017) and Bidgoli (2021) clarify that SM both facilitates and challenges how academia and scholars, as well as native and international collaborators perceive KT. SM enables participants to augment knowledge by watching and searching for previously research ideas, stories, videos, and thoughts, considered as bridges in Dervin's (2003) Sensemaking Theory. People create meanings from experience on SM use, enabling collaboration in communities, and conversations (Finding 34). Finding 36 points out the importance to note that SM affords people the ability to apply knowledge. SM affords the ability to create groups or communities for conversations to reveal one's presence, and create identity and relationships daily, occasionally, or weekly.

Studies supporting this study's findings include those Dennis et al. (2008), Argote and Fahrenkopf (2016), and Muninger et al. (2022). KT can be facilitated through meetings, coaching, training, and collaboration (Argote & Fahrenkopf, 2016; Muninger et al., 2022). Dennis et al. (2008) explain that SM affordances in conversation facilitate KT. There are various ways on how the use of SM affect effective KT in an innovative business environment. For example, SM has been recommended as a tool for sustainability and innovation, although most organisations are still struggling with SM management. Some organisations fail to distinguish between the short-term and long-term outcomes in terms of costs, profit, market share, and sales. Consequently, it is important to advance new scales to measure SM use and understand the quality of data gathered (Muninger et al., 2022). SM facilitates KT through communities that

network to source knowledge, thereby opening new avenues for both scholars and practitioners to analyse digital traces and employing the wisdom of the crowd (Helms et al., 2020). In the next section, the proposed conceptual framework is presented.

6.4 Sources of the proposed conceptual framework

Figure 6.3 outlines the sources of the proposed conceptual framework, which are: i) study domains, ii) factors affecting KT, iii) how the use of SM facilitates KT, iv) theories used, and v) data collection and analysis. The sources also include the application of the framework.

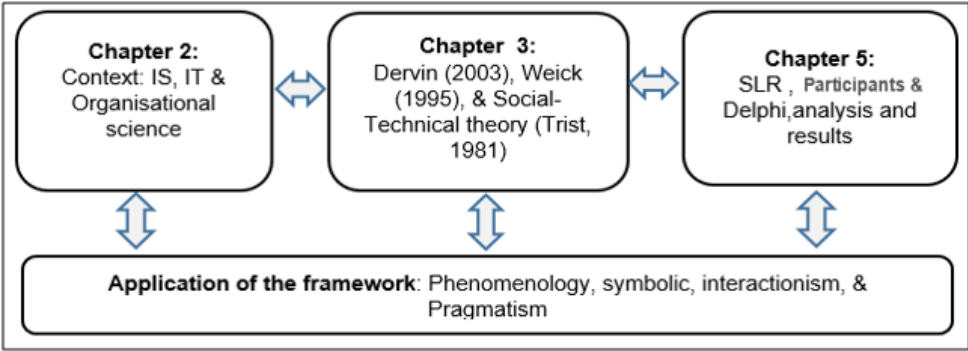


Figure 6.3: Chapters from which the proposed conceptual framework was constructed

In Figure 6.3, Chapter Two presents the research context, and Chapter Three shows sources of the conceptual framework in the form of theoretical triangulation, i.e.: i) Dervin’s Sensemaking Theory (2003), ii) Weick’s (1995) Organisational Sensemaking Theory, and iii) Trist’s (1981) the Socio-Technical Theory. The proposed conceptual framework’s building blocks comprises the following themes: i) people, ii) organisational socio-technical culture, iii) environment, iv) IT, and v) use of SM in KT.

Figure 6.3 presents the conceptual framework for Technology-Enabled Knowledge Transfer (TEKT) in an organisation. The conceptual framework in Figure 6.3 differs from the proposed theoretical framework (Chapter Three, section 3.10) in the following ways: Added to the proposed theoretical framework are more drivers related to sensemaking as well as how the cognitive actors are involved. The proposed conceptual framework includes factors affecting people, information seeking behaviour on people’s situation, context, and space-time gap. Additionally added are sensemaking theories and STT that could affect KT using SM. Figure 6.4 illustrates the conceptual framework for TEKT in an organisation.

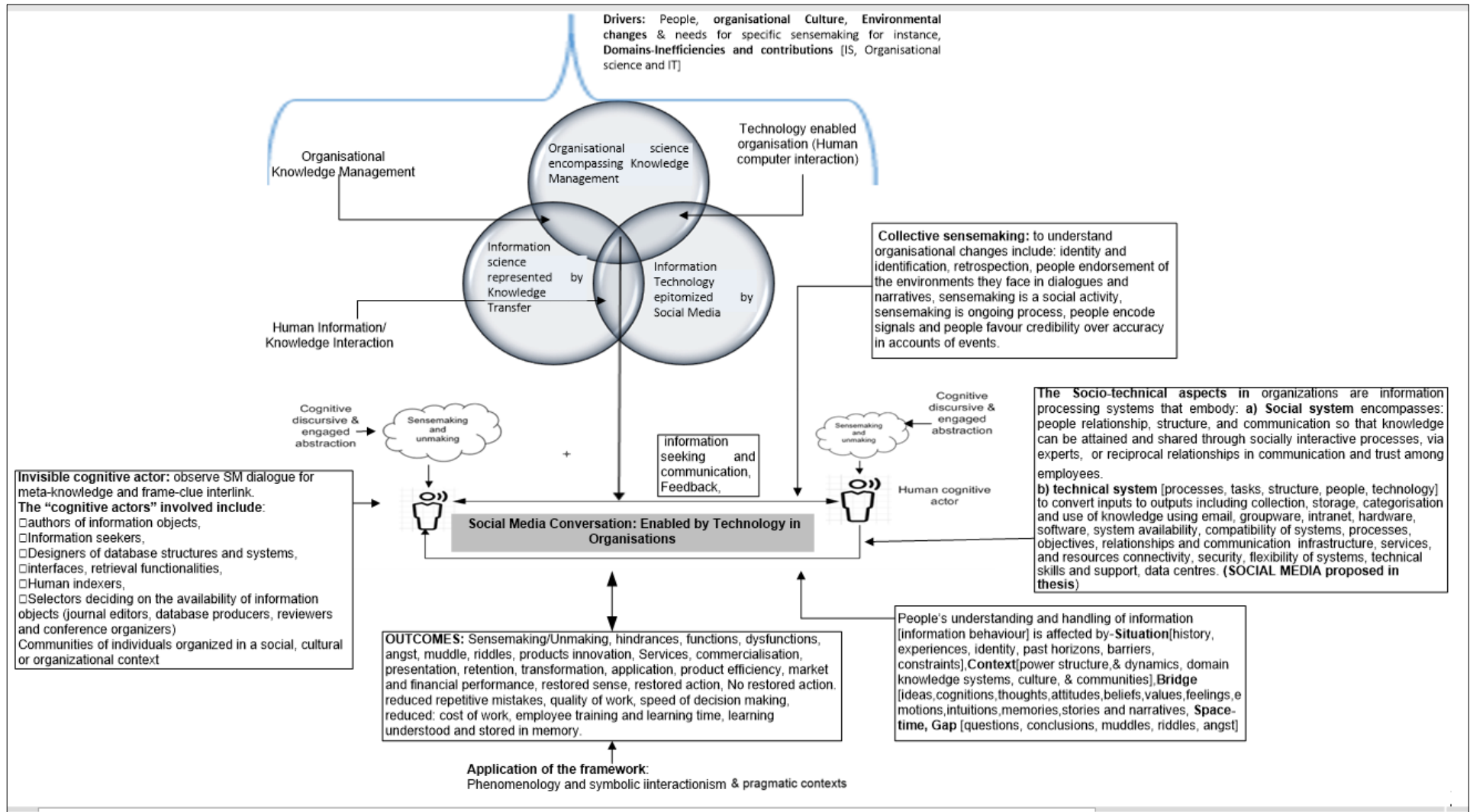


Figure 6.4: Proposed Conceptual Framework for Technology-Enabled Knowledge Transfer [TEKT] in an organisation

6.5 Explanation of the final conceptual framework elements

Figure 6.4 presents the proposed conceptual framework that supports the research problem, providing the language and a reference for the research audience to use. Secondly, the proposed conceptual framework reveals the theoretical coherence, articulation, and drawing together of multiple theoretical perspectives situated within the IS, Organisational Science, IT, HCI, HII domains to provide the basis for the theorising generated by the study. Thirdly, the conceptual framework supports the practical aspect of the study, namely the use of SM in KT in an innovative business environment. The research questions and theories also form part of the framework to generate appropriate methodology and respond to the research questions. Finally, the conceptual framework outlines the abstract and practical outcome or conclusions of the study. SM facilitates KT because of various aspects such as SM affordances and characteristics, although organisations are still struggling in terms of how to manage SM technology. The research limitations and opportunities identified in this study were considered in constructing in the proposed conceptual framework. TEKT is both a cognitive and meta-cognitive tool that supports different level order thinking and the generation of new knowledge.

The framework is based on the literature review in Chapter Two, the theories in Chapter Three (theoretical conceptual framework (Chapter 3, section 3.10)⁹ and the findings in Chapter Five. The framework was furthermore conceptualised from the SLR, interview findings, and Delphi technique findings. The application of the research theories provides a picture of factors affecting the implementation of SM tools to support KT practices in organisations.

The SM tools enable the KT practices efficiently by overcoming the barriers affecting KT. Generally, knowledge awareness, training, workshops, seminars, promotion, and marketing enable KT. On one hand, KT practices involve the awareness, creation, acquisition, storage and sharing of knowledge among people. On the other hand, the advent of SM tools has enhanced the information, knowledge seeking and transfer in dialogues or conversation. SM enhances knowledge creation acquisition as well as the storage and sharing of knowledge among people. According to Tuten and Solomon (2018:4), SM is defined as “online means of communication, conveyance, collaboration, and cultivation among interconnected and interdependent networks of people, communities, and organisations enhanced by technological capabilities and mobility’. This definition elucidates the importance of SM affordances and characteristics to information KT among people, communities, and organisations.

⁹ For this study, the theoretical conceptual framework was constructed mainly from theory (therefore the words “theoretical conceptual”). Figure 6.4 is the combined conceptual framework from theory and the results obtained throughout this study. The framework remains conceptual as the study did not endeavour to test the framework.

Changes in individual situations, organisational context, domain inefficiencies and environmental changes drive the seeking and searching for information, individual and organisational sensemaking, and KT. Knowledge can be transferred when people make cognitive sense of situations, clues, and identity that shape experience into meaningful patterns and direct action despite contextual ambiguity. People, as cognitive actors, are affected by information needs, situation, context, knowledge source, the receiver, and organisational and environmental factors. To add, the cognitive actors using SM in KT are affected by gaps and cognitive space, which include interest, emotions, and perceptions. Sensemaking is a cognitive process that aims to achieve various outcomes, and which includes assistance, hindrances, functions, dysfunctions, impacts, productive dialogue, unproductive dialogue, counterproductive dialogue, unproductive dialogue clues, and relationships.

Human cognitive actors are the subjects of sensemaking and resultantly transfer knowledge. Human cognitive actors include authors, information seekers, database designers, system interfaces, retrieval functionalities, human indexers, reviewers, conference organisers, and communities of individuals, organised in a social-cultural or organisational context, who can be in various geographical locations (visible or invisible). Chapter Three, section 3.5 elaborates on human cognitive actors.

Various reasons exist for the need for sensemaking and KT, as shown in Figure 6.3. Some of the reasons include inefficiencies in IS, Organisational Science, and IT domains, individual riddles, angst, confusion, economic interest, gaps, and changes in the context, situation or environment. Individuals need to understand and manage information to reduce uncertainties and confusion, and to understand contexts, connections, complexities, environmental dynamism, gap discovering and bridging, and structuring processes. Continuous collective sensemaking facilitates the understanding of organisational changes, signals, codes, and the credibility of those involved in organisational activities and communication. Collective sensemaking principles or characteristics include identity and identification, retrospection, social aspects, clues, continuity, plausibility, and people endorsement of environments in dialogue. The environment may be simple or complex, static or dynamic, and may provide reasons why human cognitive actors make sense of their environment, KT and SM.

There are many ways in which the human cognitive actor learns sensemaking activities and KT processes, including elaborating on how sensemaking take place, the activities involved, how knowledge is transferred, involvement in authentic tasks supported by meaningful contexts, and interpretation (Schunk, 1991; Ertmer & Newby, 2013). The Constructivist Learning Theory reveals that it is impossible to isolate content and context according to a hierarchical analysis of relationships. The basic assumptions/principles of the Constructivist Learning Theory are important to identify the context in which the knowledge will be internalised or sensed and

subsequently applied. This is because cognitive actors possess the capability to manipulate information in KT.

In terms of how knowledge can be transferred, one important aspect to keep in mind is having an active human processor, interpreter, and elaborator of information if language is a barrier. Another alternative is the use of Google translate or e-dictionaries (electronic dictionaries), because e-dictionaries contain the meaning of a word in another language and can facilitate the translation of languages (Yi, Vivi & Vivi, 2021).

The framework aims to assist organisational leadership or individuals who want to apply SM tools to enhance KT practices. This framework furthermore aims to institute the link between the research problem and the suggested solution for this study, thereby justifying the need for this inclusive and integrated framework for the application of SM tools to enhance KT in an IBE.

6.6 Outcomes of the proposed conceptual framework

Outcomes of the proposed conceptual framework are positive and negative. The positive outcomes include sensemaking, product innovation, services, knowledge commercialisation, restored sensemaking, reduced repetitive mistakes, quality of work, speed of decision making, reduced cost of processes like training time, understanding the learning and what is stored in memory. Some of the negative outcomes include sense-unmaking, hindrances, dysfunction, confusion, riddles, commercialisation of knowledge, inefficiency, restored sense, restored action, no restored action, repetitive mistakes, quality work, speed decision making, reduced costs, employee learning time, restored memory, and KT.

The framework is applicable in phenomenology (interpretations that are based on lived experiences), symbolic interactionism (something that emerges from interactions among people), and pragmatic contexts (addressing and providing tentative answers to RQs without emphasising a specific paradigm).

6.7 Summary

SM has been revealed as one of the current innovations in KT, although its implementation in an organisational setup is still a challenge. Many studies outlined the advantages of SM use without detailing the potential risks for organisations and users during KT. With the aim to explore the use of SM in KT, this study used SLR, participant interviews, and the Delphi technique as techniques to uncover several applicable technology opportunities. The findings related to RQ 1 and RQ 2 present accessible practical insight into future research and development and provide managers with new perspectives in the form of technology-enabled KT in organisations. To efficiently manage SM for KT, it is important to consider people, organisational socio-technical culture, IT and SM use. In answering RQ 2, “How can SM be

managed for effective KT in an innovative business environment”, it became evident from the study exploration that SM acts as a potentially useful tool for KT when using SM in an IBE. In answering RQ 1 and RQ 2, five themes emerged from the study: i) people, ii) organisational socio-technical culture, iii) environment, and iv) IT and SM use in KT. The proposed conceptual framework has been developed considering: i) study domains, ii) factors affecting KT, iii) how the use of SM facilitates KT, iv) the theories used, and v) data collection and analysis. The proposed conceptual framework, *TEKT in an organisation*, emerged from triangulating Dervin’s (2003) Sensemaking Theory, Weick’s (1995) Organisational Sensemaking Theory, and Trist’s (1981) Socio-Technical Theory. Outcomes of the proposed conceptual framework include both positive and negative elements. The framework is applicable to an IBE, phenomenology, symbolic interactionism, and pragmatic circumstances.

Chapter Seven details the research conclusions.

CHAPTER SEVEN: CONCLUSIONS, AND RECOMMENDATIONS

7.1 Introduction

This chapter presents the conclusions and recommendations of the study. Figure 7.1 shows the chapter structure.

7.1 Introduction
7.2 Conclusions
7.3 Recommendations
7.4 Summary

Figure 7.1: Layout of Chapter Seven

Chapter Seven is presented as follows: i) the conclusion, ii) recommendations, and iii) summary.

7.2 Conclusions

Organisations find it challenging to use social media (SM) for effective knowledge transfer (KT) across various departments, such as Marketing, Information Systems, Finance, and General Management. One of the main consequences of this challenge is that the use of SM in KT differs in an innovative business environment (IBE). The way individual, organisational and environmental factors affect KT also differs when using SM. This is further complicated by the lack of consensus on the factors impacting KT using SM among academics. Some organisations make contingent plans and other specific innovative strategies to bolster the possible negative impact of SM for KT.

Using sensemaking, organisational sensemaking, and STT theories as lenses to analyse the data, it became clear that the factors affecting the use of SM in KT are people, organisational socio-technical culture, IT, SM, and the environment. It is concluded that SM is a useful tool for KT in an IBE. Organisations from across the board can use SM to transfer knowledge taking into consideration people as well as organisational and environmental factors. It is suggested that the framework presented in this research can be used to assist IBEs and other organisations to improve the sharing of knowledge through using SM.

RQ 1, “What factors affect effective KT using SM in an innovative business environment?” was answered by two RSQs, namely:

- i) RSQ 1.1: What factors could facilitate effective KT using SM in an innovative business environment? The research revealed the following factors related to RSQ 1.1: i) people capabilities, ii) trust, iii) organisational culture, iv) political social-economic factors, and v) technological environment.

- ii) RSQ 1.2: What challenges are affecting effective KT using SM in an IBE? The researched revealed the following challenges related to RSQ 1.2: i) KT capability, ii) knowledge valuation, iii) organisational culture, iv) knowledge complexity and 'stickiness', v) having incentives, vi) knowledge absorption, and vii) motivation to use the Internet.

These answers assist with filling the gap in the scientific body of knowledge and contribute towards the debate on factors affecting effective KT using SM in an IBE. In answering RQ 2, "How can SM be managed for effective KT in an innovative business environment", the findings reveal that people are not focusing on marketing (promoting), prevention, and organisational socio-technical culture. SM can, however, be managed for effective KT in an IBE through communication, SM monitoring tools, SM affordances, conversation, clues, people meta-knowledge, links, information distribution, policies, insights, business intelligence, algorithms, and supportive leadership feedback using SM to facilitate KT. In using SM, knowledge can be transferred via conversations, sharing multi-content, searching for knowledge, meetings, workshops, SM alerts, knowledge applications, business transactions, processes, enterprise resource planning, clues through emoji in chats, and learning/educational explicit text.

It is further concluded that the effects of SM on KT can include: i) reduction in time and cost through sharing and/or receiving, ii) meta-knowledge, iii) collaboration, iv) authentication, v) accountability, vi) integrity, vii) SM affordances, viii) awareness of others' conversation, ix) affiliation, x) collaboration, xi) news aggregation, xii) new business processes, and xiii) CoP (Community of Practice) conversations. To benefit from these effects, organisational leadership and individuals should consider applying SM tools to enhance KT.

Through answering the research questions, a conceptual framework, TEKT in an organisation, is proposed to organisations finding it challenging to use SM for effective KT across various departments, such as Marketing, Information Systems, Finance, and General Management. The research explored the use of SM facilitating KT in an IBE, and this aim was fulfilled by answering RQ 1 and RQ 2.

The objectives were all achieved by determining the factors and challenges *affecting*, and factors that could *facilitate* effective KT using SM in an IBE, Determining how SM can be managed for effective KT in an IBE was achieved by exploring how knowledge can be transferred using designed SM platforms and how SM facilitates effective KT in an innovative business environment.

The proposed conceptual framework outlines SM affordance, characteristics, and factors facilitating KT. The conceptual framework highlights how SM facilitates KT and how knowledge

is transferred. The use of SM in KT in an IBE is possible and can be of benefit to organisations. Although it is challenging to use SM to assist with KT, the benefits outperform the efforts needed to do this successfully. Lastly, these efforts include the understanding of individual motives, capabilities, culture, situations, past experiences in KT, organisational sensemaking, KT using SM, and the production of goods and services.

7.3 Recommendations

The following is recommended for organisations:

- i) Organisations need to concentrate more in-depth on implementing proactive strategies to mitigate the negative organisational factors impacting KT using SM.
- ii) Various departments, such as Marketing, Information Systems, Finance and General Management, should play a leading role in sensitising staff on how SM facilitates or affects KT.
- iii) The departments should devise integrated strategies adequate to mitigate negative environmental factors.
- iv) The focus needs to be on individual and environmental factors when implementing a SM strategy for KT. It is recommended that organisations provide SM management strategies to regulate the excessive use of SM.
- v) It is also recommended to educate or show employees the dangers of overusing SM in KT, which could lead to SM fatigue and adverse effects.
- vi) The structural position of SM management in an organisation is important for strategic leadership and should remain the priority of top executives, as the latter can put enabling policies in place and manage IT (SM in relation to organisational socio-technical capabilities).
- vii) On challenges related to the use of SM, institutions are recommended to continuously generate enabling policies, a knowledge sharing culture, and pay greater attention to the potentials of SM applications in KT.
- viii) Organisations need to invest in IT security and risk assessment to maintain conducive KT using SM.
- ix) For KT using SM, the study recommends organisations to meet legal and administrative requirements as well as national and international standards and best practices in KM.
- x) Electronic record keeping systems should comprise audit trails, routine testing of system hardware and software, and procedures for measuring the readability, integrity, confidentiality, and accuracy of data input and output. This ensures that active digital records are credible and readable for future use.
- xi) Electronic records should be protected from accidental or intentional alteration and from deletion while the record still has value.

- xii) SM management should be prioritised in relation to proactive maintenance plans when the operating system or software applications are changed or upgraded in the KM process.
- xiii) It is further recommended that a local mini-consortium within each organisation is created to enhance the transfer of innovative ideas.
- xiv) Organisations should consider understanding how knowledge can be transferred and how SM facilitates KT.
- xv) Organisations should adopt SM strategies to cultivate more inter-organisation sensemaking or collaborative opportunities for individual and organisational KT.
- xvi) Furthermore, shunning rigid, static applications such as Wikipedia and using easy, dynamic tools such as Facebook and TikTok may enable the creation of visual stories, resulting in effective KT.

7.4 Summary

It is pointed out that SM can facilitate dialogue or conversation, sensemaking, and collaboration among people and organisations, although various challenges can surface. Some of the challenges are related to the generation of policies, technology management, and enacting environments to be conducive for effective KT using SM. These direct organisational leaders to understand the factors affecting the use of SM and identify strategies that can mitigate the challenges of SM using KT.

Understanding the factors affecting the use of SM also aids leaders to find applicable SM management strategies for effective KT in an IBE. It is important to understand how knowledge is transferred via SM to benefit, through business intelligence, CoP interaction, shared SM multi-content topic insight, enhanced individual/social organisational sensemaking, new knowledge creation, and the implementation of best practice cross-functional teams. Organisations are recommended to adopt the use of SM strategies. A conceptual framework is proposed to assist organisations with cultivating effective inter-organisation sensemaking and KT.

Chapter Eight presents the research objectives, aim, contributions, limitations, and future research.

CHAPTER EIGHT: RESEARCH CONTRIBUTIONS, FUTURE RESEARCH AND REFLECTION

8.1 Introduction

The use of social media (SM) in knowledge transfer (KT) remains an important strategic tool for organisations. This study identified factors as well as the challenges that need to be addressed for effective KT using SM in an innovative business environment (IBE). In no way is it presented or even suggested that the research offers a final solution for the use of SM in KT, especially in an IBE. Rather, the research endeavoured to close the gap in literature by contributing to the theory, to use methodology in specific combinations, and to offer a practical contribution through a conceptual framework.

This final chapter focuses on the research contributions, limitations, areas for future research, assessment of design, reflection, and a summary. Figure 8.1 shows the chapter's layout.

8.1	Introduction
8.2	Research contributions
8.3	Limitations
8.4	Reflection of research
8.5	Summary

Figure 8.1: Layout of Chapter Eight

8.2 Research contributions

As with many studies, this research offers a i) theoretical, ii) methodological, and iii) practical contribution.

8.2.1 Theoretical contribution

The theoretical contribution resulted from identifying a gap in the scientific body of knowledge by exploring literature. The gap, namely that organisations find it challenging to use SM for effective KT across various departments, such as Marketing, Information Systems, Finance, and General Management is closely linked to the research problem. In addressing the research problem, three theories were used as lenses to the data collection and analysis and to build a conceptual framework. The three theories are Dervin's (2003) individual Sensemaking Theory, Weick's (1995) Organisational Sensemaking Theory, and Trist's (1981) Socio-Technical Theory.

From the systematic literature review (SLR), it is evident that the use of SM in KT is widely reported on, especially the factors, challenges, and affordances of using SM in KT. Yet, despite the reported research, organisations still find it difficult to manage the relationship between SM

and KT. From the gap in literature, it became evident that little has been done to view these factors and challenges through the lenses of theories such as sensemaking and STT. One of the novelties of this research is that the sensemaking theories of Dervin and Weick were applied from an individual, organisational, and STT perspective. By applying these lenses, the factors, challenges, and affordances were used to develop the proposed conceptual framework.

In addition to SLR, the proposed conceptual framework also contributes to the body of knowledge. This study developed a *Technology-Enabled Knowledge Transfer [TEKT] in an Organisation* framework through extensive research and an in-depth understanding of how knowledge is transferred using designed SM platforms. One of the underpinning tenets of interpretive theory is that participants' lived experiences, their cultural artefacts such as texts, symbols, stories, and images, and social interactions that include perceptions, attitudes, and value of a community, thereby becoming persons in the process, help in acquiring knowledge (Crotty, 1998).

The theoretical contribution was enhanced by the triangulation or integration of theories in the use of SM in KT. The integration of theories was different to research that extends a theory, modifies, validates, nullifies, verifies, or tests the effectiveness of a theory. The sensemaking theories of Dervin (2003) and Weick (1995) clarify the process of sensemaking to assist in KT (Chapter Three). The use of Dervin's Sensemaking Theory (metaphor) to express how individuals engage in internal intellectual sensemaking, shaped by discrete understanding, and situations to make sense of perceived processes, realities, and meaningful information, is a contribution of this study. Dervin's Sensemaking Theory was used to unfold hidden, contradicting KT processes so that organisations can determine *how* and *what* knowledge is transferred by individuals and in organisations when using SM. SM is the innovative tool in business environments. It is important to understand how technology aids people and organisations to transfer knowledge using SM. The Socio-Technical Theory was also used to complement, add quality, shape, provide guidance and help to outline the results of study. The theories provided a common understanding of how leaders are facilitating the transfer of knowledge using SM. The previous studies explored the direct effects of SM use, which have not differentiated SM usage as has been done in this study.

8.2.2 Methodological contribution

This study contributed methodologically in terms of combining the SLR, interviews, and the Delphi technique in both qualitative and quantitative data collection and analysis to gain deeper insights into the use of SM and KT. Methodologically, the study did not focus on validating instruments in new contexts, propose a new methodology, or test a proposed methodology in a new context.

It is suggested that this study may add further accumulation of evidence to mixed methods procedures. This research contributed by providing abstract concepts (SM, KT, KM, HCI, HII, and IS) and methodological tools or insights where it is difficult or where methodological tools cannot be transferred easily to other theoretical frameworks. In summary, the processes adopted throughout the current study are presented in Table 8.1.

Table 8.1: Summary of the research methodology and approaches

Methodologies Paradigm	Choice adopted
Epistemology	Pragmatic epistemic
Ontology	Idealism, subjective and objective
Axiology	Value-laden; interchanging roles from faithful reporter, mediator of languages, and dialogic facilitator
Reasoning	Abductive
Strategy	SLR, expert interviews, and the Delphi technique [mixed or multiple method designs, quantitative and qualitative]
Research method	Mixed methods simple
Sampling	Snowball sampling
Analysis techniques	SLR (bibliometric), participant interviews (thematic analysis) and Delphi technique (descriptive statistics)

8.2.3 Practical contribution

The practical/contextual contribution is primarily related to changing mindsets towards the use of SM in KT in place of traditional KT strategies. The contribution differs from other research in terms of adapting/adopting policies from other industries or countries, changes of policy required, new issues arising or problems recurring.

The SLR review offers practicing managers a platform to identify gaps revealed in this study and to carry out a background feasibility study to penetrate the IS, IT, KM, OS, among other domain issues. Academic authors and policy makers should take advantage of the IT (SM) to improve their productivity through co-authorship. Academics or novice researchers can assess saturated research domains, under-researched areas, and emerging study fields for crucial conclusions when using bibliometric analysis.

This study practically demonstrated how SM applications such as Facebook can be used, implemented, facilitated, and managed successfully for effective KT in an IBE. Data were extracted from the experts' lived experiences while they were assured of reliable and credible guidance by the researcher. Having followed a pragmatic epistemic approach, this study provided a practical alternative to KT efficiency and effectiveness issues.

From literature, the practical contribution is one of the motivating factors of this research. Leadership needs to realise that not all SM platforms are a universal remedy or absolute panacea for all organisational issues. To add, SM cannot be used randomly – organisations should i) plan for audience reach, messages and return on investments, ii) manage large data

for sentiment analyses, and iii) have an organisational spokesperson. SM use is furthermore not restricted to collaboration, open innovation, and the ideation stage – it extends to research and development. The product of this study may be helpful to ICT researchers and novice researchers in developing new KT and understanding KT outcomes. The results of the research might lead to the generation of knowledge that leads to an improvement in efficiency in organisational SM use.

The study found that a growing number of organisations are currently using different organisational tailor-made SM applications for business transactions, and they have positive KT outcomes. A major implication is that academics, policymakers, and organisations should be concerned with paying more attention to the possibilities of SM platforms and being proactive in improving cybersecurity. A conceptual framework as well as a set of guidelines is proposed for organisations to use when planning and implementing a SM strategy for KT.

8.3 Limitations

Most studies are affected by limitations. This study's limitations were the literature data extracted using *Publish or Perish* software (and for the first part of the SLR, only from EBSCOhost, ProQuest, Emerald, Scopus, and Google Scholar). As a result, the study might not provide a complete overview of other domains or databases that were not considered.

In this study, one method employed was expert interviews using a critical incident approach, which meant the participant frames, clues, frame-clue interlink, and what occurred among their co-workers, affected the results. The participants were required to recall one or two specific incidents from their organisational setting (some were off-topic), but they reverted to talking about general matters they shared in terms of their routine activities related to the research topic.

The coding and interpretation were conducted by the researcher, who was also the instrument of data collection, and as a result, personal bias might occur in the interpretation of the data. Expert elicitation through interviews and the Delphi technique uses both subjective and objective measures, including beliefs of an individual or a group of experts, which may have an impact on the results. The results of the interviews and the Delphi technique as well as the subsequent thematic analysis only represent the selected interviewees; it does not cover the entirety of the expertise in other domains. With the Delphi technique, each panel member brought to the study a unique set of perceptual filters and biases. This could affect the results. However, precautions were taken as far as possible to prevent biases.

From a technical perspective, the research provides a procedure that forms part of a recommended process architecture to structure technology implementation in an IBE using a

SM platform. The complex nature of the artificial intelligence as part of the Fourth Industrial Revolution (4IR) challenges how Southern African countries adapt and adopt technology that are tailor made for their capabilities – technically, socially, and economically or financially. It is the researcher's desire that someone reading this research will buy into the idea of adapting or adopting tailor made feasible and affordable technology. To add, it is the researcher's aspiration that this study will make a difference in the enhancement of organisational productivity, including people's standard of living.

8.4 Areas for future research

All participants unanimously agreed that KT could be more effective through using SM, which is also a source for innovation. The research found that KT and KM using IT in the form of SM is still a challenge. Some indicated that the curation of knowledge may result in greater innovation and the sustainability of organisations. It would be a good research topic to conduct a quantitative multidisciplinary study on how and what directors are doing to address KT, KM and SM adoption for effective KT, or research in the same field but from an operational perspective. For persistence, one can explore whether SM content of past horizons are outlined through the persistence of older organisational content affecting one's ability to autonomous KT. Further research is also needed on issues such as big data using SM, or the impact of freeware versus in-house SM analytical software. To add, research could assess the impact on, and value of SM integration for users.

Potential research questions to explore how SM affordances facilitate KT can be posed. For visibility affordance: "When others can see SM users and SM consumers do not contribute, does the observation increase productivity? For creditability, one can explore how the presentation of SM content conceals critical dependencies on experts and how editing can control disguised SM content. Finally, one can explore how the creation of relationships afforded by SM can result in less dependence on experts sought for KT.

Future research should focus on the adoption, adaption, implementation and evaluation of SM and KT. The challenges need to be addressed through employing theories such as the Technology Acceptancy Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT). TAM explains that the actual use of technology is determined by the intention to use technology. Intention to use technology is in turn determined by attitude towards technology (determined by perceived ease of use of technology) and perceived usefulness of technology. UTAUT explains and predicts users' acceptance and usage behaviour towards technology in terms of performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy regards the extent to how users consider technology to improve performance and productivity. Additionally, effort expectancy explains supposed technology ease of use, and simplicity improves performance. Social influence explains social norms,

subjective norms, and peer impact on people's technology use decisions, while facilitating conditions outline the degree to which users recognise resources, support, and infrastructure availability in technology use. Without understanding the challenges to technology use, linking the challenges to i) relevant theories, ii) the implementation and identification of influencing factors, and iii) the adaptation and adoption of technology, becomes difficult.

8.5 Reflection of research

The use of technology has been part of my life since 2012, when I enrolled for a course in business processing management through the Collaborative Process Integration (Pvt) Ltd, Info@cpi.ac.za, and IBPM Certification. I qualified as a teacher with a Post Graduate Diploma in education through University of South Africa (UNISA). The other courses I did included a FET Further Education Training Certificate: Occupationally Directed Education Training & Development Program (ODETDP), SETA (Sector Education and Training, [SAQA–South African Qualification Authority 50334].

The Master of Business Systems qualification I did through Hochschule Wismar University of Applied Science (Germany) also assisted me to appreciate the use of technology in business processes and improve productivity. The course-based programme included subjects that made a difference in my life. These subjects included: Computer models for business decisions, software systems design and development, database systems and data management, and enterprise resource planning systems. Furthermore, these subjects gave me the confidence and interest in doing a computer service technician course which is helping me to improve the teaching of computer architecture as a subject at Rosebank College in Cape Town currently. The additional course I did was on methods and tools for community-based research projects: Distributed design and distributed information for volunteer organisations in South Africa. The course was completed at the Cape Peninsula University of Technology in 2018. There after all the courses and experience gave me the confidence to register for the Doctorate in ICT and to continue studying. I could see the advantage of teacher training in IS, IT use in education, general life.

It is my aspiration that Southern African states authorities, organisational practitioners reading this research will buy in the idea of considering the use of feasible, affordable, and tailor-made technology. The feasible, affordable, tailor-made technology may possibly result in making a difference in organisational productivity, and societal well-being.

“In an age where ICT has become the fundamental order of the day, it is vital for Southern African states to cuddle and harness the influence of the forth industrial revolution to drive productivity and enhance societal well-being. In the technology adoption or adaptation process, one should deliberate the words of Mahatma Gandhi (1919-1932):

The future depends on what we do in the present. States and organisations that seize the Forth Industrial Revolution's transformative potential of IT opportunities and conduct further research, could create a possible brighter future for the benefit of all.

8.6 Summary

Chapter One introduced the background, rationale for the study, the problem statement, aims and objectives. The chapter also covered research questions, methodology, philosophy, methodological choice, strategy, sampling, data collection, analysis, and delineation of the study. The research assumption, public trust, citizen science, confidentiality, and headline finding were presented.

Chapter Two, defined terms used in the study, background to literature review. The chapter introduced, and highlighted the main domains (IS and SM, Organisational Science and SM, IT and SM, HII and SM, HCI and SM, KT, and IBE) as sources of the problem/gap which this study is closing. From the main domains emanate concepts like SM, KM, KT, and IBE which were also explained.

In Chapter Three, theories that were selected and the justifications for the choices were presented. Dervin's Sensemaking Theory (2003), Weick's (1995) Organisational Sensemaking Theory, and the Socio-Technical Theory of Trist (1981) served as the foundation for the conceptual framework proposed as a lens for the research.

Chapter Four presented a mix of subjective and objective ontology, pragmatic epistemological assumptions as well as an abductive research approach chosen. The research strategies used included: expert's interviews and the Delphi technique. Although an abductive approach was followed, the analysis was conducted as mixed methods research.

Chapter Five presented findings to RQ 1 and RQ 2. The answers to RQ 1, the factors that could facilitate effective KT using SM in an IBE include: i) people capabilities, ii) trust, iii) organisational culture, iv) political-social-economic, and v) technological environment. Finding 6: The challenges to KT using SM are related to: i) motivation, ii) support on knowledge elicitation, iii), KT capability, iv) knowledge valuation, v) organisational culture, vi) knowledge complexity and stickiness, vii) having incentives, viii) knowledge absorption, ix) Internet access. Furthermore, the challenges affecting effective KT using SM include knowledge valuation, people, cognitive, knowledge absorption capability, and unclear KT incentive structures and knowledge management. Resistance to change, organisational socio-technical culture factors, lack of resources, obsolete-overload-of-knowledge, stickiness', and IT security respectively also affecting effective KT using SM.

In addition, answers to RQ 2, “How can SM be managed for effective KT in an innovative business environment?” disclose that: People are not focussing on the promotion or prevention and on organisational social, cultural, and technical factors. SM can be managed for the effective KT in an IBE through communication, SM monitoring tools, SM affordances, conversation, clues, people meta-knowledge, links, information distribution, policies, insights, business intelligence, algorithms and supportive leadership feedback using SM to facilitate KT. In using SM, knowledge can be transferred via conversations, sharing multi-content, searching knowledge, meetings, workshops, SM alerts, knowledge application, business transactions, processes, enterprise resource planning, a clue on emoji in chats, and learning/education explicit text.

In Chapter Six, knowledge claims were discussed, conflicting results evaluated, and the implications of the findings explained by presenting the results as themes. The themes highlighted the study importance and how it shaped the understanding of the research problem. The chapter ended with a proposed conceptual framework developed after the discussion of the results as well as a summary.

Chapter Seven was presented as follows: i) the conclusion, ii) recommendations and a iii) summary.

Chapter Eight elaborated on the research objectives, aim, contributions, limitations, future research, and research reflexivity.

The use of SM of KT in an innovative business environment can be challenging as little is known about KT using SM in an IBE, with some difference of opinion in the literature. Organisations need to manage KT as a priority and utilise SM in the endeavours to stay ahead of competitors. This research contributed towards assisting organisations to improve their sustainability and competitiveness by introducing an effective and efficient KT strategy.

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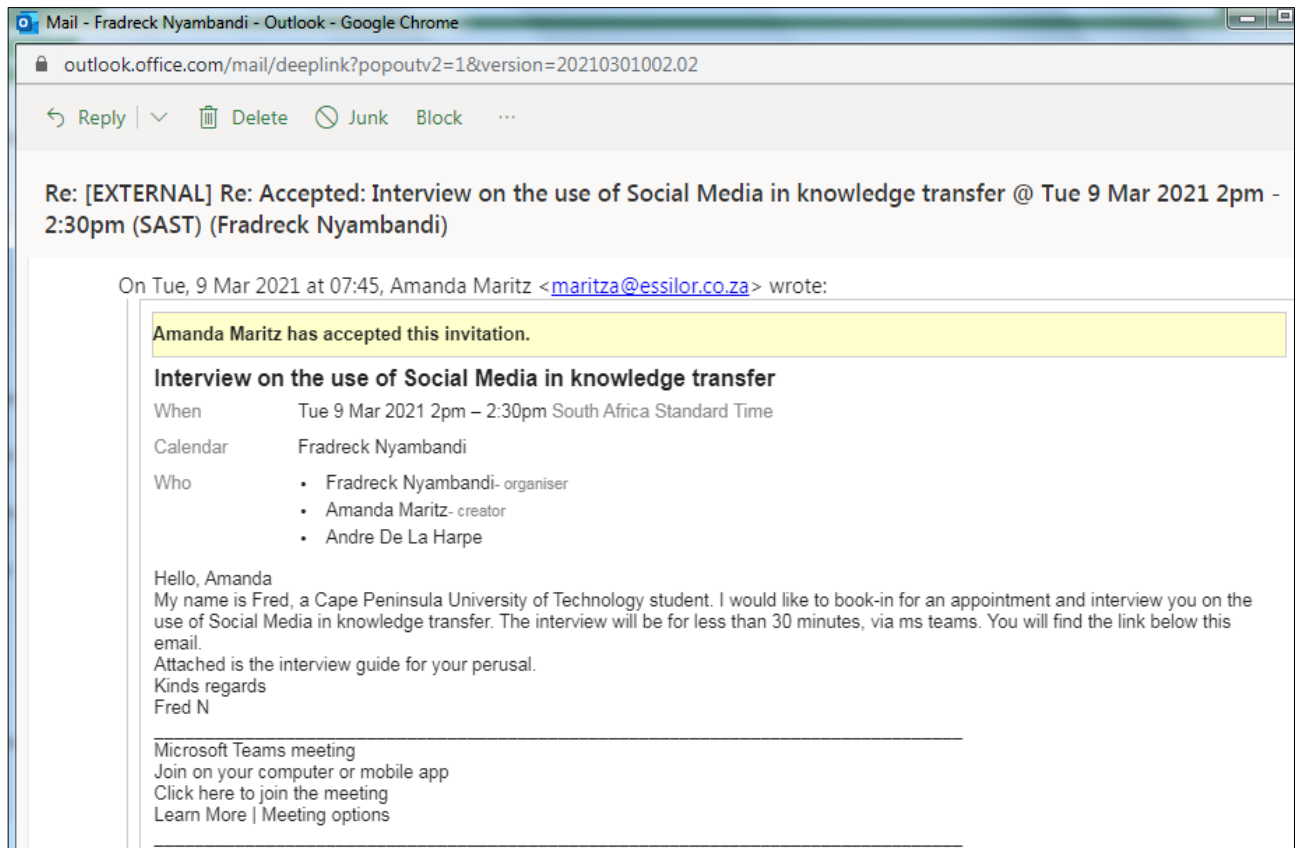
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APPENDIX A: INTERVIEWS – DATA COLLECTION USING MICROSOFT TEAMS APPLICATION



APPENDIX B: E-MAIL REMINDER RELATED TO INTERVIEW SCHEDULING



APPENDIX C: ETHICS APPROVAL LETTER



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80 Roeland Street, Vredehoek, Cape Town 8001

9 October 2018

Office of the Research Ethics Committee	Faculty of Informatics and Design
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Ethics approval was granted to MR FRADRECK NYAMBANDI, student number 211109754 on 5 October 2018 for research activities related to the Doctor of Information, Communication and Technology degree at the Faculty of Informatics and Design, Cape Peninsula University of Technology.

Title of dissertation/thesis:	The use of social media in knowledge transfer in an innovative business environment
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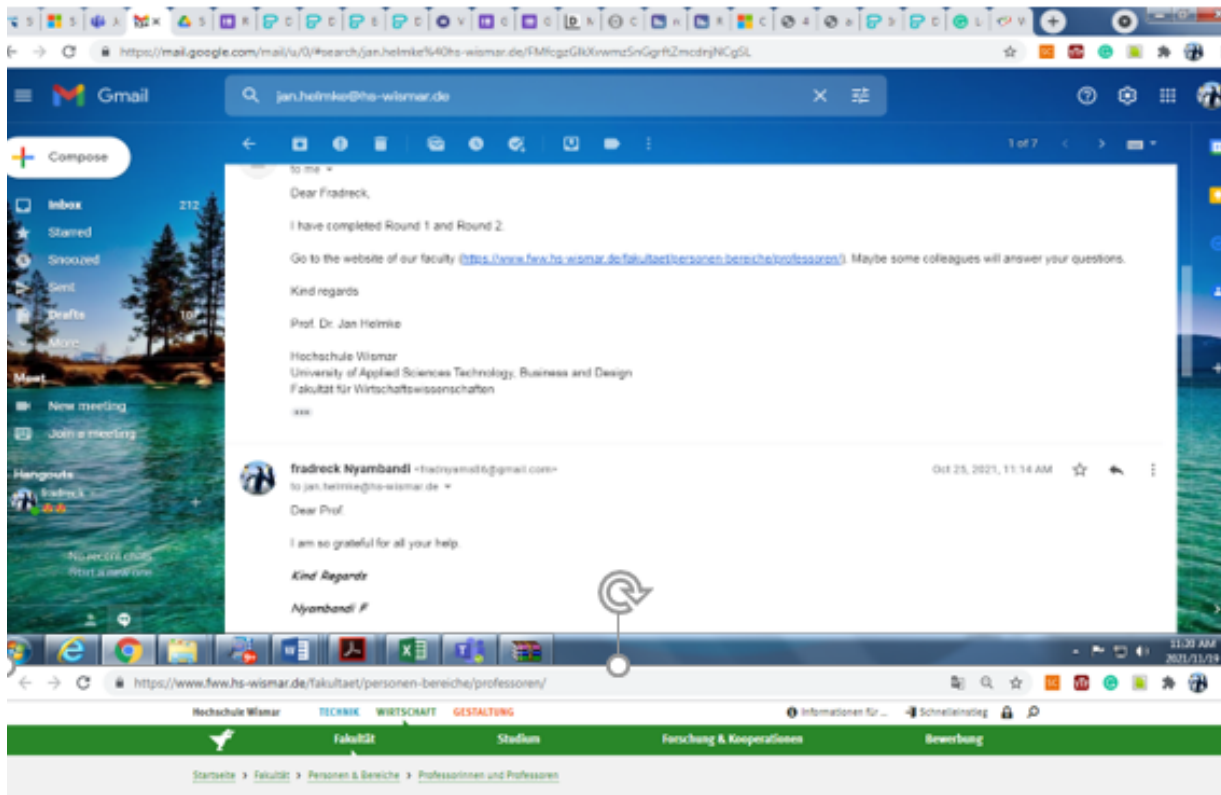
Comments

Research activities are restricted to those detailed in the research proposal.

 Signed: Faculty Research Ethics Committee	<u>9/10/2018</u> Date
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APPENDIX D: APPLICATION OF THE SNOWBALL SHOWING SOME OF THE EXPERTS WHO PARTICIPATED IN THE DELPHI TECHNIQUE



Personen & Bereiche Professorinnen und Professoren Betriebswirtschaft > Wirtschaftsinformatik > Wirtschaftsrecht >	 Olaf Bassus Prof. Dr. oec. Professor - Betriebswirtschaft Haus 19 - Raum 216 03847 753-7537 olaf.bassus@hs-wismar.de Persönliche Seite	 Rüdiger Blach Prof. Dr. rer. nat. Professor - Wirtschaftsinformatik Haus 19 - Raum 321 03847 753-7582 rüdiger.blach@hs-wismar.de Persönliche Seite
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Email Etiquette

Dear Staff and Students

Appropriate email etiquette is a direct reflection of the sender as well as the institution they represent. It is therefore in **your**'s best interest that all staff and students appreciate the value of sending and receiving emails within a professional environment.

One issue is the over-use of the blind copy (BCC) and copy (CC) function in emails. It is standard email protocol that an email addressed to someone requires a response, a BCC or CC is to keep you informed. Equally, the over-use of the reply-all function also frustrates recipients and clogs up email inboxes with unnecessary threads of conversation. It is a particularly pressing problem for the **IT Support team** and senior management who are often copied in multiple emails and also does not give line managers the opportunity to resolve a potential issue.

We appeal to staff and students to respect the use of email within a corporate environment and conduct their online interactions accordingly. Failure to do so has reputational and potential legal implications for all.

Kind Regards
Marketing and Communication Department

Fraudulent emails sent to Staff

TO: ~~~~~~
Subject: [EXTERNAL] Re

Please sorry to disturb you at this time, I need your urgent assistance, as I am having issues with my bank account making withdrawal nor transfer and I need to send an urgent EFT/Ewallet transfer to my cousin whom I need to pay, please can you help me send the /EwalleteFT to my cousin's account? I will sort you once my bank account is fixed.

Please email me back if you can help me out so i can forward cell number for transfer thanks.

P.S: I am in a meeting now and can't talk, just reply back.

Regards
XXXXX

Always remember:

- Do not respond to these types of emails and do not click on any links provided.
- Do not break company protocols – always follow the prescribed procedures.
- If you suspect an e-mail to not be legitimate, please treat it as such and report it to the CTS CSIRT

APPENDIX F: PRETESTING THE DRAFT DELPHI TECHNIQUE

SURVEY QUESTION

ROUND 1 SURVEY QUESTIONS
RQ 1: What are the factors affecting KT using SM in an innovative business environment? RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment? Survey question 1: What are the factors affecting effective KT using SM. Survey question 2: What are the factors that could affect facilitating effective KT using SM?
RSQ 1.2: What are the challenges that could affect effective KT using SM in an IBE? Survey question 3: What are the challenges that could affect effective KT using SM?
RQ 2: How can SM be managed for effective KT in an innovative business environment? Survey question 4: If you could use any SM platforms in KT, which would you use? RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment? Survey Question 5: How can knowledge be transferred using designed SM platforms? (List any 5 ways).
RSQ 2.2 How can the use of SM facilitate effective KT in an innovative business environment? Survey question 6: How important is the use of SM in problem identification, awareness, communication, socialisation, knowledge internalisation and externalisation, in your organisation? To answer RSQ2.2. Where: 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important. Survey Question 7: Knowledge can be transferred using designed SM platforms through a) individuals creating meanings from experience, b) collaboration in communities, c) conversations. Where the scale was: 5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree. Survey question 8: How important is the use of SM in knowledge application. Where: 5=extremely important; 4=very important; 3=somehow important; 2=not important; 1=extremely not important. Survey Question 9: How important is building a reputation with acquired and applicable knowledge using SM? Where: 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important. Survey Question 9: How important is building a reputation with acquired and applicable knowledge using SM? Where: 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important. Survey Question 10: How often do you use SM in groups or community conversations to reveal your presence, share, or create identity and relationships? Where: 5=Daily; 4=Weekly; 3=Occasionally; 2=Never; 1=not applicable. Survey Question 11: Indicate your age range 18-24, 25-34, 35-44, 55-64, and no one over 66. Survey Question 11: Educational level [professor-, PhD/Doctorate-, Masters-, Bachelor's degrees-, Diploma- & Certificates.
ROUND 2 SURVEY QUESTIONS

RQ 1: What are the factors affecting KT using SM in an innovative business environment?

What are the challenges that could affect effective KT using SM in an IBE?

Survey question 1: Rank from 1 to 4, in order of significance on: [a] Individual capabilities, self-efficacy, etc. as factors affecting KT using SM, where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somewhat average impact.

Survey question 2: Rank from 1 to 4, in order of significance: [b] organisational ability to choose the correct platform for specific tasks, knowledge maintenance and transfer measurement, aligning goals to strategy, policies and ethics etc. as factors affecting KT using SM, where 1=pose extremely significant impact; 2=very high impact; 3=significant impact; 4=somewhat average impact.

Survey question 3: Rank from 1 to 4, in order of significance on: [c] environmental factors affecting KT using SM, where 1=pose extremely significant impact; 2=very high impact; 3=significant impact; 4=somewhat average impact.

Survey question 4: Rank from 1 to 4, in order of significance on: [d] security factors affecting KT using SM, where 1=pose extremely significant impact; 2=very high impact; 3=significant impact; 4=somewhat average impact.

RSQ 1.2 (the section below shows the analytics for participants' responses on the question shown below).

Survey question 5: Rank from 1 to 3, challenges to KT using SM. a) individual sources e.g., source credibility, perception.

Survey question 6: Rank from 1 to 3, environmental challenges in KT using SM effectiveness and efficiency: c) environmental factors e.g., IT, economic, social, cultural, political advancement.

RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment?

Survey question 7: Rank from 1 to 4 the most important and used KT strategies when using SM.

Survey question 8: From 1 to 4 rank the most important and used KT strategies when using SM, specifically:

- a) Online conversations
- b) Information seeking, library books, documents, etc.
- c) Seeking and organising information on the organisational web
- d) Knowledge application

Where: 1=extremely important & useful; 2=Very important & useful; 3=Average in importance & used; 4=Not important & not useful.

Survey question 9: From 1 to 4 rank the most important and used KT strategies when using SM, specifically:

- a) Online conversations
- b) Information seeking, library books, documents, etc.
- c) Seeking and organising information on the organisational web
- d) Knowledge application

Where: 1=extremely important & useful; 2=Very important & useful; 3=Average in importance & used; 4=Not important & not useful.

Survey Question 10: Indicate your age range 18-24, 25-34, 35-44, 55-64, and no one over 66.

Survey Question 12: Educational level [professor-, PhD/Doctorate-, Masters-, Bachelor's degrees-, Diploma- & Certificates.

APPENDIX G: THE DELPHI TECHNIQUE FINAL SURVEY QUESTIONS

ROUND 1
Delphi participants demographics:
RQ 1: What are the factors affecting KT using SM in an innovative business environment?
RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment? Survey Question (SQ) 1.1: What are the factors that could affect facilitating effective KT using SM?
RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment? Survey Question 1.2: What are the challenges that could affect effective KT using SM? Survey question 1.3: What are the factors affecting effective KT using SM
RQ 2: How can SM be managed for effective KT in an innovative business environment?
RSQ 2.1: How can knowledge be transferred using designed SM platforms in an innovative business environment? Survey question 2.1: If you could use any SM platforms in KT, which would you use? Survey Question 2.1.1: How can knowledge be transferred using designed SM platforms? (List any 5 ways).
RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment? Survey question 2.2: How important is the use of SM in problem identification, awareness, communication, socialisation, and knowledge internalisation and externalisation in your organisation? (Where 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important). Survey Question 2.2.1: Knowledge can be transferred using designed SM platforms through a) individuals creating meaning from experience, b) collaboration in communities, c) conversations (where 5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree). Survey question 2.2.2: How important is the use of SM in knowledge application? (Where 5=extremely important; 4=very important; 3=somehow important; 2=not important; 1=extremely not important). Survey Question 2.2.3: How important is the use of SM in sharing problems identified or knowledge you are aware of? Indicate your position (where 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important). Survey Question 2.2.4: How important is building a reputation with acquired and applicable knowledge using SM? (Where 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important). Survey Question 2.2.5: How often do you use SM in groups or community conversations to reveal your presence, share, or create identity and relationships? (where 5=daily; 4=weekly; 3=occasionally; 2=never; 1=not applicable).
ROUND 2
Delphi participant demographics:
RQ 1: What are the factors affecting KT using SM in an innovative business environment?
RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment? Survey Question 1.1: Rank from 1 to 4, in order of significance, [a] individual capabilities, self-efficacy, etc., as factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somehow average impact).

Survey Question 1.2: Rank from 1 to 4, in order of significance, [b] organisational ability to choose the correct platform for specific tasks, knowledge maintenance and transfer measurement, aligning goals to strategy, policies, ethics, etc., as factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somehow average impact).

Survey Question 1.3: Rank from 1 to 4, in order of significance, [c] environmental factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somehow average impact).

Survey Question 1.4: Rank from 1 to 4, in order of significance, [d] security factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somehow average impact).

RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?

Survey question 1.2.1: Rank from 1 to 3, challenges to KT using SM in terms of [a] individual sources such as source credibility, perception on easy of technology use or usefulness, attitudes, and self-efficacy.

Survey question 1.2.2: Rank from 1 to 3, challenges of KT using SM in terms of [b] organisational factors such as leadership, tasks, IT, KT measurement, security systems, objectives, processes, culture and trust.

Survey question 1.2.3: Rank from 1 to 3, challenges of KT using SM in terms of [c] environmental factors such as IT, economic, social, cultural, and political advancement.

Survey question 1.2.4: Rank from 1 to 4 the below most important and used KT strategies when using SM:

- 1) Online conversations
- 2) Information seeking, library books, documents, etc.
- 3) Seeking and organising information on the organisational web
- 4) Knowledge application

(Where 1=extremely important and useful; 2=very important and useful; 3=average importance and used; 4=not important and not useful).

Survey question 1.2.5: Rank from 1 to 10 the below most important and used SM platforms in transferring knowledge:

- 1) WhatsApp
- 2) Slack
- 3) SnapChat
- 4) Blogs
- 5) wiki
- 6) Facebook
- 7) TikTok
- 8) Twitter
- 9) MS Teams

(Where 1=extremely important and used; 2=very important and used; 3=important; 4 to 6=somehow average in importance and used; up to 9=least in importance and use).

Survey Question 1.2.6: Indicate your age range: 18-24, 25-34, 35-44, 55-64, not over 66.

Survey Question 1.2.7: Educational level [Professor, PhD/Doctorate, Master's degree, Bachelor's degree, Diploma and Certificates.

APPENDIX H: TRANSCRIPTIONS

	RESEARCH & RESEARCH SUB-QUESTION	PARTICIPANTS' RESPONSES																																																									
RQ 1	What are the factors affecting KT using SM in an innovative business environment?																																																										
	RQ and RSQ	P1					P2																																																				
RSQ 1.1	What are the factors that could facilitate effective KT using SM in an IBE?	Notes Organisation are always looking for the right management team, leadership structure in place that is aligned with the DNA you have in the organisation, the values that you propose, the principles that in which you operate in the organisation. According to that you have the right structures you need, instantaneous systems,					From the above table: Environment is not important because when I send email, whether I am at the doctors' waiting room, looking at Facebook, in the dark or at home, make no difference where I am, I don't do better because I am in one place. Because, I am a trolley not a wheelbarrow I will run I don't need that incentive, if you are a wheelbarrow then I don't think you can motivate it and it will do it nicely. Uncertainty is equally important: if you are intrinsically motivated as I am then you will share knowledge and find knowledge regardless of whether you are incentivised to do that or not. There two types of colleagues, or staff even trollies and a wheelbarrow, a trolley you can push it and it run but a wheelbarrow you push it, when you put it down that's where it stays.																																																				
IQ1.1.1	a) Tick the primary source of innovation according to the continuum in the table	<table><tr><th>Source</th><th>Description</th><th>Most important</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr><tr><td>The unexpected</td><td>Unexpected success (e.g. a way unexpected in product selling)</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Incongruities</td><td>A discrepancy between what "is" and what "ought" to be with: Economic realities and assumption of the industry. The efforts of an industry and the value and expectations of customers</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Process needs</td><td>A clearly understood need for which process solution does not yet exist</td><td></td><td></td><td>1</td><td></td></tr></table>					Source	Description	Most important	Very important	Equally important	Not important	The unexpected	Unexpected success (e.g. a way unexpected in product selling)				1	Incongruities	A discrepancy between what "is" and what "ought" to be with: Economic realities and assumption of the industry. The efforts of an industry and the value and expectations of customers			1		Process needs	A clearly understood need for which process solution does not yet exist			1		<table><tr><th>Source</th><th>Description</th><th>Most important</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr><tr><td>The unexpected</td><td>Unexpected success (e.g. a way unexpected in product selling)</td><td>1</td><td></td><td></td><td></td></tr><tr><td>Incongruities</td><td>A discrepancy between what "is" and what "ought" to be with: Economic realities and assumption of the industry. The efforts of an industry and the value and expectations of customers</td><td></td><td>1</td><td></td><td></td></tr><tr><td>Process needs</td><td>A clearly understood need for which process solution does not yet exist</td><td></td><td></td><td>1</td><td></td></tr></table>					Source	Description	Most important	Very important	Equally important	Not important	The unexpected	Unexpected success (e.g. a way unexpected in product selling)	1				Incongruities	A discrepancy between what "is" and what "ought" to be with: Economic realities and assumption of the industry. The efforts of an industry and the value and expectations of customers		1			Process needs	A clearly understood need for which process solution does not yet exist			1	
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IQ 1.1.2	b) Show by a tick the organisational Innovation capability measurement scale, which is composed of six items measured on a seven-point Likert scale [1 - 7].	<table><tr><td>Does:</td><td>1 – Strongly disagree</td><td>3 disagree</td><td>5 agree</td><td>7 – strongly agree</td></tr><tr><td>Your company frequently tries out new ideas</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company seeks out new ways to do things;</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company is creative in its methods of operation;</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company is often the first to Market with new products and services</td><td></td><td></td><td></td><td>1</td></tr><tr><td>your company perceive innovation as too risky and resist it</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company's introduction of new products show an increase over the last five years.</td><td></td><td></td><td>1</td><td></td></tr></table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas			1		Your company seeks out new ways to do things;			1		Your company is creative in its methods of operation;				1	Your company is often the first to Market with new products and services				1	your company perceive innovation as too risky and resist it			1		Your company's introduction of new products show an increase over the last five years.			1		<table><tr><td>Does:</td><td>1 – Strongly disagree</td><td>3 disagree</td><td>5 agree</td><td>7 – strongly agree</td></tr><tr><td>Your company frequently tries out new ideas</td><td>1</td><td></td><td></td><td></td></tr><tr><td>Your company seeks out new ways to do things;</td><td>1</td><td></td><td></td><td></td></tr><tr><td>Your company is creative in its methods of operation;</td><td>1</td><td></td><td></td><td></td></tr><tr><td>Your company is often the first to Market with new products and services</td><td>1</td><td></td><td></td><td></td></tr><tr><td>your company perceive innovation as too risky and resist it</td><td>1</td><td></td><td></td><td></td></tr><tr><td>Your company's introduction of new products show an increase over the last five years.</td><td>1</td><td></td><td></td><td></td></tr></table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas	1				Your company seeks out new ways to do things;	1				Your company is creative in its methods of operation;	1				Your company is often the first to Market with new products and services	1				your company perceive innovation as too risky and resist it	1				Your company's introduction of new products show an increase over the last five years.	1			
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IQ 1.1.3	c) How is KT valued in your organisation?	researcher notes: Individual and organisational Knowledge is invaluable because you cannot put a price on knowledge, it is the most important on which you base your decision. Knowledge is from the Market you are working in, customer care, logistics, Marketing, or financial, all form knowledge. If knowledge is not shared across, you have a disconnect. When you have a disconnect you will not provide the value you seek to provide as a	The first one is the public nature of it, so there are some bits of knowledge I cannot simply share on a public platform, I have to whisper in your ear that this is going on and if I were to put that on the social platform, it could have disastrous consequences. Remember whether we are to put that on the social platform like Facebook, Instagram, WhatsApp or even an email, it could have disastrous consequences.																																																																						

		company and somewhere along the line is falling flat. Knowledge need to be shared within the organisation as quickly as possible, knowledge which come to the fore needs to be shared again as quickly as possible, it's a cycle. If it is not done across all facet of the company, then that is when you lose customers, logistics does not work, competitors see an opportunity to do better than you do. Yes, it is valued because it's the number one for any organisation. Any organisation, which say it is not it, will not last long.	Even in email written confidential it could be send to everybody. The first risk is in the easy forwarding in it and lack of confidentiality. The second challenge is on information overload that you can get information from too many streams. I have taken down to shutting my...I am a prolific user of Facebook but I am now start using it in office ours but I now check Facebook once every two weeks now because I am being bombarded with this information of COVID19, getting to much, of the same, unfiltered, unverified information. The question is hard to answer but If it is valued by putting some money on it then it is hard to say but if its KTOffice then there is always the desire to make money out of knowledge. In an institution knowledge is regarded as a highly valuable commodity because a lot of people want that knowledge and that knowledge is very dispersed in the organisation so it becomes a difficult question to answer how knowledge is valued because I can't put some monetary value on it although it can be produced and sold and in this case more value is placed on it. Even banks put value on knowledge about its customers, its processes. Where we stand with this COVID 19 Pandemic, one thing we need is knowledge because if you look at the way you are putting that across its information with value so I need to know how many people I can connect to or are in classes. I am faced with lack of knowledge in terms of what students need, how they learn, in what form the information should be. I do not know how I should base my decision on. Knowledge is incredibly valuable but I do not know where it is. Under this in need to go to minutes of meetings, need to go to recent WhatsApp messages, I need to go to institutional news flash messages, and I need to look at emails, so there can be four different channels or there can be in a standard repository or it could be sitting on the website. The problem of that knowledge is that it is hidden in plain slate. There is so much information out there that your knowledge is hard to find. KT is valued very highly although we have a problem determining the value of knowledge.
IQ 1.1.4	d) Do employees keep knowledge to themselves? If so how and if not, Why?	There are pockets were employees keep knowledge to themselves because, knowledge is power, depending on their agenda they might withhold knowledge to themselves to improve their own positions and that happens to any organisation and that what we call politics, that is not what any company wishes for, they want knowledge to be open and available to everyone, at every point in time and always shared.	Employees are very keen on sharing knowledge in numbers on WhatsApp groups, although our biggest problem lies in that we do not seem to have smooth platforms for sharing that knowledge although KTis probably highly valued, it becomes problematic because of the way in which it is shared or not shared or overshared.
IQ 1.1.5	e) Does your organisation encourage KT? If so how and if not, Why?	Yes, it depends on the organisation. In some organisations, knowledge is indebted, is instantaneous, tested on business intelligence, social platforms like slake. It depend on what the company does, if it's a company that is not well set up technologically, then its transferred through meetings, daily stand-ups, then what ever best mechanism that works for them, If it's a company that is well setup technologically then they can use technology instantaneously in an incremental way to encourage KT.	Yes, on the top is emails, on top of that will be news flashes to go across, then there would be the WhatsApp systems that goes across, then there will be face to face meetings which may have or may not have record of minutes produced after them, so that is what it is. We are beginning to experiment with my department up to top management level is to use Microsoft SharePoint so that people don't have to ask you the same information over and over again. We can the make some regular repeated information available via SharePoint, people populate that SharePoint file, and anybody who needs that information can go straight there. That strategy we have is that I want to send fewer and fewer attachments via email. I want to put anything that would be attached in an email in a documentary repository and simply point people that it is mow there, then they never have to look in their emails again as they can go into documentary repository and search and find it. Family groups also have sub-groups, which discuss things and echo it into the big group, and my family group which have very little breeding from the others. Blog is also one of the oldest SM platform, remember that blogging goes all the way to the news net group, world wide web; blog has always been with us. On what I write on my bog is something that strikes me, if want something longer than a little longer than on Facebook, What I put on blog entry is don't be tense on tense where I give advice to on past, present tense, all advice

			related to issues on blog I direct them to my blog. I don't use a blog as a daily journal, I use it as a repository for piece of information like a family member has dies, I might blog about that family member, I will then tell twitter, tell my Facebook friends, tell my friends on Instagram, that I have blogged, it is there. The only time I read other people's blogs is when they come up in a google stream and ask for information, and I don't have anyone that I follow permanently in the blog sphere																																																
IQ 1.1.6	f) What is your experience with organisational KT programs?	Organisations in ecommerce are using slake, slake is used by companies that are technology led, is a WhatsApp platform where you create different kinds of groups, you can create different management teams, functional teams. It started from the technology section in terms of development, whereby you moved away from waterfall technology now the big three into scrum and now the agile development. When you have the agile development you have story book all that are going out so that you have like seven days' sprint that are coming out like a relief. Therefore, in these seven days sprint you have like groups that are constantly releasing these story points done electronically, so that they do not have to be in a meeting. Its spread from the technology companies now you have the larger Market, you have the supply group on slake, and you have the logistic people on slake and as things happen they tie these projects together. From a feature, to a project, to a larger project, then starts feeding in and the knowledge if immediately transferred. The other side of it is that if something happens, you have a system functional, you have, feature functional, you have or if something happens in logistics, functional systems, then all of that data are immediately feed through the organisation. That immediate KTthat happens.	To me the best is emails and the reasons for that is that if somebody sends me an email that emails will forever be archived in mind cast, will not go away and so again ten years later I can find that piece of information or if you like knowledge. The downside is that we have really bad discipline in terms of what get send and to who, so every email that is sends out into groups is send using the carbon copy rather than the blind carbon copy feature and so what would happen is very important message to everybody gets send out and then certified people will press reply to all and then say noted. One or two people would reply to that reply to all and say there is something else that we need to discuss here that is quiet important and someone will reply and make a decision. One should read all emails including carbon copies to avoid missing important decisions. Reply to all, and a third drift, different heading from the main point in an email are the biggest problems of emails. Knowledge communication are some of the most important problems. For instance, heading is saying happy birthday and inside the email, you are discussing important decisions. We have innovative individual in our department who like to share ideas. May be because I am an innovative individual, they will email me their ideas. An example is where we have board of directors minutes of meetings and a whole lot of documentation people are supposed to read and do not. You also have a board meeting where they have to vote whether they agree on things and they don't focus because they do not need anything, so what we do now is we have a google drive, a google doc with all the subdocuments of the agenda get linked to it and an hour before the meeting starts get a link to the google document they start reading it , they access all the documents, then they have a google form they have to fill in to say that I have read this and I support this or I make these comments and I don't support it for the following reasons, and so during the meeting we go through those forms that they have filled and everyone that have supported we don't even discuss it because it has already been approved by the meeting. Our meetings are on line so we start with the documentary repository that would be an example of a new way of using an existing platform that has always been there. I use WhatsApp group where I allow teams to teach each other.																																																
IQ 1.1.7	g) Tick how important are the following factors affecting KT using SM	<table><tr><td>Facto Challenges</td><td>Very important</td><td>Equally important</td><td>Not important</td></tr><tr><td>Employee/Student cognitive tacit knowledge</td><td>1</td><td></td><td></td></tr><tr><td>Culture</td><td>1</td><td></td><td></td></tr><tr><td>Context and system failure</td><td></td><td>1</td><td></td></tr><tr><td>Environment</td><td>1</td><td></td><td></td></tr><tr><td>Informal communication and clear networks that involve KT by participants</td><td>1</td><td></td><td></td></tr></table>	Facto Challenges	Very important	Equally important	Not important	Employee/Student cognitive tacit knowledge	1			Culture	1			Context and system failure		1		Environment	1			Informal communication and clear networks that involve KT by participants	1			<table><tr><td>Factor Challenges</td><td>Very important</td><td>Equally important</td><td>Not important</td></tr><tr><td>Employee/Student cognitive tacit knowledge</td><td>1</td><td></td><td></td></tr><tr><td>Culture</td><td></td><td>1</td><td></td></tr><tr><td>Context and system failure</td><td>1</td><td></td><td></td></tr><tr><td>Environment</td><td></td><td></td><td>1</td></tr><tr><td>Informal communication and clear networks that involve KT by participants</td><td>1</td><td></td><td></td></tr></table>	Factor Challenges	Very important	Equally important	Not important	Employee/Student cognitive tacit knowledge	1			Culture		1		Context and system failure	1			Environment			1	Informal communication and clear networks that involve KT by participants	1		
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IQ 1.1.8	h) Does your organisation reward and /or incentivise employees that are active in teaching/learning/KT?	Not at all because there is no need to incentive KT.		There is no reward for extracting information out of me, you send me an email requesting for information and if I say here is the information, there is no specific reward for that.																							
RSQ 1.2	What are the challenges that could affect effective KT using SM in an IBE?	Transferring right knowledge to the right people is always a challenge especially if you do not have the right systems in place. You don't have the structures and systems in place or you have the wrong people employed your challenge becomes a bygone in terms of making sure that you have the right information at the right place at the right time so that the right decision can be made. Rigid websites, transferability,		The institutional police to reply is reply to all. These people replying to all are Doing so because the system is set to reply to all by default and I think that will be changed centrally, a little thing we should do is developing or another discipline we should start building is for instance WhatsApp is there for emergency messages but they have to be backed up with actual emails, registers at meetings. There has to be a crisp information sharing protocol if you like.																							
RQ 2	How can SM be managed for effective KT in an innovative business environment?																										
RSQ 2.1	How can knowledge be transferred using designed SM platforms in an innovative business environment?																										
IQ 2.1.1	a) Do you use SM apps in your organisation? if so how, if not why ?	Yes, Organisation are always looking for the right management team, leadership structure in place that is aligned with the DNA you have in the organisation, the values that you propose, the principles that in which you operate in the organisation. According to that you have the right structures you need, instantaneous systems, Slake, teams, which is reliant on having meeting. Slake is not reliant on having meetings, slake is reliant on immediate transfer of information. I am sitting, something has gone wrong in the consumer, finance, on the app write in, from applications being approved I can immediately put that on, it gets distributed to the right groups, IT groups, Marketing knows about it accountant guys know about it, customer care knows about it immediately. I do not have to have a meeting to distribute that information. The negative side of slake is that you get absolute information overload. In Start-up of slake in an organisation is like a little new toy and gadget that everyone uses. As the information continues to grow and get dumped and get spread more and more, you start getting an information overload, and then people start ignoring slake channels, a very important fact is that the same as what you get from other SM platforms like SnapChat, Instagram, Facebook, people get bored they move to something else, they start looking for something else within the app: If it is not structured and managed correctly the information on the social platform becomes negative.		We are using Email, twitter, blog, SnapChat, WhatsApp: As for WhatsApp, we have the management committee team. Running parallel, the management committee team is the COVID response team. These are the most important ones; one level down is the executive directors. This is what the WhatsApp groups consist of Parallel to that is the executives is department's leader's team. Nobody knows about the department leaders so that if there is a problem, we will discuss that problem. The chief source of information is Facebook for the middle-aged people between 35 to 45 who run it are for regular discussion promotion and live on it., Educational institutions could should use Facebook because that is where most students are found, although most are found on Instagram. [Framework, strategies & recommendation] There is a new one coming out now TikTok and that's where things are happening now mainly using TikTok videos clips especially during this COVID19 in making visual stories of ninety second or ninety minutes long, the period is irrelevant can you make a visual story is what more important.																							
IQ 2.1.2	b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? Why, How?	I might not be able to release such information No regulation, though culture is available SM can contribute to KT if it is in the right environment with correct structures and when managed correctly that is how it can contribute. In it is not structured properly in terms of how information is shared properly you can have the wrong information coming in through, so the wrong knowledge runs		I spent R600 000 to buy LinkedIn Learning for the department but that is not SM. The other raring project I can tell you about is the rolling up of the share point, and it's something the institution has been owned for at list five years but hasn't used, and it is beginning to rollout in my department																							

		to make decision and information has to be clear as much as possible to make a decision. If it not your business intelligence is incorrect, you will make the .. you will scale up incorrectly or you will scale down when you shouldn't, you will setup wrong logistics in operation	The institution has media policy it is there, it is developed and I cannot say it necessarily encourages SM but it regulates it. I can tell you we have fired a member of staff for behaving very badly on Facebook.....The police is a regulatory rather than an enabling policy Facebook is my most important channels of current awareness, Facebook is my equivalence to a newspaper, and a good newspaper in the sense that it tells me funny stories, it tells me new things, what happens next to me, but it also tells me about serious things. Like in many newspapers, you have a column called comments or something like that. I find Facebook providing that, of cause some of my serious academic friends have a very strong Facebook presence. One of my friend puts everything he says, written, published on Facebook, I can decide if I want to read that and I can also share it with other people. Other people will tag me if they find similar things. I have been able to be in my field despite in the middle of the week because everybody wants to know where I got this information I am sharing and they share information with me again and say being the person with that information have put me in a very facial position. That is all because of how I curate my information and the reason why I am staying out of Facebook is because the algorithm in Facebook has twisted itself towards COVID19 things and because initially I would obviously be founded with that desire to be back at sending me different things from the COVID 19. My disposition is I am sufficiently nervous that I keep on responding to the COVID 19 things and that is why I am staying away.
RSQ 2.2	How can the use of SM facilitate effective KT in an innovative business environment?		
IQ 2.2.1	a) How can the use of SM facilitate effective KT in an innovative business environment?	SM is an open platform, on which people connect, where on the number one side, you have the size of the platform, on the other, you have the effects of the platform, and I am on because my friends are, they are, and what is being mainly distributed is media based knowledge, information. SM Innovation is anything new, going beyond your job, profitable, customer offering, effectiveness, fail but fail fast. SM is an Innovation itself that leads to a change in knowledge, but knowledge itself does not lead to innovation. Yes, if it is used in the correct way and if it is the right knowledge within an organisation that is managed structurally correctly but can also be destructive if platforms start being used for personal reasons or for some companies if it starts being whelming with information that is not properly directed. In other words, if you get information from fourteen different sources and each one has a slight different data point, you can't distil that information to make a decision SM can contribute to KT if it is in the right environment with correct structures and when managed correctly that's how it can contribute. In it is not structured properly in terms of how information is shared properly you can have the wrong information coming in through, so the wrong knowledge runs to make decision and information has to be clear as much as possible to make a decision. If it not your business intelligence is incorrect, you will make the you will scale up incorrectly or you will scale down when you should not, you will setup wrong logistics in operation.	SM have people that communicate in groups where participants are producers sharing of information and not only consuming. It's an innovation that would not uses existing tools, creates new practices, and then new tools that makes existing practices more efficient. It can because of its ability to have large amount of information move very quickly. One solution is withdrawing from it. Another solution was that in emails people should stop replying to all messages in their emails. That make some people cross to some messages. I have now taken to the secretariat and ask them to not to put people into carbon copy but to put people into blind carbon copy. I am think of that to become officially make it an institutional policy. Recently when I started using outlook online.
IQ 2.2.2	b) What is your highest qualification? Tick where it is applicable	Chairperson, CEO, non-executive director, adviser with more than 15 yrs. Experience. With a Master's degree.	More than 16 executive director, researcher with a Doctorate degree.
	RESEARCH & RESEARCH SUB-QUESTION	PARTICIPANTS RESPONSE	
RQ 1	What are the factors affecting KT using SM in an innovative business environment?		

RSQ 1.1	What are the factors that could facilitate effective KT using SM in an innovative business environment?	Objectives which are clear, trained individuals might suffice																																																																																																																							
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	b) Show by a tick the organisational Innovation capability measurement scale, which is composed of six items measured on a seven-point Likert scale [1 - 7].	<table><tr><th>Does:</th><th>1 – Strongly disagree</th><th>3 disagree</th><th>5 agree</th><th>7 – strongly agree</th></tr><tr><td>Your company frequently tries out new ideas</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company seeks out new ways to do things;</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company is creative in its methods of operation;</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company is often the first to Market with new products and services</td><td></td><td></td><td>1</td><td></td></tr><tr><td>your company perceive innovation as too risky and resist it</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company's introduction of new products show an increase over the last five years.</td><td></td><td></td><td>1</td><td></td></tr></table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas				1	Your company seeks out new ways to do things;				1	Your company is creative in its methods of operation;			1		Your company is often the first to Market with new products and services			1		your company perceive innovation as too risky and resist it			1		Your company's introduction of new products show an increase over the last five years.			1		<table><tr><th>Does:</th><th>1 – Strongly disagree</th><th>3 disagree</th><th>5 agree</th><th>7 – strongly agree</th></tr><tr><td>Your company frequently tries out new ideas</td><td>1</td><td></td><td></td><td></td></tr><tr><td>Your company seeks out new ways to do things;</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company is creative in its methods of operation;</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company is often the first to Market with new products and services</td><td></td><td></td><td></td><td></td></tr><tr><td>your company perceive innovation as too risky and resist it</td><td></td><td>1</td><td></td><td></td></tr><tr><td>Your company's introduction of new products show an increase over the last five years.</td><td></td><td></td><td></td><td>1</td></tr></table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas	1				Your company seeks out new ways to do things;			1		Your company is creative in its methods of operation;				1	Your company is often the first to Market with new products and services					your company perceive innovation as too risky and resist it		1			Your company's introduction of new products show an increase over the last five years.				1
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IQ 1.1.3	a) How is KT valued in your organisation?	Knowledge is the crime of the businesses; it tries the businesses, so it informs operation and direction of the company.	Remember we always say in any organisation no matter what it is, no matter disciplines are, its processes; processes are made up of people and technologies. Quiet often they say that in organisations people are their most valued assets, but people are not, it is actually the worst in the people, so it actually goes deeper than the knowledge that actually goes to them than what people can do. If I say people are not the thing, I mean what is valued is the knowledge in their minds and most organisations are also spending more on technology to be successful as they try to automate people out. The vice President of AI in Googles set an interview last year which he said if you are planning to replace people with technology, you are planning to fail because technology is fantastic it will do the same thing over and over again but it doesn't have a heart, it doesn't have a soul, so as it happens will do the wrong thing. If you look at the Boeing Commercial Airplanes updates on 737 MAX operations that was the most fantastic up-to-date technology if it goes wrong, it flies the plain into the ground, instructions to the crew was let the pilots sort it out, the auto pilots did sort it out, stopped the plain nose face into the ground. There is a couple of flights were the crew said no, I am not going to let technology do this, I am going do this myself. In addition, those were safe landings. They have the same problems with 787, they need the technology, but the people is still the crucial thing here. All what they have to do is to automate what the machines can do best but use the time technology to empower people and to empower people is all about knowledge- tacit knowledge which is very difficult to get out of people. I think that is all what an organisation has (knowledge), agile in manipulating information and how they can use it. For in an organisation. I have three kids but I really want to have four kids, but I look at the data, which shows clearly that every false child born in the world is Chinese, so I only have three kids because I cannot speak Chinese. That is the difference between information, and that knowledge and wisdom. 80% of their decisions are made up of 20% of their data and 10% of their information, which is normally selective. KT is valued very highly																																																																						
IQ 1.1.4	b) Do employees keep knowledge to themselves? If so how and if not, Why?	There is a platform for sharing knowledge and there are several tools that they use. One of which is slack. There are policies where if they find out that one of their subordinates have a challenges in	Individual (people think to stop thinking, that is why we solve problems. As if you ask me a question I don't know what you know),																																																																						

		certain aspect of which could be programming language or business processes. They put some instructions on slack, were people can help you out just to share the knowledge but naturally with people it is very difficult take all the knowledge, if some of the are a senior programmers and you are a junior programmer, as much as they would try to share there is a limit to it.																																																																									
IQ 1.1.5	c) Does your organisation encourage KT? If so how and if not, Why?	Yes, like one of the evidence that the company encourage it is that all the programmers and developers are put in one place and they encourage that if you did something speak loud, so if you don't have knowledge of how to do something you ask loudly-verbally or you can slack it in an open environment then people not one person can actually advice you and help you out in the process, so that how it's done. In this case, when someone is explaining to you some other people will be listening as well.	Yes, Internships, mentorship programs though it's more of an organisational cultural thing, for example I think Palmolive is number two supply chain in the world, they say you are hyper empowered but some say they are hyper automated. Knowledge means nothing if my people do not make the right decisions. Previously we were encouraged to ask questions, the more you ask the more people will develop you, become interested in you. Right now people are holding onto their knowledge, people are scared to speak, people are afraid of saying I do not know.																																																																								
IQ 1.1.6	d) What is your experience with organisational KT programs?	All knowledge-sharing platforms are very engaging and helpful in terms of obvious states. Individual, organisational culture, content, environment with other businesses and customers also affect KT. Research outputs, audience affect KT.	I have three of those menials in my life scared of saying I do not know; they are super bright they can get to the information quickly but they do not have a clue on what to do with it and that is where knowledge and wisdom come from, it's not what you know but what you can do with it. For example, a general manager run all sites of business, be it Marketing, IT etc., empower all people around him, her to grow the business. Organisational culture, content, technological environment with other businesses and customer's factors affects KT.																																																																								
IQ 1.1.7	e) Tick how important are the following factors affecting KT using SM	<table> <tr> <th>Factor Challenges</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr> <tr> <td>Employee/Student cognitive tacit knowledge</td><td>1</td><td></td><td></td></tr> <tr> <td>Culture</td><td>1</td><td></td><td></td></tr> <tr> <td>Context and system failure</td><td></td><td>1</td><td></td></tr> <tr> <td>Environment</td><td>1</td><td></td><td></td></tr> <tr> <td>Informal communication and clear networks that involve KT by participants</td><td>1</td><td></td><td></td></tr> <tr> <td>KT measurement challenge</td><td>1</td><td></td><td></td></tr> <tr> <td>Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes</td><td>1</td><td></td><td></td></tr> <tr> <td>Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g., investors returns)</td><td></td><td></td><td>1</td></tr> </table>	Factor Challenges	Very important	Equally important	Not important	Employee/Student cognitive tacit knowledge	1			Culture	1			Context and system failure		1		Environment	1			Informal communication and clear networks that involve KT by participants	1			KT measurement challenge	1			Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes	1			Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g., investors returns)			1	<table> <tr> <th>Factor Challenges</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr> <tr> <td>Employee/Student cognitive tacit knowledge</td><td>1</td><td></td><td></td></tr> <tr> <td>Culture</td><td>1</td><td></td><td></td></tr> <tr> <td>Context and system failure</td><td>1</td><td></td><td></td></tr> <tr> <td>Environment</td><td>1</td><td></td><td></td></tr> <tr> <td>Informal communication and clear networks that involve KT by participants</td><td>1</td><td></td><td></td></tr> <tr> <td>KT measurement challenge</td><td>1</td><td></td><td></td></tr> <tr> <td>Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes</td><td>1</td><td></td><td></td></tr> <tr> <td>Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g. investors returns)</td><td></td><td>1</td><td></td></tr> </table>	Factor Challenges	Very important	Equally important	Not important	Employee/Student cognitive tacit knowledge	1			Culture	1			Context and system failure	1			Environment	1			Informal communication and clear networks that involve KT by participants	1			KT measurement challenge	1			Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes	1			Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g. investors returns)		1	
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	f) Does your organisation reward and /or incentivise employees that are active in teaching/learning/KT?	Not really, it is part of the job.	There is never an organisation that does and does not do it, there are always areas in the organisation that does it and does not do it and it is normally cooperate politics based where that works or not. Some do so only were its safe such as Premier, departments, which are close, do share as they have big brothers and sisters helping the youngsters.																																																																								
RSQ 1.1	What are the factors that could facilitate effective KT using SM in	The solutions are all what I have listed: slack, sprint, documentations, books, workshops, and verbalisation. These are the things that are recommended for the company to use.	Build food chain structures, not we flatten structures in our organisations because we believe that the model was 6.3 people per manager, now as soon as you get seven people you need another manager, you need another supervisor. All these layers and layers																																																																								

	an innovative business environment?		were meant to operate machines, let us get rid of Personal; Assistant PA(s), if you do not know where to go to, you are not going to get there. Promote people because they give you more than you expect as they learn skill for the business benefit. For example, a woman was working at one of the mine as a CIA and was always looking for business analysts to work for three years for every project and morn to become project managers because they do not know how to become one. She then asked me what should, I said just promoted the new recruits to junior business analyst, senior analyst and lead analyst and people were happy. The juniors were looking for information to become senior business analysts from the employees, from the customers, from the unions, from the developers about updating themselves to that level using SM. Companies are scared to promote people because of money but if you give them 8% instead of 6% they do much more for the company. The woman said after promoting those people to the next level the first thing, which they did, was .. they went to a PA and asked for new business cards.... It was not about the money but to learn. She had to promote them, as they had to learn about how to get to the top of the food chain. This is what organisations are failing to understand. Give people who are hiding knowledge a platform such as SM to communicate to each other or to those that they feel comfortable to chat with and access the knowledge. SM platform is quick, perfect for harvesting, is current, honest, personal, you can send it anytime a picture, a sentence, or you can leave a voice note and enable one to get enough on which to build wisdom. You may try to capture all tacit knowledge in an organisation but if you do that, I will give you two lollies. On SM we are pro-academic, capturing a million times more by making it small, were you can say I don't know that to all those you trust who will help you and give you feedback. Pro-academic solution includes knowing the what, how, why and the practicality aspect of knowledge as well as assessing how people out there contribute practically. Linking practical side with academic side make it pro-academic.
RSQ 1.2	What are the challenges that could affect effective KT using SM in an innovative business environment?	Most of the time, you will only get to know what the other person thinks you don't know and he doesn't transfer all the knowledge that you necessarily need just for a specific task. There is document documented for which people can refer to. Access that knowledge that people have. Unlike a book there is no way you can tape all the knowledge that a person has and transfer it to another person.	We are living in a time when we have to survive, someone was saying this is a thunderstorm and I am saying this is a tsunami. This is because in a thunderstorm I can hide somewhere but in a tsunami I only die or get on the surfer board The problem with knowledge management of being hungry to get the knowledge not being hungry to give the knowledge. You know if you have people who are hungry to get the knowledge, they will get the knowledge out of people because people like sharing if they are asked by the right people. Tacit-ness and extraction because people are concerned about their job security and on explicitness of knowledge aspects in documents, in databases, you know it is so important to keep those things up to date. I have never seen a bit that does proper documentations updates; Explicit knowledge is not as explicit as it is stated. Structure

			<i>in organisations destroy learning, why do we have juniors in organisations, working together, that closeness gives you that wisdom and gives access to your knowledge.</i> <i>It information overload or a cultural thing that challenges, or political thing, I am not going to tell you what I know, why do you want to take some of my bonus? The other thing is I will not tell you because I am safe guarding my job, including fear- I don't know why you are asking me this staff when 50% of the people are unemployed, why are you asking me this staff. I am going to be as vague, as high level and scary as possible, think you want to fire me. To be many people are saying is much better to hide, come up from under the table if you really need to. If you expose yourself if you make a mistake, politics gets rid of yourself. They are feeling companies want to get rid of people, while people do not have that safety feeling and very difficult to get their knowledge. I can tell you now more than ever knowledge is going to save us.</i>
RQ 2	How can SM be managed for effective KT in an innovative business environment?		
RSQ 2.1	How can Knowledge be transferred using designed SM platforms in an innovative business environment?		
	a) Do you use SM apps in your organisation? if so how, if not why?	SM are business tools used for social exchange for carrying photos and messages. Innovation is where people come up with new strategies or new method of solving problems, coming up with new solutions to solve problems using technology. Participant brainstorm and share ideas, designs, plans that they have. Labs and incubators where participants meet, merge ad review ideas. Vimeo, Facebook is used for campaigns but not for knowledge exchange, Twitter, Instagram. The organisation have own application called module reporter, which is also developed for journalist who need to share knowledge.	SM instead of calling it e-communication it could be referred to as an economic tool. It helps in innovation in break through process, improvement, reinvented by consumers, as an example, Uber was a failure at first where they bought so many taxis, and they are now using an app to enable a business success.. Email doesn't work anymore because IT doesn't manage it well, as people involve more politics tool through cc. SM has make it smaller and more to me, easy to use, maintain confidentiality than an email which need a formal session. WhatsApp, Instagram's Yes, expensive management systems which become dumps of rubbish. Using SM
	b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? Why, How	There are policies where if they find out that one of their subordinates have a challenges in certain aspect of which could be programming language or business processes. They put some instructions on slack, were people can help you out just to share the knowledge but naturally with people it is very difficult take all the knowledge, if some of the are a senior programmers and you are a junior programmer, as much as they would try to share there is a limit to it.	Empower through agile; include all, never stopping to create a culture of knowledge sharing. Take away policies, procedures which force you to do but replace them with cultures
RSQ 2.2	How can the use of SM facilitate effective KT in an innovative business environment?	SM is used for promotion or campaign about new products to get feedback, though SM in the business environment is perceived as time wasting. There are tools that are formally use that help people to interconnect to other applications that development team can develop for the company to use, like I am talking of slack, you can connect it to 'Jira' and with 'Jira' you can also connect it to, like the jacking you use to describe your problem so that when a new person comes he or she can know what did you changed, where did you changed and why you did that. Problems and solutions. However, if you use Facebook it is detached from the apps that the company uses.	It is not only going to contribute, but it will own the biggest part of it because every single in the world has a cell phone and are used to SM, no matter where they are on the pyramid. They can be at the bottom or at the top, it's easy to share, capture, simple to communicate, I don't have to have anything by me but with my phone I can share knowledge with my phone

		<i>I there is a way to merge the SM app to development tools. When I am talking about development tools, I am talking about tools that are used for deploying, for assigning or reviewing tasks - all things used when developers are working on a problem.</i> <i>App should be redesigned so that they can be integrated, as in Jira, Jerking and slack. Instead of using your email we use slack, I receive it on my phone, everybody else gets it, and it gets to your email.</i>	
	What is your highest qualification? Tick where it is applicable	PhD,	PhD.

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IQ 1.1.2	b) Show by a tick the organisational Innovation capability measurement scale, which is composed of six items measured on a seven-point Likert scale [1 - 7].	<table><tr><td>Does:</td><td>1 – Strongly disagree</td><td>3 disagree</td><td>5 agree</td><td>7 – strongly agree</td></tr><tr><td>Your company frequently tries out new ideas</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company seeks out new ways to do things;</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company is creative in its methods of operation;</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company is often the first to Market with new products and services</td><td></td><td></td><td>1</td><td></td></tr><tr><td>your company perceive innovation as too risky and resist it</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company's introduction of new products show an increase over the last five years.</td><td></td><td></td><td>1</td><td></td></tr></table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas				1	Your company seeks out new ways to do things;				1	Your company is creative in its methods of operation;			1		Your company is often the first to Market with new products and services			1		your company perceive innovation as too risky and resist it				1	Your company's introduction of new products show an increase over the last five years.			1		<table><tr><td>Does:</td><td>1 – Strongly disagree</td><td>3 disagree</td><td>5 agree</td><td>7 – strongly agree</td></tr><tr><td>Your company frequently tries out new ideas</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company seeks out new ways to do things;</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company is creative in its methods of operation;</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company is often the first to Market with new products and services</td><td></td><td></td><td>1</td><td></td></tr><tr><td>your company perceive innovation as too risky and resist it</td><td>1</td><td></td><td></td><td></td></tr><tr><td>Your company's introduction of new products show an increase over the last five years.</td><td></td><td></td><td>1</td><td></td></tr></table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas				1	Your company seeks out new ways to do things;				1	Your company is creative in its methods of operation;				1	Your company is often the first to Market with new products and services			1		your company perceive innovation as too risky and resist it	1				Your company's introduction of new products show an increase over the last five years.			1	
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IQ 1.1.4	c) Do employees keep knowledge to themselves ? If so how and if not, Why?	We value knowledge because that is why this organisation is there to create knowledge. Knowledge is developed through research to come up with new knowledge for imparting on to others, KTis not a one way but participants do contribute, object or add to that knowledge, knowledge is valued a lot because it makes the institution stand	I cannot put R10 to a knowledge, I do not have "A" knowledge, and knowledge is infinitely valuable.																																																																						
IQ 1.1.5	d) Does your organisation encourage KT? If so how and if not, Why?	Employees share knowledge through research while improving society's wellbeing, because it is pointless to have the knowledge	Employees do share. Anything I share downwards is knowledge I am sharing, anything I am sharing upward is of less value because it's up the pyramid and I assume I already know most of what they know																																																																						
IQ 1.1.6	e) What is your experience with organisational KT programs?	Absolutely because it what enable it to stand. Knowledge is transferred through conferences conference presentation thereby transferring knowledge. Knowledge can also be transferred through board meetings, where new knowledge will be transferred. Knowledge can also be transferred through publication of book Chapter and articles. KTis encouraged through funding research to attend conferences to present, publish books, articles that is how the institution encourage research.	Yes, they use various platforms to share it. SM is one of the platforms used to share knowledge																																																																						
	f) What is your experience with organisational KT programs?	My experience is that the more I present at conferences, the more I learn as I also receive knowledge from others making it more valuable as I also share it with others.	KT in our environment is a binary discussion. Knowledge in binary for is it a tool for KT. I if you ask would I use such knowledge to transfer knowledge? I would say no because its inefficient platform to do so on. Generally, the use of these SM platform are reactive to messages on WhatsApp, or going on Facebook and see if you have the most recent messages. Generally, people use these platforms because there are many people on them and it is an effective way to communicate. How do they manage it, whenever there is a message that comes through they respond to it? As a company, because we are a digital Marketing technology company we use Facebook business manager, to run all our Facebook campaigns, and for																																																																						

						our website. We use google for business which is where we ask our emails and use online tools, collaboratively share documents			
IQ 1.1.7	g) Tick how important are the following factors affecting KT using SM	Factor Challenges	Very important	Equally important	Not important	Factor Challenges	Very important	Equally important	Not important
		Employee/Student cognitive tacit knowledge	1			Employee/Student cognitive tacit knowledge	1		
		Culture	1			Culture	1		
		Context and system failure		1		Context and system failure	1		
		Environment	1			Environment	1		
		Informal communication and clear networks that involve KT by participants	1			Informal communication and clear networks that involve KT by participants	1		
		KT measurement challenge	1			KT measurement challenge	1		
		Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes	1			Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes	1		
		Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g. investors returns)			1	Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g. investors returns)		1	
IQ 1.8.8	g) Tick how important are the following factors affecting KT using SM	Not really, it is part of the job.				There is never an organisation that does and does not do it, there are always areas in the organisation that does it and does not do it and it is normally cooperate politics based where that works or not. Some do so only were its safe such as Premier, departments, which are close, do share as they have big brothers and sisters helping the youngsters.			
RSQ 1.2	What are the challenges that could affect effective KT using SM in an innovative business environment?	Note: Some of the challenges that I face when I work on some collaborative projects, when I work with other people overseas. You know it's not easy to work with other people with different backgrounds, you see it will delay the whole process, I had a collaborative project with someone who was in the United states where we were challenged by lack of strong internet connectivity resulting in the inability to realise project goals. Some of our members did not have adequate infrastructure and facility to use from home.				Knowledge is something that has unequal weighting, your knowledge my knowledge and has different value propositions			
RQ 2	How can SM be managed for effective KT in an innovative business environment?								
RSQ 2.1	How can knowledge be transferred using designed SM platforms in an innovative business environment?								

IQ2.1.1	a) Do you use SM apps in your organisation? if so how, if not why ?	We are using Instagram, Email, twitter, blog, YouTube, Facebook. Employees have that freedom to use it if they want but they use it in an informal setting SM can contribute if it is direct use for KT use, without being disruptive. We were recently working on a collaborative project where we in SA and participants from the united states were working on a project. All participants were required to come up with innovative new ideas and be innovative to come up with a new product.	Yes, in my environment which is digital Marketing communications although knowledge isn't a tangible entity that you can move from one person to another. A dynamic organism is continuously evolving. Knowledge is not a singular thing that I can say this is the sum that you can use to work out for this situation nor I can say this is the formula you need to use it is less concrete. SM is an intensive part of our company structure, we sell SM. People pay us money to run campaigns on Facebook, other companies are generally using WhatsApp- with largest client base in South Africa, When you are looking at WhatsApp- it is one of the strongest platforms in any environment especially Largely through campaigns on Facebook where one can use a video explaining what is new, what information might be needed and promote in a targeted audience. As an example, you can find clients in a small town, aged 35 to 45 and in need of tractors in Free state by giving them a link to someone, they can contact, filling a form or use a YouTube video. That KTcomponent when it comes to KT in advertising communications has impacted quite dramatically with the way companies communicate about products and also the way consumers understand how products are launched into Markets and sell to them. It no longer a thirty second Television (TV) advert to communicate a new product, one has to review on it, which is half an hour, coupled with a two minutes' video, thirty second advert, plus six second bumper. Therefore, the amount of content that is used to create that knowledge, the cost has to be strategic. It is transferred using the different tools that you have at your disposal. Looking at Facebook the KThappens via Facebook messenger in form of YouTube videos, which explains. On WhatsApp, it is a direct conversation where you share something one should be aware of and you address specific person and share an environment where they can take it further. Advertising is also KTin broad terms
IQ 2.1.2	b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? If so- How, No Why:	If it was an educational institution, you may use Email, twitter, blog, YouTube, Facebook, although it was not meant to be used to transfer knowledge in that space. We are given funding to attend workshops	On Facebook, we share videos, slack is an internal management system platform we use to share articles, although there is different platform, which offer different values to that knowledge. Everyone wants to kill email because there are inherent problems in that it's a one-way form of communication, email is constructed to take a blog of information, one takes that blog and add another blog of information and send it to me and I will have two blogs of information, now if I send to the third person I now have three blogs of information- with all these three blog now I understand what's going on. As such, it is a very ineffective way to communicate and that is one of the big thing that SM kills. Twitter, WhatsApp and blog are some. The is also the rigid, static wiki on website development stage, because no one looks at it because information sits inside the company already and the dynamic

			Facebook platform using videos. Google drive is accessible; people can write on it. The companies need to set good policies for effective KT to clients
RSQ 2.2	How can the use of SM facilitate effective KT in an innovative business environment?	For example, I can use WhatsApp, anywhere, anytime, for formal businesses but I think it was primarily designed for social informal setups. You will see that most employees are using it to exchange official information although it becomes a distraction. Organisational tasks may not be done when sent via WhatsApp compared to if the same tasks are assigned via official channels. SM is an immerging technology, which is mainly ideal for promoting interactions among people in informal setups, although it is also being used in formal setups. Innovation refers to is like creative way of Doing thing or new thinking to achieve organisational goals. The use of technology to merge and review and have new, ideas, with empowered employees SM is easy, although it has its pros and cons as well. Knowledge can be transferred through exchanging knowledge, sharing and interactions, by asking people to contribute to a knowledge that has been put on the SM platform or forum.	SM allow engaging people in communication with time aspect consideration, using tape, video for eliciting emotional reaction. innovative businesses are high risk) Reinventing something to increase profitability, SM create an innovative environment- that allows people to question assumptions about their ideas..
IQ 2.2.1	What is your highest qualification? Tick where it is applicable	PhD, >15 YRS EXP	Masters, CEO <5 years to own company

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IQ 1.1.3	c) How is KT valued in your organisation?	It's so much valued because it is why some institutions exist, and should be transferred from one generation to another for application The transfer of knowledge is very important because we need to make it a point that what is supposed to be done, should be done, what is supposed to be known by the coming generation is so important and should be known for use	We sell knowledge as such its transfer is valued Highly valued																																																																	
IQ 1.1.4	d) Do employees keep knowledge to themselves ? If so how and if not, Why?	It's so much valued because it is why some institutions exist, and should be transferred from one generation to another for application The transfer of knowledge is very important because we need to make it a point that what is supposed to be done, should be done, what is supposed to be known by the coming generation is so important and should be known for use.	We sell knowledge as such its transfer is valued Highly valued																																																																	
IQ 1.1.5	e) Does your organisation encourage KT? If so how and if not, Why?	It is also very important because there are some employees who are knowledgeable than others, therefore we need to share to know about the current developments around us in terms of technology and all that. KTis at the centre of the institution. Through research you need to share the findings of the research new knowledge It is generally, very difficult to say yes or no, but people do tend to share, remember we have different departments and clusters. So, through formal and informal meeting people tend to share new knowledge but there are some who might want to be selfish. This is because at times people are promoted according to what they know themselves so that they	The business of the institution is to share knowledge, so the employees share knowledge among themselves, to update each other on the trends of what is happening. One might be informed about technological developments that might also be helpful to colleagues on that regard they share knowledge																																																																	

		can have advantage over other people. Its within humans and the other thing is that for example myself I am in Information Technology (IT), maybe we are too specialists, I might know something here but it becomes so difficult that some people might not be interested because it's not in their field of expertise and I may not share it with them but with other people and departments. In this case we cannot say its selfishness because you don't have audients to talk to.																																																																									
IQ 1.1.6	g) What is your experience with organisational KT programs?	My experience is that we share more on WhatsApp groups for instance when there is a new virus or if there is something which have changed, especially new practices especially new technology we need to share that and SM is the best because with emails people tend to ignore. In terms of innovation, human beings are the most inefficient means for KT, as they need to learn how to manage knowledge. You would also agree with me that there is a lot of information, a lot of knowledge about how this world can be a better place but, that knowledge is being wrongly communicated or is hidden somewhere and what people always get is bits and pieces of what should be known. There was this other researcher who said, if all this research which people do was useful, we shouldn't be researching and we should have finished researching. We should have finished researching because everything which you want to know about, in this world is known, it's there, its hidden somewhere.	KT is affected by company staff, policies, system, or infrastructure.																																																																								
IQ 1.17	f) Tick how important are the following factors affecting KT using SM f	<table> <tr> <th>Factor Challenges</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr> <tr> <td>Employee/Student cognitive tacit knowledge</td><td>1</td><td></td><td></td></tr> <tr> <td>Culture</td><td>1</td><td></td><td></td></tr> <tr> <td>Context and system failure</td><td></td><td>1</td><td></td></tr> <tr> <td>Environment</td><td>1</td><td></td><td></td></tr> <tr> <td>Informal communication and clear networks that involve KT by participants</td><td>1</td><td></td><td></td></tr> <tr> <td>KT measurement challenge</td><td>1</td><td></td><td></td></tr> <tr> <td>Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes</td><td>1</td><td></td><td></td></tr> <tr> <td>Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g. investors returns)</td><td></td><td></td><td>1</td></tr> </table>	Factor Challenges	Very important	Equally important	Not important	Employee/Student cognitive tacit knowledge	1			Culture	1			Context and system failure		1		Environment	1			Informal communication and clear networks that involve KT by participants	1			KT measurement challenge	1			Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes	1			Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g. investors returns)			1	<table> <tr> <th>Factor Challenges</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr> <tr> <td>Employee/Student cognitive tacit knowledge</td><td>1</td><td></td><td></td></tr> <tr> <td>Culture</td><td></td><td>1</td><td></td></tr> <tr> <td>Context and system failure</td><td>1</td><td></td><td></td></tr> <tr> <td>Environment</td><td></td><td></td><td>1</td></tr> <tr> <td>Informal communication and clear networks that involve KT by participants</td><td>1</td><td></td><td></td></tr> <tr> <td>KT measurement challenge</td><td></td><td></td><td>1</td></tr> <tr> <td>Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes</td><td>1</td><td></td><td></td></tr> <tr> <td>Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g. investors returns)</td><td></td><td>1</td><td></td></tr> </table>	Factor Challenges	Very important	Equally important	Not important	Employee/Student cognitive tacit knowledge	1			Culture		1		Context and system failure	1			Environment			1	Informal communication and clear networks that involve KT by participants	1			KT measurement challenge			1	Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes	1			Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g. investors returns)		1	
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IQ 1.1.8	h) Does your organisation reward and /or incentivise employees that are active in teaching/learning/KT?	Not really, it is part of the job.	There is never an organisation that does and does not do it, there are always areas in the organisation that does it and does not do it and it is normally cooperate politics based where that works or not. Some do so only were its safe such as Premier, departments, which are close, do share as they have big brothers and sisters helping the youngsters.																																																																								
RSQ 1.2	What are the challenges that affect effective KT using SM in an innovative business environment?	<i>Some of the thing here is you can have an audience which is not interested or they may not even understand you because of the level of understanding about a particular area. Some people are so technical, some people are not, all these things make it their barriers to knowledge transfer. The focus of other people might be on today while others may focus on the future, but all the same the interest will be on people.</i> <i>Negotiating with people through persuasion might help, explaining the advantages and disadvantages.</i>	The challenges are that there is no clear incentives structure, proper structured induction programme, where people can sit down with you and tell you about the organisation and transfer knowledge. The induction is brief all because there is no resources or time. Everything is informal, maybe corridor chats, tea time or break time. Another challenge is how one can seek, collect information which is all over the show or lying around																																																																								
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RSQ 2.1		How can Knowledge be transferred using designed SM platforms in an innovative business environment?	
IQ2.1.1	a) Do you use SM apps in your organisation? If so how, if not why?	Definitely, I think SM is at the top in knowledge transfer. Remember it's all about information, what information do you need and once you have that information. It's easy to transfer one information from one person to another it's also easy to ask what that information is all about. SM is a jungle, its free for all, most of it we are testing how technology can work, it's not so intelligent like human beings we know what to transfer and what not to transfer. If we reach that level, we are able to say even if we see an incident where someone is in a critical life threatening condition, rather than helping the person, people take pictures and transfer. People should have contacts for a doctor and if people were able send information to those doctors to assist the person in critical condition. If the SM platforms able to reveal available doctors, to assist the critical person it was better but the one which we have now are for Marketing, tourism that staff, not secure as well Very much because it's all about knowledge development which require means of communicating with people and the best way of communicating with people is through SM, that's where we can find people. The one at the top is Email which is more private than WhatsApp, then the open WhatsApp is second not needing to login, then some form of Facebook, discussions board, blogs, Instagram and twitter. Facebook is not very private because its open liken WhatsApp:	Yes, I think SM could be useful. It extends the contact time, discuss ideas, get feedback instantly and also clients have access to data on active devices as it is now cheaper. Groups allow you to reach many people. Comments on SM about our products improve our performance, services and outputs.SM allows one to use podcast, videos, animation, simulations to express better or increase the understand ability of an aspect. I have seen one banking institution is now using WhatsApp for some of its transactions or function, so as SM become more secure, more and more people are going to move over to. In this case we need to grasp and embrace those technologies The organisation does not use it as a tool for knowledge transfer, however there are sporadic instances where the organisation uses it to share information on may be events that are happening at the institution and things like that It's mostly WhatsApp's that is used and I have seen to be active
IQ 2.1.2	b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? If so how, if not why ?	We are given funding to attend workshops	Not sure
RSQ 2.2		How can the use of SM facilitate effective KT in IBE?	
IQ2.2.1	How can the use of SM facilitate effective KT in IBE?	SM-from the word social that means we are talking of informal communication using technology, network where we think there are no various forms of communications. It's a communication, is it radial were everyone has access to every tool available, where you can bypass protocols. SM is an Innovation that can improve ways of Doing things. For example, you could be communicating using a pen and paper then you find out that there is another way of communication. Other primary Source of Innovation can be Individuals, organisations, culture, objective, clients, and high investments Remember you are still sending the same message but you are using a better means which is convenient, user-friendly, easy to understand to all people who might want that information. One thing is that it should be accessible to those who wants to be involved and also it should not be intrusive where its accessible to other people. For instance, if you are using WhatsApp you are able to make it un accessible to other people. People have means of accessing you without being intrusive. That innovative environment should have these tools, be able to deal with those pressures, you should be able to block intruders. If you are sending offensive material it should be able to detect that and interaction is very important to interact with the environment to enable easy communication, easy manipulation of information before sending and responding to the information.	SM is an online platform where people can interact, communicate, share ideas and experiences It is an innovation that allow you to break away from the norm to improve the way processes are happening, bringing about destructive technology. On SM one can develop a prototype of a product and put it out on SM and people can comment on the prototype and bring in improvements
IQ2.2.2	What is your highest qualification? Tick where it is applicable	Masters in IT, PhD,>15 years in the IT industry.	Masters, CEO 11 years in IT, male

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IQ 1.1.3	c) How is KT valued in your organisation?	It's so much valued because it is why some we exist, and should be transferred from one generation to another for application. Knowledge is important because it facilitate the decision-making in organisations.						Well valued in our organisation						
IQ 1.1.4	d) Do employees keep knowledge to themselves? If so how and if not, Why?	Knowledge should benefit the entity but you will find that some people would like to keep it to themselves although managers or the chief executive officers are mandated to transfer that knowledge that is related to work.						It is a mixed bag, if someone finds that it can benefit a certain entity through monetary value there will be selective approach in the way it is transferred.						
IQ 1.1.5	e) Does your organisation encourage KT? If so how and if not, Why?	Yes, they do, it is either you receive training sessions or during meetings.						employees capabilities, technology in place, organisational structure are affecting						
IQ 1.1.6	f) What is your experience with organisational KT programs?	Its fine I cannot complain on those issues because we are mandated to do that job perfectly and well to some extent. Resources that the organisation own also affect knowledge transfer.						KTis facilitating through the contributions to the economy						
IQ 1.1.7	g) Tick how important are the following factors affecting KT using SM	Factor						Factor						
		Challenges						Challenges						
		Employee/Student cognitive tacit knowledge	1					Employee/Student cognitive tacit knowledge	1					
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IQ 1.1.8	h) Does your organisation reward and /or incentivise employees that are active in teaching/learning/KT?	On that one, I am not sure whether they are experiencing any but I have not seen one coming my way and am not sure why they do not reward.	I am not sure
RSQ 1.2	<i>What are the challenges that affect effective KT using SM in an innovative business environment?</i>	<i>There are issues of resistance to change world is known, change is something which not taken lightly by people, especially when there is a paradigm shift from the norm or way things are done to the innovative status. Resources are also a source of challenge in knowledge transfer. Organisations want to channel their resources where they find that there is a direct benefit, if they do not see a direct benefit they would rather leave it.</i> <i>To solve these challenges organisations can have free access to WIFI to operational members and abstain from treating internet access as an expense.</i>	<i>The challenges are related to knowledge sharing, transfer, resources in the organisation</i>
RQ 2	How can SM be managed for effective KT in an innovative business environment?		
RSQ 2.1	<i>How can knowledge be transferred using designed SM platforms in an innovative business environment?</i>		
IQ 2.1.1	a) Do you use SM apps in your organisation? if so how, if not why ?	WhatsApp is now showing a message, which says you are "communication is now secure" which seem to imply that communication, was not secure initially. Have more animation, simulations and videos to improve understanding of aspects being communicated. The one at the top is Facebook, Email that is WhatsApp, and then the open WhatsApp does not need logging in, then some form of, discussions board. Very much because it is all about knowledge development, which require means of communicating with people and the best way of communicating with people, is through SM that is where we can find people.	The organisation t It's mostly WhatsApp's that is used and I have seen to be active
IQ 2.1.2	b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? Why, How?	We are given funding training	This one I tricky issue.....
RSQ 2.2	<i>How can the use of SM facilitate effective KT in an innovative business environment?</i>		
IQ 2.2.1	How can the use of SM facilitate effective KT in an innovative business environment?	I think it does because you can see now the mode of communication in nowadays, you find that everybody is highly engaged in the use of SM platforms in sharing information and knowledge. SM- enables social interaction business transactions and others, an Innovation with the ability to adapt and take advantages, other associated technology. Some other Source of Innovation can be in form of literature, magazines, and official organisations networks.	We need to grasp and embrace those technologies in our daily tasks, talking, and enquiries. This is how knowledge is transferred. SM enable people to interact, chat, collaborate for ideas exchange experiences
IQ 2.2.2	What is your highest qualification? Tick where it is applicable	B-Tech IT,>15 years in the IT industry.	Masters, CEO 11 years in IT, male
	RESEARCH & RESEARCH SUB-QUESTION	PARTICIPANTS RESPONSE	
	RQ and RSQ	P- 11	P- 12
RQ 1	What are the factors affecting KT using SM in an innovative business environment?		
RSQ 1.1	<i>What are the factors that could facilitate effective KT using SM in an innovative business environment?</i>	<i>Objectives, which are clear, trained individuals, might suffice; avoid duplication, clarity on the icons when using SM. More interactions bring excitements, interest etc.</i>	<i>.Improving communication, sharing ideas, discussion groups, sending learning material, advertising goods,</i>

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	h) Does your organisation reward and /or incentivise employees that are active in KT?	On that one, I am not sure whether they are experiencing any but I have not seen one coming my way and am not sure why they do not reward.				There is a rewarding program.																																																																									

RSQ 1.2	What are the challenges that affect effective KT using SM in an innovative business environment?	Negatives-Over reliance on technology makes it difficult to establish with certainty on whether the transferred knowledge will exist thereof after technology is removed. 2. Information passed through SM requires validation and verification in order for the more knowledgeable ones to accept it. 3. As knowledge is passed from one device/group to another, it may be edited to the extent that by the time it reaches the last recipient it will no longer be original or genuine Positives-Transfer is not impacted by social status. Information is Improving communication, sharing ideas, discussion groups, sending learning material, advertising goods,	
RQ 2	How can SM be managed for effective KT in an innovative business environment?		
RSQ 2.1	How can knowledge be transferred using designed SM platforms in an innovative business environment?		
IQ 2.1.1	a) What SM apps do you use in your organisation? If so- How, if Not Why:	WhatsApp is now showing a message, which says you are "communication is now secure" which seem to imply that communication, was not secure initially. Have more animation, simulations and videos to improve understanding of aspects being communicated. Very as a way of communicating with people Facebook, Email which is WhatsApp, YouTube, Instagram This happens through having group admins on the platform when in conversations, online meetings or to maintain order.	Easy In organisations most SM in use include WhatsApp's Facebook, TikTok, YouTube
IQ 2.12	b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? If so- How, if Not Why:	Not sure	-
RSQ 2.2	How can the use of SM facilitate effective KT in an innovative business environment?		
IQ 2.2.1	How can the use of SM facilitate effective KT in an innovative business environment?	SM as an online tool for connections and transactions with others, Represent inventiveness in new areas or purposes.	SM is an easy to use, cheap method for interactivity, saving of message, can query information on.
IQ 2.2.2	b) What is your highest qualification? Tick where it is applicable	PhD/ Doctorate degree, male	Master's degree

	RESEARCH & RESEARCH SUB-QUESTION	PARTICIPANTS RESPONSE											
	RQ and RSQ	P- 13					P- 14						
RQ 1	What are the factors affecting KT using SM in an innovative business environment?												
RSQ 1.1	What are the factors that could facilitate effective KT using SM in an innovative business environment?	Notes: Network, electronic mail, Easy to use. Economic.					Have workshops, teambuilding where people can exercise, have time to sit and deliberate.						
IQ1.1.1	a) Tick the primary source of innovation according to the continuum in the table												
		Source	Description	Most Important	Very Important	Equally important	Not important	Source	Description	Most Important	Very Important	Equally important	Not important
		The unexpected	Unexpected success (e.g. a way unexpected in product selling)				1	The unexpected	Unexpected success (e.g. a way unexpected in product selling)		1		
		Incongruities	A discrepancy between what "is" and what "ought" to be with: Economic realities and assumption of the industry. The efforts of an industry and the value and expectations of customers			1		Incongruities	A discrepancy between what "is" and what "ought" to be with: Economic realities and assumption of the industry. The efforts of an industry and the value and expectations of customers			1	
		Process needs	A clearly understood need for which process solution does not yet exist			1		Process needs	A clearly understood need for which process solution does not yet exist				
		Changes in the industry or new products or supplier , new Market structure	Shift in the relationships and dynamics between players in an industry or Market (often caused by rapid growth, technology convergence, or rapid changes in practice)		1			Changes in the industry or new products or supplier , new Market structure	Shift in the relationships and dynamics between players in an industry or Market (often caused by rapid growth, technology convergence, or rapid changes in practice)		1		
	Demographics	Changes in population (size, age, employment,		1			Demographics	Changes in population (size, age, employment,		1			

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IQ 1.1.2	b) Show by a tick the organisational Innovation capability measurement scale, which is composed of six items measured on a seven-point Likert scale [1 - 7].	<table><tr><td>Does:</td><td>1 – Strongly disagree</td><td>3 disagree</td><td>5 agree</td><td>7 – strongly agree</td></tr><tr><td>Your company frequently tries out new ideas</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company seeks out new ways to do things;</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company is creative in its methods of operation;</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company is often the first to Market with new products and services</td><td></td><td>1</td><td></td><td></td></tr><tr><td>your company perceive innovation as too risky and resist it</td><td></td><td>1</td><td></td><td></td></tr><tr><td>Your company's introduction of new products show an increase</td><td></td><td>1</td><td></td><td></td></tr></table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas			1		Your company seeks out new ways to do things;			1		Your company is creative in its methods of operation;			1		Your company is often the first to Market with new products and services		1			your company perceive innovation as too risky and resist it		1			Your company's introduction of new products show an increase		1				<table><tr><td>Does:</td><td>1 – Strongly disagree</td><td>3 disagree</td><td>5 agree</td><td>7 – strongly agree</td></tr><tr><td>Your company frequently tries out new ideas</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company seeks out new ways to do things;</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company is creative in its methods of operation;</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company is often the first to Market with new products and services</td><td></td><td></td><td>1</td><td></td></tr><tr><td>your company perceive innovation as too risky and resist it</td><td></td><td>1</td><td></td><td></td></tr><tr><td>Your company's introduction of new products show an increase</td><td></td><td></td><td>1</td><td></td></tr></table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas			1		Your company seeks out new ways to do things;			1		Your company is creative in its methods of operation;			1		Your company is often the first to Market with new products and services			1		your company perceive innovation as too risky and resist it		1			Your company's introduction of new products show an increase			1		
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IQ 1.1.3	c) How is KT valued in your organisation?	It is valued in organisations in strategy formation.						Well valued because KT sustain, and increase goodwill in organisations.																																																																											
IQ 1.1.5	e) Does your organisation encourage KT? If so how and if not, Why?	Yes, to training session or mentorship programs.						cultural gathering, and through organisational process																																																																											
IQ 1.1.6	f) What is your experience with organisational KT programs?	It fine I cannot complain on those issues because we are mandated to do that job perfectly and well to some extent. Laziness, connections, use of information, less time availability, Easiness to use of technology. Economy, affect the efficiency and effectiveness of KT.						KTis facilitating through the contributions to the economy																																																																											
IQ 1.1.7	g) Tick how important are the following factors affecting KT using SM	<table><tr><th>Factor Challenges</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr><tr><td>Employee/Student cognitive tacit knowledge</td><td>1</td><td></td><td></td></tr><tr><td>Culture</td><td>1</td><td></td><td></td></tr><tr><td>Context and system failure</td><td></td><td>1</td><td></td></tr><tr><td>Environment</td><td>1</td><td></td><td></td></tr><tr><td>Informal communication and clear networks that involve KT by participants</td><td>1</td><td></td><td></td></tr><tr><td>KT measurement challenge</td><td>1</td><td></td><td></td></tr><tr><td>Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes</td><td>1</td><td></td><td></td></tr><tr><td>Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g., investors returns)</td><td></td><td></td><td>1</td></tr></table>	Factor Challenges	Very important	Equally important	Not important	Employee/Student cognitive tacit knowledge	1			Culture	1			Context and system failure		1		Environment	1			Informal communication and clear networks that involve KT by participants	1			KT measurement challenge	1			Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes	1			Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g., investors returns)			1					<table><tr><th>Factor Challenges</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr><tr><td>Employee/Student cognitive tacit knowledge</td><td>1</td><td></td><td></td></tr><tr><td>Culture</td><td></td><td>1</td><td></td></tr><tr><td>Context and system failure</td><td>1</td><td></td><td></td></tr><tr><td>Environment</td><td></td><td></td><td>1</td></tr><tr><td>Informal communication and clear networks that involve KT by participants</td><td>1</td><td></td><td></td></tr><tr><td>KT measurement challenge</td><td></td><td></td><td>1</td></tr><tr><td>Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes</td><td>1</td><td></td><td></td></tr><tr><td>Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g., investors returns)</td><td></td><td>1</td><td></td></tr></table>	Factor Challenges	Very important	Equally important	Not important	Employee/Student cognitive tacit knowledge	1			Culture		1		Context and system failure	1			Environment			1	Informal communication and clear networks that involve KT by participants	1			KT measurement challenge			1	Knowledge complexity which make it difficult to record, analyse and asses the scope and quality of transfer processes	1			Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g., investors returns)		1					
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IQ 1.1.8	h) Does your organisation reward and /or incentivise employees that are active in KT?	They do not reward as it regarded as voluntary and at times mandatory.	It does in a way for outstanding performance
RSQ 1.2	What are the challenges that affect effective KT using SM in an innovative business environment?	There are issues of Laziness, fast, useful information, less time consuming, Less time needed, efficient and effective.	Fake news, credibility, cost factor, loss of intellectual property, cybercrime, loss of control,
RQ 2	How can SM be managed for effective KT in an innovative business environment?		
RSQ 2.1	How can Knowledge be transferred using designed SM platforms in an innovative business environment?		
IQ 2.1.1	a) Do you use SM apps in your organisation? if so how, if not why?	I think it can be transferred through the internet, electronic mail Straight to the point, using proper language not short hand and slang Straight to the point, using proper language not short hand and slang and one can use Facebook, Email which is WhatsApp, YouTube, TikTok, LinkedIn We are fund to attend workshops	Free flow of information and knowledge, availability of information seamlessly. Getting information on the move due to availability of mobile devices, "Fact checking, Content authoring Focus groups can facilitate better communication, Group and team collaboration, Change management and adoption, Adequate training on the tools available "Credibility of the source, user application , privacy and security of the user's information. SM allow fast transfer of information, can transfer information with other people regardless of distance with the people you are communicating with. It's a cheap to way of communicating. it is easy to do researches on educational information using SM. One can do brain storming with a lot of people in where ever and whenever you are. It saves time instead of going around to library looking for books, you can just type on your phone or laptop what you are looking for and it comes up. But it's not all the people who have smart phones and laptop to go SM. some people do not know how to use those smart phones and laptops. It's not 100% safe to communicate thru SM because use of hackers. Governing information management using SM platforms has proven to be challenging. This creates silos of information and misinformation and can result in data leaks and data loss. The benefits of SM in knowledge management are easy use of SM, the affordability of SM makes it easy to share information. Some organisations loss control of information and also the risk of loss of intellectual property and proprietary knowledge. SM is fast, very convenient, reaches broader viewers, cost efficient, easy to use, times saving as well makes it appealing.
	b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? If so- How, if Not Why:		
RSQ 2.2	How can the use of SM facilitate effective KT in an innovative business environment?		
IQ 2.2.1	a)How can the use of SM facilitate effective KT in an innovative business environment?	Some of the Source of Innovation can be in form of literature, magazines, official organisations, technology such as SM platforms.	If we can be able use SM for free without buying data. If everyone can get access to gadgets used for SM regardless of your special class. If it can select and delete sensitive info. If all SM platforms can be able to retrieve and delete all info you send by mistake. If we can easy and affordability access SM. If there is free flow of information and knowledge, availability of information seamlessly. Getting information on the move due to availability of mobile devices, including internet democratisation,
IQ 2.2.2	What is your highest qualification? Tick where it is applicable	Masters, female	Masters, IT, female

	RESEARCH & RESEARCH SUB-QUESTION	PARTICIPANTS RESPONSE											
	RQ and RSQ	P- 15						P- 16					
RQ 1	What are the factors affecting KT using SM in an innovative business environment?												
RSQ 1.1	What are the factors that could facilitate effective KT using SM in an innovative business environment?	- Notes						Accessibility, easy communication, transparency					
IQ1.1.1	a) Tick the primary source of innovation according to the continuum in the table												
		Source	Description	Most important	Very Important	Equally important	Not important	Source	Description	Most important	Very Important	Equally important	Not important
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		products and services						products and services						
		your company perceive innovation as too risky and resist it		1				your company perceive innovation as too risky and resist it			1			
		Your company's introduction of new products show an increase over the last five years.		1				Your company's introduction of new products show an increase over the last five years.			1			
IQ 1.1.3	a) How is KT valued in your organisation?	I think knowledge is the currency on which people make their careers. It's important to have knowledge about a specific subject matter that you are dealing with, the utilisation of that as well as what surrounding it, so it's what set to guise apart from each other. Its immensely valued. I think in IT where I spent the last 20 years of my career,						Well valued and transfer is valued so as knowledge grows the organisation						
IQ 1.1.4	b) Do employees keep knowledge to themselves ? If so how, if not why ?	Interesting, is incentives which motivate sharing and knowledge transfer.						Relationship facilitate but without it, becomes very difficulty						
IQ 1.1.5	c) Does your organisation encourage KT? If so how, if not why ?	Yes, we do we heavily encourage it. We let the employees do presentation to transfer knowledge, we give them research topics. The same way from academic perspectives. We would take an individual with interest in the topic, maybe built something and come and show the rest of the team. It's also a motivating factor in the IT perspective.						People has been using social techniques for the Transfer of knowledge probably for the bulk of their tenure. I think the way technical people has been using to transfer their knowledge to each other over the years.						
IQ 1.1.6	c) What is your experience with organisational KT programs?	Data, network, willingness, smart phone, Cost, credibility, resources, affect the KT process						KTis facilitating organisational processes through the contributions to the economy						
IQ 1.1.7	e) Tick how important are the following factors affecting KT using SM	Factor Challenges	Very important	Equally important	Not important			Factor Challenges	Very important	Equally important	Not important			
		Employee/Student cognitive tacit knowledge	1					Employee/Student cognitive tacit knowledge	1					
		Culture		1				Culture		1				
		Context and system failure		1				Context and system failure	1					
		Environment		1				Environment			1			
		Informal communication and clear networks that involve KT by participants		1				Informal communication and clear networks that involve KT by participants	1					

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IQ 1.1.8	f) Does your organisation reward and/or incentive employees that are active in KT?	- It all depends with organisations, some do pay some do not pay			It does in a way for outstanding performance																								
RSQ 1.2	What are the challenges that affect effective KT using SM in an innovative business environment?	The ability to use technology, connectivity, the will to transfer knowledge affect			Credibility of the source, user application, user adoption and trust of the SM platforms, privacy and security of the user's information.																								
RQ 2	How can SM be managed for effective KT in an innovative business environment?				Easy																								
RSQ 2.1	How can Knowledge be transferred using designed SM platforms in an innovative business environment?				Internet communication.																								
IQ 2.1.1	a) What SM apps do you use in your organisation? If so- How, if Not Why:	We use Ms team, google meet, Facebook, TikTok			It's mostly WhatsApp's that is used and I have seen to be active																								
IQ 2.1.2	b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? If so- How, if Not Why:	There are policies for example which guide the use of IT assets such as the network, passwords, use of computers, collaboration			- - -																								
RSQ 2.2	How can the use of SM facilitate effective KT in an innovative business environment?																												
	What is your highest qualification? Tick where it is applicable	Male, MASTERS			Masters, IT, female																								

	RESEARCH & RESEARCH SUB-QUESTION	PARTICIPANTS RESPONSE																																																																					
	RQ and RSQ	P- 17					P- 18																																																																
RQ 1	What are the factors affecting KT using SM in an innovative business environment?																																																																						
RSQ 1.1	What are the factors that could facilitate effective KT using SM in an innovative business environment?						Accessibility, easy communication, transparency																																																																
IQ1.1.1	a) Tick the primary source of innovation according to the continuum in the table	<table><tr><th>Source</th><th>Description</th><th>Most important</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr><tr><td>The unexpected</td><td>Unexpected success (e.g. a way unexpected in product selling)</td><td>1 opportunities bring</td><td></td><td></td><td></td></tr><tr><td>Incongruities</td><td>A discrepancy between what "is" and what "ought" to be with: Economic realities and assumption of the industry. The efforts of an industry and the value and expectations of customers</td><td></td><td>1</td><td></td><td></td></tr><tr><td>Process needs</td><td>A clearly understood need for which process solution does not yet exist</td><td></td><td>1</td><td></td><td></td></tr><tr><td>Changes in the industry or new products or supplier , new market structure</td><td>Shift in the relationships and dynamics between players in an industry or market (often caused by rapid</td><td>1</td><td></td><td></td><td></td></tr></table>					Source	Description	Most important	Very important	Equally important	Not important	The unexpected	Unexpected success (e.g. a way unexpected in product selling)	1 opportunities bring				Incongruities	A discrepancy between what "is" and what "ought" to be with: Economic realities and assumption of the industry. The efforts of an industry and the value and expectations of customers		1			Process needs	A clearly understood need for which process solution does not yet exist		1			Changes in the industry or new products or supplier , new market structure	Shift in the relationships and dynamics between players in an industry or market (often caused by rapid	1				<table><tr><th>Source</th><th>Description</th><th>Most important</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr><tr><td>The unexpected</td><td>Unexpected success (e.g. a way unexpected in product selling)</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Incongruities</td><td>A discrepancy between what "is" and what "ought" to be with: Economic realities and assumption of the industry. The efforts of an industry and the value and expectations of customers</td><td></td><td>1</td><td></td><td></td></tr><tr><td>Process needs</td><td>A clearly understood need for which process solution does not yet exist</td><td></td><td>1</td><td></td><td></td></tr><tr><td>Changes in the industry or new products or supplier , new market structure</td><td>Shift in the relationships and dynamics between players in an industry or market (often caused by rapid growth, technology convergence, or</td><td></td><td></td><td>1</td><td></td></tr></table>					Source	Description	Most important	Very important	Equally important	Not important	The unexpected	Unexpected success (e.g. a way unexpected in product selling)			1		Incongruities	A discrepancy between what "is" and what "ought" to be with: Economic realities and assumption of the industry. The efforts of an industry and the value and expectations of customers		1			Process needs	A clearly understood need for which process solution does not yet exist		1			Changes in the industry or new products or supplier , new market structure	Shift in the relationships and dynamics between players in an industry or market (often caused by rapid growth, technology convergence, or			1	
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IQ 1.1.2	b) Show by a tick the organisational Innovation capability measurement scale, which is composed of six items measured on a seven-point Likert scale [1 - 7].	<table><tr><td>Does:</td><td>1 – Strongly disagree</td><td>3 disagree</td><td>5 agree</td><td>7 – strongly agree</td></tr><tr><td>Your company frequently tries out new ideas</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company seeks out new ways to do things;</td><td></td><td></td><td></td><td>1</td></tr><tr><td>Your company is creative in its methods of operation;</td><td></td><td></td><td>1</td><td>1</td></tr></table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas				1	Your company seeks out new ways to do things;				1	Your company is creative in its methods of operation;			1	1		<table><tr><td>Does:</td><td>1 – Strongly disagree</td><td>3 disagree</td><td>5 agree</td><td>7 – strongly agree</td></tr><tr><td>Your company frequently tries out new ideas</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company seeks out new ways to do things;</td><td></td><td></td><td>1</td><td></td></tr><tr><td>Your company is creative in its methods of operation;</td><td></td><td></td><td>1</td><td></td></tr></table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas			1		Your company seeks out new ways to do things;			1		Your company is creative in its methods of operation;			1																					
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		Your company is often the first to market with new products and services			1			Your company is often the first to market with new products and services		1				
		your company perceive innovation as too risky and resist it				1		your company perceive innovation as too risky and resist it				1		
		Your company's introduction of new products show an increase over the last five years.			1			Your company's introduction of new products show an increase over the last five years.				1		
IQ 1.1.3	c) How is KT valued in your organisation?	It is imperative to have knowledge about a precise topic to guise apart from each other. It is immensely valued. I think in IT where I spent the last 20 years of my career, People has been using social techniques for the Transfer of knowledge probably for the bulk of their tenure. I think the way technical people has been using to transfer their knowledge to each other over the years.						Well valued because of the need to share, train and stream to make work easier We constantly use technology like video cameras to do the streaming for our company in digi campus which train						
IQ 1.1.4	d) Do employees keep knowledge to themselves?	Interesting, it depends I found in consulting businesses, were people sell themselves per hour of labour, they keep knowledge to themselves. When I bring resources and I pay them per hour of labour they keep it all to themselves. When I bring resources in as far as the overall team and they are incentivised by the performance of the team I see a lot of resources sharing and knowledge transfer.						It is very helpful, innovative in terms of videos, in terms of how the company work with software, or how to set up certain cameras and cables when video streaming. So KT in that regards instead of calling the IT guy one can actually or the area manager asking questions like, I have no idea of how to set up this now you can log into the company based training area and you can just watch the videos several times any time, save replay them and they can explain really well about the company values, how to set and use company equipment. KT becomes easy in terms of location and distance,						
IQ 1.1.5	e) Does your organisation encourage KT? How-platforms used	Yes, we do, we heavily encourage it. We let the employees do presentation to transfer knowledge, we give them research topics. The same way from academic perspectives. We would take an individual with interest in the topic, maybe built something and come and show the rest of the team. It's also a motivating factor in the IT perspective. You get different drivers in human, some people peruse social presence, friendship, riches, money and in an IT environment, you typically see your top performers pursue knowledge. If you want to recognise them, you recognise them for their knowledge and their performance. If you find a way to have them Excel, find a way to appreciate their knowledge you actually generate a motivating drive for them and it encourages them to perform the next time. Over the years I have also used this as an incentive program. I would take top performers and send them on courses and when they come I would let them present that course to the rest of the team. They feel like they have got more social power, because it's not more of a technical thing but more of a social thing they really enjoy this.						Yes they must , because of some platforms like Facebook, Instagram, zoom meeting use						
IQ 1.1.6	f) What is your experience with organisational KT programs?	Its huge, "if you have researched on Stack Overflow" https://stackoverflow.com/company? Stack Overflow is a KT website specifically for IT people; it uses social engagement for people to transfer knowledge with each other. People will post new ideas or problems and people will try and to solve it and give them the best way to solve it, or vote for your idea, where if people vote for you, you have the best answer and you profile starts to have more weights and people listen to your opinions more, so it become natural part of how technological environment works. Stack Overflow is seen as the primary language in which knowledge is transferred between departments and among IT technicians.						It is very helpful, innovative in terms of videos, in terms of how the company work with software, or how to set up certain cameras and cables when video streaming. So KT in that regards instead of calling the IT guy one can actually or the area manager asking questions like, I have no idea of how to set up this now you can log into the company based training area and you can just watch the videos several times any time, save replay them and they can explain really well about the company values, how to set and use company equipment. KT becomes easy in terms of location and distance,						
IQ 1.1.7	g) Tick how important are the following factors affecting KT using SM	Factor Challenges	Very important	Equally important	Not important			Factor Challenges	Very important	Equally important	Not important			

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	h) Does your organisation reward and /or incentivise employees that are active in KT?	Cluely, what I tell the people is that if you want the holidays break you must just have your knowledge transferred. IT People by nature actually want to protect their knowledge for themselves. When they gather in the information, they push themselves until they burnout. What I found interesting is if they get what they wanted to pursue it could be a holiday, it could be a vacation, share their time with their girlfriend, it could be a course, whatever else they want to pursue. In order to achieve that you have to you have to transfer that knowledge to someone else, then they are really encouraged to do the knowledge transfer. There are those who say they don't like to do the KTbecause there some people who would like to take their knowledge away. We some time penalise top performers by giving them more work and reward bad performers by taking their work away. So we have got to be careful in that we don't encourage in that fashion. I encourage people to pursue what they want and in order to pursue what they want they have got to perform a knowledge transfer.	It does not because it is part your job																																

RSQ 1.2	<i>What are the challenges that affect effective KT using SM in an innovative business environment?</i>	<i>It difficult and complex no matter how well you transfer your knowledge there is just some form of experience that you get from yourself. We have a concept called Script Kidies in IT security, now you get hackers through your script – a hacker is someone who can write in something to break in somewhere and a script kid is someone who copy and paste that. The risk we have in KTis that we have a lot of scrip kidies in IT who a file, copy and paste and let it run without really understanding what it's really doing. That KTis there but how do you know you have really transferred the knowledge, you have got to make sure that the person can practically display it. Often, that step is completely falls by the side and nobody looks at that person has assimilated that knowledge. To solve: you normally learn when you start failing, the only thing which I found working is peer reviews- I use a bit of Ego to develop us, if you want management to approve something, management is going to know what something looks like, I will tell you they don't know the practices, they don't know the monster, they are easily blinded by what the person is doing. I use a process of peer reviews. Peer reviews –before a person can convince me, the person must convince al list two people. Also is someone say to me that knowledge has been transferred to him or her, he or she has to demonstrate it to at least two people.</i>	<i>Most people don't know how to use or aware of SM use in KT, lack of promotions and banners, Organisation should promote, create a community site for the community to use, resources, connectivity,</i>
RQ 2	How can SM be managed for effective KT in an innovative business environment?		Easy
RSQ 2.1	<i>How can Knowledge be transferred using designed SM platforms in an innovative business environment?</i>		
IQ 2.1.1	a) Do you use SM apps in your organisation? if so how, if not why ?	Yes, On website , week forum where we share information with our business partners and clients, Internal social plate forms like MS Teams called where people share priorities items, debate issues, impact of various items, Stack Overflow from a social perspective to pick up knowledge from other areas,	It's mostly WhatsApp's that is used and I have seen to be active
IQ 2.1.2	b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? Why, How	R27 million for specific ICT projects , the rest goes to maintenance, network and staff like that We run graduate programs in general education, Microsoft has an App factory were you run an own student to help them develop physically then you have the practical knowledge. We run competency education program, every December my staff has to rewrite their DE qualification on the most Morden platforms and ensure that they will be able to use it. And then I use a little bit of security model were if you have a lot of knowledge you are able to transfer a lot of knowledge to the point where your quality is going good you get more access to do staff yourself without having to ask for permission from other people. Yes, we have standardised content management on called Swagger – that a deep platform where we standardise documents, when standardised, empty project process, to what level, who reviews it, who distribute it, and when it goes to customers.	Yes, we have standardised content management on called Swagger – that a deep platform where we standardise documents, when standardised, empty project process, to what level, who reviews it, who distribute it, and when it goes to customers
RSQ 2.2	<i>How can the use of SM facilitate effective KT in an innovative business environment?</i>		<i>Credibility of the source, user application, user adoption and trust of the SM platform, privacy and security of the user's information.</i>
IQ 2.2.1	a) How can the use of SM facilitate effective KT in an innovative business environment?	SM is Unstructured conversation, which maybe text based or video based Finding a way despite obstacles such as company policies, politics that can block it and you see it in reality, then you know that is good innovation, there is a market for it, it's something, it more valuable to you because it's something that shows you opportunities it's not a negative thing. Most executives don't know that most of their staff have been using SM for KT for at least the last 20 Years, SM is not a modern concept it's just that the executives don't know that. If they knew they would be very worried by some of their staff that they could leak knowledge out of the company.	Innovation attaining more customers being publicised, and have more clients I absolutely agree that SM can contribute towards KT because knowledge does spread fast, you can put up a headline of an article on Facebook and it spread like fire. For educational purposes in schools it still needs to grow. If SM can extend the time limit on Instagram videos to adapt to where to your market is. If universities could make knowledge more public.

		Yes, it's already happening, people are used to googling, posting questions expecting answers, a lot of the younger generations experience this. I think we can see that, go into sentiment analysis, and trends analysis where people start understanding any larger portions of the market and they think there is a movie or a TV series about.....can't remember were the guy built a piece of Artificial Intelligence that crowd sources knowledge and then uses that to solve cases. So you can see some of these concepts are starting to come around and mature. So if people want it or not, this is going to be the future. It is also arrogant of people to think that I can only find knowledge in my own organisation, from my own peers or I am the only person with that knowledge. There is a concept called the Johari window – as the world become more disturbed, your blind spot with the Johari window becomes much larger and you should use social techniques to crowd source your knowledge transfer- I think that is a competitive advantage going forward. Otherwise you keep on reinventing the wheel in your business while it's done by someone else already- it just slows you down.																																					
IQ 2.2.2	b) What is your highest qualification? Tick where it is applicable	Male, MASTERS (MBA), CEO Bidvest with >360 companies.	Masters, media, PM, female																																				
	RESEARCH & RESEARCH SUB-QUESTION	PARTICIPANTS RESPONSE																																					
	RQ and RSQ	P- 19	P- 20																																				
RQ 1	What are the factors affecting KT using SM in an innovative business environment?																																						
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IQ1.1.1	a) Tick the primary source of innovation according to the continuum in the table	<table border="1"> <thead> <tr> <th>Source</th> <th>Description</th> <th>Most important</th> <th>Very Important</th> <th>Equally important</th> <th>Not important</th> </tr> </thead> <tbody> <tr> <td>The unexpected</td> <td>Unexpected success (e.g. a way unexpected in product selling)</td> <td></td> <td></td> <td>1</td> <td></td> </tr> <tr> <td>Incongruities</td> <td>A discrepancy between what "is" and what "ought" to be with: Economic realities and</td> <td>1</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Source	Description	Most important	Very Important	Equally important	Not important	The unexpected	Unexpected success (e.g. a way unexpected in product selling)			1		Incongruities	A discrepancy between what "is" and what "ought" to be with: Economic realities and	1				<table border="1"> <thead> <tr> <th>Source</th> <th>Description</th> <th>Most important</th> <th>Very Important</th> <th>Equally important</th> <th>Not important</th> </tr> </thead> <tbody> <tr> <td>The unexpected</td> <td>Unexpected success (e.g. a way unexpected in product selling)</td> <td></td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>Incongruities</td> <td>A discrepancy between what "is" and what "ought" to be with: Economic realities and</td> <td></td> <td>1</td> <td></td> <td></td> </tr> </tbody> </table>	Source	Description	Most important	Very Important	Equally important	Not important	The unexpected	Unexpected success (e.g. a way unexpected in product selling)		1			Incongruities	A discrepancy between what "is" and what "ought" to be with: Economic realities and		1		
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[illegible]

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IQ 1.1.2	b) Show by a tick the organisational Innovation capability measurement scale, which is composed of six items measured on a seven-point Likert scale [1 - 7].	<table border="1"> <tr> <td>Does:</td><td>1 – Strongly disagree</td><td>3 disagree</td><td>5 agree</td><td>7 – strongly agree</td></tr> <tr> <td>Your company frequently tries out new ideas</td><td></td><td></td><td></td><td>1</td></tr> <tr> <td>Your company seeks out new ways to do things;</td><td></td><td></td><td></td><td>1</td></tr> <tr> <td>Your company is creative in its methods of operation;</td><td></td><td></td><td>1</td><td></td></tr> <tr> <td>Your company is often the first to Market with new products and services</td><td></td><td>1</td><td></td><td></td></tr> <tr> <td>your company perceive innovation as too risky and resist it</td><td>1</td><td></td><td></td><td></td></tr> <tr> <td>Your company's introduction of new products show an increase over the last five years.</td><td></td><td></td><td>1</td><td></td></tr> </table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas				1	Your company seeks out new ways to do things;				1	Your company is creative in its methods of operation;			1		Your company is often the first to Market with new products and services		1			your company perceive innovation as too risky and resist it	1				Your company's introduction of new products show an increase over the last five years.			1			<table border="1"> <tr> <td>Does:</td><td>1 – Strongly disagree</td><td>3 disagree</td><td>5 agree</td><td>7 – strongly agree</td></tr> <tr> <td>Your company frequently tries out new ideas</td><td></td><td></td><td></td><td>1</td></tr> <tr> <td>Your company seeks out new ways to do things;</td><td></td><td></td><td>1</td><td></td></tr> <tr> <td>Your company is creative in its methods of operation;</td><td></td><td></td><td>1</td><td></td></tr> <tr> <td>Your company is often the first to Market with new products and services</td><td></td><td>1</td><td></td><td></td></tr> <tr> <td>your company perceive innovation as too risky and resist it</td><td></td><td>1</td><td></td><td></td></tr> <tr> <td>Your company's introduction of new products show an increase over the last five years.</td><td></td><td></td><td>1</td><td></td></tr> </table>	Does:	1 – Strongly disagree	3 disagree	5 agree	7 – strongly agree	Your company frequently tries out new ideas				1	Your company seeks out new ways to do things;			1		Your company is creative in its methods of operation;			1		Your company is often the first to Market with new products and services		1			your company perceive innovation as too risky and resist it		1			Your company's introduction of new products show an increase over the last five years.			1		
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IQ 1.1.3	c) How is KT valued in your organisation?	Extremely, it's something key to our business, involving up-skilling and transferring knowledge from the more experienced to the juniors.	Knowledge is key to everything, for example without knowledge you won't advance at whatever you are Doing. In most companies you have you TBAs, who try to impart skill upskill people. It just shows that without KTis important in development, especially in a work space. KTis done in different ways, in most cases you have situations were a company invest a lot in getting interns for example, now with integration of interns into the working environment, it's the only way you can get those intern to upskill. The other way to look at it is in cases where junior staff have to work with senior staff in order for the junior to grow to the same level with senior staff in terms of knowledge, if not better. KTis extremely important for the company to grow in terms of the employees the company have insior Without KT the company stays stagnant, there is no competition to push people to better levels.																																																																
IQ 1.1.4	d) Do employees keep knowledge to themselves? If so how, if not why?	We try to have an open door policy in terms of transferring knowledge but there is obviously some employees who don't really like to share knowledge, either they don't have the time, fear of the unknown, they just don't want to share their knowledge, or job security ...x.,y.,z....	Yes, due to fear of the unknown																																																																
IQ 1.1.5	e) Does your organisation encourage KT? if so how, if not why ?	We encourage knowledge sharing through upskilling, delegation of tasks to the juniors staffs for upskilling	Yes, especially for the growth of an organisation. Like when you integrate learner-ships, intern into the organisation. Without KYou would not be up to speed, you stay stagnant, its key to improvement and upskilling and learn the work environment.																																																																
IQ 1.1.6	f) What is your experience with organisational KT programs?	It still very fluid and we are trying to upskilling graduates from universities. We are having KTstrategies like one-on-one session were a group leader help the juniors on new projects we are currently working on. With COVID we are using a lot of MS Teams and share point which anyone in the team has access to, share the knowledge on what each person is working on.	Without KYou would not be up to speed, you stay stagnant, its key to improvement and upskilling and learn the work environment.																																																																
IQ 1.1.7	g) tick how important are the factor affecting KT	<table><tr><th>Factor Challenges</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr><tr><td>Employee/Student cognitive tacit knowledge</td><td></td><td>1</td><td></td></tr><tr><td>Culture</td><td>1</td><td></td><td></td></tr><tr><td>Context and system failure</td><td>1</td><td></td><td></td></tr><tr><td>Environment</td><td></td><td>1</td><td></td></tr><tr><td>Informal communication and clear networks that involve KT by participants</td><td>1</td><td></td><td></td></tr><tr><td>KT measurement challenge</td><td>1</td><td></td><td></td></tr><tr><td>Knowledge complexity which make it difficult to record, analyse</td><td></td><td>1</td><td></td></tr></table>	Factor Challenges	Very important	Equally important	Not important	Employee/Student cognitive tacit knowledge		1		Culture	1			Context and system failure	1			Environment		1		Informal communication and clear networks that involve KT by participants	1			KT measurement challenge	1			Knowledge complexity which make it difficult to record, analyse		1		<table><tr><th>Factor Challenges</th><th>Very important</th><th>Equally important</th><th>Not important</th></tr><tr><td>Employee/Student cognitive tacit knowledge</td><td>1</td><td></td><td></td></tr><tr><td>Culture</td><td>1</td><td></td><td></td></tr><tr><td>Context and system failure</td><td>1</td><td></td><td></td></tr><tr><td>Environment</td><td>1</td><td></td><td></td></tr><tr><td>Informal communication and clear networks that involve KT by participants</td><td>1</td><td></td><td></td></tr><tr><td>KT measurement challenge</td><td>1</td><td></td><td></td></tr><tr><td>Knowledge complexity which make it difficult to record, analyse</td><td></td><td></td><td>1</td></tr></table>	Factor Challenges	Very important	Equally important	Not important	Employee/Student cognitive tacit knowledge	1			Culture	1			Context and system failure	1			Environment	1			Informal communication and clear networks that involve KT by participants	1			KT measurement challenge	1			Knowledge complexity which make it difficult to record, analyse			1
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		and asses the scope and quality of transfer processes					and asses the scope and quality of transfer processes				
		Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g. investors returns)		1			Uncertainty and the lack of incentives for the prospective stakeholders involved (e.g. investors returns)	1			
IQ 1.1.8	h) Does your organisation reward and/or incentivise employees that are active in KT?	Very important because they are current and we are experiencing it as it measure our success Not at the moment, no. Our current structure doesn't support that as our time and schedule do not support that as well, Additionally, we do not have a project schedule for KT rewards, it is part of your job as well.					People work on the instincts because of Political Economic, Social, and Technological factors. you can do without Does not, because it is part of your job				
RSQ 1.2	What are the challenges that affect effective KT using SM in an innovative business environment?	<i>It's just time at the moment and implementation, rolling the program. Solutions is working from home but we will have centre of excellence were we will have team leader concentrating on knowledge sharing and accreditation</i>					<i>The first challenge to KT is the willingness to learn, remember you cannot force somebody to digest the knowledge. Reward is a challenge in the country because people don't understand that reward and motivation can bring out the best in people. Even those who are not doing well can be encouraged to do better with rewards. An example is the use of the model of the employee of the month which have been used a lot but people do not understand the importance of the system. You see most retailers are using it a lot, practically everyone who has not come out as the employee of the month, wants to work hard to be the employee of the month and get the rewards. If system performance appraisal is used when people are about to get salary increment it means most will only work hard when it's almost time for salary increment. There has to be proper reward system or performance appraisal. Proper organisational structure, better reward system, as well as appraisal, impact more on knowledge transfer. Team building work, bring people together and work better</i>				
RQ 2	How can SM be managed for effective KT in an innovative business environment?	Easy									
RSQ 2.1	How can knowledge be transferred using designed SM platforms in an innovative business environment?										
IQ 2.1.2	b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? If so- How, if Not Why?	Less than a million, we have a social development project with the ministry of social development					500 000 to 1 million Internet and equipment usage policy with you should not break for cyber security Yes we have one for our organisation.				
RSQ 2.2	How can the use of SM facilitate effective KT in an innovative business environment?										

RSQ 2.2	How can the use of SM facilitate effective KT in an innovative business environment?		
IQ 2.2.1	a) How can the use of SM facilitate effective KT in an innovative business environment?	SM- platform to voice opinions. Internet,	Online interactive platforms for conversation Sources can be blogs, personal, team building, social culture, KT, regular performance appraisal
IQ 2.2.2	What is your highest qualification? Tick where it is applicable	Matric, Further Education Training Certificate in IT	IT Diploma, Microsoft professional certificate windows, MCSE- Windows, 2003- 2020

APPENDIX H: CONSENT LETTER



61 Oak Avenue, Highveld,
Techno Park, Centurion 0157,
Private Bag X881, Gauteng, 0001
T: +27 12 311 7440

I Angus de Jager in my capacity as Corporate CIO at Telkom SA SOC Ltd. give consent in principle to allow Fradreck Nyambandi, a student at the Cape Peninsula University of Technology, to collect data in this company as part of his Doctorate Information Communication & Technology research. The student has explained to me the nature of his/her research and the nature of the data to be collected.

This consent in no way commits any individual staff member to participate in the research, and it is expected that the student will get explicit consent from any participants. I reserve the right to withdraw this permission at some future time.

Research will be done on the time and dates as agreed with the student.

In addition, the company's name may or may not be used as indicated below. (Tick as appropriate.)

	Thesis	Conference paper	Journal article	Research poster
Yes				
No	X	X	X	X

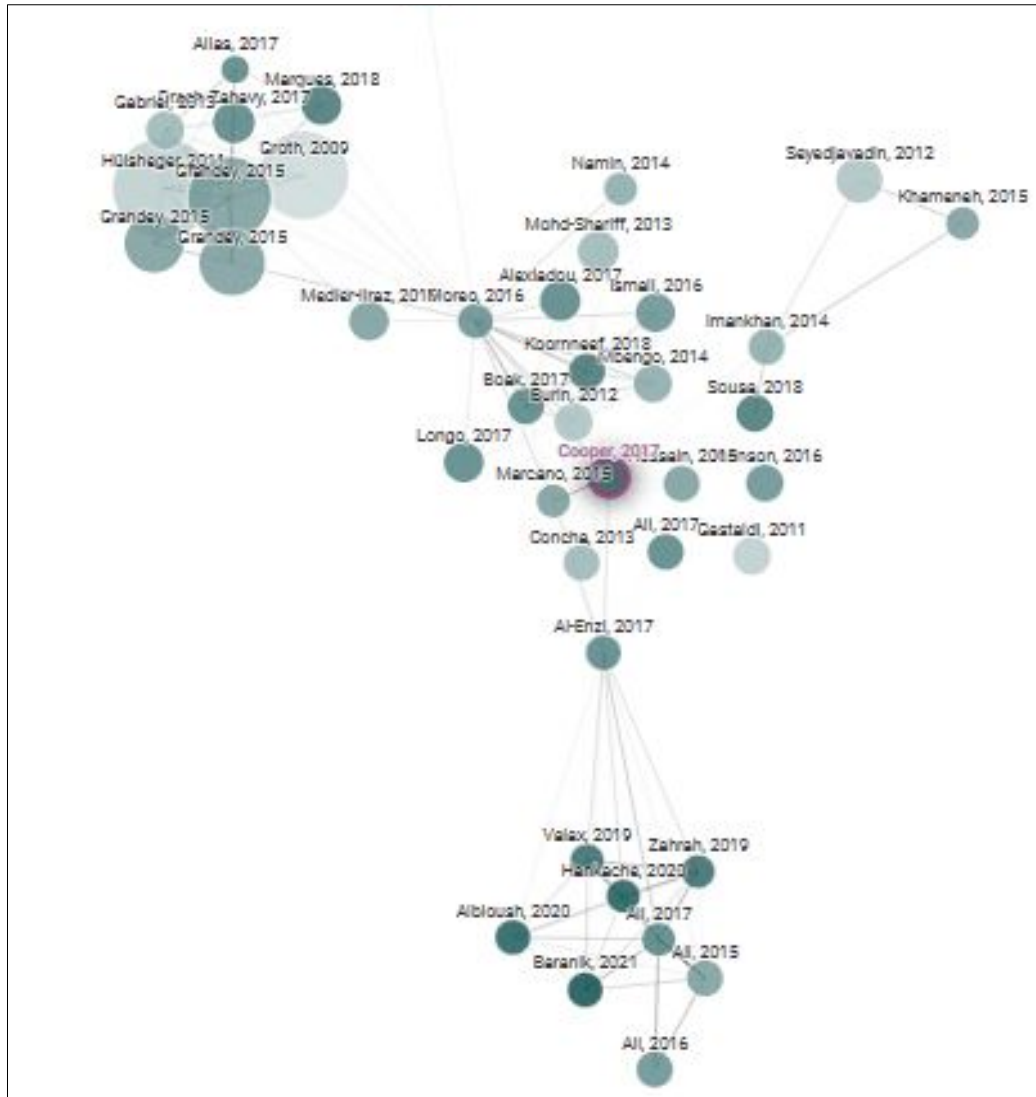
A. de Jager

2018-08-07

APPENDIX I: MERGING OF TERMS AND LANGUAGE CONVERSION

Example of a question	Example of quotations	Concepts (open coding)	Categories (axial coding)	Category merging	Relevant /Final themes
a) What are the challenges that affect effective KT using SM in an innovative business environment?	" . willingness to learn, remember you cannot force somebody to digest the knowledge.	Displaying challenges that affect effective KT using SM	challenges that affect effective KT using SM	Willingness to digest knowledge was converted to knowledge conversion	Organisational socio-technical and culture processes Environment People Tasks Technology Knowledge
b) Has your organisation established any set of policies, regulations and legislation that will enable content management or increased levels of ICT development? If so- How, if Not Why y	"Yes, expensive management systems which become dumps of rubbish using SM", (Appendix H, P4).	Demonstrate whether organisation are having policies, regulations and legislation of ICT development (revealing IT (SM) management)	Demonstrating whether employees are using SM apps in organisations and understanding SM landscape before choosing SM to use is important	understanding policies, regulations and legislation of ICT Management systems which become dumps of rubbish using SM was converted to Obsolete IT systems but represented by Technology	Technology management Organisational socio-technical structure Tasks People
a) How can the use of SM facilitate effective KT in an innovative business environment?	‘.SM is an open platform..... I am on because my friends are, they are..)	Represent how can the use of SM facilitate effective KT?	Show how SM facilitate effective KT	 I am on because my friends are words were converted to collaborations or interactions	ICT Organisational socio-technical cultural processes Tasks People interactions

APPENDIX J: RESULTS OF CONNECTEDPAPERS.COM



From 2000 to 2020, the following dominant authors were active connected authors: Grandey, Allison (2015) with 352 citations; Grandey, Rupp and Brice (2015) with 125 citations; Cooper and Pardo (2017) with one (1) citation, and Albloush and Abuhussien (2020) with two (2) citations.

APPENDIX K: WORD DATA THAT WAS IMPORTED FROM GOOGLE FORMS

ROUND 1

RSQ 1.1: What are the factors that could facilitate effective KT using SM in an IBE?

Survey Question (SQ) 1.1: What are the factors that could affect facilitating effective KT using SM?

Data were copied from Google Forms online into an MS Word file.

Responses from participants

The factors that could facilitating effective KT using SM

N	Concepts in SQ 1.1: What are the factors that could affect facilitating effective KT using SM?
1	Ease of use for instance speed, convenience
2	Security
3	Allow creativity
4	Ability to build reputation
5	Learning from the application
6	Network connection to the internet
7	Popularity
8	Environment
9	The will
10	Capabilities in ICT
11	Trust
12	Presentation of information in suitable format
13	Data availability
14	The right platform
15	Infrastructure

*N-Concept Number

RQ 1.2: What are the challenges that could affect effective KT using SM in an IBE?

Survey Question 1.2: What are the challenges that could affect effective KT using SM?

Responses from participants

SQ 1.2: What are the challenges that could affect effective KT using SM?	
N	Concepts (Appendix G)
1	improving knowledge transfer processes in personal & organisational productivity
2	knowledge transfer processes
3	transfer processes in personal & organisational productivity
4	creativity and security
5	personal productivity
6	creativity and security
7	creating meaning from experience and interaction with others and the environment
8	creating security
9	knowledge transfer
10	personal organisation
11	understanding, information interaction
12	security
13	Process, relationship, communication
14	creating meaning from the environment
27	Private & Security
28	False information, Reputation being dented,
29	Legal prohibitions; remoteness of some areas
30	Information overload
31	Technology skills and support
33	Selecting detective equipment, loss of team members, incomplete transfer of knowledge, lack of recognition
34	Data bundles cost, lack of technology, access
35	Lack of connectivity,
36	Network problems, restrictions of the platform, cyber fishing, exaggeration, social bullying
37	False information.
38	Hacking, Ethical Issues, Private & Security, Unproductive behaviour and lack of trust
39	Loss of jobs

40	Hacking, bullying, wrong information
42	Sometime social media platforms might not be able to contain big videos or limited space. People in remote areas might have limited access to internet. Risk of security of information of people might be compromised.
43	Privacy, confidentiality and security understanding. The individual's propensity to social media
45	Advert- speed, convenience, reliability, adaptability and flexibility. Disadvantage- cost, connectivity issues, cyber terrorism, infringement of privacy, hacking.
46	technology dependency ; social skills impacted; health;
47	Presentation of information, cost of accessing social media and security issues when using social media
48	Bad internet connectivity, load shedding, facilitator not sure who really pay attention in meetings
49	limited IT skills of the knowledge provider and the knowledge receiver, Language barriers, organisational policies, lack of interest in type of social media, content is usually not regarded as formal knowledge
51	Connectivity issues, costs, device settings, lack of control,

*N-Concept Number

Survey question 1.3: What are the factors affecting effective KT using SM.

Responses from participants

	SQ 1.3: What are the factors affecting effective KT using SM
N	Concepts (Appendix G)
1	IT, easy of transfer, people, knowledge
2	People, willingness to transfer, skill, resources, medium
3	Absorptive and transfer capability, tools, and time
4	Platform, environment, culture
5	Individual capabilities, organisation, environment
6	Staff potential, books, internet, conversations
7	Google, interactions, tools, atmosphere
8	People, technology capability, sharing, meetings
9	Social media, training, charts
10	Online searches
11	Googling, sharing, training, online meetings, books
12	Internet sharing, skills transfer, place to share in companies
13	Tools, people, context in organisations
14	Context, people, tools
15	Online sharing, training in organisations
16	People, technology capability
17	sharing, meetings
18	Hard and soft copy books, skills sharing
19	Social media, teaching, on job training
20	Application of learned skill
21	Explorations online, in books
22	Research actual activities
23	Online researches
24	Skills transfer, hard and soft copy text, culture, technology
25	Skills in using social media, cost of accessing social media and presentation of information
26	YouTube, face-to-face interactions, training
27	Content, popularity or followers
28	Technical knowledge
29	Sharing through experience
30	Agreement on a common platform
31	Schools
32	Social media network
33	Knowledge of technology, availability of internet and infrastructure
34	Video, comments
35	Content,, popularity or followers
36	Promoters new ways of sharing ideas with other peers to gain knowledge
37	Provide new ways of sharing knowledge and communication within the organisations
38	Less communication in person
39	Trust
40	Willingness to participate by individuals and organisation
41	The ability to ask the right questions and evaluate the various responses
42	Access to people process and technology
43	Speed and convenience
44	Ease of use, resources availability
45	Skills in using Social media, cos of accessing social media and presentation of information
46	Solid internet connectivity, good sound interactivity
47	Adequate IT skills of sender and receiver of knowledge, understanding the content
48	Who is connected, how easy a platform is to use, how much it can be trusted
49	Wi-Fi connection and technical skills
50	Providing support, locating knowledgeable people, providing a Virtual context

RQ 2: How can SM be managed for effective KT in an innovative business environment?

RSQ 2.1 How can knowledge be transferred using designed SM platforms in an innovative business environment?

SQ 2.1: If you could use any social media platforms in KT, which would you use?

In managing SM for KT organisations must choose carefully the correct single SM platform to run the core processes. The survey question aided in the identification of SM platforms to run processes like KT.

The participant's responses: WhatsApp (16) were the leading choice, followed by YouTube (8), MS Teams (6), Zoom (3), and Blogs, Facebook, Slack, and Stud IP with 1 mention respectively.

The question was not taken to Round 2 of the Delphi technique owing to the consensus of participant's feedback.

SQ 2.1.1: How can knowledge be transferred using designed SM platforms? (List any 5 ways).

Responses from participants.

Participants responses on how knowledge can be transferred using SM

N	SQ 2.1.1: How can knowledge be transferred using designed SM platform?	number
1	Concept (Appendix G)	
2	alerts	1
3	Knowledge application	1
4	Business transactions	3
5	Business transactions	
6	Business transactions	
7	Collaborations	1
8	Conversation	1
9	Entertainment	1
10	ERP	1
11	Communication	11
12	Communication	
13	Communication	
14	Communication	
15	Communication	
16	Communication	
17	Communication	
18	Communication	
19	Communication	
20	Communication	
21	Communication	
22	Gym	1
23	Sharing	8
24	Sharing	
25	Sharing	
26	Sharing	
27	Sharing	
28	Sharing	
29	Sharing	
30	Sharing	
31	Reputation	1
32	Meeting	5
33	Meeting	
34	Meeting	
35	Meeting	
36	Meeting	
37	Career opportunities	3
38	Career opportunities	
39	Career opportunities	
40	Technical knowledge	3
41	Technical knowledge	
42	Technical knowledge	
43	Learning	1
44	Google	6
45	Google	
46	Google	
47	Google	

48	Google	
49	Google	
50	Workshops	2
51	Workshops	

*N-Concept Number

RSQ 2.2: How can the use of SM facilitate effective KT in an innovative business environment?

SQ 2.2: How important is the use of SM in problem identification, awareness, communication, socialisation, knowledge internalisation & externalisation, in your organisation? Where: 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important

Responses from participants

SQ 2.2: How important is the use of SM in problem identification, awareness, communication, socialisation, knowledge internalisation & externalisation, in your organisation?					
N	Extremely not important	Not important	Neutral	Very important	Extremely important
1	X				
2		X			
3		X			
4			X		
5			X		
6			X		
7			X		
8			X		
9			X		
10			X		
11			X		
12			X		
13			X		
14			X		
15			X		
16			X		
17			X		
18			X		
19			X		
20			X		
21				X	
22				X	
23				X	
24				X	
25				X	
26				X	
27				X	
28				X	
29				X	
30					X
31					X
32					X
33					X
34					X
35					X
36					X
37					X
38					X
39					X
40					X
41					X
42					X
43					X

44					X
45					X
46					X
47					X
48					X
49					X
50					X
51					X

*X -TICK Selected by participants

Survey Question 2.2.1: Knowledge can be transferred using designed SM platforms through a) individuals creating meanings from experience, b) collaboration in communities, c) conversations? Where the scale was: 5=strongly agree; 4=agree; 3=neutral; 2=disagree; 1=strongly disagree.

Responses from participants

SQ 2.2.1: How important is the use of SM in problem identification, awareness, communication, socialisation, knowledge internalisation & externalisation, in your organisation?				
N	Strongly disagree	Neutral	Agree	Strongly agree
1	X			
2		X		
3		X		
4		X		
5		X		
6		X		
7			X	
8			X	
9			X	
10			X	
11			X	
12			X	
13			X	
14			X	
15			X	
16			X	
17			X	
18			X	
19			X	
20			X	
21			X	
22			X	
23			X	
24			X	
25			X	
26			X	
27			X	
28			X	
29				X
30				X
31				X
32				X
33				X
34				X
35				X
36				X
37				X
38				X
39				X
40				X
41				X
42				X

43				X
44				X
45				X
46				X
47				X
48				X
49				X
50				X
51				X

*X -TICK Selected by participants

SQ 2.2.2: How important is the use of SM in knowledge application. Where: 5=extremely important; 4=very important; 3=somewhat important; 2=not important; 1=extremely not important

Responses from participants

SQ 2.2.2:How important is the use of SM in knowledge application				
N	Extremely not important	Somewhat important	Very important	Extremely important
1	X			
2		X		
3		X		
4		X		
5		X		
6		X		
7		x		
8		x		
9			X	
10			X	
11			X	
12			X	
13			X	
14			X	
15			X	
16			X	
17			X	
18			X	
19			X	
20			X	
21			X	
22			X	
23			X	
24			X	
25			X	
26			X	
27			X	
28			X	
29			x	
30				X
31				X
32				X
33				X
34				X
35				X
36				X
37				X
38				X
39				X
40				X
41				X
42				X
43				X

44				X
45				X
46				X
47				X
48				X
49				X
50				x
51				X

*X -TICK Selected by participants

SQ 2.2.3: How important is the use of SM in sharing problems identified or knowledge you are aware of. Indicate your position-Where: 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important

Response from participants

SQ 2.2.3: How important is the use of SM in sharing problems identified or knowledge you are awareness of? Indicate your position				
N	Extremely not important	Neutral	Very important	Extremely important
1	X			
2		X		
3		X		
4		X		
5		X		
6		X		
7		x		
8		x		
9			X	
10			X	
11			X	
12			X	
13			X	
14			X	
15			X	
16			X	
17			X	
18			X	
19			X	
20			X	
21			X	
22			X	
23			X	
24			X	
25				x
26				x
27				x
28				x
29				x
30				X
31				X
32				X
33				X
34				X
35				X
36				X
37				X
38				X
39				X
40				X
41				X

42				X
43				X
44				X
45				X
46				X
47				X
48				X
49				X
50				x
51				X

*X -TICK Selected by participants

Survey Question 2.2.4: How important is building a reputation with acquired and applicable knowledge using SM? Where: 5=extremely important; 4=very important; 3=neutral; 2=not important; 1=extremely not important

Response from participants

SQ 2.2.4:How important is building reputation with acquired and applicable knowledge using SM.				
N	Extremely not important	Neutral	Very important	Extremely important
1	X			
2		X		
3		X		
4		X		
5		X		
6		X		
7		x		
8		x		
9		x		
10		x		
11		x		
12		x		
13		x		
14			X	
15			X	
16			X	
17			X	
18			X	
19			X	
20			X	
21			X	
22			X	
23			X	
24			X	
25			X	x
26			X	x
27			X	x
28			X	x
29			X	x
30			X	X
31			X	X
32			X	X
33			X	X
34			X	X
35			x	X
36				X
37				X
38				X
39				X
40				X
41				
42				

43				
44				
45				
46				
47				
48				
49				
50				
51				

*X -TICK Selected by participants, SM-social media

Survey Question 2.2.5: How often do you use SM in groups or community conversations to reveal your presence, share, or create identity and relationships? Where: 5=Daily; 4=Weekly; 3=occasionally; 2=Never; 1=not applicable

SQ 2.2.5: How often do you use SM in groups or community conversations to reveal your presence, create identity and relationships?					
N	Not applicable	Never	Occasionally	Weekly	Daily
1	X				
2		X			
3		X			
4			X		
5			X		
6			X		
7			x		
8			x		
9			x		
10			x		
11			x		
12			x		
13			x		
14			X		
15			X		
16			X		
17			X		
18			x		
19			x		
20				X	
21				X	
22				X	
23				x	
24				x	
25				x	
26				x	
27				x	
28				x	
29					X
30					X
31					X
32					x
33					x
34					x
35					x
36					x
37					x
38					x
39					X
40					X
41					X
42					X
43					x
44					x

45					X
46					X
47					X
48					X
49					x
50					x

*X -TICK Selected by participants, SM-social media

ROUND 2

RQ 1: What are the factors affecting KT using SM in an innovative business environment?

RSQ 1.1: What are the factors that could facilitate effective KT using SM in an innovative business environment?

Survey Question 1.1: Rank from 1 to 4, In order of significance, Individual capabilities, self-efficacy, etc., as factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somewhat average impact).

SQ 1.1: Rank from 1 to 4, in order of significance, individual capabilities, self-efficacy, etc., as factors affecting KT using SM.				
N	1=extremely significant impact	2=very high impact	3=significant impact	4=somewhat average impact
1	X			
2	X			
3	X			
4	X			
5			X	
6			X	
7			X	
8			X	
9				x
10				x
11				X
12	X			
13	X			
14	X			
15	X			
16	x			
17	x			
18	X			
19		X		
20	x			
21	x			
22	x	x		
23	x	X		
24	x	X		
25	x			
26				
27				
28				
29				
30	X			
31	X			

*X -TICK Selected by participants, SM-social media

Survey Question 1.2: Rank from 1 to 4, in order of significance, organisational ability to choose the correct platform for specific tasks, knowledge maintenance and transfer measurement, aligning goals to strategy, policies, ethics, etc., as factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somewhat average impact).

SQ 1.2: Rank from 1 to 4, In order of significance on: [b] organisational ability to choose the correct platform at for specific tasks, knowledge maintain ace and transfer measurement, aligning goals to strategy, policies and ethics etc. as factors affecting KT using SM?				
N	1=extremely significant impact	2=very high impact	3=significant impact;	4=somehow average impact
1		X		
2		X		
3				
4	X			
5		X		
6				
7		X		
8				
9				
10		X		
11				
12	X			
13				X
14				X
15	X			
16	X			
17	X			
18	X			
19		X		
20			X	
21	X			
22		X		
23			X	
24			X	
25			X	
26			X	
27		X		
28		X		
29		X		
30		X		
31	X			

*X -TICK Selected by participants, SM-social media

Survey question 1.3: Rank from 1 to 4, in order of significance, environmental factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somehow average impact).

Survey question 1.3: Rank from 1 to 4, in order of significance, environmental factors affecting KT using SM.				
N	1=extremely significant impact	2=very high impact	3=significant impact	4=somehow average impact
1				X
2				X
3			X	
4	X			
5		X		
6			X	
7		X		
8				
9				
10		X		
11			X	
12				
13		X		
14			X	
15	X			
16	X			
17	X			
18	X			
19		X		

20			X	
21	X			
22		X		
23				
24		X		
25		X		
26				
27	X	X		
28		X		
29				
30		X		
31	X			

*X -TICK Selected by participants, SM-social media

Survey question 1.4: Rank from 1 to 4, in order of significance. security factors affecting KT using SM (where 1=extremely significant impact; 2=very high impact; 3=significant impact; 4=somehow average impact).

Survey question 1.4: Rank from 1 to 4, in order of significance. security factors affecting KT using SM.				
N	1=extremely significant impact	2=very high impact	3=significant impact	4=somehow average impact
1			X	
2			X	
3	X			
4	X			
5	X			
6	X			
7	X			
8	X			
9	X			
10	X			
11	X			
12			X	
13	X			
14			X	
15	X			
16	X			
17	X			
18	X			
19				
20				
21	X			
22				X
23				X
24				X
25		X		
26				
27	X			
28		X		
29		X		
30		X		
31	X			

*X -TICK Selected by participants, SM-social media

RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?

Survey question 1.2.1: Rank from 1 to 3, challenges to KT using SM in terms of [a] individual sources such as source credibility, perception on easy of technology use or usefulness, attitudes, and self-efficacy.

Survey question 1.2.1: Rank from 1 to 3, challenges to KT using SM in terms of [a] individual sources such as source credibility, perception on easy of technology use or usefulness, attitudes, and self-efficacy.				
N	1=pose the most extreme impact & need urgent attention	2=pose a very high impact & need attention	3=pose an average impact need less attention	4=Neutral
1		X	X	

2		X	X	
3	x	x		
4		X		
5		X		
6	x			
7		X		
8		X		
9		X		
10	X			
11	X	X		
12			X	
13	X	X		
14		X	X	
15	X	X		
16	X	X		
17	X		X	
18	X		X	
19		x	X	
20	X			
21		x		
22	X	x		
23		x		
24	X	x		
25	X	X		
26				
27	X			
28		X		
29		X		
30		X		
31	X			

*X -TICK Selected by participants, SM-social media

Survey question 1.2.2: Rank from 1 to 3, challenges of KT using SM in terms of [b] organisational factors such as leadership, tasks, IT, KT measurement, security systems, objectives, processes, culture and trust.

Survey question 1.2.2: Rank from 1 to 3, challenges of KT using SM in terms of [b] organisational factors such as leadership, tasks, IT, KT measurement, security systems, objectives, processes, culture and trust.				
N	1=pose the most extreme impact & need urgent attention	2=pose a very high impact & need attention	3=pose an average impact need less attention	4=Neutral
1		X		
2		X		
3	x			
4		X		
5		X		
6	x			
7		X		
8				
9				
10	X			
11	X			
12				
13	X	X		
14				
15	X			
16	X			
17	X			
18	X		X	
19		x	X	
20	X			

21		x		
22	X	x		
23		x		
24	X	x		
25	X			
26				
27	X			
28		X		
29				
30		X		
31	X			

*X -TICK Selected by participants, SM-social media, * SQ- Survey Questions; SM-social media; KT-knowledge transfer

Survey question 1.2.3: Rank from 1 to 3, challenges of KT using SM in terms of [c] environmental factors such as IT, economic, social, cultural, and political advancement.

Survey question 1.2.3: Rank from 1 to 3, challenges of KT using SM in terms of [c] environmental factors such as IT, economic, social, cultural, and political advancement.				
N	1=pose the most extreme impact & need urgent attention	2=pose a very high impact & need attention	3=pose an average impact need less attention	4=Neutral
1				
2				
3				
4				
5				
6	x			
7				
8				
9		x		
10	X			
11	X			
12				
13	X	X		
14		X		
15	X	X		
16	X			
17	X	X		
18	X	X	X	
19		x	X	
20	X		x	
21		x		
22		x	x	
23		x		
24		x		
25			x	
26				
27				
28		X		
29			x	
30		X		
31				

*X -TICK Selected by participants, SM-social media, * SQ- Survey Questions; SM-social media; KT-knowledge transfer

Survey question 1.2.4: Rank from 1 to 4 the below most important and used KT strategies when using SM:

- 1) Online conversations
- 2) Information seeking, library books, documents, etc.
- 3) Seeking and organising information on the organisational web
- 4) Knowledge application

(Where 1=extremely important and useful; 2=very important and useful; 3=average importance and used; 4=not important and not useful).

Table 5.59 displays the descriptive statistics, related to ranking the most important and used KT strategies when using SM. Survey question 1.8.

Table 5.59 Descriptive statistics on ranking from 1 up to 4 the most important and used KT strategies when using SM

	SQ 1.2.4: Rank from 1 up to 4 the most important and used KT strategies when using SM.	Frequency			
		A10) Online conversations	b) Information seeking, library books, documents, etc.	c) Seeking and organising information on the organisational web	d) Knowledge application
	1=extremely important & useful	(16)	10	8	8
1		X	X	X	X
2		X	X	X	X
3		X	X	X	X
4		X	X	X	X
5		X	X	X	X
6		X	X	X	X
7		X	X	X	X
8		X	X	X	X
9		X	X		
10		X	X		
11		X			
12		X			
13		X			
14		X			
15		X			
16		X			
	2=Very important & useful	7	8	11	13
17		X	X	X	X
18		X	X	X	X
19		X	X	X	X
20		X	X	X	X
21		X	X	X	X
22		X	X	X	X
23		X	X	X	X
24			X	X	X
25				X	X
26				X	X
27				X	X
27					X
28					X
	3=Average in importance & used	3	6	7	7
29		X	X	X	X
29		X	X	X	X
		X	X	X	X
			X	X	X
			X	X	X
			7	7	7
				X	X
	4=Not important & not useful.	3	4	3	2
		X	X	X	X

		X	X	X	X
		7	7	7	

* SQ- Survey Questions; SM-social media; KT-knowledge transfer

Survey question 1.2.5: Rank from 1 up to 10 the most important and used SM platforms in transferring knowledge:

- 1) WhatsApp,
- 2) Slack,
- 3) SnapChat,
- 4) Blogs,
- 5) wiki,
- 6) Facebook,
- 7) TikTok,
- 8) Twitter
- 9) MS Teams

Where 1=extremely important and used; 2=very important and is used; 3=important; 4 up to 6=somehow average in importance and is uses; 7 up to 9=least in importance and in use,

Survey question 1.2.5: Rank from 1 up to 10 the most important and used SM platforms in transferring knowledge:									
1) WhatsApp, 2) Slack, 3) SnapChat, 4) Blogs, 5) wiki, 6) Facebook, 7) TikTok, 8) Twitter									
9) MS Teams									
	1) WhatsApp	2) Slack	3) SnapChat	4) Blogs	5) wiki	6) Facebook	7) TikTok	8) Twitter	9) MS Teams
1=extremely important and used	9	4	3	2	3	3	3	5	10
2=very important and is used	7	8	6	10	7	2	5	6	11
3=important in importance and is uses	4	4	4	4	6	9	5	5	2
4 up to 6=somehow average in importance and is used	6	7	9	13	8	8	6	5	2
7 up to 10=least in importance and in use	5	9	9	3	5	8	11	8	5

*X -TICK Selected by participants, SM-social media

RSQ 1.2: What are the challenges that could affect effective KT using SM in an innovative business environment?

Survey question 1.2.1: Rank from 1 to 3, challenges to KT using SM in terms of [a] individual sources such as source credibility, perception on easy of technology use or usefulness, attitudes, and self-efficacy.

Survey question 1.2.1: Rank from 1 to 3, challenges to KT using SM in terms of [a] individual sources such as source credibility, perception on easy of technology use or usefulness, attitudes, and self-efficacy.				
N	1=pose the most extreme impact & need urgent attention	2=pose a very high impact & need attention	3=pose an average impact need less attention	4=Neutral
1		X	X	
2		X	X	
3	x	x		
4		X		
5		X		
6	x			
7		X		
8		X		
9		X		
10	X			
11	X	X		
12			X	

13	X	X		
14		X	X	
15	X	X		
16	X	X		
17	X		X	
18	X		X	
19		x	X	
20	X			
21		x		
22	X	x		
23		x		
24	X	x		
25	X	X		
26				
27	X			
28		X		
29		X		
30		X		
31	X			

*X -TICK Selected by participants, SM-social media

Survey question 1.2.2: Rank from 1 to 3, challenges of KT using SM in terms of [b] organisational factors such as leadership, tasks, IT, KT measurement, security systems, objectives, processes, culture and trust.

Survey question 1.2.2: Rank from 1 to 3, challenges of KT using SM in terms of [b] organisational factors such as leadership, tasks, IT, KT measurement, security systems, objectives, processes, culture and trust.				
N	1=pose the most extreme impact & need urgent attention	2=pose a very high impact & need attention	3=pose an average impact need less attention	4=Neutral
1		X		
2		X		
3	x			
4		X		
5		X		
6	x			
7		X		
8				
9				
10	X			
11	X			
12				
13	X	X		
14				
15	X			
16	X			
17	X			
18	X		X	
19		x	X	
20	X			
21		x		
22	X	x		
23		x		
24	X	x		
25	X			
26				
27	X			
28		X		
29				
30		X		
31	X			

*X -TICK Selected by participants, SM-social media, * SQ- Survey Questions; SM-social media; KT-knowledge transfer

Survey question 1.2.3: Rank from 1 to 3, challenges of KT using SM in terms of [c] environmental factors such as IT, economic, social, cultural, and political advancement.

Survey question 1.2.3: Rank from 1 to 3, challenges of KT using SM in terms of [c] environmental factors such as IT, economic, social, cultural, and political advancement.				
N	1=pose the most extreme impact & need urgent attention	2=pose a very high impact & need attention	3=pose an average impact need less attention	4=Neutral
1				
2				
3				
4				
5				
6	x			
7				
8				
9		x		
10	X			
11	X			
12				
13	X	X		
14		X		
15	X	X		
16	X			
17	X	X		
18	X	X	X	
19		x	X	
20	X		x	
21		x		
22		x	x	
23		x		
24		x		
25			x	
26				
27				
28		X		
29			x	
30		X		
31				

*X -TICK Selected by participants, SM-social media, * SQ- Survey Questions; SM-social media; KT-knowledge transfer

Survey question 1.2.4: Rank from 1 to 4 the below most important and used KT strategies when using SM:

- Online conversations
- Information seeking, library books, documents, etc.
- Seeking and organising information on the organisational web
- Knowledge application

(Where 1=extremely important and useful; 2=very important and useful; 3=average importance and used; 4=not important and not useful).

Table 5.59 displays the descriptive statistics, related to ranking the most important and used KT strategies when using SM. Survey question 1.8.

Table 5.59 Descriptive statistics on ranking from 1 to 4 the most important and used KT strategies when using SM.

	SQ 1.2.4: Rank from 1 to 4 the most important and used KT strategies when using SM.	Frequency			
		a) Online conversations	b) Information seeking, library books, documents, etc.	c) Seeking and organising information on the organisational web	d) Knowledge application
	1=extremely important and useful	(16)	10	8	8
1		X	X	X	X

2		X	X	X	X
3		X	X	X	X
4		X	X	X	X
5		X	X	X	X
6		X	X	X	X
7		X	X	X	X
8		X	X	X	X
9		X	X		
10		X	X		
11		X			
12		X			
13		X			
14		X			
15		X			
16		X			
	2=Very important & useful	7	8	11	13
17		X	X	X	X
18		X	X	X	X
19		X	X	X	X
20		X	X	X	X
21		X	X	X	X
22		X	X	X	X
23		X	X	X	X
24			X	X	X
25				X	X
26				X	X
27				X	X
27					X
28					X
	3=Average in importance & used	3	6	7	7
29		X	X	X	X
29		X	X	X	X
		X	X	X	X
			X	X	X
			X	X	X
			7	7	7
				X	X
	4=Not important & not useful.	3	4	3	2
		X	X	X	X
		X	X	X	X
		7	7	7	

* SQ- Survey Questions; SM-social media; KT-knowledge transfer

Survey question 1.2.5: Rank from 1 up to 10 the most important and used SM platforms in transferring knowledge:

- 10) WhatsApp,
- 11) Slack,
- 12) SnapChat,
- 13) Blogs,
- 14) wiki,
- 15) Facebook,

- 16) TikTok,
17) Twitter
18) MS Teams

Where 1=extremely important and used; 2=very important and is used; 3=important; 4 up to 6=somehow average in importance and is uses; 7 up to 9=least in importance and in use,

Survey question 1.2.5: Rank from 1 up to 10 the most important and used SM platforms in transferring knowledge:									
1) WhatsApp 2) Slack 3) SnapChat 4) Blogs 5) wiki 6) Facebook 7) TikTok 8) Twitter 9) MS Teams									
	1) WhatsApp	2) Slack	3) SnapChat	4) Blogs	5) wiki	6) Facebook	7) TikTok	8) Twitter	9) MS Teams
1=extremely important and used	9	4	3	2	3	3	3	5	10
2=very important and is used	7	8	6	10	7	2	5	6	11
3=important in importance and is used	4	4	4	4	6	9	5	5	2
4 to 6=somehow average in importance and is used	6	7	9	13	8	8	6	5	2
7 up to 10=least in importance and in use	5	9	9	3	5	8	11	8	5

APPENDIX L: DELPHI PARTICIPANTS DEMOGRAPHY

Delphi Participants (P) Pseudo names-abbreviation	Country	Position	Qualifications	Years of experience	Application being used
P1	Australia	Chairman, Chief Executive Officer, non-executive director, adviser	Masters	More than fifteen years' experience, with a Master's degree.	Slake, MS Teams, SnapChat, Instagram, Facebook
P1	SA	Senior manager	PhD/ Doctorate degree	More than sixteen years	Slake, WhatsApp, Zoom, MS Teams, Instagram, Facebook
P2	SA	Senior Manager	PhD/ Doctorate degree	More than 9 year years	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P3	SA	Supervisor	Certificate	More than 5 years' experience	MS teams, Instagram, Facebook
P4	German	Middle Manager	Diploma	More than 5 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P5	SA	Middle Manager	Diploma	Less than 5 Years' experience	WhatsApp, MS Teams, Instagram, Facebook
P6	SA	Senior manager	Masters	More than 5 years' experience	Instagram, Facebook, YouTube, logs, Slack
P7	SA	Senior manager	Masters	More than 15 years' experience	WhatsApp, Zoom, MS teams, Instagram, Facebook
P8	SA	Low manager	Certificate	More than 10 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P9	SA	Low level management	Bachelor's degree	More than 5 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook, YouTube
P10	SA	Senior manager	PhD/ Doctorate degree	More than 10 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook,
P11	SA	Senior manager	Masters	More than 15 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P12	SA	Senior manager	Bachelor's degree	More than 15 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P13	SA	Low manager	Masters	More than 5 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P14	SA	Senior manager	Bachelor's degree	More than 5 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook

P15	SA	Senior manager	Masters	More than 15 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P16	SA	Senior manager	Bachelor's degree	More than 15 years' experience	Facebook, YouTube, Blogs, Slack WhatsApp, Zoom, MS Teams, Instagram, Facebook
P17	SA	Senior manager	Masters	More than 5 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P18	SA	Senior manager	Masters	More than 15 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P19	SA	Senior manager	Masters	More than 5 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P20	SA	Middle Manager	Diploma	Less than 15 Years' experience	WhatsApp, MS Teams, Instagram, Facebook
P21	SA	Senior manager	PhD/ Doctorate degree,	More than 10 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook
P24	SA	Senior manager	PhD/ Doctorate degree	More than 10 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook,
P25	SA	Senior manager	Masters	More than 10 years' experience	WhatsApp, Zoom, MS teams, Instagram, Facebook,
P26	SA	Senior manager	Masters	More than 10 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook,
P27	SA	Middle Manager	Diploma	More than 10 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook,
P28	SA	Middle Manager	Certificate	More than 10 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook,
P29	SA	Senior manager	Bachelor's degree	More than 10 years' experience	WhatsApp, Zoom, MS Teams, Instagram, Facebook,
P30	SA	Senior manager	Masters	More than 15 years' experience	Facebook, LinkedIn and Twitter
P31		Senior manager	PhD/ Doctorate degree	More than 15 years' experience	YouTube, Facebook, WhatsApp
P32	SA	Low level manager	Diploma	More than 5 years' experience	WhatsApp, Zoom, MS teams, Instagram, Facebook,
P33	SA	Senior manager	Bachelor's degree	More than 10 years' experience	Yes WhatsApp, Facebook zoom
P34	SA	Middle Manager	Diploma	More than 5 years' experience	YouTube Facebook, WhatsApp
P35	SA	Low level manager	Diploma	More than 5 years' experience	YouTube, Facebook and WhatsApp
P36	SA	Middle Manager	Bachelor's degree	More than 10 years' experience	Facebook, WhatsApp and Instagram

P37	SA	Middle Manager	Bachelor's degree	More than 10 years' experience	WhatsApp, Instagram and Twitter
P38	SA	Middle Manager	Bachelor's degree	More than 5 years' experience	Does not use it for KT
P39	SA	Middle Manager	Masters	More than 10 years' experience	No, I use it for entertainment only
P40	SA	Middle Manager	Masters	More than 10 years' experience	Teams for organisation collaboration, meetings, workshops. WhatsApp for Technology team knowledge sharing and alerts
P41	SA	Senior manager	Bachelor's degree	More than 10 years' experience	WhatsApp, Instagram and Twitter
P42	SA	Middle Manager	Masters	More than 10 years' experience	QL Server Central (Database knowledge). Stack Overflow (Technical knowledge). GPUG (ERP Questions)
P43	German	Senior manager	Professor	More than 15 years' experience	WhatsApp, Zoom, MS Teams, YouTube, Facebook
P44	SA	Middle Manager	Masters	More than 10 years' experience	WhatsApp, Zoom, MS Teams, In audio, video, podcast format
P45	SA	Middle Manager	Masters	More than 10 years' experience	WhatsApp, Google docs; MS teams
P46	SA	Middle Manager	PhD/ Doctorate degree	More than 10 years' experience	WhatsApp for sharing information, LinkedIn for networking within my profession and Zoom for meetings
P47	SA	Senior manager	Professor	More than 15 years' experience	WhatsApp, MS Teams, Zoom
P48	SA	Middle Manager	Masters	More than 10 years' experience	WhatsApp, MS Teams
P49	SA	Middle Manager	PhD/ Doctorate degree	More than 10 years' experience	WhatsApp (connecting, messaging and sending material to my students), YouTube (sourcing useful how-to's and applications for platforms and online tools), Zoom (meeting and workshops)
P50	SA	Middle Manager	Masters	More than 10 years' experience	WhatsApp, Google Meet
P51	SA	Middle Manager	PhD/ Doctorate degree	More than 10 years' experience	WhatsApp, Facebook and Instagram

APPENDIX N: ATLAS.ti PREDEFINED REPORTS USED TO CONFIGURE REPORTS

Challenges coding -Quotation Browser Report - Excel (Product Activation Failed)

ID	Quotation Name	Quotation Content	First coding	Codes
2:29	Most of the time, you will only get to know what the other person thinks...	Most of the time, you will only get to know what the other person thinks you don't know and he doesn't transfer all the knowledge that you necessarily need just for a specific task. There is document documented for which people can refer to. Access that knowledge that people have. Unlike a book there is no way you can tape all the knowledge that a person has and transfer it to another person.		Challenges to effective KT using SM
2:31	Tacit-ness and extraction because people are concerned about their job...	Tacit-ness and extraction because people are concerned about their job security and on explicitness of knowledge aspects in documents, in databases, you know it is so important to keep those things up to date.	Knowledge transfer measure	Challenges to effective KT using SM
3:4	knowledge is infinitely valuable.	knowledge is infinitely valuable.	Knowledge tacitness, obso	Challenges to effective KT using SM
3:11	inefficient platform	inefficient platform	Knowledge valuation	Challenges to effective KT using SM
3:19	lack of strong internet connectivity	lack of strong internet connectivity	inefficient KT platforms	Factors affecting KT using SM
3:30	email is constructed to take a blog of information, one takes that blo...	email is constructed to take a blog of information, one takes that blog and add another blog of information and send it to me and I will have two blogs of information, now if I send to the third person I now have three blogs of information- with all these three blog now I understand what's going on. As such, it's a very ineffective way to communicate and that's one of the big thing that SM kills.	inefficient KT platforms	Challenges to effective KT using SM
4:1	P-My-7P- Chry-8	P-My-7P- Chry-8	Knowledge transfer capabili	Challenges to effective KT using SM
4:4	a lot of information, a lot of knowledge	a lot of information, a lot of knowledge	information overload	Challenges to effective KT using SM
4:5	knowledge is being wrongly communicated or is hidden somewhere and wha...	knowledge is being wrongly communicated or is hidden somewhere and what people always get is bits and pieces of what should be known.	Knowledge transfer, knowle	Challenges to effective KT using SM
4:7	sell knowledge as such its transfer is valued	sell knowledge as such its transfer is valued	Knowledge transfer incentiv	Challenges to effective KT using SM
4:21	no clear incentives structure, proper structured induction programme,	no clear incentives structure, proper structured induction programme,	Knowledge transfer incentiv	Challenges to effective KT using SM
4:22	induction is brief all because there is no resources or time	induction is brief all because there is no resources or time	Knowledge transfer incentiv	Challenges to effective KT using SM
4:36	nnovation can be Individuals,	nnovation can be Individuals, organisations, culture, objective,		Challenges to effective KT using SM

Quotation Browser Report Final codes KT Challenges

APPENDIX O: CODEBOOK

Number	CODES
1	access of information
2	Appropriability
3	attitudes
4	bridges
5	capabilities
6	change
7	cognitive processes
8	communication
9	contacting an Participant
10	conversation
11	culture
12	digital marketing
13	elements
14	elicitation
15	enactment
16	experience
17	fear
18	guideline
19	Hidden knowledge
20	history
21	incentives
22	information overload
23	infrastructure
24	innovations
25	interaction
26	internet access
27	IT integration
28	knowledge absorption
29	knowledge capturing
30	knowledge complexity
31	knowledge creation
32	knowledge elicitation
33	knowledge integration
34	knowledge stickiness
35	KT
36	KT measurement
37	lack of challenge
38	media platform
39	mental model
40	Meta-knowledge
41	motives
42	online conversations
43	organisational culture
44	outcomes
45	past horizon
46	people
47	problem solving
48	Procedures
49	receptive capability
50	receptive self-efficacy
51	relationship
52	reputation

Number	CODES
53	retention
54	selection
55	self-efficacy
56	sensemaking or unmaking
57	SM affordances
58	SM conversation
59	SM affordance
60	SM analytics
61	Social networking
62	socio-technical process
63	socialisation
64	speed of information distribution
65	succession plan
66	tacit knowledge
67	task
68	trust

APPENDIX P: EDITING CERTIFICATE

27 September 2023

FRADRECK NYAMBANDI

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CERTIFICATE - EDITING OF DOCTORAL THESIS

I, the undersigned, herewith confirm that the editing of the Doctoral thesis of Fradreck Nyambandi, *THE USE OF SOCIAL MEDIA IN KNOWLEDGE TRANSFER IN AN INNOVATIVE BUSINESS ENVIRONMENT* has been conducted and concluded.

The finalised thesis was submitted to his Supervisor, Prof A de la Harpe, on 27 September 2023.

Sincerely



Professor Annelie Jordaan
D'Tech: Information Technology
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South African Translators Institute