

**EVALUATING THE EFFECTIVENESS OF SOCIAL MEDIA ON KNOWLEDGE
MANAGEMENT SYSTEMS OF SMALL, MEDIUM AND MICRO ENTERPRISES IN
SOUTH AFRICA**

By

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Exact wording of the title of the dissertation or thesis as appearing on the copies submitted for examination:

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MANAGEMENT SYSTEMS OF SMALL, MEDIUM AND MICRO ENTERPRISES IN
SOUTH AFRICA

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15 January 2021

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SUMMARY

Social media platforms are evolving rapidly as alternative options for effective communication in businesses. With communication being the force behind the evolution of knowledge management systems in organisations, the literature highlighting the potential of social media to transform the knowledge management systems has risen exponentially. However, in the small, medium, and micro enterprise context, social media is used informally in the knowledge management processes, resulting in a high failure rate by knowledge management systems to achieve their intended outcomes. This study draws from that observation and proposes a theoretical model for evaluating the effectiveness of social media on the knowledge management systems of the small, medium, and micro enterprises in South Africa.

The model was developed using the diffusion of innovation theory to explore social media characteristics that influence the overall quality of the knowledge management system; uses and gratifications theory to explore the determinants of using social media to influence the quality of the knowledge derived in the system; unified theory of acceptance and use of technology version 2 to explore the support activities that influence the quality of the service provided by the knowledge management system in the small, medium, and micro enterprises; and the knowledge management system success model to explore the factors that influence successful adoption of knowledge management systems in the small, medium, and micro enterprises of South Africa.

An explanatory sequential mixed-method approach was conducted within small, medium, and micro enterprises that operate in the information and communication technology industry, advanced manufacturing industry, and smart industries, located in Gauteng, South

Africa to explore the concepts of the developed model. The quantitative research approach was first conducted in phase one of the study using a web-based survey questionnaire of 227 small, medium, and micro enterprise owners and managers selected at random. Subsequently, a qualitative study was then conducted using semi-structured interviews of 13 small, medium, and micro enterprise owners and managers selected purposively using the maximum variance purposive sampling technique to explain the findings of the quantitative approach.

The findings of the study revealed that compatibility and relative advantage are the two social media characteristics which positively influence the quality of the knowledge management system; coordination and immediate access are the two determinants of using social media which positively influence the quality of the knowledge derived in the knowledge management system; facilitating conditions provide the necessary support activities by small, medium, and micro enterprises to positively influence the quality of service of the knowledge management system; and the system quality and service quality are the two knowledge management system success factors which positively influence user's intention to continue using social media to support the knowledge management system, with user's intention to use for social media highly influencing the net benefits of the knowledge management system of small, medium and micro enterprises in South Africa. The results also revealed that knowledge quality is also a success factor with a positive influence on user satisfaction of the use of social media to support the knowledge management system. However, there was not enough evidence to suggest that user satisfaction has an influence on the net benefits of the knowledge management system.

The developed model serves as guidance to small, medium, and micro enterprise owners and managers when implementing social media to support their knowledge management systems. The model also highlights important relationships to be considered by academics when developing social media and knowledge management adoption models for small, medium, and micro enterprise.

KEYWORDS: Knowledge Management Systems; Social Media; Knowledge Management; Small, Medium and Micro Enterprises; Knowledge

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LIST OF ACRONYMS

AGFI	Adjusted Goodness of Fit Index
AI	Artificial Intelligence
AMOS	Analysis for Moment Structure
ANOVA	Analysis of Variance Analysis
AVE	Average Variance Extracted
BYOD	Bring Your Own Device
CFA	Confirmatory factor analysis
CFI	Comparative Fit Index
CMIN	Minimum discrepancy
COMPA	Compatibility
COMPLE	Complexity
COORD	Coordination
CR	Construct reliability
DF	Degree of Freedom
DIKIW	Data Information Knowledge Intelligence Wisdom
DNT	Department of National Treasury
DOI	Diffusion of Innovation theory
ESMP	Enterprise Social Media Platform
EU	European Union
FA	Factor analysis
FC	Facilitating Conditions
GDP	Gross Domestic Product
GFI	Goodness-fit index
IA	Immediate Access
IBM	International Business Machines
ICT	Information and Communication Technology
IFI	Incremental Fit Index
IS	Information Systems
IUPTB	Intention to Use / perceived benefit
KM	Knowledge Management
KMA	Knowledge Management Approach
KMS	Knowledge Management Systems
KQ	Knowledge Quality
MAR	Missing at random
MCAR	Missing Completely at random
MLE	Maximum Likelihood Estimation
MNAR	Missing not at random
MPCU	Model of PC utilization
MSME	Micro, Small and Medium Enterprises
MSV	Maximum shared variance
NB	Net Benefits

NDP	National Development plan
NDSBD	National Department of Small Business Development
NFI	Normed Fit Index
NIMD	Non-ignorable Non-response
NSBA	National Small Business Act
NSBAA	National Small Business Amendment Act
P	Significant Value
PCA	Principal component factor analysis
PGFI	Parsimony Goodness of Fit Index
RA	Relative Advantage
RMSEA	Root mean square error
RNI	Relative Non-centrality Index
ROI	Return on investment
SaaS	Software as a Service
SCT	Social Cognitive Theory
SD	Standard Deviation
SECI	Socialisation, Externalisation, Combination, Internalisation
SEM	Structural Equation Modeling
SERVQ	Service Quality
SI	Social Influences
SIC	Squared inter-construct correlation
SLR	Systematic Literature Review
SMB	Small and Medium Businesses
SMME	Small, Medium and Micro Enterprise
SNS	Social Networking Site
SP	Social Presence
SRMR	Standardised Root Mean Residual
SYSQ	System Quality
TAM	Technology Acceptance Theory
TLI	Tucker Lewis Index
TPB	Theory of Planned Behaviour
TRA	Theory of reasoned action
UGC	User-Generated Content
UGT	Uses and Gratification
UNISA	University of South Africa
US	User Satisfaction
UTAUT	Unified Theory of Acceptance and Use of Technology
UTAUT2	Unified Theory of Acceptance and Use of Technology version 2
WTO	World Trade Organisations

GLOSSARY

Term	Definition
Social Media	Any internet-based platform that allows users to actively collaborate and exchange knowledge.
Information	Information can be defined as a property of influencing decision making.
Knowledge	A combination of people's values and beliefs, learning experiences, and reality to inform decision-making processes and taking meaningful actions – regardless of the situation.
Knowledge Management	A process that encompasses information communication technology, organisational knowledge, as well as organisational processes, needed to cater for knowledge needs.
Knowledge Management System	Information and communication technology that support the knowledge management processes by facilitating the social interactions of members within organisations
Small, Medium and Micro Enterprise	Any privately-owned business registered in the South African national treasury and employs less than 200 people

PUBLICATIONS FROM THIS RESEARCH

Conference papers

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CHAPTER ONE:

Introduction and background

1.0 Introduction

The current growth in global trade compels organisations to leverage innovative technologies to enhance their product and service offerings to a wider market more quickly (Jorge, Mosconi, de Santa-Eulalia & Marion 2020; Zhan, Tan, Ji, Chung & Tseng 2017; Nokeno 2011). These developments in global trade further propel organisations to probe and manage the knowledge that exists in their internal structures to keep up with the latest trends. Over the years, knowledge management (KM) has evolved in its potential to improve business sustainability and competitive advantage in the business world (Manesh, Pellegrini, Marzi & Dabic 2021).

The initial conceptualisation of the KM phenomenon began in the early 1990's as an overlapping discipline alongside competence management and organizational learning disciplines (Tuomi 2002). KM further evolved to focus more on information systems and later shifted towards intellectual capital management, social learning, organizational sensemaking, and systematic innovation, and change management in the late 1990's.

Although KM has evolved in many disciplines, organisations that are effectively executing the KM processes are constantly having to juggle in distinguishing between knowledge that is explicit from that which is tacit in nature (Akula 2017). Explicit knowledge is made transparent in tangible sources like documents, while tacit knowledge is the kind that is not tangible and is difficult to codify (Nonaka 1994). Tacit knowledge develops in the mind through the experiences of people and can only be transferable if the individual who holds it is willing to do so (Davenport & Prusak 2000).

Nevertheless, organisations need to manage both knowledge types effectively to survive and succeed. Shongwe (2016) asserts that knowledge continues to take a growing share of today's global trades as an intangible product for organisations of all kinds and sizes. Consequently, organisations are driven towards developing knowledge management

systems (KMS) as initiatives to preserve the kind of knowledge that is critical for their success.

The value and relevance of knowledge towards competitiveness and sustainability, drives the development of KMS strategies for organisations. KMS strategies started to penetrate the markets during the middle of the 1990s (Hislop 2013). Since then, more and more organisations continue to introduce the KMS to improve sustainability and competitiveness (Cerchione, Esposito & Spadaro 2015). The KMS involves different activities for proper handling of knowledge. According to Shongwe (2016:145) ‘knowledge acquisition, creation, storage, transfer and application are the key activities within KMS’.

In the current dynamic and unpredictable economic climate, organisations use social media platforms to process KMS activities. Indeed, social media play a big role in enabling KMS (Jorge et al. 2020). Social media are internet based Information and Communication Technology (ICT) systems which offer several advantages to the KMS. The ability of social media to offer location independence, scalability, and cost effectiveness to the KMS promotes its use in organisations (Arpaci 2017). As such, social media emerge as a suitable platform for digitizing knowledge and adding value to small, medium and micro enterprises (SMMEs) in South Africa.

1.1 Background of the research problem

The necessity for organisations to meet the current demands for knowledge in order to compete and remain sustainable is not an issue from which SMMEs are exempt. The SMMEs of developing countries contribute substantially to Gross Domestic Product (GDP) by creating jobs, being innovative and providing for long-term growth (Thuo & Namusonge 2017). The SMME sector makes up to 95% of the overall business sector in South Africa, with over 80% being formal businesses, over 61% of employment creation and an overall contribution of up to 57% to the GDP (SEDA 2018). Evidently, the SMME sector exceeds the average economic growth of the national economy in South Africa and its contribution can never be overlooked.

Interestingly, issues such as the low rate of advanced ICT adoption in the African continent, stifle the growth and success of SMMEs in South Africa (Sitharam & Hoque

2016). ICT keeps evolving to provide organisations with opportunities for sustainability and competitiveness by enabling the efficient creation, application, distribution and transfer of knowledge to facilitate and enhance the KMS (Mosha 2017). It allows organisations to generate new knowledge which can be used for innovation and competitiveness (Dong, McCarthy & Schoenmakers 2017). With the recent growth in ICT having the potential to improve the knowledge-driven economy (Sarina 2018), SMMEs are remaining further behind with the implementations of advanced ICT enabled KMS solutions.

Several studies (Thuo & Namusonge 2017; Sitharam & Hoque 2016; Beck & Cull 2014; Modimogale & Kroeze 2011) have identified factors contributing to the slow pace of ICT adoption generally in the SMME sectors of developing countries. Some of the major factors include the lack of enough capital to fund ICT initiatives, lack of management capacity and support, as well as a lack of training needed among employees to use ICT systems (Thuo & Namusonge 2017; Beck & Cull 2014; Gikenye 2012; Modimogale & Kroeze 2011). Owing to the focus of KM being geared towards the creation and improvement of ICT enabled processes to service the knowledge needs (Tarutė & Gatautis 2014), these factors become impediments for SMMEs from successfully adopting ICT enabled KMS.

While some factors have been found to be hindering SMMEs from successfully adopting ICTs, there is consensus among scholars (Thuo & Namusonge 2017; Kramer, Wirth, Jamous, Klingner, Becker, Friedrich & Schneider 2017; Sitharam & Hoque 2016; Corfield & Paton 2016; Modimogale & Kroeze 2011; Gourova 2010) about the important role that ICT plays in the overall performance of organisations. Moreover, the use of ICTs provide SMMEs with opportunities to compete equally with large enterprises (Tarutė & Gatautis 2014). As such, ICT enabled KMS have a potential to improve SMME performance and sustainability.

Generally, adoption and implementation of ICT comes at very high costs, particularly for SMMEs in the developing countries in Africa. In the case of South Africa, THENERVEAFRICA (2016) asserts that more than a R100 billion lump sum would have to be spent to support SMMEs and provide them with access to the required ICT resources. Clearly, affordable access to a full range of ICT services is an issue in South Africa,

especially in the SMME sector of the region. A search for alternative methods with the potential to close the ICT access and adoption gap is inevitable.

The current developments in ICT have given rise to low-cost and open-access internet-based solutions with the potential to improve business sustainability. Social media are such ICTs with a potential bring many benefits to organisations (Greeven & Williams 2017; Mosha 2017; Rahbi & Abdullah 2017), particularly in the SMME sector where cost and resource constraints are a major hindrance to ICT adoption.

The role of social media in facilitating the KMS processes of SMMEs can no longer be overlooked. The constrain of lack of finance and resources compel SMMEs to opt for social media to execute the KMS processes. Moreover, social media's ability to facilitate the KMS processes becomes a great gratification to SMMEs in South Africa (Mamorobela & Strydom 2020). As such, the impact of social media on SMME operations within the developing countries context warrants further research, particularly as a way to enhance the KMS processes.

1.2 Research gap

A considerable amount of empirical research has analysed the importance of KMS in organisations. The works of Mosha (2017); Martinsons, Davison & Huang (2017); Kramer et al. (2017); Bethel, Henkel, Eakin, May & Pilkinton (2017); Corfield & Paton (2016); Jennex, Smolnik & Croasdell (2016); Shongwe (2016); Arshad, Fauzan & Noordin (2016); Cerchione et al. (2015); and Evans, Dalkir & Bidian (2015) are some recently conducted studies that advocate the importance of having more systematic and deliberate efforts for managing knowledge in organisations. With ICT being an enabler for business processes (Tarutė & Gatautis, 2014), organisations that adopt ICTs to efficiently create, use, distribute and transfer knowledge are perceived to have an edge over their competitors.

The SMME sectors of South Africa are making an effort to adopt ICT solutions to facilitate KMS processes in order to compete in the current economic climate. Indeed, ICT provides SMMEs with more opportunities to enhance their KMS (Kramer et al. 2017). However, a large proportion of KMS fail to meet their intended benefits (Jennex et al. 2016). This results in a high failure rate in KMS adoption efforts by SMMEs in South

Africa. Kramer et al. (2017) argues that the high implementation costs of ICT incurred by the organisations have an effect on the failures of KMS implementation efforts.

The proliferation of ICT has given rise to internet-based collaborative KMS that are cost-effective and user friendly (Arpaci 2017). ICTs like social media are on the rise with their ability to facilitate collaboration within organisations. A study by Cerchione et al. (2015) found that SMMEs, despite their financial constraints, are overcoming the barriers preventing the spread of KMS by using various technologies like social media for supporting the KMS processes. Owing to the accessibility and ease of use characteristics of social media, SMMEs adopt them to improve their communication and KMS processes (Jorge et al. 2020).

Although social media is constantly evolving in the KM fraternity (Mosha 2017; Rahbi & Abdullah 2017), generic guidelines, models or frameworks for measuring the effectiveness of social media technologies to enhance KMS of SMMEs are yet to be provided in the literature (McCann & Barlow 2015; Divol, Edelman & Sarrazin 2012). The absence of such models or frameworks results in SMMEs being unable to realise the full benefits of social media use in the context of KMS (Ngai, Moon, Lam, Chin & Tao 2015). In concurrence, Mangiuc (2009:76) states that measurement tools are important to justify the choices made about employing a particular technology within the organisation. The need for evaluation methods to ensure effectiveness of social media was also emphasised in Tang, Zhang, Xu & Vo (2015) when studying social media's impact on the decision-making processes of drought management.

1.3 Problem statement

In a research study, the problem statement needs to be described precisely because it serves as the main 'organ' of the research project (Leedy & Ormrod 2015). It indicates the need for conducting the study by describing the importance, relevance, benefits, and justifications of the study (Bloomberg & Volpe 2012). The identified research problem of the current study is presented in this section of the document.

The research problem identified by this study is associated with the lack of structural guidelines from the literature to assist SMMEs to evaluate social media in KMS processes.

Despite the over reliance on social media for communication and knowledge processes by SMMEs in South Africa, there is still a lack of structural guidance on how to evaluate social media within a KMS context. There is an abundance of literature that focuses on adoption and use for business sustainability and competitiveness with no reference to evaluation procedure, framework or models. The lack of guidelines for evaluating the effectiveness of social media in the KMS context prevent SMMEs from realising the true business value of social media. SMMEs need a model to evaluate the effectiveness of social media use in their KMS efforts. This study closes the research gap by developing a model to evaluate the effectiveness of social media on KMS of SMMEs in South Africa. The research refers to such a model as ‘novice’, simply because social media technologies are fast-changing, relatively new and transforming the KMS practices of organisations, particularly in SMMEs.

1.4 Research objectives

The research problem affecting KMS in the SMME was addressed through the study’s objectives in this section. The primary objective is **to develop and propose a model for evaluating the effectiveness of Social Media on KMS of SMMEs in South Africa.**

Secondary objectives are derived to expand on the primary objective as follows:

- a) To investigate how SMMEs in South Africa use Social Media to enhance their KMS.
- b) To identify factors influencing the use of Social Media to enhance KMS of SMMEs in South Africa.
- c) To assess the significance of the identified factors in the evaluation of Social Media to enhance KMS of SMMEs.
- d) To identify current methods used by SMMEs in South Africa to evaluate the effectiveness of Social Media on KMS.
- e) To identify the challenges experienced with the current methods of evaluating the effectiveness of Social Media on KMS of SMMEs in South Africa.
- f) To suggest a model that can be used by SMMEs in South Africa to evaluate the effectiveness of Social Media on KMS

1.5 Research questions

To align with the objectives, the primary research question is: **How can the effectiveness of Social Media on KMS of SMMEs in South Africa be evaluated?**

This was expanded by specific secondary questions as follows:

- a) How do SMMEs in South Africa use Social Media to enhance their KMS?
- b) What are the factors that influence the use of Social Media to enhance KMS of SMMEs in South Africa?
- c) How significant are the identified factor in the evaluation of Social Media to enhance KMS of SMMEs?
- d) What methods are currently used by SMMEs in South Africa to evaluate the effectiveness of Social Media on KMS?
- e) What are the challenges experienced with the current methods of evaluating the effectiveness of Social Media on KMS of SMMEs in South Africa?
- f) What can SMMEs in South Africa use to evaluate the effectiveness of Social Media on KMS?

1.6 RESEARCH SCOPE

This research work is limited to SMMEs operating in the sectors such as ICT, Advanced manufacturing, and Smart industries, located in the Gauteng province, South Africa. The selected SMMEs in South Africa were targeted because of their advanced skills and knowledge of ICT, particularly social media to perform their day to day knowledge-driven activities. Thus, selected SMMEs can produce adequate relevant data to address the study's objectives. Although SMMEs in Gauteng, South Africa, were targeted for the sampling frame of the study, the statistical methods used in the study provide enough evidence that the findings can be generalised broadly to SMMEs in developing countries worldwide.

1.7 STRUCTURE OF THE THESIS

The current research work comprises eight chapters and followed the structure provided in Neuman (2014) as a guide. **Chapter One** serves as an introductory chapter, providing an

overview and background of the study to set the scene. The chapter includes the research gap, problem, questions, objectives, and scope of the research.

Chapter Two of this thesis provides a review of the literature regarding the research problem and objectives being addressed. This includes an exploration of related studies addressing how social media is used to support and enhance the KMS of SMMEs. Furthermore, a discussion of existing social media strategic frameworks as well as processes of how collaborative systems evaluations are carried out is presented. Lastly, to provide more justification for the study, the chapter presents related studies and missing gaps.

Chapter Three presents the theoretical foundations of the study. This comprises sections justifying the selection of IS theories underpinning the study as well as the illustration of the proposed conceptual model. The chapter also explains the hypothesised relationships among identified exogenous and endogenous constructs adapted to develop the conceptualised model of evaluating the effectiveness of social media on KMS for SMMEs.

Chapter Four presents the research methodology and design in the form of ‘peels’ of the ‘research onion’ proposed in Saunders, Lewis & Thornhill (2009). The current study adheres to the onion peels model to formulate the research design. The sequential explanatory mixed-method approach was chosen to address the complex research questions of the study using various techniques for collecting and analysing both quantitative and qualitative data.

Chapter Five presents processes followed in phase one of the study, that is, the Quantitative phase. It includes discussions of how the survey questionnaire was designed and piloted as well as how the main quantitative study was conducted. Several tests were conducted to do justice to the quantitative research as advised in Pallant (2016). The tests included T-Test, ANOVA, SEM, and CFA which subsequently resulted in the proposed model. *IBM SPSS* and *AMOS* version 25 tools were used for statistical analysis.

Chapter Six presented phase two of the study, the Qualitative phase. The chapter discusses how the semi-structured interview guide was designed and all collection and

analysis of the qualitative data followed to explain the findings of the quantitative study in phase one. *Atlas.ti* version 8.0 was employed to analyse the qualitative data.

Chapter Seven presents the interpretation of the results of both phases of the study to confirm the resultant model for evaluating the effectiveness of social media on KMS of SMMEs in South Africa. In this chapter, the relevance, contributions, limitations, implications of this research, and direction for future research are discussed.

Chapter Eight presents the contributions, recommendations and conclusions of the study highlighting the key findings as well as providing in summary, the approaches and methods (used in previous chapters) to address any questions and objectives. The chapter also presents recommendations for future research in related areas.

1.8 TIME FRAME AND DELIVERABLES OF THE RESEARCH

STEPS	DATES
1. Documenting the Introduction (Chapter1: Background and Introduction)	March 2017 – May 2017
2. Unpacking the study (conceptual frameworks, refining questions and objectives, refining methodology)	June 2017 – July 2017
3. Final proposal with feedback from Supervisor	July 2017 – September 2017
4. Review of the literature (Chapter2: Literature review)	September 2017 – March 2018
5. Theoretical foundations (Chapter3)	April 2018 – May 2018
6. Research Methodology (Mixed method research: Chapter 4)	June 2018 – August 2018
7. Ethical clearance (Research participants selection and signing of informed consent forms)	September 2018 - December 2018
8. Data collection instrument design (the questionnaires: Phase 1)	January 2019 – February 2019

9. Pilot study (Online survey Questionnaire: Phase 1)	March 2019 - April 2019
10. Data collection through questionnaires (Phase 1: Main study) (Chapter 5)	May 2019 – August 2019
11. Data analysis (Phase 1: Main study) (Chapter 5)	September 2019 - December 2019
12. Data collection through Interviews (Phase 2: Main study) (Chapter 6)	January 2020 – February 2020
13. Data analysis (Phase 2: Main study)(Chapter 6)	March 2020 – June 2020
14. Interpretation of findings (Chapter 7)	June 2020 – August 2020
15. Research discussions, contributions, and conclusion (Chapter 8)	September 2020 - October 2020
16. Submission of Draft Thesis to the Study Supervisor for review	November 2020
17. Documentation and submission of Final Thesis	December 2020

Table 1.1. Overall research plan

1.9 Chapter summary

Social media promise to improve KMS of SMMEs with their capability to effectively create, capture, share and present knowledge by allowing members to create groups of interest in which they can freely exchange knowledge among themselves. Although there are many challenges that SMMEs are facing, that prevent the implementation of ICT solutions in many areas of the organisation, the developing trends of social media platforms are gaining popularity in SMMEs as solutions for improving KMS processes.

The introduction of the current study, including the background to the research problem, the research gap, problem statement, research questions and objectives were presented in this chapter. The chapter also discussed the scope of the study and highlighted the structure in terms of time frame and deliverables which were met to ensure that the

research project is completed successfully. The next chapter presents the review of the IS-related studies in the context of social media, KMS and SMMEs in relation to the study's objectives.

CHAPTER TWO:

Literature review

2.0. Introduction

Chapter One provided an overview of the study by outlining the research background, identifying gaps, problem statement, objectives, and questions. The current chapter presents an analysis of existing literature to position the ideas of the study in the body of knowledge. The chapter also covers knowledge management concepts and the relationship with social media use in SMME environments.

This chapter presents the literature according to the following research questions: (i) how do SMMEs in South Africa use social media to enhance their KMS?, (ii) what are the factors that influence the use of social media to enhance KMS of SMMEs in South Africa?, (iii) how significant are the identified factors in the evaluation of social media to enhance KMS of SMMEs?, (iv) what methods are currently used by SMMEs in South Africa to evaluate the effectiveness of social media on KMS?, (v) what are the challenges experienced with the current methods of evaluating the effectiveness of social media on KMS of SMMEs in South Africa?, and (vi) what can SMMEs in South Africa use to evaluate the effectiveness of social media on KMS?

The chapter is presented in the following manner: Section 2.0 presents the introduction of the chapter; this is followed by a detailed description of the systematic literature review process followed to identify relevant sources pertaining to the study objectives in Section 2.1; Section 2.2 presents an analysis of descriptions and applications of social media; Section 2.3 describes the notion of KMS by defining knowledge and its different types as well as the KM phenomenon; Section 2.4 provides definitions and categorisations of SMMEs as well as their characteristics and how they differ from large organisations; Section 2.5 presents a synthesis of the literature according to the research questions; Section 2.6 presents related studies to identify the gaps and to emphasise the significance of the study; and lastly, in Section 2.7 the summary of the chapter is presented.

2.1. Literature searching and selection criteria

It is important to acknowledge ideas other researchers have previously put forward. A properly constructed literature review provides a summation and synthesis of studies reporting on coherence and rigour (Okoli & Schabram 2010). This allows a researcher to identify gaps in the subject matter and suggest areas for future research (Kaniki 2006). According to Blaxter, Hughes & Tight (2010:124), the literature review assesses and criticises previous related studies to identify gaps. As such, the review must be done systematically to provide more reliable findings. Mindful of Blaxter et al. (2010), a systematic literature review (SLR) was carried out in this study to identify relevant sources addressing how SMMEs use social media to support KM processes.

An SLR is a repeatable process that combines literature that is related to a specific topic within a set time frame (Kitchenham 2004). SLR is a structured process used for collecting, summing up, evaluating existing evidence, and discovering further research gaps in the area of interest (Unterkalmsteiner, Gorschek, Islam, Cheng, Permadi & Feldt 2012). This section presents the SLR process followed in this study to identify relevant literature in social media, KMS, and SMMEs research.

A search of the literature involved using Google Scholar to locate web-based online databases for mostly cited journal articles, conference proceedings, and book chapters written in English using the phrases ‘social media for Knowledge management in SMEs’, ‘Knowledge management via social media’, ‘social media supported Knowledge management in SMEs’, ‘social media enabled knowledge management in SMEs’. Google Scholar was used due to its popularity and credibility to locate scholarly databases used by academics (Zientek, Werner, Campuzano & Nimon 2018).

To widen the search and improve results, an exercise of searching for articles directly within databases like *IEEE Computer Society*, *ProQuest*, *ScienceDirect*, *Scopus*, *Springer*, *Wiley Online Library*, *ACM Digital Library*, *ISI web of Knowledge*, and *ResearchGate* was conducted. These databases were selected because of their popularity in IS research.

All selected papers were read to ensure that they fall within the inclusion criteria, that is, social media, KMS, and SMMEs. Consequently, additional studies were included to provide broader content on the subject. Papers whose content did not apply to social media use within the KMS field were excluded from the review. The reviewed papers were categorised and discussed in subsequent sections of the current chapter.

2.2. Overview of Social Media

From the SLR search criteria, papers that provide an overview of social media are discussed in this section. Social media have evolved in their ability to transform how organisations manage communication over the years (Ngai et al. 2015). In current times, organisations increasingly use social media for their KM needs (Razmerita, Kirchner & Nabeth 2014). The platforms are also used to enhance traditional KMS because of their ability to serve as the foundation for a mature internet on which an increasing number of internet users can collaborate, share information, and create new knowledge (Arpaci 2017). Social media comprise disruptive ICT innovations that are enabling people to stay well informed of current events that are impacting their daily lives (Wamba & Carter 2016).

The history of social media started in the early 2000s with the introduction of Web 2.0 to transform static websites developed on Web 1.0 technology (Ngai et al. 2015; O'Reilly 2007). One of the reasons behind Web 2.0 development was the idea around distributed systems (Andriole 2010). Web 2.0 allows users to collaborate and create networks to exchange User Generated Content (UGC) (Kaplan & Haenlein 2010). Accordingly, Web 2.0 and UGC are related concepts which form the basis for understanding how social media is defined (Paquette 2013; Stockdale, Ahmed & Scheepers 2012; Kaplan & Haenlein 2010). As such, in the context of this study, social media is defined based on a synthesis and evaluation of related literature providing definitions of Web 2.0 and UGC.

2.2.1. Web 2.0 and User Generated Content (UGC)

Web 2.0 was developed in the mid-2000s as a dynamic web application to enhance the static Web 1.0 (Ngai et al. 2015; O'Reilly 2007). The idea behind Web 2.0 was to enable users to author their own content and share it over a connected web environment (Cestiyakara & Surendro 2013; Constantinides 2009). Unlike in the Web 1.0 environment

where users were restricted from modifying content, in the Web 2.0 environment, users participate collaboratively to create their own content and exchange it with one another (Kaplan & Haenlein 2010).

Web 2.0 offers a collaborative web environment to enhance how content was published under the Web 1.0 era (Kaplan & Haenlein 2010). For example, under the Web 1.0 environment content was first generated and then published on static web pages for users to consume passively, whereas in the modern Web 2.0 environment users have more control over the creation and modification of content on dynamic web pages (Hvass & Munar 2012; Hanna, Rohm & Crittenden 2011).

In the Web 2.0 environment, users are ceded with overall control over applications and have more flexibility to create, extract, and reuse the data and information needed by those applications (Dave & Koskela 2009; Tredinnick 2006). They create their own networks for sharing ideas and use the webserver to facilitate communication (Choi, Huang, Palmer & Horowitz 2014). The content that is created directly by the user in web 2.0 is simply referred to as User Generated Content (UGC).

The relationship between Web 2.0 and UGC forms the basis upon which social media is defined. UGC encompasses all kinds of internet-based content that is accessible, modifiable, and transferable through social networking sites (Kaplan & Haenlein 2010). Moreover, UGC provides a facility for Web 2.0 to enable the creation of different types of media content (Hvass & Munar 2012; Hanna et al. 2011). Hence, both Web 2.0 and UGC are regarded as the two underlying components used to define social media.

2.2.2. Defining social media

While social media is underpinned by Web 2.0 and UGC, there is no consensus among scholars on what a generally accepted definition should be (Omosigho & Abeysinghe 2012; Xiang & Gretzel 2010). Several studies explored theories and models to better understand social media by focusing on social behaviour (Hajli 2014; Hau & Kim 2011), personal behaviour (Gruber, Smerek, Thomas-Hunt & James 2015), as well as mass communication (Jin & Phua 2014; Tsai & Men 2013). Because of the different perspectives, some studies provide very comprehensive definitions while others are

narrowly focused on applications (Treem & Leornadi 2012). Commonly used definitions of social media are provided in Table 2.1.

Author(s)	Definition
Boateng (2016)	Social media is a group of internet-based applications which have been developed on Web 2.0 and allow users to create develop and exchange the content and enable them to interactive virtually to create, learn, share and exchange information online
Filo et al. (2015)	Social media refers to “New media technologies facilitating interactivity and co-creation that allow for the development and sharing of user-generated content among and between organizations (e.g. teams, governing bodies, agencies and media groups) and individuals (e.g. consumers, athletes and journalists)”.
Zhang (2015)	Social media refers to software that expands people’s social behavior. Such media are effective means for communicating with customers and managing customer knowledge
Mccann & Barlow (2015)	Social media describes a manner in which content and information have become democratic via the internet and by which individuals play a role not only in using information and conveying it to others but also in creating and sharing the content
Zeng & Gerritsen (2014)	Social media refers to “the means of interactions between people in which they create, share, and exchange knowledge and ideas within virtual communities and networks”.
Shahabi & Bayat (2013)	Virtual social media is a variety of contact patterns in which the interaction and communication between network elements are supported by a technical base and internet infrastructure. In these network, aims, interests or common needs could serve as linking elements leading the related factors to feel being in a real society and community even without a physical presence
Gupta & Brooks (2013)	Social media refers to all the devices and platforms that allow users globally to virtually create and share information with each other
Papadopoulos et al (2013)	Social media refers to the activities through which people share their knowledge, within a collaborative online Environment
Chomsky (2012)	Social media use for knowledge sharing is comprised of interactive digital tools, allowing users to not only share knowledge, but also to create or influence content.
Chang & Chuang (2011)	Social media refers to Internet-based media that allows individuals to share information and knowledge.

Pepler & Solomou (2011)	Social media is a recognized and community-based social tool for organizations to gather knowledge and receive feedback on their new products and services
Kaplan & Haenlein (2010)	Social media refers to a group of internet-based applications that build on the ideological and technological foundation of Web 2.0, and that allow the creation and exchange of User Generated Content
Henderson & Bowley (2010)	Social media is collaborative online applications and technologies that enable participants connectivity, user-generated content, sharing of information, and collaboration among community of users
Malita (2010)	Social media are the tools that facilitate the socialisation of content by encourage collaboration, interaction, and communication through discussion, feedback, voting, comments, and sharing of information from all interested parties

Table 2.1. Definitions of Social Media

As shown in Table 2.1, the key terms used by authors to define social media include ‘online applications’, ‘user-generated content’, ‘collaboration’, and ‘community of users’. Evidently, the identified terms are closely associated with Web 2.0 and UGC. Another observation is that social media is believed to be the term used to describe a connected web in which users are allowed to create, edit, and exchange content (Rahbi & Abdullah 2017; Cestyakara & Surendro 2013).

While acknowledging the definitions given by various authors in Table 2.1, this thesis draws on a definition provided by Kaplan & Haenlein (2010) as demonstrated in Figure 2.1.

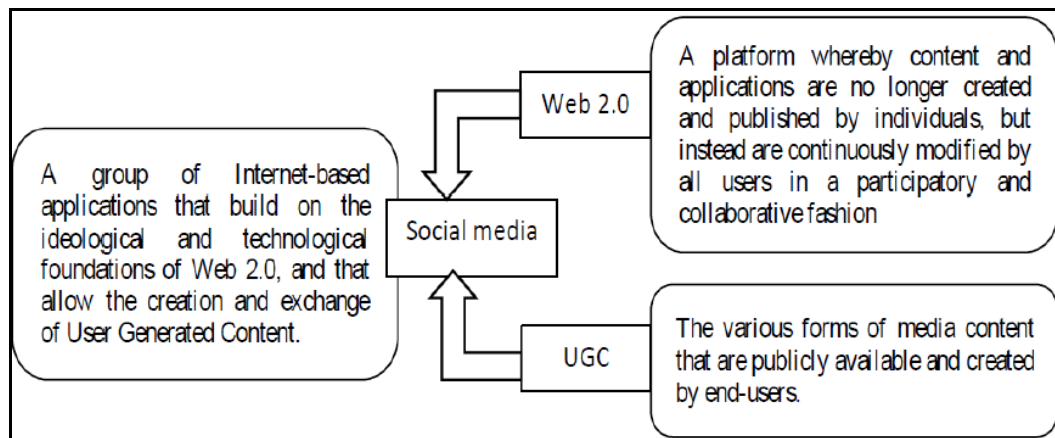


Figure 2.1. Adapted definition of Social Media

Source: Kaplan & Haenlein (2010)

As shown in Figure 2.1, the relationship between web 2.0 and UGC forms an important foundation for defining social media (Kaplan & Haenlein 2010). As such in this study, social media is defined as any internet-based platform that allows users to actively collaborate and exchange knowledge.

Social media are classified into six categories (Grewal & Levy 2013), namely; social networking sites, virtual/online communities, virtual worlds, social bookmarking sites, media sharing sites, and blogs/microblogs.

Social networking sites (SNS)

SNS have become pervasive in social media communities as they focus on building strong relationships among online communities who share common interests (Ngai et al. 2015). SNS mainly attract marketers and organisations because they provide useful applications in marketing, customer relationship management, organisation communications, and education and training (Moncrief, Marshall & Rudd 2015; Hajli 2014; Tsai & Men 2013; Cvijikj, Spiegler & Michahelles 2013; Hussain 2012). Examples of SNS applications include: Facebook, LinkedIn, and Google Plus+.

Media sharing sites

Using media sharing sites, individuals and selected communities can exchange multimedia material such as videos, audio, and photos (Ngai et al. 2015). Organisations are taking advantage of the capabilities of media sharing sites by introducing them as tools for

conveying organisational messages to stakeholders to promote their products and corporate image (Bonsón & Flores 2011). Teaching and learning institutions also distribute digital learning material to students to enhance their support for student learning online (Sranamkam 2012; Click & Petit 2010; Baird & Fisher 2006). Examples of media sharing sites include: YouTube, Vimeo, Instagram, and Flickr.

Social bookmarking sites

Social bookmarking sites are types of social media that provide users with the ability to store and exchange bookmarks of content that they find interesting to avoid direct uploading and sharing of media content (Ngai et al. 2015). Organisations are taking advantage of social bookmarking sites as they are now able to use tags collaboratively to conduct collaboration activities (Kaplan & Haenlein 2014; Baird & Fisher 2006). Marketers use social bookmarking sites for promotions, such as viral campaigns, by annotating and categorizing interesting content through tags (Kaplan & Haenlein 2014). Examples of social bookmarking sites include: Delicious, Pinterest, and Digg.

Virtual/online communities

Created on social networking platforms, virtual/online communities allow people – who are often not acquaintances but have common interests – to exchange information (Ngai et al. 2015). Individuals participating in virtual/online communities build such communities mainly to influence others and to share knowledge (Ngai et al. 2015; Chua & Banerjee 2013; Ren, Harper, Drenner, Terveen, Kiesler, Riedl & Kraut 2012). Examples of virtual/online communities include: Lonely Planet and Yahoo Answers.

Virtual worlds

Virtual worlds are websites that are built to simulate the real-world environment where everything that exists in the world is artificially created (Ngai et al. 2015). Virtual worlds also include scenarios that simulate a realistic experience for organisations to test and introduce new products to the market (Moncrief et al. 2015; Brown-Johnson, Berrean & Cataldo 2015; Krasnikolakis, Vrechopoulos & Pouloudi 2014). Examples of virtual worlds include: Virtual Reality, Second Life and Active World.

Blogs/microblogs

As sharing sites, blogs/microblogs are used to share thoughts where users create and post messages for others to read (Ngai et al. 2015). Blogs/microblogs are mostly used to convey short messages that will spark the interest of a wider community of internet users. In most cases, blogs/microblogs contain a short commentary about a particular subject or topic of interest. Since the messages are very short, recent ones are displayed at the top on the blog/microblog website so people always get the latest information and are always up to date (Weinberg & Pehlivan 2011). Examples of Blogs/microblogs include: Twitter, Tumblr, Plurk and WeiBo.

Given that different social media platforms are used for different reasons, this study identifies specific social media platforms that are mainly used to support the KMS of SMMEs and proposes a model for evaluating their effectiveness in enhancing the KMS. Firstly, it is important to understand the notion of KM and define it in the context of SMMEs. The next section describes the notion of KM.

2.3. The notion of Knowledge Management

Papers that provide the history of KM and KMS from the SLR are discussed in this section. The discipline of Knowledge Management (KM) has been growing literature for many years (Serenko & Dumay 2017; Akhavan, Ale & Mahdih 2016; Hislop 2013). The increasing need for KM in organisations is a result of the consideration of knowledge being a strategic asset for attaining sustainable competitive advantage (Shongwe 2016; Grant 2015; Hislop 2013). Managing knowledge using ICT provides comprehensive KMS which enables organisations to create value and gain sustainable competitive advantage (Adams & Comber 2013). An increasing number of organisations are highly dependent on KMS to collect, process, store, analyse, and distribute the knowledge needed to achieve different organisational objectives (Turban, Volonino & Wood 2013). While the current study investigates the effectiveness of social media to enhance the KMS of SMMEs, it is important to clarify how knowledge is defined in this context.

2.3.1. Defining knowledge

In IS literature, knowledge is derived from data and information (Krylova, Vera & Crossan 2016). In recent times, the advancement of ICT propels organisations to process volumes

of data which they transform into information. This encourages organisations to value the skills and expertise needed to manage their IS even more. These skills and expertise are regarded as valuable knowledge which is needed to serve as a source to compete in the highly competitive business environment today. To further clarify the difference between these terms, Liew (2013) developed the DIKIW model which depicts their relationships. Liew’s model in Figure 2.2 demonstrates the relationship between knowledge and its related terms.

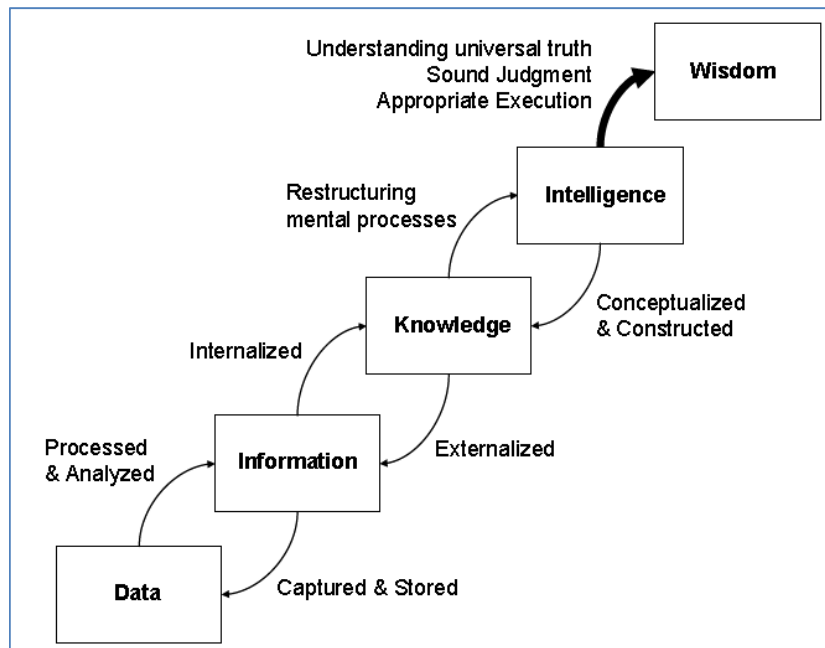


Figure 2.2. Data, Information, Knowledge, Intelligence and Wisdom

Source: Liew (2013)

As shown in Figure 2.2, knowledge originates from information and data and can further be used to produce intelligence and wisdom. Liew’s model helps to understand how these different contents relate to one another as well as how each of these contents influences the development of others. The bottom of the DIKIW model is data that can be defined as discrete facts, symbols and signals, products of observations, flow of events, and activities which have no context and are of no real value (Saleem & Eric 2017; Liew 2013).

In the business environment, data is captured, ordered and stored in a particular manner for further processing and analysis into a usable form and given context to become information (Liew 2013). The resultant information is then used by people and systems to

perform work activities. Liew (2013) defines information as processed data that contain a message with relevant meaning and has implications for taking action. Thus, having the correct information at our disposal can positively influence our decision making. As such, in this study, information can be defined as a property of influencing decision making.

However, information has to be in the right format and must come from reliable sources to be usable for decision making (Krylova et al. 2016). Information could be derived from different sources such as physical media like paper, or electronic media like the internet (Grigoriou & Rothaermel 2017). A combination of these sources of information is very helpful for the creation of knowledge in organisations. While information is simply contextualised data, knowledge is formed by information that is gathered through personal experiences and it is closely linked to how people act and behave (Hislop 2013). The information-knowledge balance is mainly enhanced by information and communication technology (ICT) systems which present it in a form of natural language (Duan, Shao, Hu, Zhou, Zou & Lin 2017).

Knowledge is also produced from justified true beliefs, intuition and personal experience (Saleem & Eric 2017; Liew 2013). It is the information which is formed during a process of dialogue among people and their familiarity with one another that triggers knowledge and justified true beliefs (Nonaka, Toyama & Hirata 2008). In practice, knowledge is derived by converting raw data into meaningful information that is useful and valuable to us (Liew 2013).

The conversion process is normally internalised in our mental processes. Knowledge can be associated with the concept, skill, experience, and vision used to provide a framework for creating, evaluating, and using information (Soltani & Navimipour 2016). It is formed through the internal mental structures of an individual. In concurrence, Krylova et al. (2016) also add that knowledge is formed by information that is internalised and integrated within a person's cognitive structures. Several other scholars (Hislop 2013; Ghaziri & Awad 2005; Tserng & Lin 2004; Nonaka, Toyama & Konno 2001) define knowledge by suggesting that knowledge is geared towards taking action from the information that describes the situation. Table 2.2 provides some of the commonly used definitions of knowledge found in the literature.

Source	Definition
Davenport & Prusak (2000:5)	“A fluid mix of framed experiences, 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 organizational routines, processes, practices, and norms”
Davenport, De Long & Beers (1998:43)	“Knowledge is information combined with experience, context, interpretation, and reflection. It is a high-value form of information that is ready to apply to decisions and actions.
Nonaka et al. (2001:5)	“Information anchored in the beliefs and commitment of its holder”
Bath (2000:89)	“A changeable reality created through interactions and information exchange”
Klicon (1999)	Knowledge is a body of information, coupled with the understanding and reasoning about why it is correct... Knowledge is the cognitive ability to generate insight based on information and data... Knowledge is typically gained through experience or study.
Tiwana (1999)	Actionable (relevant) information available in the right format, at the right time, and at the right place for decision making... An understanding of information based on its perceived importance or relevance to a problem area.

Bennet & Bennet (2004:72)	“Knowledge is the capacity (potential or actual) to take effective action in varied and uncertain situations”.
McInerney (2002:1010)	“Knowledge is the awareness of what one knows through study, reasoning, experience or association, or through various other types of learning”.

Table 2.2. Definitions of knowledge

As shown in the definitions in Table 2.2, it is clear that the main constructs that produce knowledge are *experience, understanding, beliefs, values, context, learning, and reality*, a combination of which can be used to take meaningful action. In general, the goal of knowledge is to take meaningful action (Grimm 2014). However, taking meaningful action in one situation may not necessarily mean that the same action will be meaningful if it were to be taken in a different situation. In this research, knowledge is defined using as people’s values and beliefs, learning experiences, the context in which knowledge is used, and reality to inform decision-making processes and taking meaningful actions – regardless of the situation.

When knowledge is used to sense the environment, make decisions, and control actions, it can be regarded as intelligence (Liew 2013). Liew (2013) also adds that a person can apply his/her intelligence by presenting knowledge in a world model and reasons about plans for the future. By definition, intelligence is the mental or thought processing capabilities which include learning, conceptualizing, analytical thinking, critical thinking, quick thinking, performing, problem-solving, decision making, judging, and affective thinking (Liew 2013). When one applies intelligence, over time you tend to gain more experience and your intelligence can then be transformed into wisdom.

Wisdom is formed when one can see the long-term consequences of any action and evaluate them relative to the idea of total control (Bernstein 2009). It is the ability to identify right from wrong and what is true or false by using the knowledge that informs the best course of action to take (Swartwood 2013). Therefore, wisdom requires a person’s

ability to identify and acquire the correct knowledge that informs making the right decision and acting in accordance with moral standards (Huda, Jasmi & Mustari 2017).

Given that the definition of knowledge has been provided, it is also important to further expand on it to explore the different types of knowledge that exist in literature. Although knowledge is broadly defined in the study by looking at values and beliefs, learning experiences, the context in which knowledge is used, as well as the reality, there are specific types of knowledge and each requires a different management approach. The next section discusses the different types of knowledge.

2.3.2. Identifying the types of knowledge

Literature of knowledge management defines different types of knowledge for organisations to devise effective strategies for their KM efforts. These knowledge types are discussed as follows:

Tacit knowledge

Tacit knowledge is derived from uncodified and hands-on skills and insights which are produced through direct experience and trial-and-error in work situations (Nonaka 2007; Lin, Wang & Tserng 2006). This type of knowledge takes the form of ingrained mental models such as beliefs and perceptions which makes it very difficult to formalise. One common method of communicating tacit knowledge is through intense conversation, storytelling, and shared experiences.

For tacit knowledge to be organised and managed effectively requires a highly interactive process where individuals who possess tacit knowledge are required to share this knowledge through conversations with those individuals that need the knowledge. The use of sophisticated methods and tools that can encourage and facilitate conversations between individuals, provide the best way of transforming tacit knowledge into explicit knowledge.

Nevertheless, tacit knowledge takes many forms, with each form being classified as either 'technical tacit knowledge', which is the expertise and experiences of individuals; or 'cognitive tacit knowledge', which are the mental modes, perceptions and beliefs including

ideas, viewpoints and innovations (Nonaka & Takeuchi 1995; Nonaka 2007). Bennet & Bennet (2008) describes four categories of tacit knowledge as follows:

- **Embodied tacit knowledge** – is learned through practical and behavioural skills training. Over time, the knowledge becomes embedded in human memory. It encompasses the human body movement such as the practice of using a specific tool to produce a good quality piece of artwork.
- **Intuitive tacit knowledge** – involves the act of unconsciously making decisions using natural human senses. Users of this kind of tacit knowledge are often not able to explain how the decision came about. Intuitive tacit knowledge is developed in people's minds through continuous learning from meaningful experiences of decision-making and action-taking. People who rely on intuitive tacit knowledge naturally develop skills to predict situations and their future consequences (Klein 2003).
- **Spiritual tacit knowledge** – involves the moral aspects, emotions, and mental abilities of human nature which may influence the decisions and actions to be taken. This kind of knowledge is linked to matters of the soul and it is directed by information that is outside an individual's experience and awareness (Bennet & Bennet 2008).
- **Affective tacit knowledge** – involves the use of feelings that affect how people make decisions in certain situations. When feelings are used, they influence the actions to be taken by providing insight in a non-linguistic manner. Affective tacit knowledge is related to feelings and emotions that are not expressed. Therefore, feelings of excitement or fear are aspects of affective tacit knowledge that are often used to inform actions to be taken in response to particular situations.

Explicit knowledge

Derived from tangible sources like documents, web portals, and intranets, explicit knowledge is easy to manage (Hislop 2013:21). Explicit knowledge can be accurately described as words and visual representations which can easily be exchanged among individuals. In the context of organisations, explicit knowledge is relied upon to collect objective, rational and technical material which can be documented, transferred, taught and learnt (Turban, Sharda & Delen 2011). In practice, organisations use human resource data,

meeting minutes, web portals, contracts, reports, drawings, project specifications, and the intranet as sources of explicit knowledge to make informed decisions (Lin et al. 2006).

Implicit knowledge

The terms tacit knowledge and implicit knowledge are often used interchangeably to mean the same type of knowledge, however, scholars such as Cooper (2017); Bennet & Bennet (2008); Alonderiene, Pundziene & Krisciunas (2006); Nickols (2003) caution that a significant difference exists between the two knowledge types and they urge against using them interchangeably. One major difference is that, unlike explicit and tacit knowledge, implicit knowledge is normally not verbalised by the individuals who possess it. Implicit knowledge is driven by unconsciousness, emotions and intuition (Cooper 2017). It is the kind of knowledge that is internalised, hard to formalise, understood but not clearly stated, gained through experience or by intuition (Cooper 2017).

Bennet & Bennet (2008) state that implicit knowledge is automatically stored in an individual's memory and it is only retrievable when triggered by reflective thoughts or an external event. People who possess implicit knowledge are not immediately aware of possessing such knowledge (Cooper 2017). Once this knowledge has surfaced, either through questioning or triggered through an event, the individual holding such knowledge is unable to describe it such that others can recreate it (Bennet & Bennet 2008).

Implicit knowledge is formed in a three-stage learning process (Anderson 1982): *Cognitive stage* – where an individual observes the appropriate actions to be taken in a particular situation; *Associative stage* – where all the relationships learnt in the cognitive stage are put into action; and lastly, the *Autonomous stage* – where the actions that are practised in the associative stage are performed seamlessly without reference to instructions.

The problem with implicit knowledge arises when the knowledge expert repeatedly uses the knowledge procedurally to the point where they lose awareness of the basis of their expertise, resulting in them losing the ability to report on their knowledge. As such, having awareness of the basis of knowledge is essential since the loss thereof may impose many challenges to the management of knowledge. One way of identifying the origin of knowledge is to differentiate between tacit, explicit and implicit knowledge. The next subsection explains how the three knowledge types evolve and relate.

2.3.3. Evolution of the different knowledge types

As much as there are differences among knowledge types, some knowledge types evolve to form the basis of other knowledge types. Bennet & Bennet (2008) explain the evolution of knowledge types and their relationships through an awareness model in Figure 2.3.

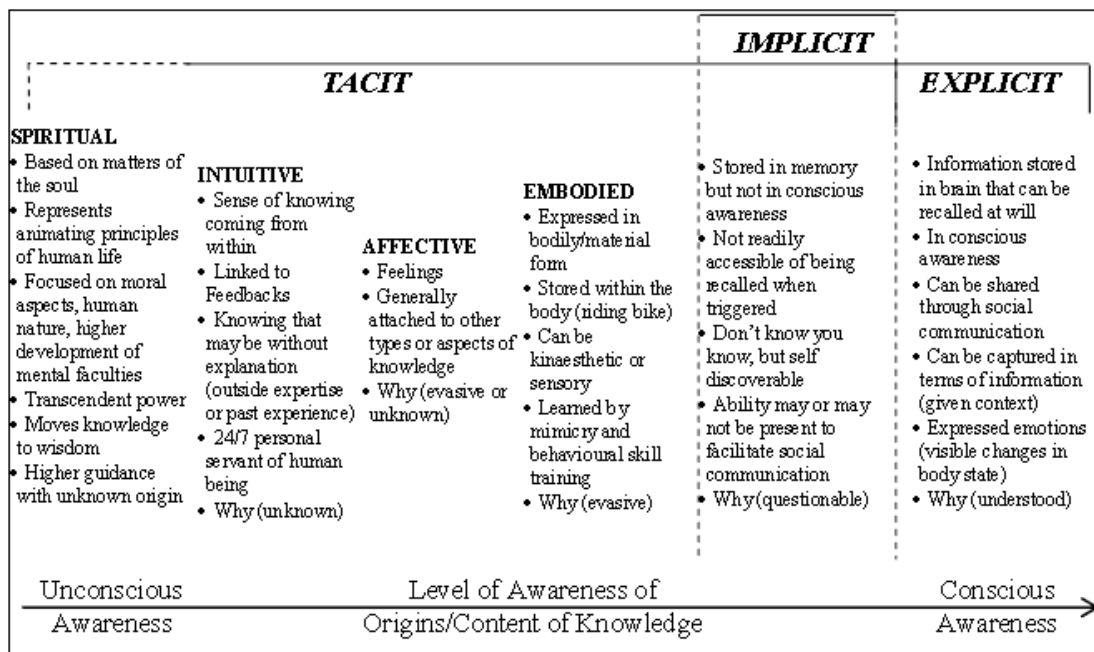


Figure 2.3. Awareness of origins of different types of knowledge

Source: Bennet & Bennet 2008

The awareness model in Figure 2.3 represents the evolution of knowledge from the unconscious to the conscious level of awareness. The level of awareness is important for understanding knowledge types and deciding on suitable strategies for KMS. The figure also demonstrates how awareness of knowledge is gained as it transitions from tacit through to explicit. Because tacit knowledge cannot be articulated or expressed using language (Bennet & Bennet 2008), it is difficult to describe it in words that people may understand (Nickols 2003).

Accordingly, organisations are required to identify the skills and expertise of seasoned workers that need to be retained for effective KMS (Ahmad 2011). These skills and expertise may take the form of tacit, implicit or explicit knowledge types. To aid with the

identification of different knowledge types for effective management, Nickols (2013) suggests a knowledge representation model in Figure 2.4:

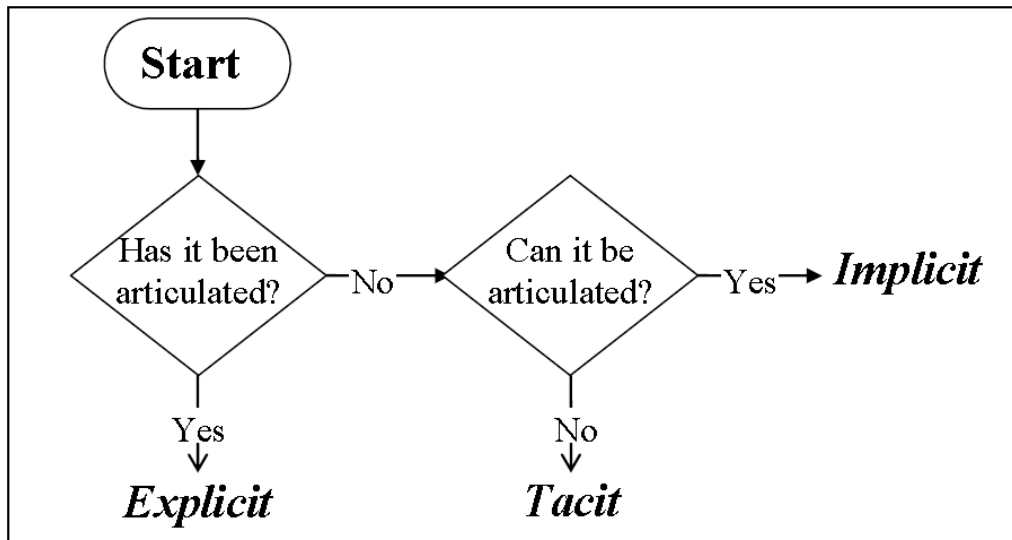


Figure 2.4. Distinguishing among explicit, tacit and implicit knowledge

Source: Nickols (2003)

As shown in Figure 2.4, distinguishing among explicit, tacit and implicit knowledge is critical for defining the scope of KMS. Many organisations are failing in their KMS because many of their employees are highly experienced at what they do, relying mostly on their experience to come up with solutions to problems and failing to verbalise their experiences for the knowledge to be externalised and documented for ease of management in the KMS.

Taking from the articulation of Nickols (2003) above, it is evident that managing tacit knowledge is challenging and KMS efforts must be focused on explicit and implicit knowledge to succeed. Although the literature suggests that tacit knowledge is the most critical, as it combines experiences that are highly personal and embedded in the mind of humans, its management requires people holding such tacit knowledge to externalise it willingly. Without the tacit knowledge holder's will to externalise such knowledge, the KMS effort can be deemed futile. Contrarily, Floyd, Lawson, Shalloe, Eastgate & D'Cruz (2013) argue that one way of managing tacit knowledge is when organisations encourage collaboration and interaction among staff members because these interactions mainly

characterise the dynamic process of knowledge creation (Nonaka 1994). The next section discusses the general process of managing knowledge.

2.3.4. The Knowledge Management process

Several activities are involved in the process of effective management of knowledge in organisations. These include management procedures and techniques needed to cater for knowledge needs, leverage intellectual capital, and create sustainable competitive advantage within organisations (Dumay 2015). Such activities exist to serve as best practice approaches for simplifying work efforts and saving time and resources (Ahmad, An & Gaterell 2007). Moreover, such activities ensure that there are sufficient environments and systems necessary for creating, capturing, organising and disseminating knowledge (Serenko & Dumay 2017; Akhavan et al. 2016; Frost 2014). That is, the activities exist to ensure an effective knowledge management (KM) process.

The term KM is reported to have evolved in the late 1980s where it was seen in conferences, books and business-oriented journals (Dalkir 2011). In the mid 1990s, more organisations started to implement KM processes as formal business processes (Hislop 2013). Since the 1990s, organisations shifted their focus from natural resources to intellectual assets as key drivers of economic activities (Razi, Karim & Lumpur 2011).

The concept of KM has been practiced for many years by librarians, philosophers, teachers, and writers before it was formalised as an organisational process (Dalkir 2011). For example, people have always shared their knowledge through workshops, seminars and meetings, and relied on some form of narrative repository of lessons learnt. Over the years, ICT evolved to facilitate KM processes and simplified organisational efforts to simulate rich, interactive, face-to-face knowledge encounters.

KM has become a necessary practice for organisations today (Saleem & Eric 2017). It continues to grow in popularity, especially as a knowledge retention strategy because losing people's tacit knowledge has been highlighted as one of the biggest risks for organisations today (Martins & Meyer 2012). Although implemented as a process of optimising knowledge to achieve a sustainable competitive advantage (Buckley 2009), its overall objective goes beyond the creation, capturing, organising, and sharing of

knowledge (Arshad et al. 2016). One major objective of KM is to influence organisational productivity, corporate effectiveness and business performance as well as improving total business value (Abdelrahman, Papamichail & French 2011). Botha, Kourie & Snyman (2014) also add that KM creates business value by leveraging, improving and refining the competitiveness and knowledge assets for meeting organisational goals.

In today’s dynamic global business environment, KM comprises a set of methods and techniques together with IT-based tools and services for the effective capturing, sharing, reusing, updating, and creation of new experiences to solve business-related problems (Serenko & Dumay 2017; Cerchione et al. 2016; Akhavan et al. 2016). A search of the literature revealed several other definitions of KM as per Table 2.3.

REFERENCES	DEFINITIONS
Fombad (2018:194)	“KM is a process that involves the capturing, creating, refining, and distribution of knowledge, as well as the application of know-how”
Carlucci, Marr & Schiuma (2004:575)	“The KM is a managerial paradigm which considers knowledge as a resource at the basis of a company’s competitiveness. It identifies the capabilities to generate value for a company’s stakeholders with the explicit and systematic implementation of approaches, techniques and tools for the assessment and management of intellectual capital.”
Jashapara (2011)	The effective learning processes associated with exploration, exploitation and sharing of human knowledge (tacit and explicit) that use appropriate technology and cultural environments to enhance an organisation’s intellectual capital and performance.
McInerney (2002:1010)	“Knowledge management (KM) is an effort to increase useful knowledge within the organisation. Ways to do this include encouraging communication, offering opportunities to learn, and promoting the sharing of appropriate knowledge artefacts.”
uit Beijerse (2000:162)	“It is the management of information within an organisation by steering the strategy, structure, culture and systems and the capacities and attitudes of people with regard to their knowledge. It is the achievement of the organisation’s goals by making the factor knowledge productive”.

Lee & Yang (2000:783)	“It is an emerging set of organisational design and operational principles, processes, organisational structures, applications and technologies that helps knowledge workers dramatically leverage their creativity and ability to deliver business value.”
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Table 2.3. Definitions of knowledge management (KM)

To merge the definitions of KM in Table 2.3, a commonality among them is that KM involves management procedures and techniques needed to cater for knowledge needs within the organisation. However, Assegaff & Hussin (2012) observe three different perspectives of understanding KM.

The first perspective involves understanding KM from the technology point of view where rules and standards are said to be governing the KM process regardless of social or organisational factors (Søderberg & Holden 2002); the second perspective is that of understanding KM as the flow of knowledge among people in self-managed groups where the people in those groups are considered to be the primary holders of knowledge (Marr, Gupta, Pike & Roos 2003); and the third perspective, which is also the perspective of this thesis, views KM as interactions between processes and resources for manage those processes (Mason 2003).

The different perspectives on KM have led to a lack of a uniform definition for KM. Williams (2015) asserts that the lack of a uniform definition for KM could also be triggered by the belief that it is not possible to manage what is in someone’s mind. In concurrence, Buckley (2009) also adds that KM definitions differ from context to context. Consistent with the perspective of Mason (2003) on KM definition, in this study, social media platforms represent physical resources; organisational knowledge represents conceptual resources; and KM processes represent social and organisational processes. As such, in this thesis, KM is viewed as a process that encompasses ICT systems, organisational knowledge, as well as organisational processes. ICT systems used for handling the knowledge needs of organisations are commonly known as knowledge management systems (KMS) (Maier & Hadrich 2011).

2.3.5. Knowledge Management Systems (KMS)

For many years, organisations have positioned ICT as enablers for improved organisational performance and sustainability (Tarutė & Gatautis 2014). López-Nicolás, Meroño-Cerdán & Mero (2011) assert that to improve innovation, effectiveness, and efficiency, organisations need to focus their energy on improving ICT solutions as well as harnessing the capabilities of human resources. As stated in the work of Tarutė & Gatautis (2014), organisations that achieve a competitive advantage are those who adopt ICT to enhance their KM effort much quicker than their competitors. Alavi & Leidner (2001) illustrate how ICT enables KM processes in Figure 2.5.

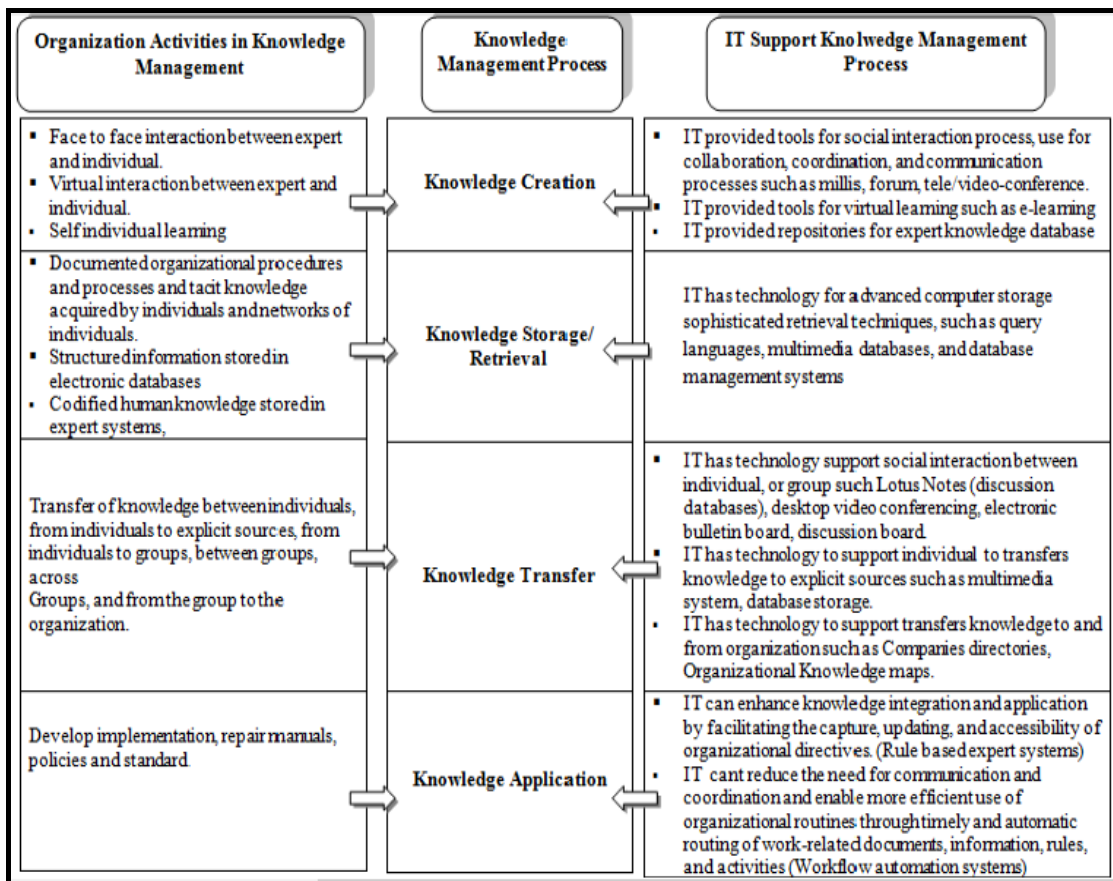


Figure 2.5. ICT functional support for KM Processes

Source: Alavi & Leidner (2001)

To support KM processes, ICT provides tools that facilitate the social interactions of members within organisations. Such ICT tools are regarded as KMS. As shown in Figure 2.5, the acronym ‘IT’ refers to ICT in the current study. KMS are ICT that support the KM processes of storing, retrieving, distributing, and presenting knowledge; improving

collaboration among members of an organisation; locating knowledge sources; and mining repositories for hidden knowledge (Maier & Hadrich 2011; Šajeva 2010; Alavi & Leindner 2001).

KMS provide an effective way of acquiring, organising, and communicating knowledge by transforming tacit forms of knowledge into explicit forms (Abdelrahman et al. 2011). Generally, KMS are designed in two ways, namely, centralistic design or peer-to-peer design (Maier & Hadrich 2011).

Centralistic KMS architecture

The centralistic client-server solution is a typical approach of designing IT services for organisations. It is the basic centralised architectural principle used for integrated organisational ICT systems (Sedigheh & Rabeifar 2012). Traditional KMS are designed using client-server architecture to centralise knowledge assets (Zhen, Jiang & Song 2010; Maier 2007). Knowledge assets in this context include a collection of databases, policies, procedures, documents, guides, software, and patents that belong to an organisation. These assets are stored in a central server and accessed through client machines that are connected to the organisation's network.

Similarly, the centralistic KMS is a layered service architecture in which layers offer services to one another in a sequential fashion (Maier & Hadrich 2011). It is designed to centralise knowledge services that are offered to users and other heterogeneous applications that interact with the KMS.

Users and other applications interacting with the KMS are classified as *participants*. The interaction is facilitated securely through the *access services* layer. The access services layer also facilitates communication between the KMS, users and multiple heterogeneous applications. The layer provides participants with login credentials to interact with the system by customising content and exchanging knowledge content. However, only knowledge managers and content specialists have special privileges to add and remove content within the system. This is facilitated through the *personalisation service layer*.

The Personalisation services layer provides a facility for the KMS to be customisable, thereby improving access in a more efficiency and effective way by allowing specific roles that are dedicated to performing KM functions. Directly linked to the personalisation services layer is the *knowledge services layer* where the knowledge is presented.

Knowledge services layer provides intelligent services to locate knowledge sources, distribute knowledge elements, as well as the application of learning tools to improve organisational learning. The knowledge service layer is connected to the *integration services layer* to simplify the process of access and use of knowledge elements.

Integration services layer serves to organise knowledge using taxonomies and ontologies capable of integrating and analysing the knowledge base. It includes synchronisation services that allow knowledge workspaces for work done offline to be re-integrated. The integration service layer connects with the *infrastructure services layer* to provide online and offline access to the KMS.

Infrastructure services layer serves as the intranet to provide the basis for communication and exchange of documents. Infrastructure services layer also provides viewers for inspection of heterogeneous data and document formats. Lastly, the *data and knowledge sources layer* serves as a layer beneath the infrastructure services layer. The data and knowledge sources layer comprise all forms of data and knowledge within the organisation.

Figure 2.6 shows a typical architecture of a centralised KMS adopted from Maier & Hadrich (2011).

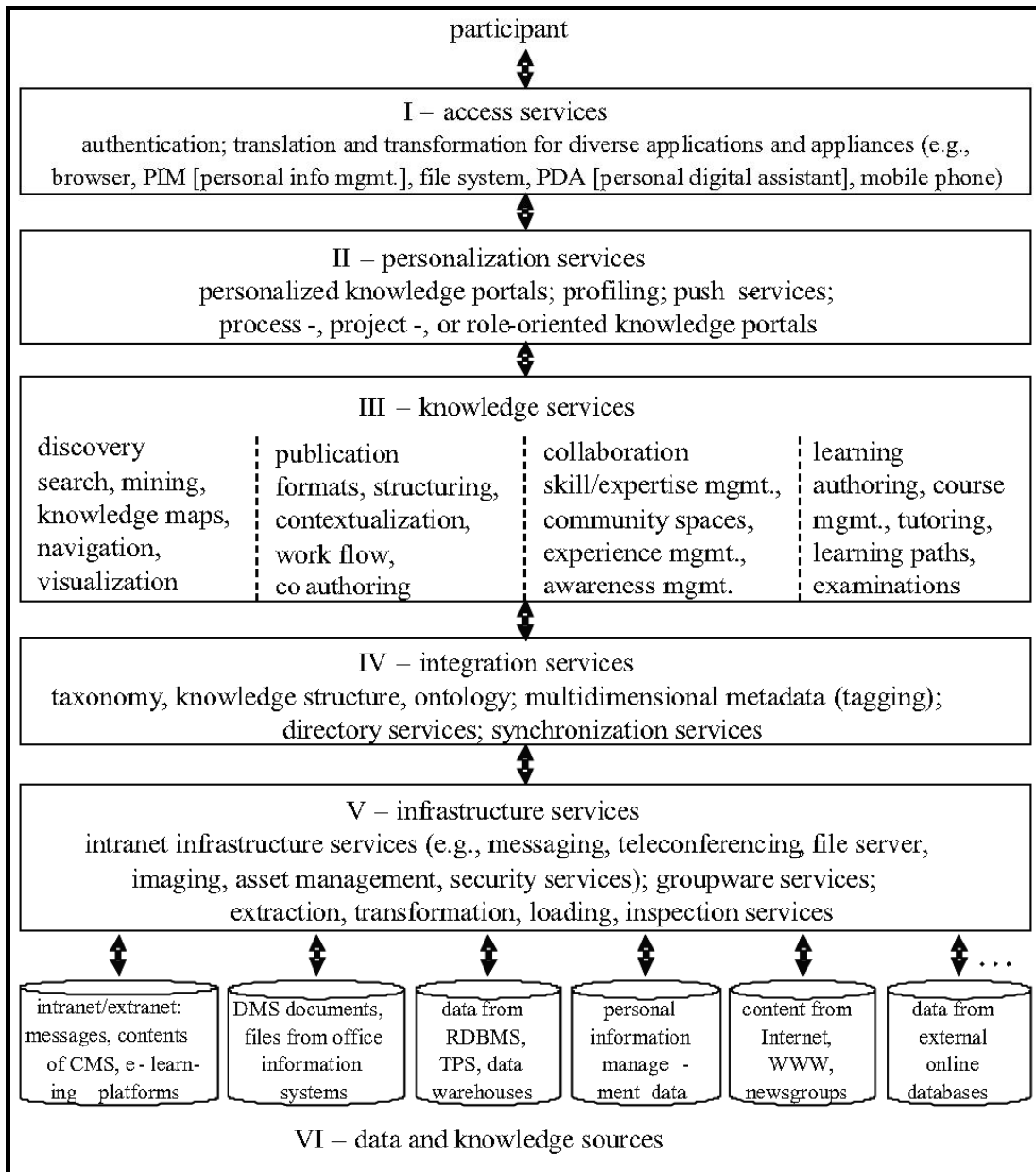


Figure 2.6. Centralistic knowledge management system architecture

Source: Maier & Hadrich (2011)

Although centralistic client-server KMS are designed to offers benefits to organisations, many of these systems fail to meet their objectives (Kane 2017). Reasons for some failures are attributed to the technology itself. For example, the technology is very costly to implement and maintain, especially for organisations with limited access to finance such as SMMEs (Hume & Hume 2016).

Other scholars attribute the failure of centralistic KMS architecture to organisational and social factors. For example, Baloh, Desouza & Hackney (2012); Sedigheh & Rabeifar (2012) argue that centralistic KMS limit active participation of individual knowledge workers. Organisations must rely on a few individuals who are assigned the responsibility to update the knowledge databases.

Other reasons are associated with the type of knowledge created and shared within the system. For example, Bradley & McDonald (2011b) argues that the centralistic KMS uses a top-down approach of knowledge distribution where the only knowledge in the system is about what the organisation wants employees to know. Furthermore, Baloh et al. (2012); Sedigheh & Rabeifar (2012) add that centralistic KMS fail to integrate with personal knowledge workspaces such as personal emails.

The proliferation of ICT introduces a paradigm shift from over-reliance on centralised knowledge repositories to the development of more distributed, conversational and collaborative KMS (Maier & Hadrich 2011; Bradley & McDonald 2011a). A growing interest in KMS that are compatible with ICT tools that meet both social and organisational knowledge needs is imminent (Abdelrahman et al. 2011). Such tools include the social media platforms that people use in their daily lives. This is because organisations derive more business value from the knowledge that is created within the social dimensions of employees than that which is formed within the top-down organisational hierarchies (Bradley & McDonald 2011b).

Social systems offer a more distributed infrastructure of KMS which support the social interactions of people in organisations. However, it is often difficult to accurately reflect the social dimension in organisational hierarchies (Bradley & McDonald 2011b). These KMS are labelled peer-to-peer and common architectures (or agreed list of functions) for such KMS are not available yet (Maier & Hadrich 2011). More discussion on peer-to-peer KMS is provided next.

Peer-to-peer KMS

Contrary to the centralised client-server KMS, a peer-to-peer KMS architecture promises to overcome many challenges associated with centralised client-server KMS architecture

(Maier & Hadrich 2011). Unlike in the centralised client-server architecture, peer-to-peer architecture supports a distributed environment where all devices perform the tasks of both the client and the server at any particular point in time (Sedigheh & Rabeifar 2012; Zhen et al. 2010; Antonova, Gourova & Roumen 2009; Levy 2009; Lee & Lan 2007). Over the years, peer-to-peer systems have been studied for their ability to lower the barriers of access to innovative technologies (Rodrigues & Druschel 2010). They include all forms of computing applications and gadgets that can connect over the Internet.

There are three categories of peer-to-peer architecture (Korpeoglu, Sahin, Agrawal, Abbadi, Hosomi & Seo 2013; Vu, Lupu & Ooi 2010; Dustdar, Gall & Hauswirth 2003), namely, *pure* peer-to-peer design in which each device in the network serves as both a server and a client and most of the system's resources are dynamically allocated among all connected devices; *assisted* peer-to-peer design in which one device serves as a host for managing all knowledge requests from other devices and re-directing requests for direct transfer to happen between knowledge seeker and knowledge source peers; and *super* peer-to-peer design in which each peer will be directly assigned to a super peer to handle all knowledge requests.

However, peer-to-peer architecture is generally used to provide organisations with the capability to achieve highly distributed scalable KMS (Sedigheh & Rabeifar 2012; Raimond, Abdallah, Sandler & Lalmas 2006). Peer-to-peer KMS are dynamically distributed, allowing knowledge experts to proactively disseminate knowledge to other members of the organisation. Li, Xie & Xu (2011) also add that the efficiency of peer-to-peer KMS can be directly linked to the reduction of effort and time required to retrieve and share knowledge within organisations.

The peer-to-peer architecture of KMS is well explained using the theory of 'connectivism' (Downes 2010; Siemens 2005). Popularly known as a learning theory of the digital age, connectivism theory examines how knowledge is exchanged through different sources that are connected over the internet. Previous learning theories include behaviourism, social constructivism, and cognitivism which are of the view that knowledge resides only in the mind of an individual (Evans 2014). By contrast, connectivism theory holds the notion that the internet has become a major source of information (Burton & Riley 2018), as a result,

knowledge is not only acquired from the minds of humans rather it exists in the world of interconnected sources that are accessible over the internet (Downes 2010; Siemens 2005).

Nowadays, knowledge has become a product of connections between people and information resources, which are facilitated by ICT (Evans 2014). ICTs like Artificial Intelligence (AI) have produced the idea behind connectivism. According to Russell & Norvig (2010: 290), connectivism theory was coined from the findings of AI research where knowledge is represented as a network of agents. As the research in AI evolved, different AI programming languages were proposed to facilitate communication among agents; to convey information about the facts and how agents translate them. Table 2.4 provides a summary of AI programming languages as stated in Russell & Norvig (2010).

Language	Ontology	Epistemology
Propositional Logic	facts	true/false/unknown
First-Order Logic	facts, objects, relations	true/false/unknown
Temporal Logic	facts, objects, relations, time	true/false/unknown
Probability theory	facts	degree of belief $E(0-1)$
Fussy Logic	facts with degree of truth $E(0-1)$	known interval value

Table 2.4. AI languages, ontology and agent epistemology

Source: Russell & Norvig (2010)

Connectivism theory corresponds to Temporal Logic of AI languages shown in Table 2.4. The ontology of Temporal Logic consists of a network of objects and relations that are governed by facts (or rules), and time that validates the facts. The agents have an epistemology of what they believe, disbelieve, or are unsure of, which does not belong to any individual agent but is distributed across the network (Russell & Norvig 2010). In connectivism theory, the agents represent humans and non-human objects which are connected over the internet.

Knowledge is a product of learning processes (Craciun & Dumitru 2011), thus the connectivism theory provides a good platform for addressing the KMS issues of locating knowledge sources and distributing knowledge-in-context within organisations (Siemens

2005). Moreover, connectivism theory embraces the individual and psychological diversity that exists within connected environments (Tschofen & Mackness 2012).

Nowadays, it has become more important to know how to find useful information from the connections that we have created, than to know the information ourselves (Evans 2014). Thus, connectivism theory is of the view that there is a shift in the information revolution from the importance of 'what one knows' to 'what one knows how to find out' by using the connections that one has created (Tschofen & Mackness 2012).

There are four principles on which connectivism theory is based, namely, *autonomy*, *connectedness*, *diversity*, and *openness* (Downes 2010). *Autonomy* among members of the network ensures that knowledge is created by users at their convenient time. This means that members of a connected network are independent and have control over the kind of knowledge they need to access and from whom they will access that knowledge. In terms of the *connectedness* principle, members of the network need to have sufficient resources to be able to connect to the internet in order to link with other members of the network to take advantage of the immense amount of information that is available on the internet. The *diversity* principle encourages members of the network to exercise their creativity by instantiating and presenting their unique perspectives based on personal experiences. Lastly, the *openness* principle encourages members of a connected network to share information, ideas, expertise, communication, and to create new knowledge through networking.

The type of KMS to be implemented is highly dependent on the context in which the organisation exists (Buckley 2009). For example, KMS in large organisations are different from those in SMMEs. The current study proposes a model for evaluating the effectiveness of social media in enhancing the KMS of SMMEs. Thus, a literature exploration of SMMEs and how they use social media to enhance their KMS is a necessity. The next section discusses an overview of SMMEs in South Africa.

2.4. Small, Medium and Micro Enterprises

Papers that provide the overview of SMMEs from the SLR are discussed in this section. The fundamental role of SMMEs in the development of economies can never be

overlooked. Studies of Beck & Cull (2014); Fatai 2011; Ekwem (2011) assert how SMMEs have long been recognised as instruments of development to grow the economies of the world. More than ninety-five percent (95%) of businesses around the world fall into the SMME category (Beck & Cull 2014). For example, in South Africa alone, ninety-six per cent (96%) of formalised businesses fall under the SMME category (Seda 2018); in Europe, the SMME sector accounts for over ninety-nine per cent (99%) of all enterprises (McGuinness, Hogan & Powell 2017); fifty-three percent (53%) of enterprises in USA are SMMEs; and forty percent (40%) of enterprises in China fall under the SMME category (Fatai 2011; Ekwem 2011). These findings attest to the significance of the SMME sector in world economies.

In South Africa, the SMME sector is used to close the unemployment gaps and to provide innovative solutions to boost the economy of the country (Ayyagari, Demirguc-Kunt & Maksimovic 2011). The South African SMME sector makes an overall contribution of forty-two percent (42%) to the Gross Domestic Product (GDP) of the country (Seda 2018). This contribution to GDP is significant to the economy of the country, thus the government is encouraged to develop programs that seek to support SMME growth and sustainability (SBP 2014).

To emphasise the commitment of government on SMME growth, the National Development Plan (NDP) was developed to support the SMME sector to create more employment opportunities to further grow the economy by the year 2030 (SBP 2014). To this end, it is clear that economic progressive growth is created by the SMME sector.

2.4.1. Definition of SMMEs

Defining an SMME seems to be a challenge in the literature. Different authors define SMMEs by their size in terms of capital assets, amount of skilled labour, legal status, methods of production, and turnover levels (Abor & Quartey 2010). There is no universally acceptable or general definition of SMMEs. Every country uses its own measures to define SMMEs (Ackah & Vuvor 2011). This is because organisations are generally different in their net worth, turnover, profitability, and number of employees. Thus, to apply a definition that either focuses on turnover or number of employees in one country may result in dissimilar results in another country (Sitharam & Hoque 2016).

This section provides a broad overview of SMMEs to provide a definition suitable for the current study context. It is important to clarify the meaning of SMME as the term is often used interchangeably with SME in academic literature. The World Trade Organisations (WTO) and the European Union (EU) simply use the acronym SME (ILDP 2014), USA uses the term, Small and Medium Businesses (SMB), India uses the term Micro, Small and Medium Enterprises (MSME) (Government of India 2006:2), while in South Africa the acronym SMME is used (DNT 2017). Thus, in the current study, the term SMME is used throughout.

SMMEs in South Africa are officially defined in section one of the National Small Business Act (NSBA) of 1996, which was revised further in the National Small Business Amendment Act (NSBAA) number 29 of 2004 as privately owned businesses that are not part of government and operate in any sector of the economy (Government Gazette of the Republic of South Africa 2004:2). The different sectors in which SMMEs are permitted to operate are defined by the South African Department of National Treasury (DNT) in Table 2.5:

Sector	Size	Employees (full-time equivalent)	Total annual turnover	Total gross asset value (without fixed property)
Agriculture	Micro	5	R0.20m	R0.10m
	Very small	10	R0.50m	R0.50m
	Small	50	R3m	R3m
	Medium	100	R5m	R5m
Mining and quarrying	Micro	5	R0.20m	R0.10m
	Very small	20	R4m	R2m
	Small	50	R10m	R6m
	Medium	200	R39m	R23m
Manufacturing	Micro	5	R0.20m	R0.10m
	Very small	20	R5m	R2m
	Small	50	R13m	R5m
	Medium	200	R51m	R19m
Electricity, gas and water	Micro	5	R0.20m	R0.10m
	Very small	20	R5.10m	R1.9m
	Small	50	R13m	R5m
	Medium	200	R51m	R19m
Construction	Micro	5	R0.20m	R0.10m
	Very small	20	R3m	R0.50m
	Small	50	R6m	R1m
	Medium	200	R26m	R5m
Retail, motor trade and repair services	Micro	5	R0.20m	R0.10m
	Very small	20	R4m	R0.60m
	Small	50	R19m	R3m
	Medium	200	R39m	R6m
Wholesale trade, commercial agents and allied services	Micro	5	R0.20m	R0.10m
	Very small	20	R6m	R0.60m
	Small	50	R32m	R5m
	Medium	200	R64m	R10m
Catering, accommodation and other trades	Micro	5	R0.20m	R0.10m
	Very small	20	R5.10m	R1.90m
	Small	50	R6m	R1m
	Medium	200	R13m	R3m
Transport, storage and communications	Micro	5	R0.20m	R0.10m
	Very small	20	R3m	R0.60m
	Small	50	R13m	R3m
	Medium	200	R26m	R6m
Finance and Business services	Micro	5	R0.20m	R0.10m
	Very small	20	R3m	R0.50m
	Small	50	R13m	R3m
	Medium	200	R26m	R5m
Community, social and personal services	Micro	5	R0.20m	R0.10m
	Very small	20	R1m	R0.60m
	Small	50	R6m	R3m
	Medium	200	R13m	R6m

Table 2.5. SMMEs in different sectors of the South Africa

Source: DNT (2017)

As shown in Table 2.5, SMMEs in South Africa operate in different sectors of the economy and their sizes differ according to those sectors. The NSB Act further provides a

framework in which SMMEs are classified as survivalist enterprises, micro-enterprises, very small enterprises, small enterprises, and medium enterprises. These categories are described in ILDP (2014) as follows:

- a) **Survivalist enterprises:** include businesses that produce very a small income and are barely sustainable since the income is from hand to mouth. Ranyane (2015) adds that survivalist enterprises are often lumped together with the micro-enterprises because of their similarities, thus they are not represented separately in the SMME acronym.
- b) **Micro enterprises:** are very informal businesses employing fewer than five employees on a full-time basis. They often fail to meet the VAT registration process required by law.
- c) **Very small enterprises:** have access to technology and operate in the formal sectors of the economy. They have fewer than 10 employees. However, the number of paid employees could reach up to 20 in sectors such as manufacturing, mining, energy, and construction.
- d) **Small enterprises:** are more formal than very small enterprises with a maximum of 50 registered employees on the payroll.
- e) **Medium enterprises:** Generally, they employ not more than 100 people and have very flexible leadership styles with decentralised management. Only in sectors such as manufacturing, mining and engineering, can they have up to 200 permanent employees.

A general summary of the classifications and different categories of SMMEs in South Africa as set out by the South African Department of National Treasury is shown in Table 2.6:

Size of Enterprise	Active Number of Employees	Annual Turnover (in South African rand)	Gross Assets, Not including Fixed Property
Medium	Less than 200, depending in the industry	Less than R4 million to R50 million, reliant on industry	Less than R2 million to R18 million, reliant on industry
Small	Less than 50	Less than R2 million to R25 million, depending on industry	Less than R2 million to R4.5 million, reliant on industry
Very Small	Less than 20, depending on the industry	Less than R200 000 to R500,000, reliant on industry	Less than R150 000 to R500,000, reliant on Industry
Micro	Less than 5, depending on the industry	Less than R200 000 to R500,000, reliant on industry	Less than R150 000 to R500,000, reliant on Industry

Table 2.6. Summary of SMMEs category in South Africa

Source: DNT (2017)

As per the summary of SMME categories in Table 2.6, defining an SMME based on the total number of salaried employees is sufficient. Therefore, in the current study, an SMME is defined as any privately-owned business registered in the South African national treasury and employs less than 200 people.

While the significance of the SMME sector is widely recognised in academic literature, it is important to note that SMMEs do not share the same operational characteristics with large organisations (Zakaria & Hashim 2016). Despite the official classifications of SMMEs; e.g., private business entities, organisations employing less than 200 employees, etc.; certain operational characteristics distinguish SMMEs from their bigger counterparts. Some of the common operational characteristics are discussed next.

2.4.2. Operational characteristics of SMMEs

Although some operational characteristics may appear to be limiting the performance of the SMMEs business, others allow SMMEs to have a noticeable impact on the economic

activities of the country. Some of the operational characteristics of SMME include limited access to finance and flexible management style.

Limited access to finance

Lack of access to capital finance is one of the major hindrances preventing SMME growth and sustainability, especially in African countries (Fatoki & Asah 2011; Kira & He 2012; Kari 2013; Beck & Cull, 2014). Botha & Musengi (2012) assert that many problems relating to finance in SMMEs are mostly resulting from a dearth of the accessibility of finance from financial institutions. The stringent policies, collateral requirements, and cumbersome procedures set by the financial institutions are some of the challenges preventing SMMEs to access finance to start and sustain their business (Haron, Said, Jayaraman & Ismail 2013). Ranyane (2014) further adds that financial institutions have a negative perception towards the survival of SMMEs, which makes it even more difficult for SMMEs to be granted funding.

Access to finance by SMMEs has become costly and somewhat impossible (Kira 2013). The financial institutions only provide finance to businesses that have a reputation and some form of collateral. SMMEs are required to grow and gain more reputation so that access to finance from equities and financial institutions can become easier for them (Kira (2013). As shown in Figure 2.7, the more SMMEs grow, the more funding opportunities become available.

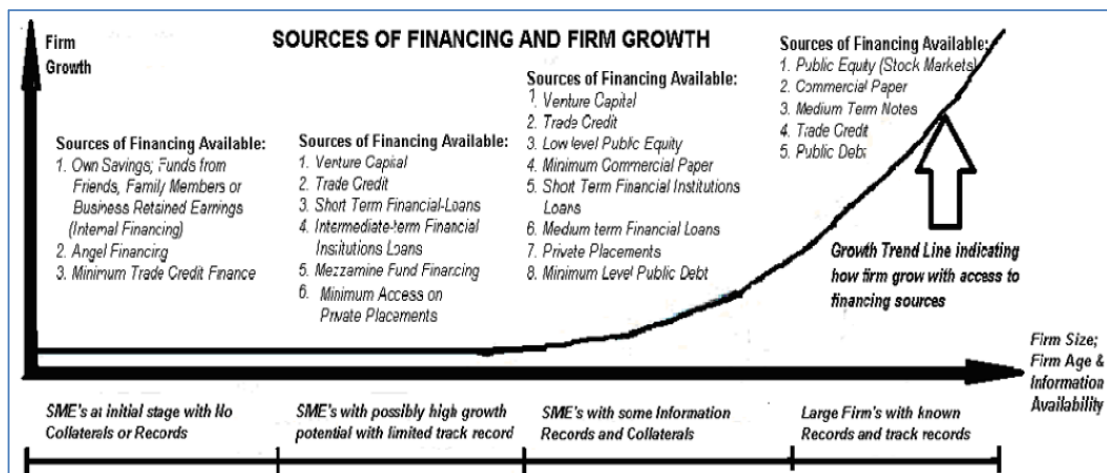


Figure 2.7. SMME growth and access to financing

Source: Kira (2013)

As shown in Figure 2.7, SMMEs rely on funds from their savings, short-term and intermediate-term loans, trade credit, etc., as sources of finance. SMMEs are generally expected to accumulate assets that can serve as equity and can be used as collateral for financial institutions to grant loans to them (Kira 2013). It is clear from Figure 2.7 that SMMEs have to follow stringent growth patterns to be granted finance by financial institutions.

The issue of SMMEs access to finance has also been recognised by the international development community as an important policy priority (Pittsburgh 2009). The South African government has made efforts by setting up finance development institutions such as Khula Enterprise Ltd., which is aimed at assisting SMMEs to access funding (Pretorius & Shaw 2004).

Despite efforts by the South African government to assist SMMEs with access to finance, SMMEs are still finding it difficult to access funding. The financial institutions are making it difficult for SMMEs to access funding because they serve as the first point of contact for checking the assets, liabilities and creditworthiness of SMMEs before finance applications are granted by organisations like Khula in the form of credit to SMMEs (Pretorius & Shaw 2004).

Thus, there is a finance gap that exists between the supply capabilities of financial institutions and the demand for capital finance set by SMMEs in South Africa. SMMEs are currently being pressured to improve their sustainability scorecards (Høgevoid, Svensson, Wagner, Varela, Ferro & Padin 2016). Consequently, SMMEs in South Africa continue to operate in very competitive environments with very little finance.

Flexible management styles

The management styles influence the performance of an organisation (Zakaria & Hashim, 2016). Many organisations achieve success because of good management styles. Management styles involve the manager's preferred approach of handling matters

concerning employee and employer relations as well as the ways in which managers exercise their authority during decision-making processes (Dundon & Rollinson 2011).

Management styles are influenced by external and internal organisational factors. Zakaria & Hashim (2016) argue that factors such as government policies, regulations, economic environment, labour markets, infrastructure, crime, corruption, economics, and competition are the external factors influencing the management of SMMEs; while internal factors are made up of core values, access to finance, investment decisions, cost of production, management skills, networking, purpose, management philosophies of the business owner, and business strategies.

Because the management style of SMMEs is characterised by the influence of the owner on business decisions and direction (Goldstuck 2014), it is regarded as simple, flexible, having little depth and versatility, and very low levels of bureaucracy. The high degree of flexibility in the management styles allow SMMEs to incorporate informal methods of communication to cater for the different needs of customers and external partners, and to improve relationships (Berends, Jelinek, Reymen & Stultiëns 2014). Informal communication patterns include the social exchange of ideas with customers and external partners. These communication patterns are often without bureaucracy and could lead to SMME competitiveness (Adams & Comber 2013; Gourova 2010).

Moreover, informal communication patterns help SMMEs to learn by creating new knowledge that is important for their competitiveness (Saleem & Perveen 2017). SMMEs reflect on new knowledge which emerges during the informal communication and they apply it in practice (Krylova et al. 2016). For example, Joe, Yoong & Patel (2013) discovered five different concepts of valuable knowledge derived from a multiple case study of SMEs in New Zealand.

Given the flexibility of SMMEs, the study seeks to ascertain how they manage to execute KMS with the aid of social media. As such, the study addresses specific research questions pertaining to such an enquiry. In particular, a review of the literature based on specific research questions stated in Chapter One is presented in the next section.

2.5. Reviewing the literature based on research questions

To keep the study focused, a search of the literature was based on the research questions. In line with the first research question asking: *how do SMMEs in South Africa use social media to enhance their KMS*, the study explored the literature that covers KMS in organisations and explained them in terms of their processes and relevance to the SMME environment in section 2.5.1. The study further explored the literature to understand the impact of social media on the KMS of SMMEs in section 2.5.2.

In section 2.5.3, the literature that covers social media strategies is explored to address the second research question asking: *what are the factors that influence the use of social media to enhance the KMS of SMMEs in South Africa?* To expand on the discussion and to understand specific factors, several adoption frameworks providing the adoption and use factors were discussed in Chapter Three.

For the third research question asking: *how significant are the identified factors in the evaluation of social media to enhance the KMS of SMMEs*, the factors identified in section 2.5.3 were used to develop a conceptual model proposed in the study. The model was tested and validated using structural equation modelling (SEM) in Chapter Five of this study (*cf* Chapter Five) to ensure the significance of the identified factors.

In line with the fourth research question which asks: *What methods are currently used by SMMEs in South Africa to evaluate the effectiveness of social media on KMS*, the literature relating to several evaluation methods for collaborative systems was reviewed and discussed in section 2.5.4 to provide context on the role of social media in the SMME and how evaluations are performed.

For the fifth research question asking: *what are the challenges experienced with the current methods of evaluating the effectiveness of social media in the KMS of SMMEs in South Africa*, section 2.5.4 presents the literature of challenges of several evaluation methods for collaborative systems.

Lastly, in line with the seventh research question asking: *what can SMMEs in South Africa use to evaluate the effectiveness of social media on KMS*, a conceptual model for evaluating the effectiveness of social media to enhance the KMS of SMMEs is proposed in Chapter Three.

2.5.1. Typical KMS in the SMME context

SMMEs are constrained by the lack of financial capacity to invest in costly ICT systems, hence, will mostly prefer to adopt and use systems that are flexible and that come with low to no implementation costs. The peer-to-peer architecture requires little to no dedicated infrastructure, reducing the upfront investment cost required in the configuration of the architecture (Rodrigues & Druschel 2010). Examples of such distributed peer-to-peer systems include collaborative technologies like wikis (Dotsika & Patrick 2013; Gresty 2013; Razmerita & Kirchner 2011; Grace 2009), and social media platforms (Arpaci 2017; Mosha 2017; Crosby 2016; Gresty 2013; Choudhary, Harding, Camarinha-Matos, Lenny Koh & Tiwar 2013). Thus, SMMEs are less advanced with mechanistic approaches such as centralistic KMS architectures and normally opt for peer-to-peer KMS that come with no cost (Mcadam & Reid 2006)

Generally, KMS are implemented to technologically execute KM processes (Shongwe 2016; Alavi & Leidner 2001). However, traditional KMS are being criticized for tending to decontextualize by codifying knowledge, but neglecting the behavioural aspects and social learning that are very influential in organisations, particularly in SMME environments (Boden, Avram, Bannon & Wulf 2012).

In the SMME context, the knowledge creation aspect of KM usually involves informal face-to-face brainstorming conversations between subject matter experts and individual knowledge seekers (Shih, Chang & Lin 2010; Hutchinson & Quintas 2008), where subject matter experts serve as knowledge repositories (Mcadam & Reid 2006). Knowledge transfer is also mostly done through informal discussions among individuals and groups, while the knowledge application is in the form of manuals with limited adherence to governance standards. As such, KMS processes in SMMEs put more focus on tacit forms of knowledge (Cerchione et al. 2015). Thus, the KMS of SMMEs mainly address the socialisation quadrant in the broader Socialisation, Externalisation, Combination,

Internalisation (SECI) cycle of KM (Nonaka 1994). As a result, SMMEs end up using simpler, more relaxed, unstructured, and flexible systems to carry out their KMS needs.

Because of the global financial burden and their operational flexibility, SMMEs often rely on Internet-based ICT systems that offer advantages such as location independence, maintenance, scalability, and cost-effectiveness (Arpaci 2017) to carry out their KMS needs. Hester (2011) asserts that effective KMS are more dependent on social interactions among individuals. The operational characteristics of the SMME business (i.e., limited access to finance and flexible management style) (*cf* Section 2.4.2) require the use of low cost and flexible solutions that enhance social interactions among employees. Hence, SMMEs are constrained to using internet-based, low-cost and flexible KMS that support interactions among employees, customers and business partners.

The growth of internet platforms brings about new developments in the KMS arena. The developments have seen the rise of social media platforms that cultivate many benefits promised by peer-to-peer architecture. Social media platforms are mostly used at a personal level to support the social interaction among people, but their impact on the KM practices of organisations has been on the rise. The next section discusses the impact of social media on the KMS.

2.5.2. Impact of Social Media on Knowledge Management Systems

Since knowledge is a key factor to achieve sustainable competitive advantage (Shongwe 2016; Adams & Comber 2013), organisations are compelled to invest in socially-enabled collaboration platforms that are used for knowledge exchange (Greeven & Williams 2017). Such platforms include social media with its ability to enhance the collaboration efforts of organisations for future growth (Barnes, Clear, Dyerson, Harindranath, Harris & Rae 2012). Social media allows organisations to facilitate collaboration and information sharing quickly and easily (Effing & Spil 2016; Ogbuji & Papazafeiropoulou 2016).

Social media focuses on key concepts of KMS which are socialisation and networking among communities of same interests (Helms, Cranefield & van Reijssen 2017). The proliferation of social media in organisations has transformed the way business is conducted (Ogbuji & Papazafeiropoulou 2016). Social media platforms introduce new

developments which ultimately alter the KMS processes of organisations (Schroeder 2014). Niehaves, Koffer & Ortbach (2015) assert that developing trends in ICT such as Bring Your Own Device (BYOD) and the consumerisation of IT has transformed social media from being private platforms to becoming workplace platforms that can be used to gain competitive advantage.

Over the years, there has been emerging literature addressing the impact of social media on organisational KMS processes. For example, Meske & Stieglitz (2013) discovered that social media offer networking and collaboration capabilities to enhance knowledge exchange among staff and external partners; Epure, Mohamed & Mihaes (2017) discovered that social media is capable of providing KM dimensions of knowledge creation, sharing and dissemination which is essential for collaborative research projects; Aisenberg-Ferenhof, Durst & Hesamamiri (2016) discovered that social media is capable of overcoming KM barriers such as cultural issues, locating knowledgeable people and building trust among organisational members; and Jones, Borgman & Ulusoy (2015) discovered that social media platforms offer great potential for increased awareness among organisational members.

Several other IS-related studies explored social media's impact on customer KMS processes. For example, Chua & Banerjee (2013) discovered that social media offers great potential for organisations to engage their customers in knowledge sharing to gain knowledge about them; and Vlachvei & Notta (2014) discovered that organisations that use social media have the advantage of reaching their customers in real-time and 'feed' them product-related information as it becomes available. Vlachvei & Notta (2014); Lacho & Marinello (2010) also add that social media enables organisations to form brand-centric communities where they can engage their customers to have rich dialogues about their products.

While there is a plethora of literature addressing potential benefits of social media, the scarcity of literature that provides generic methods suitable for evaluating the effectiveness of social media on KMS is evident, particularly for SMMEs in South Africa. A growing number of companies are increasingly using different social media platforms without a clear strategic approach or guidelines on how their return on investment (ROI) is measured (Ogbuji & Papazafeiropoulou 2016). Recent literature also shows that there is limited

social media strategy frameworks or models (Persaud, Spence & Rahman 2012), which make it more challenging to measure the effectiveness of social media on the KMS of SMME organisations (Mamorobela & Buckley 2018). Thus, strategic frameworks and models are necessary in this regard. Generally, social media strategies are used to provide the basis for using social media in organisations. Some of the existing strategies are discussed next.

2.5.3. Social media strategies

There is growing literature suggesting strategies for companies to effectively implement social media platforms for sustainable competitive advantage. The strategies take into account the constraints of maintaining a positive image while having an active online presence to communicate with a wider audience of customers. The strategies also ensure alignment between social media capabilities and business objectives. Lardi & Fuchs (2013) adds that applying social media through a strategy, enforces a major change in the organisation which cuts across its people, culture of doing things, processes and the view on technology. Some social media strategies that are developed to focus on different aspects of social media are discussed as follows:

Social media functionalities (Honeycomb)

Social media technologies have been studied to enhance social relationships that exist among people in organisations. While there are many applications of social media to enhance organisational processes, it is important to understand how social media platforms enable the KMS process through different functional building blocks – so that the use and effectiveness can be evaluated. The functional build blocks of social media are defined using the Honeycomb model (Kietzmann et al. 2011). Figure 2.8 represents the building blocks of social media:

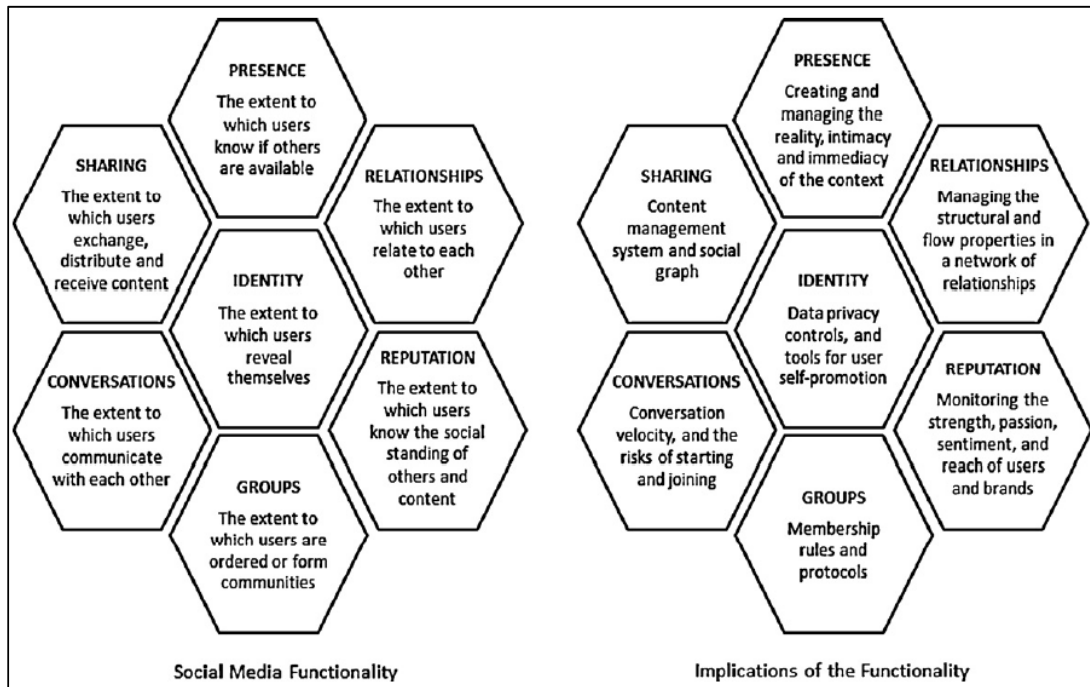


Figure 2.8. Social Media functionalities

Source: Kietzmann et al. (2011)

As shown in Figure 2.8, social media functionalities include identify, presence, groups, relationships, conversation, sharing, and reputation. Each building block can be measured through its implication for one or more business capabilities. Each building block of the Honeycomb model provides the capability to examine and unpack the user experiences of a specific facet of social media and their implication for organisational capabilities (Kietzmann et al. 2011). Specific functions are discussed as follows:

- Identity functionality:** The identity function of social media allows users to reveal their identity by disclosing their names, age, gender, profession, location, to others who are connected on the social network (Kietzmann et al. 2011). Although it is not necessary to disclose users' real names on social media platforms, their ideas and interests may be used to identify them (Kaplan & Haenlein 2010). However, it only makes sense for users to reveal their real names, age, gender, profession and location when using platforms like Facebook and LinkedIn for marketing purposes. Users are also provided with the facility to store their profiles online, similar to the nature of business cards and email signatures, to advertise their identities and encourage other users to follow them (Kietzmann et al. 2011).

- **Conversation functionality:** facilitates conversations of individuals who are connected over social networks. The conversation functionality represents how social media users communicate with one another on the social platform (Kietzmann et al. 2011). For example, Twitter enables users to create short messages to raise awareness about current issues, thus users need to be connected synchronously to receive messages timeously, but are not compelled to respond to those messages (Kaplan & Haenlein 2010). Other platforms such as Blogs are designed for facilitating the creation of lengthy conversations. Users are not required to be connected synchronously as the messages can be traced back to the blog itself (Kietzmann et al. 2011). Thus, Twitter conversations require some advanced methods of capturing short message and linking them together to form a complete conversation, while blogs can explain the whole conversation in one setting.
- **Sharing functionality:** The sharing functionality of social media represents technologies that enable users to exchange, distribute, and receive digital content (Trainor, Andzulis, Rapp & Agnihotri 2014). It provides a way for social media users to interact through the exchange of objects such as text, groupings, videos, pictures, sound, links, and locations (Kietzmann et al. 2011). The functionality also encourages organisations to constantly interact with customers and more importantly, to manage relationships with stakeholders. Through the sharing functionality, organisations can identify common objects that are interesting to both them and external partners to encourage constant connectivity and exchange on those objects. Additionally, platforms such as YouTube have a built-in capability of filtering and screening content that needs to be shared to avoid uploads of content that is offensive and contravening copyright laws (Kietzmann et al. 2011).
- **Presence functionality:** Presence functionality represents how social media users can be made aware of the existence of others on the platform as and when they connect. Kietzmann et al. (2011) assert that the presence function provides users with the ability to be aware of the availability of others as they log in on the platform. The functionality is represented by a status line such as ‘online’ or ‘hidden’ to show whether a user is available on the platform or not. When a user ‘checks in’ on a platform, all other users that are currently online can view this information and start a

conversation with them. The key focus of presence functionality is user availability and user location (Kietzmann et al. 2011) as they directly influence how users will engage with one another. Platforms such as Facebook, Twitter, Foursquare and Gowalla can display information about friends in close physical proximity. As Kaplan & Haenlein (2010) puts it, the biggest influence of social media presence functionality is the level of intimacy and immediacy of the social media relationships medium. High levels of social presence in a social media platforms are likely to make conversations more influential (Kaplan & Haenlein 2010).

- **Relationships functionality:** Relationship functionality of social media measures the extent to which users are related to one another (Kietzmann et al. 2011). For example, users can be friends on platforms such as Facebook because of the state of having mutual affections. Kietzmann et al. (2011) adds that relationship functionality is key to determine what kind of information and how that information will be exchanged among social media users. Platforms such as LinkedIn allow users to see how they are associated with other users, for instance, the links could possibly be organisations they used to work for or schools they have once attended.
- **Reputation functionality:** Reputation functionality describes the general opinions that social media users have about one another on the network. Reputation includes elements of trust in information provided by users. Both users and the content they post on social media are measured for their trustworthiness (Kietzmann et al. 2011). Social media platforms are embedded with a tool called ‘mechanical turks’ to determine the trustworthiness of content posted by users. For example, platforms like YouTube provide users with facilities for ratings to enhance trustworthiness of user-generated content and Facebook includes ‘likes’ to ensure that users trust the content. Reputation has important implications for organisations as it guides how they could create a metric to measure contributions that users make on topics that matter most for the effectiveness of the organisation. Reputation also helps organisations to measure the number of times a user is mentioned and how their opinions matter to others in the network.
- **Groups functionality:** Groups functionality plays a major role in social media. Users can form communities and sub-communities in which they exchange ideas though the

groups functionality (Kietzmann et al. 2011). The more social media users with common interests connect, the more social the groups become. Groups can be open to all social media user or can be restricted only to users with special privileges. For example, Facebook has groups and subgroups which have administrators with full control to invite potential members, approve applicants and remove users who are no longer required in the groups. Implication of groups in organisations include the allowance of employees to quickly retrieve the contacts of those they need to communicate with, as well as the creation of different groups with special permissions for effective communication.

Although the Honeycomb framework offers guidance for specific functions of social media, the frameworks does not give any insight on methods of evaluating social media (Kietzmann, Hermskens, McCarthy & Silvestre 2011). Moreover, the functional building blocks of the Honeycomb are only operational to describe the extent to which users engage with social media (Ogbuji & Papazafeiropoulou 2016).

The Social strategy cone

Effing & Spil (2016) developed the social strategy cone to address seven key components of concern when developing social media strategies. The seven components are discussed as follows:

- **Target audience:** comprises groups of people intended to be addressed by organisations through social media (Berthon, Pitt, Plangger & Shapiro 2012). Target groups allow organisations to segment their population of customers, partners and employees to gain knowledge of the population that accesses their social media sites (Larson & Watson 2011).
- **Channel choice:** is the appropriate channel for communication with different target groups (Dutta 2010). Depending on the technological infrastructure, social media channels can determine the effectiveness and appropriateness of communication among different target groups (Klang & Nolin 2011).

- **Goals:** the goals of social media have to be clearly defined, measurable and aligned with business goals to derive business value from social media strategies (Gotterbarn 2018; Bottles & Sherlock 2011).
- **Resources:** refers to those resources that need for effective use of social media. Employees may need to be provided with training, internet access, or computing devices to use social media channels that are proposed within the organisation (Burkhalter, Wood, & Tryce 2014).
- **Policies:** refers to basic rules governing how social media are used and managed in the organisation. Policies are necessary to protect the image and reputation of the organisation from harm by setting clear boundaries for effectively engaging with target groups (Burkhalter et al. 2014).
- **Monitoring process:** are sufficient mechanisms to inform the organisation about what the audiences are saying regarding the organisation's products and services or the organisation itself (Berthon et al. 2012; Klang & Nolin 2011). Since organisations have no control over what can or cannot be communicated on social media platforms, monitoring mechanisms will allow them to keep track of conversations to respond accordingly if required. Standard software tools like TweetDeck, GoogleAlerts, and Fisheye, can be used for monitoring (Dutta 2010). Klang & Nolin (2011) adds that impact measurement can be done through simple metrics including number of comments, visitors, followers, likes, and responses to evaluate activities.
- **Content activities:** including posts and timeframes that need to be defined to allow constant contribution on the social media platforms. Content activities ensure that a clear plan for social media activities such as marketing, communication, and campaigns exists (Klang & Nolin 2011). Barnes (2014) further adds that having such plans for social media content will ensure that social media platforms are constantly being updated with content that is authentic and appropriate.

The social strategy cone suggests that social media strategies in companies will have three broad maturity levels and these levels are of importance when evaluating the effectiveness of a social media. According to Effing & Spil (2016), the three levels of maturity include: the *Initiation* stage where a social media strategy mainly focuses on components such as target audience and channel of choice as the main components to measure the success of the strategy; the *Diffusion* stage where the focus of the strategy is on goals, resources and policies as a measure of success; and lastly, the *Maturity* stage where the elements of monitoring and content activities serve as key focus areas to measure success of the social media strategy.

2.5.4. Methods for evaluating collaborative systems

Social media are also regarded as global collaboration and sharing systems (Effing & Spil 2016; Ogbuji & Papazafeiropoulou 2016). Recently, evaluation of collaboration systems was done to ascertain their impact on individuals, groups, and organisations using them (Antunes, Herskovic, Ochoa & Pino 2012). The evaluation process enables organisations to decide about future adoption and acceptance of collaborative systems.

Several evaluation methods for collaborative systems have been proposed in the literature. Most of which tend to focus on evaluating collaborative systems in terms of their usability to improve user experience (Sánchez-Gálvez, Fernández-Luna & Anzures-García 2019; Sánchez-Gálvez & Fernández-Luna 2015; Vizcaíno, Martínez, Aranda & Piattini 2005). However, since social media are collaborative systems with the potential to enhance KMS processes, this study puts more emphasis on methods used to evaluate collaborative systems in the context of KMS processes.

Vizcaíno et al. (2005) proposed the Knowledge Management Approach (KMA) checklist to evaluate the capabilities of collaborative applications to facilitate the knowledge creation, accumulation, sharing, utilisation, internalisation, and integration processes of the KMS. Although the KMA received attention in the context of KM evaluation, it is only a checklist and a work in progress towards a formalised quality model that can reliably be used to cover all important KMS aspects (Vizcaíno et al. 2005).

Sołtysik-Piorunkiewicz (2015) proposed the ‘discover’ evaluation method to evaluate the Web 2.0/3.0 applications in the context of KM. The evaluation criteria of the model include assessing the impact of the graphical interface of the collaborative system; its functional structure; method of publishing content; technological and organisational aspects relating to KM. However, since the evaluation is based on usability, the model does not address perception issues at an organisational level for successful evaluation on Web 2.0/3.0 as enablers of KM.

There is growing literature addressing evaluations of collaborative systems from the viewpoint of usability. Neale, Carroll & Rosson (2004) suggests that evaluation methods for collaboration systems should include more factors than just addressing usability issues. The current study heeds the call and takes a different direction by focusing on evaluating the effectiveness of social media from the viewpoint of KMS in the SMME context. This perspective allows the study to include individual factors such as user’s intention to use or perceived net benefit of using social media, organisational factors such as management support, as well as characteristics of social media to support and enhance the KMS of SMMEs. Some of the related studies and gaps that the current study is addressing are discussed next.

2.6. Related studies and identified gaps

Although there is limited literature that specifically addresses evaluations of social media in the context of KMS, some of the recent studies that are closely related to the current research are explored and compared in this section. Social media has long been studied to provide a more collaborative environment for enhanced KMS (Aisenberg-Ferenhof et al. 2016). In this study, it is logical to refer to social media as collaborative systems that can enhance KMS. Thus, an exploration of generic methods for evaluating collaborative systems provided useful guidance towards the development of a model for evaluating the effectiveness of social media on KMS of SMMEs in the South African context.

Sun, Zhou, Jeyaraj, Shang & Hu (2019) developed the model to evaluate the impact of Enterprise Social Media Platform (ESMP) on knowledge sharing by focusing on both positive and negative affordances of ESMP affecting individual goals and organizational

context. The study highlights that previous research on ESMP affordances do not take the role of individual goals and organizational context into consideration. While the study addresses issues of ESMP affordances for knowledge sharing at both individual goals and organisational context point of view, it is limited to only one aspect of KM as the outcome of ESMP. The current study explores the effectiveness of social media on KMS processes holistically.

Kramer et al. (2017) explores the literature to identify the impact of the internet, distributed systems and social technologies on the KMS adoption in SMEs. The findings of the study reveal challenges associated with recent KMS of SME including failure to address KM holistically and lacking the ability to harness the culture of knowledge sharing in the organisation. Although the study highlights important elements within the KM literature, it is only limited to a literature search on google search engine and not collecting and drawing conclusions about data from other sources to widen the scope and identify KMS that are especially focusing on the specific needs of SMEs comprehensively.

Behringer & Sassenberg (2015) conducted a quantitative survey to measure the causes leading to employees' intentions to adopt social media to exchange knowledge internally in the organisation. A survey of 315 employees revealed that their experience with social media, their understanding of the importance of having a knowledge sharing culture within the organisation, the usefulness of social media are all determinants of an intention to use of social media. The research did not address how users' intentions translate into actual technology-use behaviour. This study attempts to close this gap using KM success model to evaluate usage behaviour of social media for KMS success in SMMEs

Cerchione et al. (2015) qualitatively studied the evolution of KM in SMEs operating in technology industries in the European Union by looking at common hindrances, types of KMS, and the impact of KM in SMEs. The study highlights that KMS play an important role in SME growth and performance, most of the KMS used are outdated and cannot offer collaborative functionalities similar to current and newer social media platforms. Furthermore, the study does not explore methods used for the adoption of cost-effective KMS such as social media, particularly to address the specific needs of SMEs.

The current thesis attempts to close the gaps identified from previous related studies through a model for evaluating the effectiveness of social media on KMS of SMMEs in the South African context.

2.7. Chapter summary

In summary, this chapter presented the literature review of important concepts of the current study. The review included the background and classification of SMMEs and their contribution to GDP in South Africa and the background of knowledge, KM and KMS popularly used in organisations. It emerged that social media tools are gaining popularity in SMMEs where they are mostly being used for marketing and product promotions among other uses.

Social media functionalities such as identity, conversation, sharing, presence, relationships, reputation and groups can also be used to facilitate KMS activities to create the knowledge ecosystem, especially in SMMEs. The SMME characteristics such as lack of finance and flexible management style make it possible for SMMEs to adopt social media to carry out business activities and, more importantly, to enhance KM processes. It was also discovered that while SMMEs use social media in their KM processes, they do not necessarily evaluate the effectiveness of social media technology being used.

Various studies that propose methods of evaluating collaborative systems are geared towards evaluating the usability aspects of the technology. Generic models for holistically evaluating the effectiveness of social media in the context of KMS of SMMEs are not known in literature. It is because of the lack of such methods, frameworks, or models that the current study becomes significant. The current study develops and proposes a model for evaluating the effectiveness of social media on KMS of SMMEs in the South African context. The next chapter discusses the theoretical frameworks that underpinned the study.

CHAPTER THREE:

Theoretical foundations

3.0. Introduction

Following the literature review in Chapter Two, which presents relevant IS-related research addressing social media usage in SMMEs and the effect of social media on KMS, the current chapter elaborates on the discussion by addressing the secondary research question that seeks to ascertain specific factors influencing social media usage to enhance KMS of SMMEs in South Africa. The chapter presents several theories – from which the factors are derived to underpin the study – and develops a conceptual model which the study proposes.

Consulting the various theories that underpin the study helps researchers to fully understand the problem under investigation by asking relevant questions and gathering data (Creswell 2017). Researchers need to be aware of relevant theories that provide a framework for explaining several ways to conduct their research. Moreover, theoretical foundations guide the research process towards more rigour and provide it with a concrete foundation regarding research methods (Ravitch & Riggan 2016; Heeks 2010).

It is always common for an IS research to use theoretical foundations to guide the research efforts to meet the goals of the study. The model of evaluating the effectiveness of social media on KMS of SMMEs serves as a goal of the current study. Antunes et al. (2012) assert that an evaluation of collaborative systems can help with understanding of the impact such systems will have in organisations. Thus, the current study is premised on the notion that social media platforms are collaborative systems (Arpaci 2017; Mosha 2017; Crosby 2016) designed specifically to facilitate and enhance KMS processes.

3.1. Theoretical foundations

Recently, there has been an evolution of studies addressing the relationship between social media and KM in organisations (Sun et al. 2019; Qi & Chau 2018; Kramer et al. 2017). To add to these developing trends, the current study focusses on the SMME context, an area that is under-researched (Ayyagari et al. 2011), and suggests an evaluation model of social media for enhancing the KMS of SMMEs.

There is limited research addressing the impact that social media has in SMME environments. It was important in the current study to widen the scope of the literature by reviewing broader ICT adoption studies to guide the direction of the current research within the context of SMMEs. As such, the model proposed in the study was derived using the theoretical concepts adapted from the Diffusion of Innovation theory (DOI), Use and Gratification Theory (UGT), Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) as well as the KM success model.

Given that social media platforms represent novice innovative technologies in SMME environments (Rahbi & Abdullah 2017; Dotsika & Patrick 2013), theoretical concepts of the DOI theory were adopted to measure the influence that innovation characteristics of social media such as complexity, compatibility, and the relative advantage it has over the KMS processes of SMMEs.

Owing to the limitation of having financial constraints, SMMEs are always challenged to accept and use new technologies like social media. Therefore, using concepts of the UTAUT2 theory helped develop our understanding of the social influences of SMME owners and managers and facilitating conditions that enable the use of social media to enhance KMS processes.

Generally, people prefer to use technologies that are linked to their gratification. As such, concepts of UGT were adopted in the proposed model: to ascertain the influence that social presence, immediate access, and coordination gratification, (posited as determinants of social media use) have on the KMS of SMME.

Lastly, the KM success model is adapted to evaluate the success criteria for the KMS when social media is used in SMMEs. These theories have been applied to guide the development of an evaluation model for social media's effectiveness in the KMS of SMMEs.

3.1.1. Diffusion of Innovation Theory (DOI)

DOI is a popular theory in IS research used for describing the spread of innovation (Rogers 2003). The theory is mostly used to understand the diffusion process by which an innovation is adopted in organisations. An innovation in this regard may refer to a product, service, idea, information, or practice that is newly adopted by an organisation or by members of a social system (Newby, Nguyen & Waring 2014; Rogers 2003).

The diffusion process is measured through different degrees of willingness among innovation adopters when adopting an innovation over time (Rogers 2003). Innovation adopters are then categorised into five groups as shown in Figure 3.1.

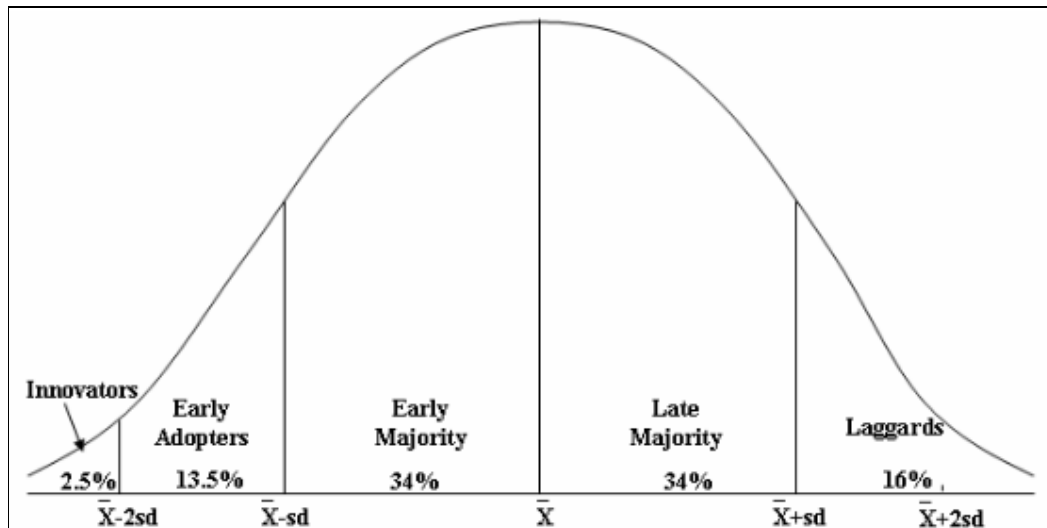


Figure 3.1. Categorisation of adopters

Source: Rogers (2003)

As shown in Figure 3.1, the normal distribution curve is often used to illustrate different categories of innovation adopters (from innovators to laggards) as well as the percentages of each category in adopting an innovation.

The first category is referred to as the *innovators*. Innovators are always the first to adopt innovations despite the risks and uncertainties associated with the innovation at the time of adoption. The innovators only represent 2.5% of the overall adopters of innovations.

The second category is called the *early adopters*. Early adopters help spread the word about an innovation after joining the innovators. This group normally adopts an innovation while it is still at an infancy stage and is not yet popular. Early adopters represent 13.5% of the overall innovation adopters.

Following the early adopters, the third group is referred to as the *early majority*. The early majority group normally deliberates for quite some time before adopting an innovation. They go through a lengthy innovation-decision process and are usually persuaded by the innovators and early adopters before adopting an innovation. This group represents 34% of the overall innovation adopters.

The fourth group of innovation adopters is called the *late majority*. Similar to the early majority, the late majority group deliberates on the innovation and decides whether the innovation is beneficial to them or not before adoption. The group normally waits for an innovation to gain popularity with more people adopting it before they will adopt. The late majority group also represents 34% of the overall innovation adopters.

Lastly, the fifth group of adopters is called the *laggards*. The laggards are highly sceptical about adopting innovations. They only adopt when necessary with no other options at their disposal. The laggards group represents 16% of innovation adopters.

To guide adopters in their decision to adopt an innovation, DOI theory highlights factors that need to be considered before adoption. The type of innovation-decision includes the time in which the innovation is introduced, attributes of the innovation itself, the communication channels used in spreading information about the innovation, social systems spreading the innovation, and the efforts of change agents, are used to guide the adoption process (Henderson 2017; Rogers 2003). These factors are of particular importance to SMMEs as they also help to understand the rate at which an innovation is spread prior to its adoption. Figure 3.2 illustrates the factors.

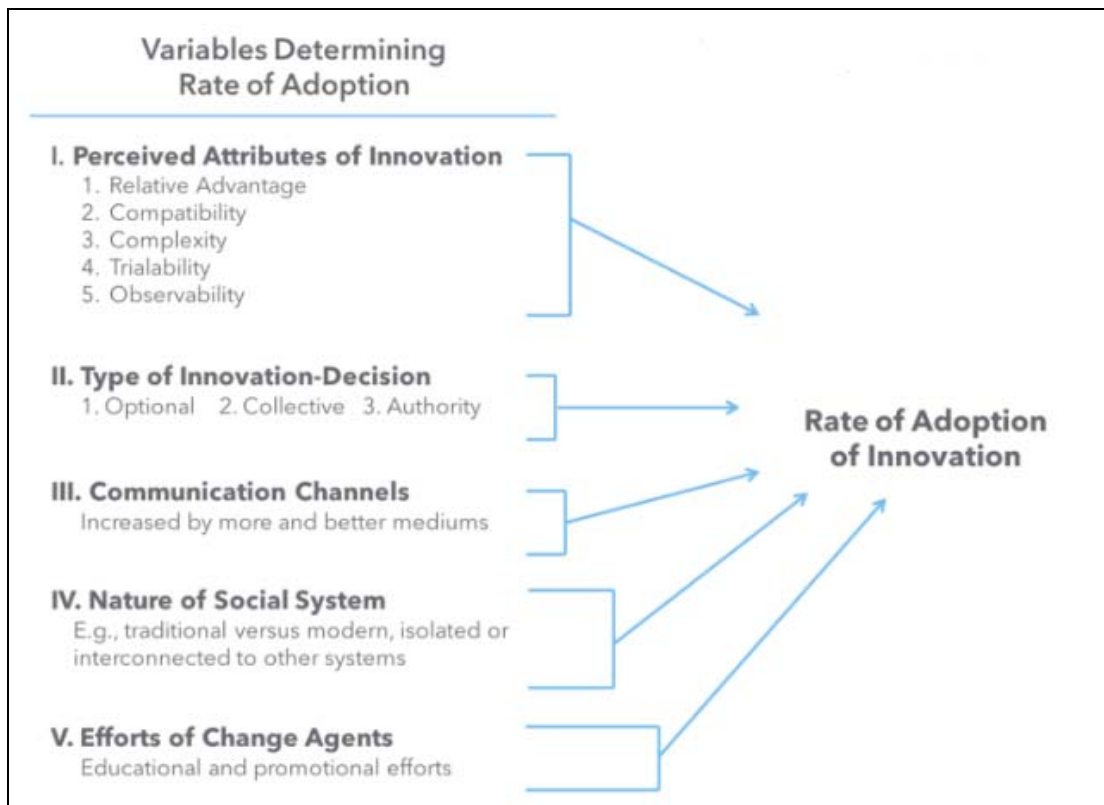


Figure 3.2. Variables of DOI

Source: Henderson (2017)

As shown in Figure 3.2, evaluation of the *perceived attributes of innovation* include: (1) the relative advantage of the proposed innovation when compared to current ones; (2) its compatibility with the existing practices, customs, experience, and values within a social system; (3) its complexity for adopters to understand and use; (4) its trialability in terms of it being tested for some time before adoption; and lastly, (5) the observability of results of the innovation (Henderson 2017).

When evaluating the *type of innovation-decision*, DOI promotes more socially driven adoption decisions which are influenced by different desires of innovation adopters. It measures three types of innovation decisions made by an individual adopter when an innovation is introduced and the adopters are made aware of its existence to decide whether to accept or reject it. These decisions include: (1) Optional decisions – which measures whether individual adopters can freely make decisions and take the initiative to adopt. This type of decision is often related to new products on the market (examples:

smartphones, health products, etc.) which can be adopted at the capacity of the individual; (2) Collective decision – which measure whether a decision to adopt an innovation is dependent on strong cultural norms and an agreement reached by members in a particular group. (3) Authority decision – which measures whether a decision to adopt is dependent on one person who holds the highest authoritative position in a group. Authority innovation-decision often involves one decision-maker who makes decisions on behalf of the entire organisation.

With respect to *communication channels*, the DOI theory measures the number and quality of mediums used to spread news pertaining to an innovation. The more accessible such information is, the more an innovation is promoted in the social system and the easier it will be for its adoption. For example, the evolution of mass media (i.e. a combination of radio, television, internet and other sources of information) has given rise to the pace of innovation adoption because the information about innovations is spread quickly to reach masses of potential adopters.

Another variable is called *the nature of the social system*. Individuals who work together as a team to accomplish certain goals are classified as a social system. They have social and communication structures that influence the behaviour of team members and their decision to adopt innovations. DOI measures the patterns of behaviour among individuals in a social system to provide an understanding of the type of innovations-decision made.

The last variable that impacts the rate of innovation adoption is the *efforts of change agents*. Rogers (2003) defines a change agent as an individual who promotes the innovation and influences others to adopt it. Change agents play a big role in the innovators and early adopters' categories of adopters because they are more effective in influencing social systems that are more disposed towards their message about innovations. They are often good communicators and are capable of persuading individuals in social systems to adopt innovations, whether individuals understand the innovation or not.

3.1.2. The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2)

UTAUT2 is a modified version of UTAUT originally coined by Venkatesh, Morris, Davis & Davis (2003) to understand determinants influencing users' intentions of using new

technology. UTAUT was extracted from other theoretical models such as Theory of Planned Behaviour (TPB), Technology Acceptance Model (TAM), Social Cognitive Theory (SCT), Model of PC Utilisation (MPCU), Theory of Reasoned Action (TRA), Motivational Model, and DOI (Taiwo & Downe 2013; Venkatesh et al. 2003). Using the concepts of UTAUT, Venkatesh, Thong & Xu (2012) added more determinants such as habit, price value, and hedonic motivation to form UTAUT2 shown in Figure 3.3.

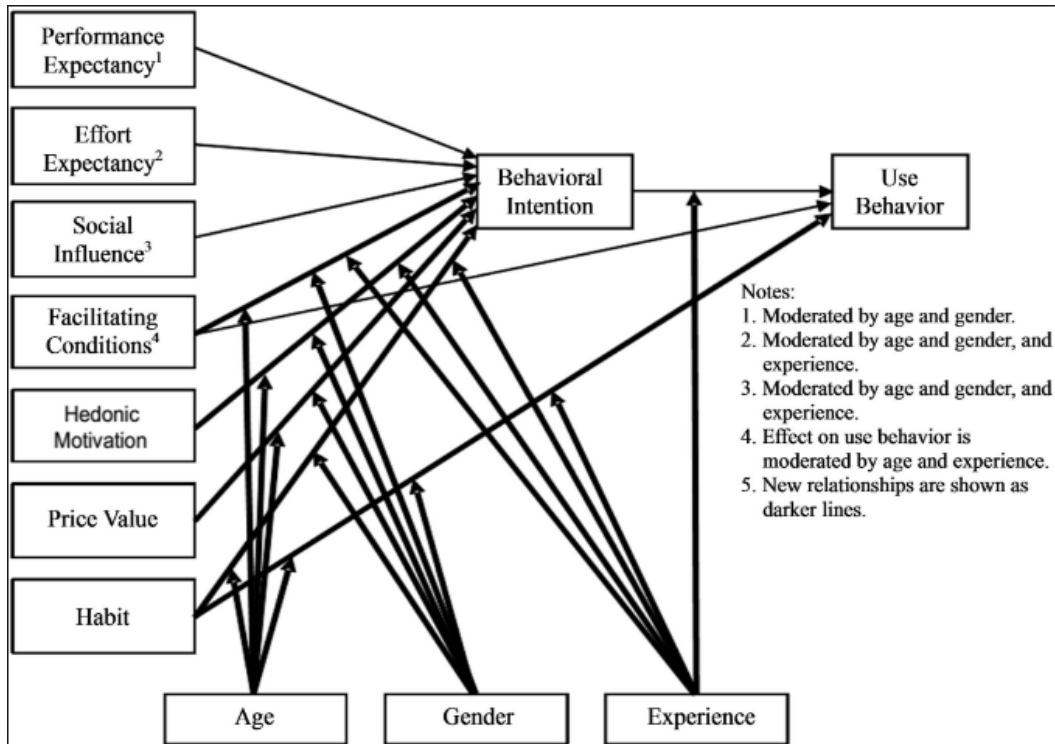


Figure 3.3. The UTAUT2

Source: Venkatesh, Thong & Xu (2012)

As shown in Figure 3.3, constructs of UTAUT2 include *performance expectancy* which evaluates the extent to which users derive the benefits of using technology to improve their activities; *effort expectancy* which measures the ease with which users expect to use the technology; *social influence* which evaluates the people’s perceptions towards the use of technology and the influence of significant others including close contacts, family members, and friends on their adoption decisions; *facilitating conditions* which are the supporting environments and the infrastructure upon which the technology will operate; *habit* which measures the extent of automatic behaviour which is derived from the experience of using the technology, as key determinants that impact the overall behavior of

users towards the use of technology; *hedonic motivation* which measures the fulfillment as a result of use; and *price value* striking a balance between the actual monetary and perceived value of technologies (Gruz, Staves & Wilk 2012; Chang 2012).

UTAUT2 also include other variables that focus on an individual's demographical information including their *gender*, *age* and *experience* to moderate various relationships between independent variables (Venkatesh et al. 2012).

3.1.3. Uses and Gratification Theory (UGT)

UGT is a framework established in media research to explain the physiological needs and gratifications of individuals (Khan 2017; Blumler & Katz 1974). It has been applied in several studies to explain media use in terms of expected positive outcomes, or 'gratifications' (Ja, Lee & Contractor 2019; LaRose, Mastro & Eastin 2001). The theory focuses on factors that users perceive as important, which influence their decisions to use media technologies (Scholtz, Calitz & Tlebere 2017; Lee & Ma 2012). More so, the theory is used for understanding the reasons why people prefer to use such technologies in a specific way (Xu, Ryan, Prybutok & Wen 2012). More importantly, UGT aims to attain three objectives: to understand how a technology is used, the extent of its use, unearth reasons for its use, and to highlight both positive and negative consequences of using media technologies (Katz, Haas & Gurevitch 1973).

UGT finds its roots in communication literature that promotes its effectiveness in evaluating social media applications (Scholtz et al. 2017). In the 1940s, researchers started to investigate why people engaged in various forms of media behaviour and this gave rise to UGT (Wimmer & Dominick 1994). The long history of UGT was underpinned by dependency and deprivation theories which suggest that some people engage in media behaviour to deal with certain socio-economic challenges (Ruggiero 2009). They will read the news, listen to the radio, or even watch television to pass the time.

Dependency theory argues that individuals have an increasing desire for media produced information (i.e. television, radio, newspaper, and Internet). This desire provides grounds for explaining reasons such media information is dependent upon (Ruggiero 2009). Rubin & Windahl (1986) included gratifications sought by users of media to augment the

dependency model and argue that individuals will only depend on the media to feed their desire for information or to satisfy specific rituals.

In addition to the dependency theory, the deprivation theory suggests that the more people are exposed to media platforms and engage with their significant others using such platforms, the more such media platforms will be promoted as a need to have (Windahl, Hojerback & Hedinsson 1986). Deprivation theory is mostly used in studies that seek to ascertain the reasons behind strikes and protests by masses of people in a particular social setting (Walker & Bellamy 1991; Windahl et al. 1986; Cohen 1981; de Bock 1980).

Both the dependency theory and deprivation theory explain how users interact with the media – which is a significant strength of UGT (Ruggiero 2009). Scholtz et al. (2017) also add that the value of UGT depends on user interactions. Users' interaction with social media is receiving a lot of attention among scholars and practitioners, as a result, the UGT gains more strength as a theory to measure interactive social media platforms. Mainly, UGT focuses on measuring the aspects that make social media useful and attractive (Lee & Ma 2012). These can include the cognitive and social gratifications observed as a result of using social media platforms (Xu et al. 2012). Lariscy, Tinkham & Sweetser (2011) also add that UGT is premised on the ultimate gratification that people seek when choosing a particular media platform that can potentially fulfil their needs.

Xu et al. (2012) suggests five gratifications that influence social media usage, namely, *coordination* which focuses on the distribution of information and arrangements of social events; *immediate access* which focuses on easy access of people located in disparate geographical locations; *social presence* which focuses on contacts and connections that people make with one another on social media platforms (Weisberg, Te'eni & Arman 2011); *affection* to express emotions to friends on social media platforms, and *leisure* for entertainment and relaxation (Xu et al. 2012).

Gratifications such as affection and leisure are more pleasure-oriented and would not ordinarily meet the objectives of professional environments like SMME organisations; while immediate access, social presence, and coordination are goal-oriented and better suited for professional settings (Xu et al. 2012). As such, immediate access, social presence, and coordination gratifications of social media are adopted in the current study's

developed model. These gratification categories have an implication on the knowledge creation aspect of the KMS of SMMEs.

3.1.4. Knowledge Management Success Model

Taking from the definition of KM success by Jennex (2005:53) as the act of using previous decision-making experience to solve current situations toward achieving organisational success in the future, Jennex et al. (2016) argue that increased effectiveness of decision-making activities results in successful KM efforts of an organisation. Similarly, in the current study, the developed model is aimed at evaluating the effectiveness of social media in achieving a successful KMS in the SMME context.

The KM success model was originally coined to evaluate the actual success of KMS using constructs adapted from the DeLone & McLean's IS success model of 2003 (Jennex & Olfman 2006). DeLone & McLean (2003) provides six dimensions along which IS are commonly evaluated. Dimensions of success consist of *System Quality* which focuses on the technical infrastructure and interfaces of the system; *Information Quality* which focuses on the accuracy of the information within the IS; *Service Quality* which addresses the services offered by the IS group; *Intention to Use* which measures users' intention to continue using the IS; *User Satisfaction* which focuses on whether the system enables users to achieve their tasks to their satisfaction; and *Net Benefit* which is the ultimate positive result of using the system to benefit the organisation (Wang & Yang 2016; DeLone & McLean 2016).

The essence of an IS success model is to demonstrate that Service Quality, Information Quality and System Quality, are the determinants of User Satisfaction and Intention to Use to achieve IS success (Urbach & Muller 2012:4). The model further highlights how User Satisfaction and Intention to Use are strongly related and positively influence each other, indicating that the more frequent a system is used, the more satisfied its users become and vice-versa (Wang & Yang 2016). These relationships are explored in the current study to ascertain their influence in the proposed evaluation model.

The KM success model evaluates the effective use of technology to manage knowledge in an organisation. Jennex & Olfman (2006) refer to KMS success as a process of enhancing

the KMS components and all other related activities within the KMS. The increased KMS effectiveness enhances KMS success and decision-making capabilities, which ultimately results in improved organisational performance (Jennex et al. 2016). As such, to ensure the accuracy of knowledge capture and transfer processes, the *information quality* construct of the IS success model was renamed to *knowledge quality* in the model. The model also appends the *intention to use* dimension with *perceived benefit* adopted from Thompson, Higgins & Howell (1991) predicting the continuance of KMS use on a voluntary basis. The other modification on the model is a link from *net benefit* feeding back to *intention to use / perceived benefits, user satisfaction, and knowledge quality* suggesting that the KM strategy provides a good platform for having useful knowledge resulting in increased satisfaction and intentions to continuance of use within the organisation (Jennex et al. 2016). Figure 3.4 illustrates the KM success model adopted from (Jennex & Olfman 2006):

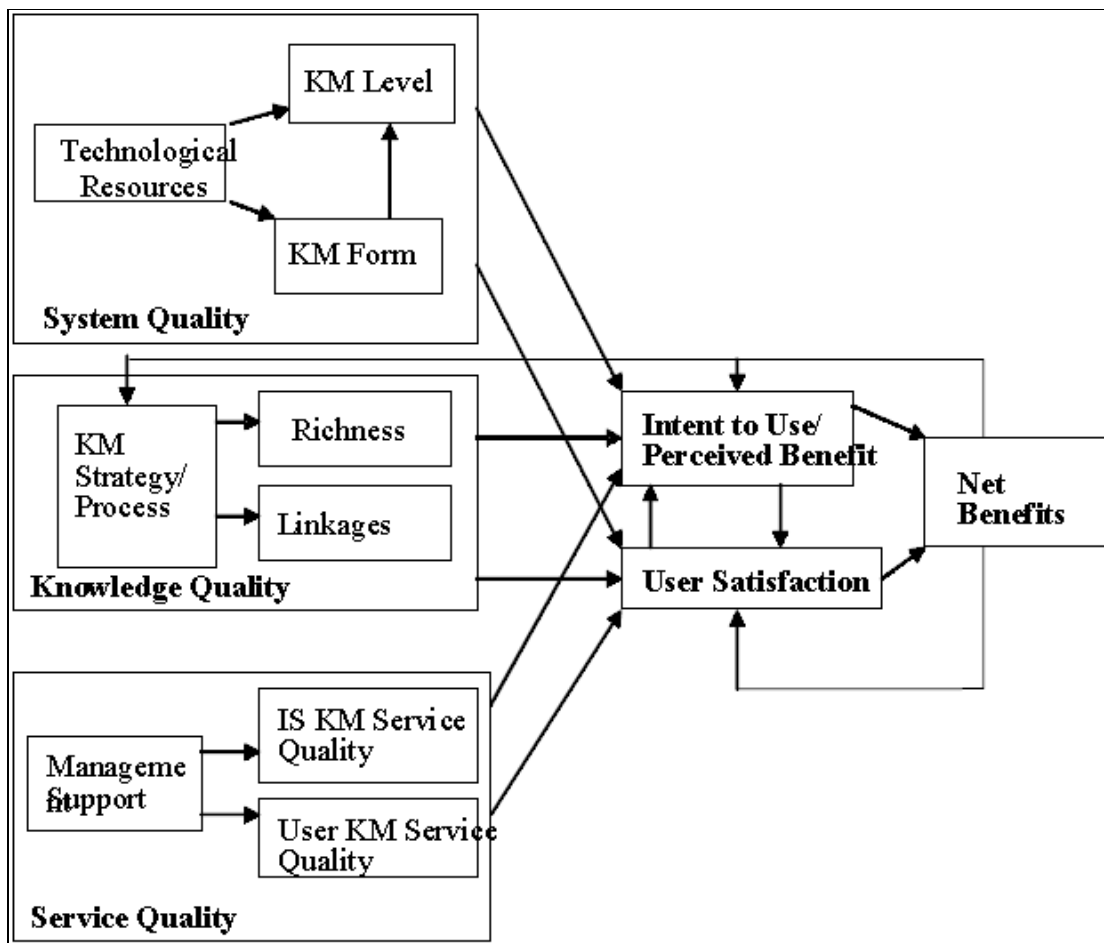


Figure 3.4. KM Success Model

Source: Jennex & Olfman (2006)

As shown in Figure 3.4, the KM success model comprises System Quality which includes the capabilities of the organisation in the form of technological components to ensure that the KMS operates at its optimal level. The capabilities include KM forms which integrates knowledge with KM processes to ensure accuracy and accessibility of knowledge, as well as KM level which ensures that proper functions of searching and manipulating knowledge are implemented correctly for knowledge to be brought to bear (Jennex & Olfman 2006).

The Knowledge Quality dimension consists of a KM strategy or process component which deals with KM process planning to ensure that knowledge is accurately captured and with the correct format before it is consumed. The strategy includes Richness to ensure that knowledge within the right context, is timely and accurately stored – so that it is useful in the organisation; and Linkages to connect knowledge with the right expertise as available knowledge sources for users (Jennex & Olfman 2006).

The third dimension is Service Quality, which consist of management support to ensure that there are adequate resources (i.e., encouragements, incentives, direction); and a knowledge-sharing culture for the creation and maintenance of a KMS. Management support comprises of User KM support reflecting the kind of support offered by the organisation to its employees (i.e., training needs for users, guidance etc.) to facilitate the use of the KMS, and the IS KM support, which is the support offered by the IS service providers to the users, for the maintenance of the KMS. The IS service providers provides user support on the technical aspects of the KMS (Jennex & Olfman 2006).

3.2. Operationalisation of the Conceptual Model

From the exploration of theories in the previous section, constructs and definitions were derived to form a conceptual model of this study. This research adapts the KM success model to derive the model of evaluating the effectiveness of social media on KMS processes for SMMEs in South Africa. The KM success model measures the effectiveness of all ICT based systems that have the capability to execute KM processes in organisations (Wang & Yang 2016; Alavi & Leidner 2001). In this research, social media is studied to represent an ICT system that supports KM processes.

The IS success theory, DOI, UTAUT2, and UGT were used in previous IS related studies to explain the relationships among various constructs that influence adoption of ICT in organisations. Since the current study refers to social media as an ICT that enhances KMS processes of SMMEs, the study adopted constructs from these theories together with the KM success model to underpin the study.

Today's KM is no longer dependent on a dedicated knowledge manager role to oversee KM processes, but rather on the network of connected knowledge sources and participation in communities of common interest (Sharma & Kumar 2017). Social media platforms produce a distributed network of knowledge which can be shared among different people at different times over the internet. Knowledge has evolved into a network of ideas and concepts that not only reside in human but also in non-human objects that are linked through social ties (AIDahdouh, Osório & Cares 2015). This phenomenon transforms KMS into major sources of organisational sustainability and competitiveness in today's connected world (Alavi & Leidner 2001). The success of such KMS is dependent on autonomy, connectedness, diversity and openness of knowledge workers (Tschofen & Mackness 2012). These characteristics are consistent with how SMMEs operate.

SMMEs have a high degree of flexibility in their management structures which allows them to have more versatile communication patterns (Berends et al. 2014). The versatility of their communication has the potential to improve their KMS processes. Consequently, such flexibility in the management structures has the potential to improve the service quality dimension of KM success model when social media are used to support KMS processes.

Social media is generally regarded as new innovation (Cerchione et al. 2015). It is linked to new innovation because it is fast-changing, relatively new, and transforms the KMS processes in organisations (Rahbi & Abdullah 2017). Evidently, the spread of social media use in support of KMS processes in SMMEs is also at its infancy. However, DOI theory explains innovation attributes that influence its acceptance and use by individuals in a social system over time (Rogers 2003). Furthermore, the attributes of DOI theory are more suitable to explain why individuals or organisations prefer to use social media platforms (Idemudia, Raisinghani, Samuel-Ojo 2018; Chiang 2013).

Thus, in this study, it is argued that social media is an innovation that SMMEs use to achieve KMS success. This means that social media meets all the technical and social requirements of a traditional KMS (Bradley & McDonald 2011a). This improves the system quality of the KM success model. Therefore, social media's relative advantage, complexity, and compatibility attributes are used in the model of this study as moderating variables for the system quality dimension of the KM success model.

Owing to its effect on work-related outcomes such as KM and workplace learning, social media has sparked a lot of interest in businesses (Epure et al. 2017; Aisenberg-Ferenhof et al. 2016; Ngai et al. 2015; Cerchione et al. 2015; Thomas & Akdere 2013). From a KMS success point of view, management support is important (Thuo & Namusonge 2017; Beck & Cull 2014) to leverage from social media. Consequently, the service quality dimension is promoted when there is sufficient support from management encouraging the continuance of social media use to enhance KM processes in organisations. The quality of direction and support from management in providing adequate resources for the creation and maintenance of the KMS are also key determinants of services quality (Jennex & Olfman 2006).

Furthermore, understanding the attitudes of social media users and their behaviour of use, is fundamental for developing models for evaluating the effectiveness of social media on KMS processes for SMMEs (Mamorobela & Buckley 2018). UTAUT2 theory presents a united description of the determinants that affect users' attitudes towards technology usage (Venkatesh et al. 2012). In the context of this study, UTAUT2 concepts are adopted with the argument that facilitating conditions and social influence predict the behaviour of social media users resulting in increased service quality of the KMS.

Owing to the assumption that people generally choose to use social media platforms to achieve their ultimate gratifications (Lariscy et al. 2011); social media gratifications (i.e. social presence, coordination, and immediate access) derived from UGT were also used in the model (Froget, Baghestan & Asfaranjan 2013; Lee & Ma 2012; Xu et al. 2012). Thus, the knowledge quality dimension of the KM success model is influenced by independent variables that are derived from UGT to form the model of this study.

The current study is mainly centred on the extent to which SMMEs use social media platforms to manage knowledge and on how effective social media is in this regard. Therefore, the knowledge quality dimension of the KM success model is explored to evaluate the extent to which social media ensure that the knowledge is accurately and timely captured and transferred to users. Because social media has the potential to automate KMS functions (Gresty 2013), the KM success model provides sufficient guidance for developing the model that assists with the evaluation of the effectiveness of social media in the effort to support the KMS.

3.3. Conceptual Model

The current study conceptualised a model by following guidance from models and theories used in previous IS related studies. A conceptual model is a tool that assists the researcher in developing and communicating ideas as well as to demonstrate an understanding of the phenomenon being studied (Ngulube, Mathipa & Gumbo 2014). It equips researchers with advanced knowledge to interpret and present their findings.

The development of the model for evaluating the effectiveness of social media on the KMS of SMMEs in the current study required the consideration of factors that are applicable in three domains namely, social media, KMS, and SMME environments. As explained in Chapter Two of this study, KMS provide the necessary tools for knowledge acquisition, creation, storage, transfer, and application; while social media has the capability to facilitate the KMS functions by enhancing social interactions among members of the organisation. Thus, the developed model of evaluating the effectiveness of social media was based on specific KMS processes suitable for SMME environments.

The KM success model served as the basis upon which the model was developed. Its strength in addressing issues around the quality of the KMS and the users' intention to use the system when appropriate, as opposed to the amount of KMS use (Jennex 2008) served as motivation enough for its adaption in the current study. Thus, to evaluate users' intention to use social media to support KM processes as opposed to the frequency of use, is important in the current study. This is because the study explores certain characteristics of social media such as relative advantage, complexity, and compatibility, which are

hypothesised to influence the system quality of the KMS in a positive way within the SMME environments. These characteristics are posited as independent variables in the model that influence the system quality dimension of the KM success model.

This study also hypothesised that social media capabilities such as social presence, immediate access, and coordination have a positive influence on knowledge quality – resulting in an increase in users’ intention to use it, and overall user-satisfaction with the KMS in the context of SMMEs. Social influences and facilitating conditions are also studied to influence SMMEs’ decision to adopt social media, as determinants of service quality. The proposed conceptualised model is illustrated in Figure 3.5.

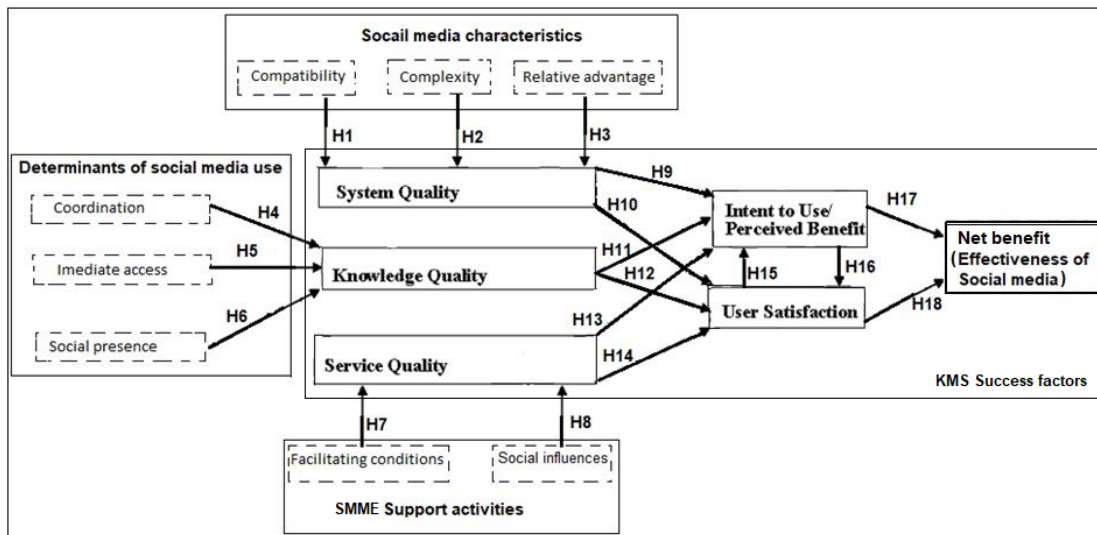


Figure 3.5. The Conceptual Model

The conceptualised model of evaluating the effectiveness of social media on the KMS for SMMEs in Figure 3.5 demonstrates how the KM success model was adapted and extended with independent variables derived from DOI (i.e., relative advantage, complexity, and compatibility), UGT (i.e., coordination, immediate access, and social presence), together with UTAUT2 (i.e., facilitating conditions and social influences).

3.4. Research Hypotheses Development

Research hypotheses are basic statements that explain the potential relationships between variables of a theory or of different theories. Sage (2006) asserts that the hypotheses can be

defined as a refined guess that is based on assumptions. Hypotheses need to be tested to ensure that there is a significantly accurate fit between the data and constructs of the conceptualised model (Schumacker & Lomax 2004).

3.4.1. System Quality of the KMS Success and the Role of DOI Variables

System quality defines the optimum performance of the KMS in terms of achieving its intended functions to benefit the organisation (Urbach & Muller 2012; Jennex & Olfman 2006). Edwards (2015) argues that choosing the right social media platform as preferred by targeted customers, can increase the effectiveness of social media in the organisation. Owing to the high satisfaction of users around social media usage, its growth in business has also been observed (Ogbuji & Papazafeiropoulou 2016). Therefore, the argument presented by the current study is that the system quality of social media influences user satisfaction and intention to use in a positive way. Thus, the following hypotheses are proposed:

H10: System quality of social media positively influences user satisfaction of KMS in SMMEs

H9: System quality of social media positively influences intention to use / perceived benefits of KMS in SMMEs

Social media can enhance KMS processes by providing a more flexible collaborative environment for organisations to share business insights and ideas (Barnes et al. 2012). Generally, organisations tend to adopt and use technologies that are compatible with their environments (Hsu, Lu & Hsu 2007). Social media's functionalities such as identity, presence, groups, relationships, conversation, sharing, and reputation, provide the flexibility to perform KMS processes which are compatible with the customs of SMMEs. Odoom, Anning-Dorson & Acheampong (2017) also argue that compatibility is a strong motivation for social media usage. Thus, in the current study, the compatibility of social media is hypothesised to positively influence the system quality of the KMS. The hypothesis is posited as follows:

H1: Compatibility of social media positively influences System Quality of KMS in SMMEs

Due to their flexibility, ease of use, peer-to-peer structure, and low levels of bureaucracy (Lane & Coleman 2012; Conrad 2013; Rogers 2003), social media platforms are preferred to traditional client-server technologies. Conrad (2013) adds that people seem to be more encouraged to accept and use technology that is less complex. Therefore, the current study argues that social media requires less effort to use and can easily be understood – resulting in its continuance of use in SMMEs to support KMS processes. Accordingly, the low complexity of social media is associated with improved system quality of the KMS. Therefore, the hypothesis is posited as follows:

H2: Complexity of social media positively influences System Quality of KMS in SMMEs

The KM success model is important to evaluate the extent of KMS use in organisations, resulting from the technical infrastructure that is favorable to users. As such, the KMS and its related supporting technologies is perceived to have a relative advantage if it outperforms those that were previously used (Conrad 2013). The current study argues that social media provides the current KMS of SMMEs with a relative advantage over traditional ones that are said to be costly and tedious for SMMEs to use.

Several advantages of social media have been highlighted in literature. Some of the advantages include location independence, meaning that social media users are not limited by a geographical location in order to use the technology; less maintenance efforts, meaning that social media does not require intensive training to use and maintain; high scalability, meaning that social media can be used by as many users with similar interest as possible; and cost effectiveness, which means that social media platforms come at minimal to no cost (Arpaci 2017). Another advantage of social media is its potential to access rich knowledge from multiple sources which are connected over the internet without any boundaries.

Because of the above-mentioned advantages, SMMEs can leverage social media to support their KM processes. As such, continuance of social media use – due to its relative advantage over the traditional client server KMS – increases the system quality of the KMS. Thus, the hypothesis is posited as follows:

H3: Relative advantage of social media positively influences System Quality of KMS in SMMEs

3.4.2. Knowledge Quality of the KMS Success and the Role of Uses and Gratification Variables

Knowledge quality measures how accurate and timely the KMS captures and transfers knowledge (Masrek, Jamaludin & Mukhtar 2010; Jennex & Olfman 2006). Social media provides timeous information exchange applications. Generally, information provides the basis upon which knowledge is formed in organisations (Krylova et al. 2016). While the context and the users can clearly distinguish between information and knowledge (Wu & Wang 2006), the knowledge quality dimension of the KMS encompasses both aspects and ensures that they are timely, complete, understandable, relevant, and usable (Jennex & Olfman 2006). The ability of social media to timely capture and transfer knowledge (Chua & Banerjee 2013) serves as motivation for the current study to argue that the knowledge quality of social media positively influences users' satisfaction and intention to continue using the KMS. As such, the hypotheses were proposed as follows:

H11: Knowledge quality of social media positively influences intention to use / perceived benefits of KMS in SMMEs

H12: Knowledge quality of social media positively influences user satisfaction of KMS in SMMEs

SMMEs are flexible entities in which members can adopt and use free technology without high levels of bureaucracy (Oliveira, Thomas & Espadanal 2014). With social media being freely available and offering benefits such as networking and collaboration, it has become important for SMMEs to adopt and use the platforms for innovation and business sustainability. Scholtz et al. (2017) asserts that people use social media because it meets their gratifications.

In this study, it is argued that knowledge quality of the KMS is positively influenced by social media gratifications. Properties of social media such as coordination of activities, including the creation of groups and relationships, exchanging content between people in

virtual communities, and facilitating conversations; providing immediate access to knowledge through the creation and management of content; and users' social presence like providing a sense of connections between people on virtual networks (Kietzmann et al. 2011); are all social media determinants with the potential to positively influence the quality of knowledge in the KMS. As such, the hypotheses are derived as follows:

H4: Coordination of social media positively influences knowledge quality of KMS in SMMEs

H5: Immediate access of social media positively influences knowledge quality of KMS in SMMEs

H6: Social presence of social media positively influences knowledge quality of KMS in SMMEs

3.4.3. Service Quality of the KMS Success and the Role of UTAUT2 Variables

Service quality is a measure of overall support provided by KMS service providers, management, or other sources (Delone & Mclean 2016). A KMS should provide knowledge services that exceed the expectations of its users. This can be made possible if the service providers and management provide the necessary support to users like training and finance (Urbach & Muller 2012). Moreover, because social media are online, often free applications, SMME owners and managers find this solution highly suitable for their SMME businesses (Bennett 2012). As such, the current study proposes the following hypotheses:

H13: Service quality of social media positively influences intention to use / perceived benefits of KMS in SMMEs

H14: Service quality of social media positively influences user satisfaction of KMS in SMMEs

The organisational and technical support provided by SMME management enables effortless enhancement of the KMS through social media. For example, organisations can engage with customers to have a rich dialogue and exchange product knowledge using social media platforms (Chua & Banerjee 2013); real-time product information can be provided to customers to make accurate decisions about orders (Vlachvei & Notta 2014)

and trust among organisational members is also improved (Aisenberg-Ferenhof et al. 2016). Gruzd et al. (2012); Chang (2012) assert that aspects such as the environment, the technical infrastructure and the organisation itself constitute the facilitating conditions which largely and positively influence the use of technology. As such, the hypothesised relationship is posited as follows:

H7: Facilitating conditions of social media positively influences service quality of KMS in SMMEs

Social influence of significant others on decisions for adopting social media plays a huge role (Gruzd et al. 2012; Chang 2012). Evaluating the extent to which the perceptions of significant others have an influence on SMMEs to adopt social media is critical in providing a further understanding of the determinance of social media usage. In this study, it is argued that the influence of significant others can play a very influential role in SMMEs adoption and use of social media applications – to avoid feeling ‘left out’. Thus, the hypothesised relationship is posited as follows:

H8: Social influence of social media positively influences service quality of KMS in SMMEs

3.4.4. Intention to Use / Perceived Benefit

Social media are more effective when used to provide collaborative environments in organisations (Barnes et al. 2012). ‘Intention to use’ measures the favorable tendency of users to continue using social media in the search for knowledge and exchanges with peers in the SMMEs context. Wang (2008) asserts that favourable attitudes of users towards the system – which result in repeated use behaviours – are a measure of the intention to use / perceived benefits. As such, the current study measures intention to use by observing the attitude of SMMEs towards the use of social media to support KM initiatives. SMME attitudes largely influence their decision to adopt social media (Buffet 2010). Evidently, users’ satisfaction and intention-to-use relationship is tightly coupled. SMMEs will most likely adopt social media because of their positive attitude towards it. Since a positive attitude reflects user satisfaction, the following hypotheses are advanced:

H16: Intention to use / perceived benefits of social media positively influence user satisfaction of KMS in SMMEs

H17: Intention to use / perceived benefits of social media positively influence net benefit / effectiveness of KMS in the SMME context

3.4.5. User Satisfaction

The KMS needs to operate at its optimal level to achieve the intended objectives and improve user satisfaction (Jennex & Olfman 2006). Evidently, user satisfaction can be said to have a direct association with a successful IS (Delone & Mclean 2016). This means that user satisfaction is achieved if the use of the system results in users doing much better work in less time allocated (Urbach & Muller 2012).

A measure of user satisfaction with technology requires meeting different needs, costs, and benefits (Seddon 1997). If users are satisfied with technology, there is a strong possibility of them intending to use the technology even more. This means that user satisfaction has a potential to influence users' intention to continue using a technology and vice versa (Wu & Wang 2006). Because of this relationship, this study argues that users have the intention to continue social media usage in support of their KMS processes because they are satisfied with it. Therefore, the following hypotheses are advanced:

H15: User satisfaction of social media positively influences intention to use / perceived benefits of KMS in SMMEs

H18: User satisfaction of social media positively influences the net benefits / effectiveness of KMS in the SMME context

3.4.6. Net Benefit (Effectiveness of Social Media)

A net benefit is achieved when social media attains the intended outcome of enhancing the KMS. To be effective, social media must have a positive impact within SMMEs by supporting and enhancing the KMS processes. In this study, effectiveness is highly associated with intention to use / perceived benefits, and user satisfaction as a measure of net benefit. Generally, the net benefit of a system reflects the positive effects that the system has on its stakeholders (Delone & Mclean 2016; Urbach & Muller 2012). As stated

in Jennex & Olfman (2006:64), a net benefit is any positive outcome resulting from the use of the KMS. The current study develops an evaluation model for the effectiveness of social media to enhance the KMS of SMMEs. Therefore, positive outcomes resulting from social media usage to enhance the KMS for SMMEs is a net benefit in the context of this study.

3.5. Chapter Summary

The conceptualised model of evaluating the effectiveness of social media on the KMS of SMMEs in South Africa was presented in this chapter. The model was conceptualised using hypothesised relationships of constructs adopted from existing IS theories such as DOI; UTAUT2; UGT; as well as the KM success model.

The conceptualised model is premised on the notion that social media can lead to a successful KMS and that the basic relationships can be moderated by factors of DOI theory such as compatibility, complexity, and relative advantage; factors of UGT theory such as social presence, coordination, and immediate access; and factors of the UTAUT2 theory such as facilitating conditions and social influence. All these factors have been highlighted in the conceptual model with 18 hypotheses formulated. The next chapter presents details of the methodology and design followed in the current study.

CHAPTER FOUR:

Research Methodology and Design

4.0. Introduction

The previous chapter presented the theoretical foundations underpinning the study, including operationalisation of the conceptual model and hypothesised relationships between constructs. In this chapter, the underlying methodology followed in the current study is described. The research methodology describes the plan of conducting research activities using specific research methods that are justified by linking them to specific outcomes. Therefore, this chapter discusses the methodological process followed to address the main objective of developing a model of evaluating the effectiveness of social media on the KMS of SMMEs in South Africa.

The chapter is structured into eight (8) sections. Section 4.1 describes the research onion approach proposed by Saunders et al. (2009) that will guide the development of a coherent research design as followed in the current study. Section 4.2 presents the different research philosophies applied in IS research and a justification for selecting a suitable philosophy. Section 4.3 discusses the research approaches and strategies used, including the justification for using sequential explanatory mixed-methods. Section 4.4 follows by presenting different data collection methods used including techniques, procedures for the selection of participants, and sampling techniques. Section 4.5 presents the process for data analysis and the techniques used in both phases of the sequential explanatory mixed-method approach that is applied in the current study. Ethical considerations then follow in section 4.6. Lastly, section 4.7 summarises the research methodology followed.

4.1. Research Methodology

The research methodology aims to broadly outline the steps involved in the research process and how they are carried out (Leedy & Ormrod 2015). The methodology must be detailed enough such that other reasonably knowledgeable researchers can repeat the same process for similar studies in different environments to obtain almost similar results (Lindsay 1995). The current study followed the guidelines of the research onion proposed by Saunders et al. (2009) to present the research methodology. Figure 4.1 depicts the research onion.

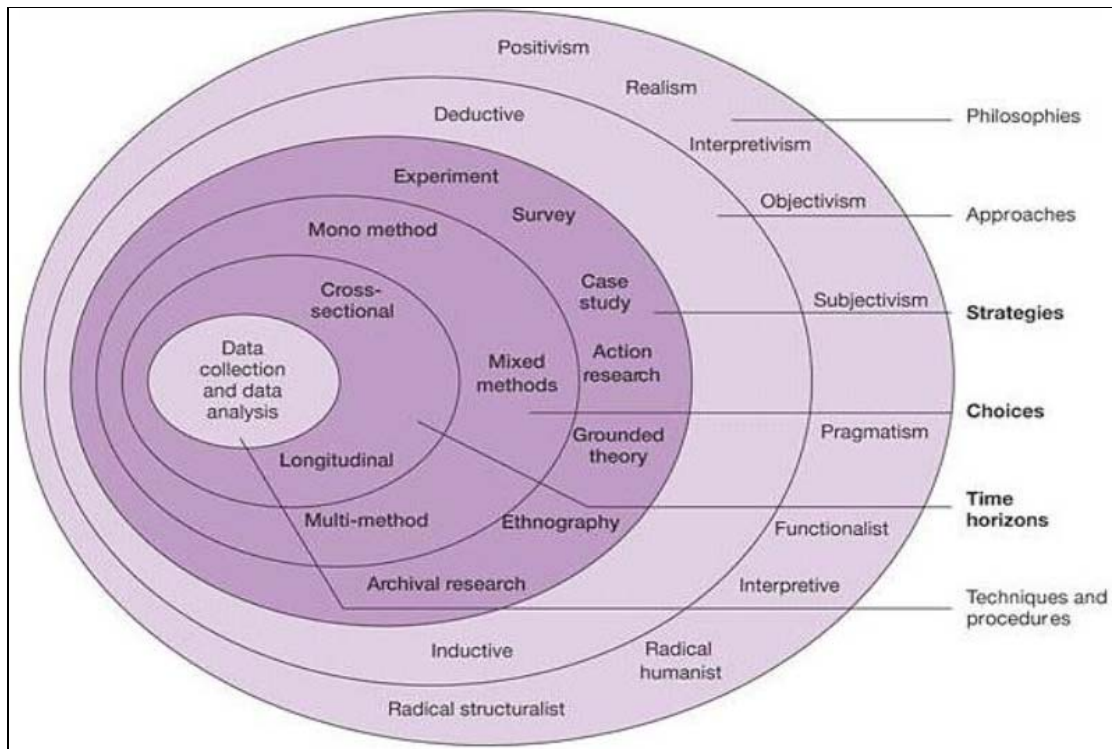


Figure 4.1. The research onion

Source: Saunders et al. 2009

Saunders et al. (2009) use the concept of the layers of an onion to classify the stages that a research process must follow. To conform to the research onion concept, the research process must include stages such as research philosophy being the outwards layer of the onion, the research approach, the research strategy, the research choices, time horizon, and techniques and procedures for data collection and analysis. Taking the concept of the research onion into consideration allowed the current study to develop a coherent research design that is justifiable. The research onion examined in the current study, is discussed in the following subsections starting with the research philosophy being the outmost layer.

4.2. Research philosophy

Given that a research process is carried out in an unbiased manner to enquire about a phenomenon following a set of guiding principles that are reliable and valid (Leedy & Ormrod 2015), researchers have different views and beliefs through which they interpret reality. Such beliefs and views inform the appropriate research philosophy influencing the nature and conduct of the research (Cresswell 2017). They guide researchers in their choice of research approaches based on the problem they are trying to resolve by developing the background of the research as well as the knowledge being produced (Saunders et al. 2009).

A research philosophy is usually defined in conjunction with a research *paradigm*. Research paradigms are a broad framework comprising perceptions, rules, beliefs, theories, and practices that provide guidance on how research should be conducted (Cohen, Manion & Morrison 2007). Research paradigms and philosophies are standards and rules that influence the beliefs and values of a researcher, way of seeing things, mental model, different perceptions, and different beliefs towards reality (Khanal 2012; Cohen et al. 2007). This implied that researchers must first understand the background of the research problem to apply perspectives and assumptions that are relevant to the field (Doyle, Bradley & Byre 2009).

A researcher should clarify their preferences so that their viewpoint is apparent to others reading the research (Miles, Huberman & Saldaña 2018). Given that many different research paradigms exist, researchers need to make a choice based on the nature of reality (ontology), what reality means to them and how they know it (epistemology), and the process of research (methodology) (Creswell 2017; Doyle et al. 2009; Cohen et al. 2007). Making such choices at the early stage of the research process is important to avoid inappropriate use of approaches that are not relevant to the research project.

Ontologies refer to common beliefs and assumptions that are created by the researcher to understand reality in the context of a phenomenon under investigation (Guba & Lincoln 1994). On the other hand, epistemology consist of processes and procedures followed to understand the reality and the parameters that form our relationship with reality in the

'real' world (Cohen et al. 2007). Epistemological assumptions about knowledge are imposed by ontological assumptions since they comprise dealing with the creation of knowledge that is valid and poses questions about how that knowledge could be obtained (Morgan 2007; Guba & Lincoln 1994).

Both ontological and epistemological assumptions about knowledge directly influence the methodological assumptions of conducting research (Creswell & Creswell 2017). A research methodology can be defined as an organised process consisting of procedures and techniques for effectively carrying out a research process based on a shared explicit philosophical approach (Creswell 2017). Several philosophical assumptions have been applied in social science research, including Positivism, Post-positivism, Constructivism, Transformativism, and Pragmatism (Creswell & Creswell 2017), each with their own advantages and disadvantage.

This study applies the pragmatism philosophical assumption. Pragmatism philosophy involves using a variety of research methods in one study for understanding different situations and the consequences of certain actions (Creswell & Creswell 2017). Scholars following the pragmatism philosophy argue that research problems should be addressed by using both positivist and interpretivist lenses (Saunders et al. 2009). They also emphasise the research question as the main focus of the research to determine the philosophical stance of the researcher and accentuating the possibility of a researcher to work within two or more philosophical positions to understand the problem (Creswell & Creswell 2017). Unlike the positivism, post-positivism, constructivism, and transformativism philosophical approaches which the focus on one philosophical position, the focus of pragmatism is not so much on the specific approaches used but rather on the research problems and questions to be addressed holistically.

A study that does not clarify specific philosophical assumptions upon which to address the research question suggests that researchers can apply a mix of methods to understand the phenomenon (Saunders, Lewis & Thornhill 2016; Morgan 2007). In concurrence, Ngulube (2020) asserts that a research project that applied a mix of philosophical assumptions adds more perspectives to understanding the research problem. This study applies mixed-methods to develop a model for evaluating the effectiveness of social media on KMS of SMMEs in South Africa.

While evaluation studies are said to be mostly positivistic or post-positivistic, focusing mainly on predetermined benchmarks based on pre-set indicators, this study goes beyond the positivistic or post-positivistic stance by also gathering in-depth information about the problem through the interpretation of peoples' perceptions about using social media technology in their working environments. Using diverse methods in one study provides more opportunities for improving the credibility of the study (Saunders et al. 2009). Such studies reflect the philosophy of pragmatism.

Pragmatic studies claim that the world of IS keeps evolving with ongoing changes and the application of a mix of research approaches that can potentially improve our understanding of many diverse areas of IS is important (Goldkuhl 2012). As such, in the current study, a mix of research methods such as the semi-structured interview and closed-ended questionnaires were used to understand the phenomenon from broader perspectives. Hence, the study lies within the pragmatism philosophy.

4.3. Research design

Having decided on the philosophy, the researcher had to align the research with a specific design. Research design is an overall systematic process followed by the study to assess the methodology of gathering and evaluating data, and creating models for answering the research questions (Yin 2014). The research design highlights all major parts of the research, and a plan of action underlying the research to make conclusions about the research problem (Okello 2007). Bhattacharjee (2012) also adds that the research design creates a blueprint of all the activities involved to draw satisfactory conclusions.

Research designs also enable researchers to follow a specific type of strategy within the research approach that they would have chosen when conducting research (Creswell & Creswell 2017). The research approach and strategy followed in this research are discussed next.

4.3.1 Research approach

Research approach explains the procedures and methods used to direct the outcome of a research project (Creswell & Creswell 2017). It is a philosophical and theoretical foundation which is used primarily to guide the research process. In social science research, three dominant approaches include; qualitative, quantitative, and mixed-method approaches (Mertens 2015). Figure 4.2 illustrates the research continuum of three prominent approaches.



Figure 4.2. The research continuum

Source: Mertens (2015)

Social science research projects can apply only qualitative methods, or only quantitative methods; or mixed-method with either qualitative or quantitative traits, or mixed-method with both quantitative and qualitative approaches carrying equal weight, as the dominant approach (Creswell & Creswell 2017) as shown in the research continuum in Figure 4.2.

The mixed method research approach was applied to direct the outcomes of the current study. Unlike the quantitative or the qualitative approach which focus solely on one method, the mixed-method approach combines aspects of both the quantitative and qualitative approach to provide as much information about a phenomenon as possible (Creswell & Creswell 2017). Teddlie & Tashakkori (2010) add that the mixed-method research approach has five broad purposes, namely (1) to triangulate diverse methods used for studying an identical phenomenon through convergence and corroboration among those methods; (2) to complement outcomes from multiple methods to clarify, elaborate, enhance and illustrate those outcomes; (3) to shape the development of methods with outcomes of other methods; (4) to ascertain arguments that help derive a research question; and (5) to expand the research scope by exploring alternatives that may bring a different perspective in the understanding of a phenomenon.

Mixed-methods can broaden and strengthen research simultaneously (Yin 2006). Consequently, the credibility of data collected through various methods improves tremendously (Wake 2013). Furthermore, the application of a mixed-method approach allows researchers to use both quantitative and qualitative methods in a complementary way to overcome their respective weaknesses. For example, qualitative studies lack repeatability (Schofield 2002) and are unable to generalise the findings (Saunders et al. 2016); while quantitative studies are confined to statistics and numbers, and fail to address contextual issues such as social, political and cultural issues to understand the phenomenon.

The current study develops a model for evaluating the effectiveness of social media technologies on KMS of SMMEs in South Africa. This objective is achieved by exploring the characteristics of different research approaches as applied in social science research. Having awareness and understanding of different research approaches and their characteristics improves the chances of the research to succeed (Jogulu & Pansiri 2011; Johnson & Onwuegbuzie 2004).

Generally, all research approaches will either follow qualitative or quantitative as the main modes of enquiry (Teddlie & Tashakkori 2010; Doyle et al. 2009). The mixed-method model sits between the two approaches to provide the best of both approaches and to deal with their weaknesses in a single study (Doyle et al. 2009). While the qualitative approach is grounded on the philosophies of social constructivism (Ritchie, Lewis, Nicholls & Ormston 2013) and the quantitative approach is based on positivism (De Villiers 2005), the mixed-method approach takes the stance of pragmatism philosophy since the research questions suggest neither a constructivism nor a positivism approach (Creswell 2017; Patterson 2013).

Although the quantitative approach offers opportunities for the generalisability of findings (Saunders et al. 2016), its limitation in using readily measurable static constructs becomes its weakness because it fails to consider the contextual and social issues of the phenomenon under investigation (Bryman 2003). On the contrary, qualitative studies are aimed at gaining more detailed knowledge about the phenomenon using small samples from which the findings are difficult to generalise in a large population. Thus, it is not sufficient to use only quantitative or qualitative approaches in the current study because,

when used alone, each of these approaches fails to draw a complete picture of the significant indicators that can guide the development of an evaluation model of social media in the context of KMS of SMMEs.

The application of the mixed-method approach in one study has the potential to strengthen the research more than using either a qualitative or quantitative approach (Creswell & Clark 2011). In concurrence, Cooper & Schindler (2014) suggest that studies that apply a mix of both quantitative and qualitative approaches are perceived to be of higher quality, especially when the qualitative approach follows the quantitative and provides a validation of the findings.

Moreover, Venkatesh, Brown & Bala (2013) argue that a mixed-method approach is more suitable for studies that aim to understand and explain complex organisational and social issues. In the current study, an enquiry into existing IS theories addressing the adoption of technology was carried out to ascertain variables that could contribute to the development of the model proposed in the current study. The findings were then explained by interviewing research participants to confirm the proposed model.

The process of developing a model in the current study requires adequate data offering different perspectives of SMME owners and managers regarding social media and how it is used to support and enhance their KMS. The collection of such different perspectives can only be made possible through mixed-methods (Creswell 2017). This study values research participants' involvement and relied heavily on a mix of web-based closed-ended questionnaires and semi-structured interview instruments as sources of reliable data.

A web-based closed-ended questionnaire was used to collect statistical data, the results of which were further explained by way of semi-structured interviews to serve the main objectives of the study. Thus, the mixed-method approach became suitable and strengthened the outcome of this study. While the mixed-method approach provides benefits to the current study, it is worth noting that more time must be allocated for its execution in the design because the data for the closed-ended questionnaires and semi-structured interviews needed to be collected and analysed separately. The mixed-method design for the current study is presented in the next section.

4.3.2 Mixed-method design

The data in a mixed-method research approach can be analysed either simultaneously or sequentially (Creswell & Clark 2011). Typically, mixed-method designs are classified into explanatory sequential which starts by conducting the quantitative enquiry followed by the qualitative enquiry, convergence parallel which conducts both quantitative and qualitative enquiries concurrently, embedded which conducts one enquiry (qualitative or quantitative) within the other (quantitative or qualitative), multiphase which involves the execution of more than two enquiries in one longitudinal study, exploratory which starts with the qualitative enquiry followed by the quantitative enquiry, and transformative designs which can either follow the explanatory or exploratory approach and takes a transformative lens to address issues of the marginalised people.

This study applied the explanatory mixed-method design principles to develop a model for evaluating the effectiveness of social media in the KMS of SMMEs in South Africa. In an explanatory sequential mixed-method design, quantitative and qualitative enquiries are carried out sequentially in two stages. Unlike in the convergence parallel or the embedded mixed-method, where the data is collected and analysed simultaneously, the approach requires quantitative and qualitative enquiries to be conducted sequentially in two stages where the outcome of the quantitative enquiry influences the outcome of the qualitative enquiry (Bryman & Bell 2015).

In the first stage, the researcher conducts a quantitative enquiry to collect and analyse statistical data, then ‘follow-ups’ are made in the second stage with more in-depth qualitative methods for further explanation of the quantitative findings (Creswell 2017). This two-stage approach generally prioritises the quantitative results and uses the qualitative methods to explain the findings (Creswell & Creswell 2017). This was the case in the current study where the researcher started with the positivist approach of developing the model for evaluating the effectiveness of social media in the KMS of SMMEs in the first phase, and further explained the findings of the first phase using the interpretivist approach to understand the model holistically in the second phase of the study. An example of the explanatory sequential mixed-method design is illustrated in Figure 4.3.



Figure 4.3. Explanatory sequential mixed-method design

Source: Creswell (2012)

The explanatory sequential mixed-method shown in Figure 4.3 emphasises quantitative enquiry more in the first stage. The strategy is useful for researchers who want to validate a theoretical perspective and explain the unexpected results that may arise from the study (Creswell & Clark 2011). Creswell (2012) adds that the rationale for an explanatory sequential mixed-method strategy is that quantitative data provides a general picture of the phenomenon without clear explanation, and the provision of qualitative methods at a later stage of the study helps to explain the picture in more detail.

The strength of explanatory sequential mixed-method design lies in its ability to clearly separate aspects of quantitative and qualitative research as both are done separately. This allows the research to have the best of both methods where quantitative results are obtained from the first stage and refined through in-depth explanations using qualitative data in the second stage (Creswell 2017). However, the biggest challenge of this strategy is when a researcher must decide precisely which follow-ups to make, i.e., which participants to sample, how to sample them, and what questions to ask to build on the initial quantitative phase to expand the study further.

In the current study, a quantitative enquiry was conducted in the first phase to provide a detailed planning of variables of the developed model using theories obtained from related IS literature. Unlike the exploratory sequential mixed-method approach, the explanatory sequential mixed-method offers researchers with predetermined measures to understand the population under study (Creswell 2017). This allowed the current study to avoid bias and to obtain a precise measure of variables by being as objective as possible. Dawson, Norberg-Hodge & Jackson (2010) adds that the explanatory sequential mixed-method allows the researchers to isolate themselves from the data being collected.

In this study, the researcher published the URL link for the online closed-ended, web-based survey questionnaire to the facilities manager at The Innovation Hub to distribute it further to SMME owners and managers in their network so that they could complete the survey anonymously at their convenience. The process was important to ensure that the researcher has no relationship with the research participant. After receiving a total of 227 responses, the data was analysed and prepared for the qualitative approach in phase two.

After the quantitative enquiry, the qualitative enquiry was carried out through semi-structured interviews in the second phase to explain the findings of the quantitative phase. The researcher purposively selected 13 SMME owners and managers to participate in the semi-structured interviews to provide more detailed explanation and articulation of the factors identified in phase one of the study to understand their relevance in evaluating the effectiveness of social media on the KMS of SMMEs. The qualitative phase inherently broadened the scope of the study by providing more depth through close engagement with research participants and gathering different perspectives regarding the impact of social media on KMS of their respective SMMEs. In an explanatory mixed-method approach, the qualitative approach is carried out to explain the findings of the quantitative approach (Wake 2013). Thus, the explanatory mixed-method techniques were more suitable for the current study.

4.3.3 Research strategy

Research strategy refers to the type of enquiry within the research approach that paints a picture of the direction a research project must follow to reach its desired conclusions (Creswell & Creswell 2017). Some of the commonly adopted research strategies in social science research include *experiment*, *design and creation*, *phenomenology*, *narrative*, *ethnography*, *grounded theory*, *survey*, and *case study*.

The *experiment* research strategy focuses on investigating the cause-and-effect relationship between variables to validate or invalidate the relationship (Mitchell 2015). The *design-and-creation* strategy is concerned with procedures that guide the design, creation and deployment of new artefacts to respond to real-life situations (Oates 2006). The *phenomenology* aims to find an understanding of a phenomenon by comparing different peoples' experiences with the phenomenon (Worthington 2013). The *narrative* strategy

focuses on collecting and analysing peoples' stories from transcripts, documents, and observational field notes (Ollerenshaw & Creswell 2002). The *ethnography* focuses on a specific description of peoples' cultures or ways of doing things (Pelto 2016). The *grounded theory* focuses on developing a theory by relying on large volumes of data from peoples' experiences and perspectives of a phenomenon (Flynn & Korcuska 2018). The *survey* strategy aims to identify an adequate sample to provide the data that will represent a large population using scientifically proven methods (Nardi 2015). The *case study* strategy investigates complex situations using in-depth methods of enquiry to explain a phenomenon as it appears in real life (Yin 2014). Depending on the research approach, some strategies predominantly follow quantitative approaches and others are purely for qualitative research approaches.

The current study immersed a survey strategy within the explanatory sequential mixed-method approach to identify the predictive power of selected factors on distributed larger sample of SMME owners in the first phase, from which a purposeful selection of participants, to attend follow-up, face-to-face interviews in the second phase was conducted to understand why the factors that were identified and tested in the first phase were significant predictors of effective KMS through social media in the SMME context. As such, the survey strategy provides a picture of the research problem in more depth.

4.3.4 Overview of the study design

Considering the philosophical and methodological assumptions discussed in the above sub-sections, a suitable research design for this study was identified. Mindful of the different mixed-method approaches applied in social science research, including their strengths and weaknesses, the current study applied the explanatory sequential mixed-method design – as shown in Figure 4.4.

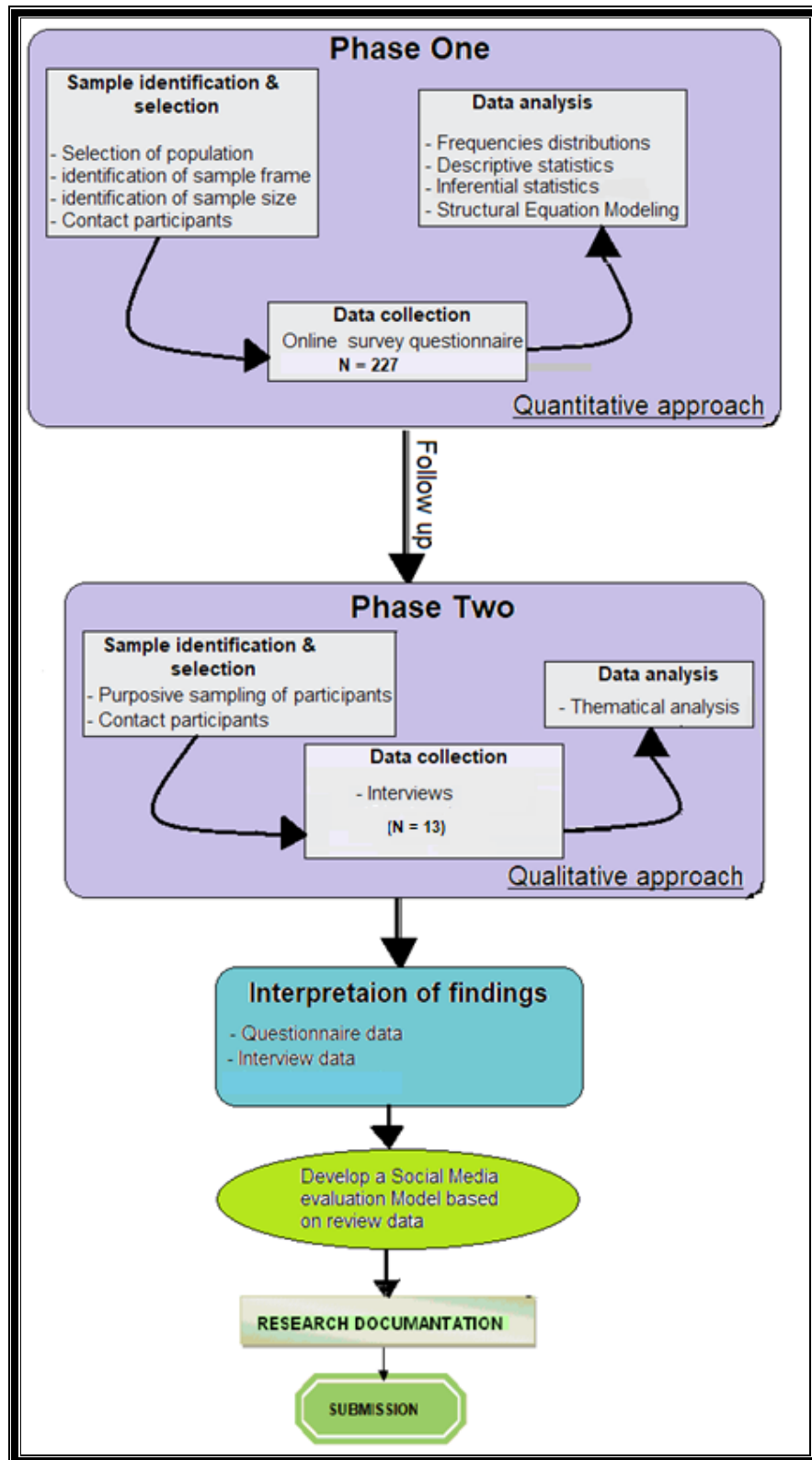


Figure 4.4. Detailed study design

The research design of the current study started with a quantitative enquiry of significant factors that can potentially be measured to evaluate the effectiveness of social media in enhancing the KMS of SMMEs in phase one of the study. The sampling frame was identified where a random selection of suitable participants was drawn to complete a web-based survey questionnaire to measure the significant relationships between the identified factors. Statistical data was analysed to derive the model highlighting the relationships between factors.

In phase two, a qualitative enquiry (using follow-up interviews) was then conducted with participants who were purposively sampled to explain the findings of the statistical analysis of factors and their relationships in the model. The interview transcripts were then analysed – using a thematic analysis technique – to explain the results of the quantitative enquiry in phase one of the study.

The results from both the quantitative and qualitative enquiries were compared, contrasted, and interpreted to further inform the development of a final model to be used for evaluating the effectiveness of social media on the KMS of SMMEs. The model is presented in Chapter Seven of the study.

4.4. Time horizon

Time considerations are key aspects of social science research. Generally, two horizons are proposed namely, longitudinal and cross-sectional (Babbie 2017; Saunders et al. 2016). In cross-sectional studies, researchers have only one opportunity to collect and analyse the data. This can be done during a specified period to allow the researcher to work within the time frames allocated for completing the research project. On the contrary, longitudinal studies take longer to complete because researchers usually observe the unit of analysis at different intervals (Babbie 2020). Studies that are carried out under longitudinal time horizons often fail to generalise their findings because of unanticipated changes that could happen in the unit of analysis and the research environment. Thus, factoring in the budget and time constraints of the current study, the researcher deemed the cross-sectional time horizon as the most suitable option for this study.

4.5. Research methods

Using inappropriate research methods can lead to inaccurate results, thereby threatening the integrity of the research (Buckley 2009). The research methods section discusses the techniques used for collecting data. Because the current study takes an explanatory sequential mixed-method approach, both of quantitative and qualitative data collection methods were used. A closed-ended questionnaire was used to collect quantitative data that assisted to derive the variables of the proposed model; and qualitative semi-structured interviews were used to explain the data previously collected through questionnaires – to bring about new findings.

4.5.1 Quantitative data collection methods

Survey questionnaires were designed for collecting statistical data in the quantitative phase of the study. Survey questionnaires are used for eliciting, recording and collecting information needed for testing specific hypotheses that have been generated by a quantitative study (Song, Son & Oh 2015). They are designed to include a series of pre-set questions for research participants to respond to at their own convenience. Due to their easy-to-use format, survey questionnaires are efficient in collecting volumes of data very quickly without the involvement of the researcher (Song et al. 2015). While participants may sometimes interpret questions differently, using the survey questionnaire allows for variations in the questioning process to be eliminated (Mavodza & Ngulube 2011).

There are three categories of survey questionnaires; *unstructured questionnaire*, which aims to ask specific questions regardless of the order in which the questions are asked; *structured questionnaire*, which includes a set of predetermined questions that follow a particular order; and *semi-structured questionnaire*, which combines elements of both structured and un-structured questionnaires into one method (Babbie 2017). In this study, structured survey questionnaires were used.

Survey questionnaires may be administered in different ways (Babbie 2017). These include a *face-to-face* process, whereby the researcher meets face-to-face with the participant to collect responses to a list of pre-set questions in the survey questionnaire; the *telephonic* survey questionnaire, whereby the researcher reads a list of pre-set survey questions over

the telephone to the participant, listens and records the responses given; and *self-administered* survey questionnaires, whereby the researcher delivers a questionnaire to the participant for the participant to complete by themselves without the assistance of the researcher. The researcher may choose to deliver the questionnaire via post, electronic mail (i.e., email, web, and voice responders) or in person (Dillman & Bowker 2001). Each of these self-administered surveys has advantages and disadvantages. For example, the turnaround time of using post and in-person delivery can be too long compared to electronic mail. Therefore, a self-administered web-based questionnaire was designed for the study to enable participants to complete at a convenient time and location. Moreover, the researcher easily and quickly extracted 227 completed and usable responses from the web-based survey and used *Microsoft Excel* for the data analysis process.

4.5.2 Qualitative data collection methods

Several qualitative data collection methods have been suggested in the literature. These include interviews, focus groups, observations, and document reviews (Saunders et al. 2016). These methods are suggested because they have the power to gather empirical evidence from the perspective of social actors. Creswell & Creswell (2017) add that qualitative research focuses on interactions with subjects who have first-hand knowledge about the phenomenon being investigated. Such cases require the use of interviews, observations, and document reviews as data collection instruments (Yin 2014). In the current study, semi-structured interviews were used in the qualitative phase to explain the findings of the first phase from the perspectives of research participants.

Interviews are formal techniques enabling researchers to extract verbal responses to questions to understand perspectives and opinions (Remenyi 2013). Researchers meet with participants physically in one-on-one or group settings, or electronically using telephones or online platforms (Creswell & Creswell 2017). Moreover, interviews collect firsthand information from the research participants (Remenyi 2013).

Interviews are designed to take three different forms, including *structured interviews*, which require a list of questions to be set up front in a particular order for participants to respond; *semi-structured interviews*, which also have pre-set questions but allow the researcher to ask additional questions – to assist with more information relating to the

context of the responses; and *unstructured interviews*, which provide no predefined set of questions – allowing the researcher to probe for in-depth information to be provided by the participants (Scott & Usher 2011).

Semi-structured interviews were suitable for the current study to collect data that proved to be useful in developing the model for evaluating the effectiveness of social media on the KMS of SMMEs. Since all research participants had similar profiles as the SMME owners and managers, the interview guide was designed with semi-structured interview questions thereby ensuring that all participants were asked similar questions in the same way. The semi-structured interviews also assisted with collecting relevant information for explaining the relationships of model constructs (derived in the quantitative phase) from individual participant's viewpoint and to provide a sense of how SMMEs perceive social media as tools to enhance their KMS processes.

The interviews were conducted during a time when the world was faced with the COVID-19 pandemic, which required people to remain indoors and to avoid physical contact with one another where possible, to curb the spread of the virus. Due to nationwide travel restrictions, the researcher ultimately conducted a total of 13 interviews, of which eight were face-to-face (before the nationwide lockdown) and five were conducted online using *Microsoft Teams* (Microsoft 2019), amounting to a total of 13 interviews.

4.6. Data collection activities

This data collection section of the study includes various activities such as the identification of the study population in sub-section 4.6.1, the selection of a sampling frame in sub-section 4.6.2, and the sampling techniques in sub-section 4.6.3.

4.6.1 Study population

The population of the study needs to be clearly identified for the research to focus on and address specific issues facing the targeted groups. The population specifies the boundaries of the study in terms of targeted people, demographics, and geographical location (Stangor 2011; Welman, Kruger & Mitchell 2005).

The current study selected South African SMMEs operating in the ICT, advanced manufacturing, knowledge-intensive, and smart industries in the Gauteng province. There are nine provinces in South Africa, namely Western Cape, Gauteng, Northern Cape, North West, Mpumalanga, Free State, Eastern Cape, Limpopo, and KwaZulu-Natal (SEDA 2018). Each province has several SMMEs addressing the socio-economic needs of the country and making significant contributions to the GDP. Figure 4.5 shows the total number of SMMEs by province in the first quarter of 2018.

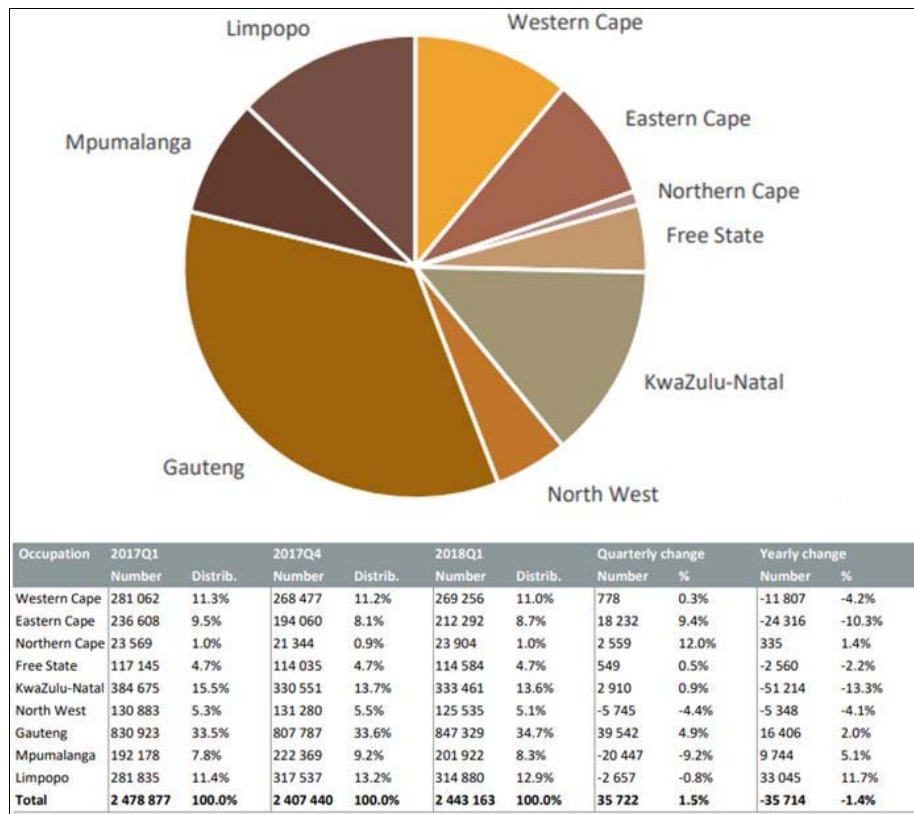


Figure 4.5. Total number of SMMEs by province in South Africa

Source: (SEDA 2018)

As shown in Figure 4.5, Gauteng province seems to have a large pool of SMME businesses. Gauteng is arguably the economic hub of South Africa and the large number of SMMEs operating in the region is justifiable (SEDA 2018). More than 35% of the entire country’s SMME population resides in Gauteng alone, followed by 14% in KwaZulu-Natal, and 13% in Limpopo. All other provinces have a very small percentage of SMMEs operating in the area. Thus, most SMME activity and innovation initiatives occur in

Gauteng province. Therefore, sampling SMMEs in Gauteng can produce results that are fairly and more broadly generalisable across all SMMEs in South Africa. The Gauteng province is split into five local municipalities (Gauteng 2019) as shown in Figure 4.6.

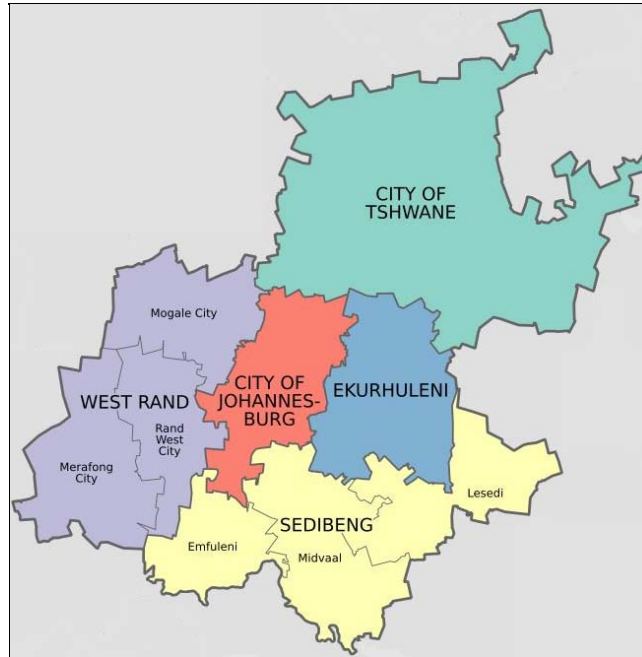


Figure 4.6. Gauteng municipalities

Source: Gauteng (2019)

As shown in Figure 4.6, the five local municipalities in Gauteng are: City of Tshwane, City of Johannesburg, Ekurhuleni, Sedibeng, and West Rand. Since the research is aimed at obtaining relevant responses relating to the perception of social media as support tools to enhance the KMS of SMMEs, and to assist with the development of an evaluation model, the researcher felt it prudent to identify those SMME owners and managers who run their businesses in the ICT, advanced manufacturing, knowledge-intensive and smart industry sectors across the different municipalities in Gauteng. A list of formal SMMEs in Gauteng had to be obtained to form a sampling frame from which an appropriate and relevant sample of participating SMMEs could be drawn (Rea & Parker 2014).

4.6.2 Sampling frame

In South Africa, the National Department of Small Business Development (NDSBD) is responsible for SMME development. However, several SMME ‘incubator’ organisations are mandated by the NDSBD to offer immediate support to SMMEs in different provinces and sectors. In Gauteng, the only incubator mandated to specifically focus on technology-rich SMME businesses is the Innovation Hub Management Company’s Business Incubation Program, simply referred to as The Innovation Hub (THEINNOVATIONHUB 2019).

The Innovation Hub was established by the Gauteng provincial government to serve as a pillar of innovation in the province to uplift competitiveness, innovation, and entrepreneurship which are all key to the development of the economy (THEINNOVATIONHUB 2019). The organisation offers entrepreneurship support to emerging innovation and technology SMMEs in South Africa. Because of this, the researcher approached the facilities manager at The Innovation Hub, seeking a letter of approval for permission to access SMMEs in their database and to facilitate communication with the SMME owners and managers. The permission letter can be found in Appendix D. As such, a list containing 450 SMMEs registered with The Innovation Hub was enough to provide relevant SMME generic information and served as an adequate sampling frame for the study.

4.6.3 Sampling of participants

Sampling techniques assist researchers to obtain an adequate representation of participants in the study, to sum up the outcomes (Stipi’c & Bronzin 2011). Researchers identify a smaller segment that resembles the larger population that the study seeks to investigate (Leedy & Omrod 2015). Two forms of sampling techniques are available to researchers, namely *non-probability sampling* and *probability sampling* (Bryman & Bell 2015). The non-probability sampling requires units of a population to be selected based on some characteristics that are particularly interesting to the researcher, while the probability sampling technique requires all units in the population under investigation to be afforded similar opportunities of being selected at random. Owing to the nature of mixed-method studies, the current study adopted both sampling techniques. Probability sampling was used in the first, quantitative phase one of the study and non-probability sampling was used in the subsequent, qualitative phase.

Quantitative Sampling technique

Quantitative studies require large samples of numerical data that can be statistically analysed to generalise results over a population. They typically use probability sampling techniques to identify suitable sampling units from large populations (Creswell & Plano-Clark 2011). Probability sampling techniques such as stratified sampling, random sampling, systematic sampling, and cluster sampling are commonly used (Bluman 2009). Each of these techniques provide all individual subjects an equal chance of participating in a sample (Bryman & Bell 2015). Bluman (2009) explains the probability sampling techniques as follows:

- *Random sampling* technique uses chance methods to randomly select units which will form part of a sample.
- *Systematic sampling* allocates numbers to each unit of the population and selects every k^{th} unit. For example, if 50 units are required to form a sample from a population of 2000 units, 2000 divided by 50 equals 40 ($2000/50 = 40$) then $K = 40$, meaning that each 40th unit will be selected.
- *Stratified sampling* allocates participants to small groups of interest (called strata) and then randomly selects units from each stratum to form a sample.
- *Cluster sampling* creates small segments of the population called clusters and randomly selects some of the clusters and uses all units of the selected clusters to form a sample.

Because all SMMEs in the sampling frame of the current study have experience in using ICT to conduct their business, given that they operate in the innovation and technology sector, a random probability sampling technique was deemed appropriate so that SMME owners and managers are randomly selected to participate in a survey questionnaire to generate a large dataset for the quantitative phase. As a result, 227 survey responses were generated. The procedure for arriving at the 227 survey responses is explained in detail in the third paragraph in section 5.3.3.

Qualitative Sampling technique

Unlike deductive studies, where large sample sizes are required to perform statistical estimations and generalisation of results, the qualitative approach is an inductive study and

requires small sample sizes (Onwuegbuzie & Collins 2007). Because of the small sample size requirement, the sampling techniques used in qualitative approaches are usually more purposive (Patton 2002). Generally, the non-probability sampling techniques are used in qualitative approaches (Creswell & Plano-Clark 2011). Examples of non-probability sampling techniques include reliance on the available subject, snowballing, quota, and purposive or judgmental sampling (Babbie 2020).

- *Reliance on available subject* sampling selects sampling units that are available during a set period. Researchers using this technique have no control over the representation of the sample. Thus, the technique is high risk and is only justifiable when less risky techniques are not feasible to achieve the objective of the study.
- *Snowball sampling* selects sample units based on referrals, in that a person being selected to participate in the sample may be asked to refer a few more others who may be interested to participate because the researcher may be finding it difficult to locate other sample units.
- *Quota sampling* selects units of the sample based on some pre-determined characteristics that are assumed to resemble the entire population. All selected units in a sample must possess the same characteristics that are assumed to be a true reflection of the entire population.
- *Purposive or judgmental sampling* selects sampling units based on the researcher's deliberate judgement of some characteristics that the units may possess and not necessarily characteristics that resemble the population. A group of purposive sampling techniques are available for researcher to select samples based on specific characteristics (Creswell 2017). Maximum variance purposive sampling selects samples who might provide rich and different perspectives to strengthen the research; homogeneous purposive sampling selects small groups of samples to understand them in depth; typical case purposive sampling creates consensus among selected samples to provide common understanding, and extreme case purposive sampling aims to understand the extremely unusual phenomenon by selecting samples that could provide the information. Lewis & Shepard (2006) add that using purposive sampling techniques, the researcher will select people who will provide the precise information that is needed for an enquiry.

The maximum variance purposive sampling was chosen as a suitable technique for selecting SMME owners and managers who are knowledgeable about KMS processes and social media applications serving the knowledge needs of their SMMEs. A total of 13 SMME owners and managers were purposively sampled to represent their SMMEs by participating in the semi-structured interview process of the qualitative phase of the study. A procedure detailing how the 13 SMME owners and managers were purposively sampled is provided in section 6.1.

4.7. Data analysis approaches and tools

Data analysis is a method of resolving a complex whole by dissecting it into smaller parts, using synthesis to reconstruct meaning (Creswell 2017). This systematic search for meaning in the research data ensures that whatever that has been learned in one research setting could be disseminated to other settings (Ratcliff 2008). A variety of data analysis tools and techniques for social science research exists. Some are designed for analysis of quantitative data and others for qualitative data.

While quantitative studies are limited to one general kind of analysis – *statistics* – which are deductive and can be subdivided into *descriptive* and *inferential statistics* (Ahlquist 2010), qualitative research includes a diverse variety of inductive analytical procedures which continue to be invented regularly (Ratcliff 2008). Because the current study is a mixed-method study, done in two phases sequentially, data analysis was carried out in each phase, respectively.

4.7.1 Quantitative data analysis

The International Business Machines Statistical Package for Social Sciences (IBM SPSS) version 25 tool was used to analyse quantitative data in phase one. Missing data and outliers were removed to ensure data quality and the normality of the data was checked by applying the central limit theorem (Levine, Szabat & Stephan 2016). The data analysis process includes the application of descriptive statistics, inferential statistics, and structural equation modelling (SEM) techniques.

Descriptive statistics

Gravetter & Wallnau (2017) asserts that descriptive statistics can be described as procedures used to present numerical data in a simplified manner. The presentation of data can be produced using two techniques namely, numerical and graphical techniques. Keller (2018) asserts that the difference between the two techniques is guided by the preference of the researcher. Numerical techniques are mainly used to transform raw data into numerical categories to make it usable through summary statistics, while graphical techniques are used to present the data in graphical form that allows for easier extraction of information. In this study, the demographic information of participants as well as all scale items in the questionnaire making up the constructs of the model were computed, using descriptive statistics and presented in the form of frequency distribution tables, proportions, means and standard deviations, and coefficients of variants.

Inferential statistics

Inferential statistical are more sophisticated methods of analysis used to predict outcomes and make assumptions about a population using sample data (Keller 2018:4). In this study, two forms of inferential statistics were used, namely, Independent sample T-Test to compare the mean scores of male and female groups on all constructs and One-way Analysis of Variance (ANOVA) to compare the mean scores of more than two groups making up the roles of participants. The groups included managers, owners, and owner/manager groups for all constructs.

Structural equation modelling (SEM)

Structural equation modelling (SEM) includes a range of scientific models and techniques to test interrelationships among dependent and independent variables that fit the data (Tabachnick & Fidell 2019; Pallant 2016). Both independent and dependent variables can take the form of either discrete or continuous variables.

Hair, Black, Babin, Anderson & Tatham (2010) add that SEM lies on the foundation of Factor analysis (FA) and Multiple regression techniques for testing the significance of relationships between variables and how the resultant model fits the data. FA and Multiple regression techniques are arguably the two most popular multivariate statistical methods

used in social science research (Tabachnick & Fidell 2019). As such, SEM becomes a powerful statistical analysis technique over other common multivariate techniques with the ability to calculate measurement errors, correlated independents, and multiple latent independents, and coming up with a theoretical model to explain a set of relationships (Hair, Black, Babin & Anderson 2019; Byrne 2016). SEM is mainly used to fit models with their respective data (Barrett 2007). Model constructs are referred to as latent variables while questionnaire items measuring the constructs are simply called observed variables (Tabachnick & Fidell 2019).

SEM can be conducted in two parts (Hair et al. 2019). The first part involves the measurement model at the initial stage of the research. In this part, Confirmatory Factor Analysis (CFA) technique is used to provide confirmatory tests for the strength of the relationships between constructs of the measurement model. The second part involves the validation of the structural model at the later stage of the research. Both these parts were conducted in the current study.

Hair et al. (2019) proposed six stages of conducting SEM techniques. The stages include:

- Stage 1: Defining each constructs of the model
- Stage 2: Development of the overall measurement model
- Stage 3: Design of a study to produce empirical results
- Stage 4: Assessment of the measurement model validity
- Stage 5: Specification of the structural model
- Stage 6: Assessment of the structural model validity.

SEM technique comes with an IBM SPSS add-on software package called *Analysis of Moment Structure (AMOS)*. In the current study, IBM SPSS *AMOS* version 25 was used to apply SEM techniques. The techniques were applied following the guidelines provided by Hair et al. (2019) as follows:

In **stage 1**, a conceptual model was designed using constructs adopted from popular IS theories and models previously tested in related studies (*cf* Chapter Three). This stage also involved the development of research hypotheses which were tested to confirm the model.

In **stage 2**, items of the survey questionnaire were identified and used as measured variables for each of the model constructs. The path diagram which indicates the measurement model was drawn in *AMOS* version 25.

Stage 3 involved screening the variables against the data to check for outliers, incomplete responses, and missing data, as well as selecting the estimation method. Central limit theorem was used to check the normality of the data. Adequacy of sample size was also checked to ensure that it does not violate the assumptions of SEM. According to Tabachnick & Fidell (2019), any sample above 150 cases should be sufficient for SEM. This study obtained 227 cases as sample data to be analysed using SEM techniques.

In **stage 4**, the model was checked for its ‘goodness of fit’ to the data to ensure the validity of the measurement model and the validity of the model constructs. There are three types of construct validity; namely, *convergent validity*, which checks the relationship between the scores of scales that are designed to measure the same construct; *discriminant validity*, which ensures that a measurement scale does not measure items that it was not intended to measure (i.e., constructs must be distinctively measured); and *nomological validity*, which checks the significance of the relationships between constructs of the model (Hair et al. 2019). All three validity tests were done in the current study.

With regard to convergent validity, principal component factor analysis (PCA) was performed on all questionnaire items measuring each construct of the model (Bhattacharjee 2012). Generally, scale items belonging to a single construct with a loading factor greater than 0.5 are satisfactory for convergent validity. In this study, most of the constructs were measured among items with loading factors greater than 0.5, which reflected a strong factor loading. Items with weak loading factors were removed from the model.

Average variance extracted (AVE) and composite (construct) reliability (CR) were calculated for the assessment of convergent validity. AVE represents the average percentage of variance extracted among measurement items of a distinct model construct (Hair et al. 2019). It provides a summarised measure of convergence among the measurement items of a construct. Its formula is given by:

$$AVE = \frac{\sum_{i=1}^n L_i^2}{n}$$

where L_i is a standardised factor loading for i^{th} measured construct and n represents the number of measurement items for a particular construct. AVE is assumed to be higher than 0.5 for a good measure to be achieved.

CR measures the internal consistency of the questionnaire items measuring a particular construct (Hair et al. 2019). Its formula is given by:

$$CR = \frac{(\sum_{i=1}^n L_i)^2}{(\sum_{i=1}^n L_i)^2 + (\sum_{i=1}^n e_i)}$$

where $(\sum_{i=1}^n L_i)^2$ represents a squared sum of factor loadings (L_i) and $\sum_{i=1}^n e_i$ is the sum of error variance terms of a construct e_i . Generally, CR must be ≥ 0.7 to confirm internal consistency among measured variables (Manerikar & Manerikar 2015). Furthermore, to achieve convergence validity, all CR must be higher than AVE, that is $CR > AVE$.

In respect of discriminant validity, measurement items of the same construct must have much higher correspondence scores than those of other constructs (Rubin & Babbie 2016). Discriminant validity ensures constructs are unique (Hair et al. 2019). Bhattacharjee (2012) adds that discriminant validity is measured similarly to convergent validity. The results of PCA are used to confirm convergence validity and both AVE and CR are calculated to assess discriminant validity. Whereas factor loadings are expected to be ≥ 0.6 on a single factor for convergent validity, for discriminant validity, the items should not have factor loadings of ≤ 0.3 across the board (cross-factor loading).

With regard to nomological validity, a matrix confirming the correlation between constructs is normally used for the test (Hair et al. 2019). Nomological validates the overall model. It does this by determining whether Confirmatory factor analysis (CFA) model reflects the theoretical relationships among constructs (Byrne 2016; Lee & Lim 2013). The relationship should have a correlation of $0.50 < r < 0.85$.

Hair et al. (2019) asserts that CFA is conducted to test the extent to which measured variables correctly and precisely represent a smaller number of constructs to determine

either to ‘confirm’ or ‘reject’ the preconceived theory. Models can be assessed using incremental fit indices, absolute fit indices, and parsimony fit indices. The incremental indices are Comparative Fit Index (CFI), Normed Fit Index (NFI), Incremental Fit Index (IFI), Tucker Lewis Index (TLI), Relative Non-centrality Index (RNI); absolute fit indices are the chi-square statistics (X^2), goodness-fit index (GFI), Standardised Root Mean Residual (SRMR) and the root mean square error (RMSEA); and the parsimonious indices are Adjusted Goodness of Fit Index (AGFI) and Parsimony Goodness of Fit Index (PGFI).

Pallant (2016) adds that it is important to run a few different goodness-of-fit tests on the model to achieve a good fit with the data obtained. Fit indices such as X^2 , CFI, RMSEA, and GFI were used in this study to determine how the model fits the data.

X^2 tests the absolute fit of the model. It measures the differences that exist between the observed and estimated covariance matrices (Hair et al. 2019). For the model to fit the data, the tests must be non-significant at $p\text{-value} > 0.05$. However, X^2 is adversely affected by sample size. X^2 rejects models with large sample sizes or with too many constructs. The impact of sample size must be minimised to achieve a good fit. One way of minimising the impact of sample size is to use the normed chi-square (X^2 / df) with an acceptable ratio ranging from 5 to as low as 2. Other indices are commonly used to supplement X^2 (Tabachnick & Fidell 2019). The most popular indices include CFI, RMSEA and GFI.

CFI considers the characteristics of a sample and is not affected by small sample sizes (Hooper, Coughlan & Mullen 2008). CFI assumes that all constructs are independent and no correlations exist between them and makes a comparison between the model and the sample covariance matrix. It uses values ranging from 0 to 1, where values above 0.9 are usually regarded as indicative of a model with a good fit (Hair et al. 2019). That is $0.9 \leq p\text{-value} \leq 1$.

RMSEA is commonly used to correct issues raised by X^2 when models with large sample sizes are rejected (Hair et al. 2019). It estimates the fitness of the model to the data in relation to a saturated model in the population (Fox 2002). In concurrence, Dion (2008) also add that RMSEA tests the sample data and predicts the outcome of the tests if the models are assumed to be correct. Furthermore, Hair et al. (2019) states that RMSEA is a

model error term which regards lower values close to zero as an indication of a better fit of the model. Generally, a cut-off point of 0.05 is recommended to indicate a better fit.

GFI also produces a model fitness statistic that is not affected by sample size to serve as an alternative to X^2 (Hooper et al. 2008). It accounts for the proportionate variance resulting from the estimated population covariance. Statistical values for GFI range from 0 to 1 and the higher values ($0.90 < p\text{-value} \leq 1$) are indications of a good model fit (Hair et al. 2019).

A summary of the selected fit indices in this study is shown in Table 4.1:

Fit Index	Acceptable Threshold Levels	Interpretation
Chi-square	X^2 to degrees of freedom in the range of 5 to 1	Low X^2 relative to degrees of freedom with insignificant p-value ($p > .05$)
RMSEA	Values less than .07	Has a known distribution and values less than .03 represents an excellent fit
GFI	Values greater than .95	Scaled between 0 and 1, with higher values indicating the better fit model
CFI	Values greater than .95	Normed, 0 -1 range

Table 4.1. Summary of selected fit indices

Source: Adapted from Hooper et al. (2008)

Stage 5 of SEM techniques for this study involved converting the measurement model to a structural model. In this process, only latent variables (constructs) and their relationships were considered in the model and all observed variables of the measurement model were neglected.

In **stage 6**, the SEM structural model was tested for validity. In this stage, the model fit is assessed together with several tests for the size, significance, and direction of the structural parameter estimates. The model fitness indices used in the measurement model such as X^2 , CFI, RMSEA, and GFI were also used in the structural model.

4.7.2 Qualitative data analysis

As explained in Chapter Three, the explanatory sequential mixed-method approach requires the qualitative phase of mixed method studies to explain the results of the quantitative phase. As such the findings of the quantitative phase of the current study were used to guide the subsequent qualitative enquiry in phase two of the study. Consequently,

the results of the web-based survey in the quantitative phase were explained in more detail using a semi-structured interview in the qualitative phase.

Generally, the data analysis process involves a thorough process of examining and organising datasets to deriving meaning and make conclusions about the phenomenon (Creswell & Creswell 2017). While quantitative research requires the use of statistical methods for analysing the data, in qualitative research the data analysis process is conducted narratively. Qualitative data analysis involves organising data in a form of codes, themes, relationships, patterns, explanations, and interpretations to understand its meaning.

The qualitative analysis approaches are easier and more flexible forms of data analysis and requires no prior knowledge of theoretical approaches (Creswell 2017). Crowe, Inder & Porter (2015) add that qualitative analysis approaches are oriented towards providing new insights through an understanding of meaning and experiences in areas that are poorly understood. As such, the qualitative analysis process is usually undertaken simultaneously with the data collection process (Silverman 2013). This rigorous process is conducted because qualitative data analysis is oriented towards understanding meanings that could provide new insights in areas that are complex and poorly understood (Crowe et al. 2015), such as the phenomenon of how SMMEs evaluate the effectiveness of social media in their KMS.

In this study, the survey yielded results about which the participants were probed to provide in-depth explanations regarding the significance of the relationships between identified factors in attaining a model which will guide the evaluation of social media on KMS of SMMEs. For example, the survey results suggested that the satisfaction of users with social media does not necessarily lead to its effectiveness in the KMS of SMME as a net benefit. This finding was unexpected given that the literature of KMS success supports the relationship between user satisfaction and net benefit (Jennex et al. 2016). However, interview findings provided more depth and revealed that although social media are used to support the KMS, it is mostly used informally. Hence, the satisfaction of users cannot be associated with the effectiveness of social media on the KMS, but with the general advantage of using social media in SMMEs despite the context of KMS.

Several approaches of qualitative data analysis may be applied according to their entrenchment in paradigm or philosophy (Archer, Herman, van Vuuren & Hugo 2017; Huberman 2014; Eberle 2014). Examples can range from those linked to theory development such as narrative analysis, conversational, and grounded theory to those that are not linked such as content analysis, experiential, and thematic analysis (Braun & Clark 2006).

In this study, thematic analysis was used due to its popularity in social science research (Vaismoradi, Turunen & Bondas 2013) and its ability to focus on the meaning of the data rather than the calculations (Crowe et al. 2015). Thematic analysis is a powerful process of analysing qualitative data and can be used across a wide range of epistemologies (Nowell, Norris, White & Moules 2017). Its ability to identify, analyse, organise, describe, and report on themes found in large sets of data in a detailed manner makes it a powerful process to use in qualitative studies (Braun & Clark 2006). The thematic analysis process allows researchers to identify codes and themes either inductively from the data or deductively from own understanding derived from conceptual theory – even before the data is collected. In this study, codes and themes were created deductively according to the research questions and the conceptual model. The thematic analysis process of this study was conducted following the guidelines suggested by Archer et al. (2017) as follows:

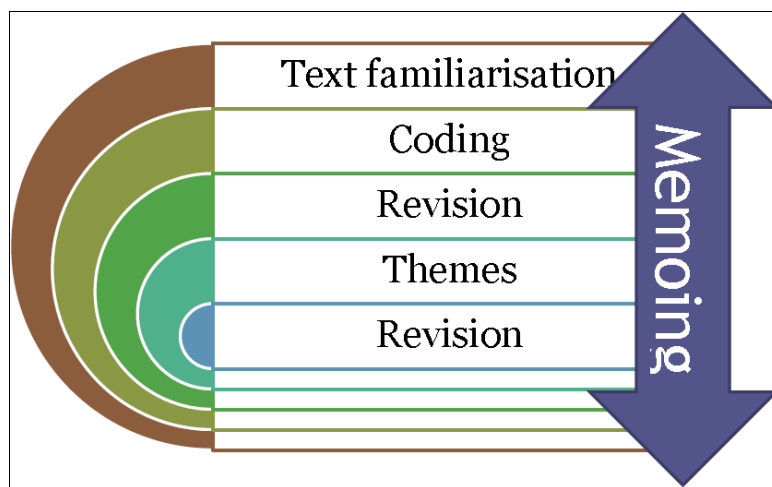


Figure 4.7. Thematic analysis process

Source: Archer, Herman, van Vuuren & Hugo (2017)

Stage 1: Text Familiarisation

In this stage, the researcher listened and re-listened to each recorded semi-structured interview audio/video recording thoroughly to ensure data accuracy. The interviews were then transcribed from audio/video to text to prepare for analysis. To comply with the code of ethics for research, each transcript was spell checked to ensure that all references to names of participating SMMEs and participants were removed. The researcher compared each transcript with its respective audio/video together with field notes forming the basis for developing codes in the subsequent stage.

Stage 2: Coding

In the coding stage, the transcripts were exported into *ATLAS.ti* software for initial codes to be created. Initial codes form the basis of qualitative data analysis because they assist with the initial interpretation of the data. A codebook was created using deductive codes emanating as constructs of the conceptual model developed in the quantitative phase of the study as well as inductive codes discerned from the interview transcripts so that no codes that are relevant and specifically focusing on the research questions of the study are omitted.

Stage 3: Revision

At this stage, the codebook was revised to ensure that all codes that were created in step 2 are relevant to the research questions. This step was rigorous but necessary to ensure that none of the important codes were omitted in the next stage of theme identification.

Stage 4: Themes

At this stage, the primary themes of the study were generated by reviewing the codebook generated in the previous stages to identify similarities and overlaps between codes as well as to cluster and collapse codes with similar features to reflect meaningful patterns of the data. This stage required the researcher to ensure that all generated themes capture aspects of the data with no overlap between themes. The researcher also reflected on the research questions to ensure that all themes are relevant and address the research questions directly. Themes were also given names and organised to reflect the conceptual model of the study by creating relationships between them and the overall dataset.

Stage 5: Revision

Themes that were generated in stage 4 were refined by combining those with similar ideas to address the same research question and discarding those that are not sharing central ideas and not contributing to the objectives of the study. This stage also involved a rigorous process of re-checking the themes and their relationships for coherence to ensure that no new, significant themes emerge. Moreover, the revision stage involves the process of making sure that the themes are organised to create a narrative that explains the phenomenon addressing the research questions. Lastly, the interpretations of the findings were documented.

4.8. Ethical considerations

Research projects need to clarify how issues of ethics are taken into consideration. Ethical considerations include rules and standards guiding our behaviour and moral choices in the relationships we form with other people (Cooper & Schindler 2014). Researchers need to ensure that during the research process, all issues of ethics are discussed with participants and are not violated nor omitted.

The current study involved human participants and the researcher was obligated to adhere to the moral principle of not disclosing the names of SMME organisations or individual owners and managers participating in the study anywhere in the write-up of the thesis. Ethical norms also promote the aims of research such as truth, accountability, mutual respect, fairness, and the avoidance of errors. Overall, this study was subjected to the ethical review policy of the University of South Africa (UNISA), School of Computing Research Ethics Committee under the ethical guidelines such as honesty, openness, objectivity, integrity, carefulness, confidentiality, non-discrimination, responsible mentoring, and respect for intellectual property (*cf* Appendix C).

- Honesty, integrity and openness – the research participants were provided with the information sheet that includes the details of the researcher, the study leader, the ethical clearance certificate number for the study, as well as the contact details of the chairperson of the Research Ethics Review Committee of the School of Computing, UNISA, to refer in case they wanted to follow up to gain more clarity of the study. The information sheet also explained the purpose of the study, the

reasons for inviting the participant in the study, and the role that the participants would play in the study.

- Confidentiality and respect for intellectual property - Before the data was collected, confidentiality issues were explained to the participants. In the quantitative phase, the information sheet included information that guarantees anonymity of participants so that they are not linked to any of the responses received. The web-based survey questionnaire was designed with full anonymity to ensure that the names of the participants and those of participating organisations are not disclosed anywhere in the study. In the qualitative phase, all interview transcripts were coded to ensure that the names mentioned during the recorded interviews are hidden. All the collected data is secured with a password known only to the researcher, and stored on an external hard drive in a secured locker for five years – after which it will be destroyed.
- Objectivity and carefulness – the researcher was very careful to remove any bias from the data being collected. In the qualitative phase a codebook was developed to confirm the relevance of the codes across all interview transcripts. The researcher was free from any financial or commercial returns and explained to the participants that there is no payment or reward offered or financial compensation or otherwise for participating in the study.
- Non-discrimination and responsible mentoring - In the quantitative phase, the researcher ensured responsible monitoring of responses by making follow-ups with the gate keepers of participating SMMEs to ensure that proper channels are followed and the data collection is done in a responsible manner. In the qualitative phase, the researcher requested meetings with participants and only scheduled the interviews at the convenience of the participants. The participants were allowed to withdraw from the interviews at any time if they could not continue with the process.

4.9. Chapter summary

In summary, the overall research methodology was discussed in this chapter. Specifically, different research philosophies found in IS research were presented before justifying the

pragmatism philosophy as the most suitable philosophy for the current research. The discussion continued by reporting on the paradigm that was closely linked to the philosophical stance of the research. Different paradigms were discussed and the justification for selecting a suitable one for this research was also presented. Furthermore, the chapter discussed the selected research design (explanatory sequential mixed-methods design) presenting the two phases that were followed (Phase One: Quantitative and Phase Two: Qualitative) during the design of the mixed-method approach, the suitable time horizon, the data collection methods, and the analysis procedures used in each phase. Subsequently, the chapter discussed the ethical considerations.

Having explained the requirements of the explanatory sequential mixed method approach of the current study, the next chapter discusses how the quantitative phase of the approach was operationalised.

CHAPTER FIVE:

Phase one: the quantitative study

5.0 Introduction

Given that the research methodology of the study was presented in the previous chapter, in this chapter, the processes and activities which formed the main elements of the quantitative phase of the explanatory sequential mixed method approach of the current study are presented. As it was mentioned in Chapter Four, the quantitative phase of this study was executed mainly to address the following objectives:

- To identify factors influencing the use of social media to enhance KMS of SMMEs in South Africa.
- To assess the significance of the identified factors in the evaluation of social media to enhance KMS of SMMEs.

The phase aims to achieve these objectives by using a survey strategy to gain data from a large sample of 227 dispersed participants administered online to understand these factors.

Three sections are used to structure the chapter. Section 5.1 starts by describing the survey questionnaire and its advantages over other data collection methods, as well as how a web-based survey questionnaire was constructed and section 5.2 follows by discussing data collection activities as well as the piloting of the web-based survey questionnaire. The section also discusses reliability and validity issues and the survey administration process while section 5.3 explains the data analysis process of the main study – including the procedure for selecting the sampled participants, distribution of the questionnaire, and a variety of tests that were conducted for the quantitative analysis phase. The section also discusses the application of SEM to validate and confirm the structural model of the study and finally, the section draws conclusions from the survey data – which will then influence the qualitative phase of the study.

5.1 Survey questionnaire

Surveys are generally regarded as effective and efficient methods of assessing management perceptions about issues in their organisations (Rogelberg & Stanton 2007). They have deductive capabilities for hypothesis testing and validation of models. The use of survey questionnaires fit well in the current study where SMME owners and managers are selected to provide some insight regarding how social media are used to support their KMS processes. Generally, survey results have the potential to boost the confidence of researchers to generalise their findings to a large population (Song et al. 2015).

In the current study, a web-based survey questionnaire was the instrument utilised for the collection of data to assist with the validation of the underlying factors motivating the use of social media by SMME in enhancing their KMS processes. The selection of the web-based survey questionnaire was informed by its potential to collect data from large samples of participants in disparate locations, its time-efficiency, as well as its cost-efficiency (Fink 2015; Nardi 2015). Moreover, the web-based survey was easily accessible to the sampled SMME owners and managers since they work with social media platforms daily, and are vastly dispersed all over the Gauteng region.

Although other survey methods can be used, such as email surveys, postal surveys and telephone surveys (Dillman, Smyth & Christian 2014; De Vaus 2013), they are time-consuming, both in the distribution of questionnaire instruments and in the collection of responses where large pools of responses are required. Therefore, their major drawback is the amount of time involved in administrative work.

Over and above the possibility of reaching a large pool of disparately located sampled participants over the internet in the shortest possible time (Andreadis 2015; Fink 2015; Nardi 2015), some of the advantages of a web-based survey over conventional surveys are: first, it has relatively low administration costs, including the costs associated with distributing and returning of a survey (Blair, Czara & Blair 2013; Olsen, Keltyka & Kimmell 2011); second, it has a potential for improved response rate due to its interactive features and visual elements (Bakla, Çekiç & Köksal 2013; Blair et al. 2013; Sue & Ritter 2012); third, it allows easy follow-ups and reminders sent to participants (Lefever, Dal &

Matthiasdottir 2007); fourth, offers complete anonymity of participants (Sue & Ritter 2012) and fifth, has an improved process of cleaning and managing the collected data for analysis (Bakla et al. 2013).

While a web-based survey has more benefits than other conventional survey methods, they also have disadvantages (De Vaus 2013; Blair et al. 2013; Kaplowitz et al. 2011). If not monitored, a web-based survey can result in very low response rate (De Vaus 2013).

Although the internet is becoming increasingly accessible to many individuals, it comes at a cost (Levenburg, Schwarz & Motwani 2015). People tend to use their time on the internet more productively and may view completing online surveys as time-consuming.

Another challenge of relying solely on web-based surveys for research, is that individuals with no internet access may be excluded, thereby resulting in a sample that is unrepresentative (Solomon 2001). This could lead to skewing of the data and adversely affect the generalisability of findings in some instances (Zhang 2000). However, in this research, the selection of a web-based survey is made deliberately to ensure that only those SMMEs who are actively using social media platforms are sampled. Thus, the results are only generalisable to SMMEs in the innovation and technology sectors in Gauteng which are actively using social media for their knowledge needs.

To maximise the benefits of web-based questionnaires in this study, the researcher thought it key to construct one that was easy to complete by the research participants. Next, some of the useful recommendations and guidelines for developing useful web-based survey questionnaires provided in the literature are discussed.

5.1.1 Development of the web-based survey questionnaire

It takes considerable effort to construct a web-based survey questionnaire (Rowley 2014; Bakla et al. 2013). The process of designing, developing and testing a high-quality questionnaire requires much dedication, time and effort (Blair et al. 2013; Andre 2012). Since the web-based survey questionnaire served as the only communication medium between the researcher and the participants (Bee & Murdoch-Eaton 2016; Fielding, Lee & Blank 2008), it was important to put more emphasis on the design to ensure that the measurement variables are precisely represented by the envisaged data. As such, even

more effort was put into the process of designing the web-based survey questionnaire to ensure successful results for the study.

Although there are no theoretical bases or rules that guarantee an 'ideal' design of a web-based survey (Grover & Vriens 2006), the study ensured that the type of questions asked in the survey could influence the outcome positively. Generally, surveys are designed to ask either closed-ended or open-ended questions (Fink 2015; Rowley 2014; Bakla et al. 2013; Sue & Ritter 2012). Sometimes a mix of questions in one survey is permissible. However, the decision to include either open-ended or closed-ended questions needs careful consideration because answers to such questions may determine the depth of the study. While open-ended questions provide participants with the freedom to express their views and opinions, closed-ended questions provide a list of precoded options from which participants can select suitable answers (Rowley 2014; Sue & Ritter 2012).

The web-based survey questionnaire of the current study comprised closed-ended questions only (*cf* Appendix A). The rationale behind a choice of closed-ended questions was motivated by the work of Babbie (2017) who asserts that closed-ended questionnaires provide more noteworthy consistency of responses and are more effectively analysed. Moreover, responses to closed-ended questions normally require less effort to analyse (Bee & Murdoch-Eaton 2016). Ideally, if a population is so vastly scattered, it may be sensible for the study to collect data using closed-ended survey questionnaires.

Regardless of whether the questions are open- or closed-ended, they must be clear and understandable so that they provide enough data to respond to the study's main objectives (Fink 2015). Such questions have the potential to achieve a successful survey. Furthermore, Sue & Ritter (2012); Hewson & Laurent (2012) suggest that adopting questions from existing related surveys that have been tested may improve the reliability and validity of the survey, thereby easing administration efforts and ultimately improving the chances of success. Thus, the questions used in the web-based survey questionnaire of this study were adopted from related studies addressing social media and KMS adoption and use in the organisational context. The layout of the web-based questionnaire of this study including operationalisation of variables of the model are presented next.

5.1.2 Layout of the web-based survey questionnaire

A good layout of a questionnaire improves the chances of attracting more responses (Saunders et al. 2016). A survey with a good layout provides clear, reliable, valid, and presentable results (Blair et al. 2013). Sometimes the participants will answer questions based on some unintended influence such as the order of the items in the questionnaire, the response options provided, and the wording of the items; which could lead to misleading results and subsequently minimise the reliability and validity of the responses.

Moreover, using unambiguous language and keeping the questions short, clear, and simple has the potential to provide the study with more accurate responses (Leedy & Ormrod 2015). Thus, survey questionnaires with good layouts are easy to complete, especially those deployed over the internet (i.e., web-based questionnaires) because they provide easy navigation of questions in a user-friendly manner.

The process of constructing the web-based survey questionnaire for this study was guided by suggestions made by Leedy & Ormrod (2015). The initial design of the instrument was tested through a pilot phase with a small sample of 16 participants to ensure that the final web-based survey questionnaire instrument in the main study is clear and easy to complete.

The instrument consists of five sections including instructions, namely, sections A through D respectively (*cf* Appendix A) with each section addressing different aspects of the study. Table 5.1 shows the high-level layout of the web-based survey questionnaire in this study; highlighting the different sections, their respective focus areas, the number of items or specific questions in each area, and the types of variables which were operationalised.

Section	Area	Number of items	Variable type	
Instructions	Cover letter to an online anonymous web-based survey	N/A	N/A	
A	Demographic information	5	Norminal / Scale	
B	Social media as a KM tool for SMMEs	3	Norminal	
C	Applicability of Social media	Compatibility	5	Norminal
		Complexity	5	
		Relative advantage	5	
		Coordination	4	
		Immediate access	4	
		Social presence	4	
		Facilitating conditions	4	
		Social influences	3	
		System quality	7	
		Knowledge quality	6	
		Service quality	6	
		Intention to use	5	
		User satisfaction	5	
Effectiveness (net benefit)	5			
D	Perceptions about Social media evaluation processes in SMMEs	7	Norminal	

Table 5.1. Layout of the web-based survey questionnaire

Instructions page: Cover letter to an online anonymous web-based survey

As shown in Table 5.1, the first page of web-based survey questionnaire includes the cover letter containing information about the aims of the study as well as all guidelines for participating in the study – for selected participants to familiarise themselves with the rules governing research that requires human participation. The section also contains information on the rationale for selecting participants of this study.

Moreover, the cover letter and instruction page include information about the ethical clearance review process of the Unisa Research Ethics Review Committee of the School of Computing and an ethical clearance reference number: 071/SPM/2018/CSET_SOC confirming the approval of this study. Statements for guaranteeing the confidentiality of participants, as required by the law governing research in the University of South Africa, are also found here (*cf* Appendix C).

The instruction page is an important element of the web-based survey questionnaire because it includes information that provides the background of the study. One of its functions is to sensitise the participants to ensure that the questionnaire will be completed correctly (Rowley 2014). The following are all important factors for the success of the web-based survey questionnaire: providing details of the study and its background, the rationale behind selecting participants as candidates, the significance of the study, the researcher's contact information, the time required for completing the survey, and a guarantee of the confidentiality and anonymity of the responses. As such, the instructions page has the potential to influence the outcome of the survey (Rowley 2014; Kaplowitz, Lupi, Couper & Thorp et al. 2011).

Following the cover letter, are sections A through D which represent components of the research model and the questions that were selected for their potential relevance and theoretical importance for the research objective to be addressed adequately. Each of these sections was measured differently to collect either nominal or scale variables to ensure that responses can easily be coded. As stated by Leedy & Ormrod (2015), it is important to determine in advance how the responses will be coded for easy analysis and reporting of research findings at the end of the study.

Section A: Demographic information

Since the study focuses on SMMEs in the Gauteng regions. It was important to ensure that participating SMMEs have their business premises in the Gauteng area to fulfil the aims and objectives of this study. Section A includes questions that seek to understand the demographic information of the SMME owners and managers participating in the study, including the physical location and size of their respective organisations. Five questions were asked under the demographics section to understand the characteristics of these

SMMEs. The five questions consisted of a combination of nominal and scale variables to help understand the demographic information of the participating SMMEs. Nominal variables in this section include information like the roles and gender of participants and the physical location of their SMMEs; while scale variables included questions around the annual turnover of participating SMMEs and the number of full-time employees. This information is important in ensuring that the characteristics of participating SMMEs are congruent with the definition provided in the literature section of this thesis (*cf* Chapter Two).

Section B: Social Media as a KM tool for SMMEs

Section B comprises questions aimed at ascertaining the use of social media by SMMEs, particularly in their KMS processes. Participants were presented with a list of common social media platforms from which to make a selection of those that they use in the SMMEs for their knowledge needs.

A precoded five-point Likert scale was also used in the questionnaire. The Likert scale was presented as: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree – in relation to the usage level of social media and the support given by top management in the SMME. Likert scales have the advantage of collecting more indepth perceptions and attitudes of research participants (Schrum, Johnson, Ghuy & Gombolay 2020). They are very easy to complete, with improved internal consistency in the questions being asked (Tavakol & Dennick 2011). As such, the use of Likert scale was appropriate for the current study to understand how SMMEs perceive the use of social media in their KMS processes.

Section C: Applicability of Social Media

Section C comprises questions relating to key constructs of the model for the study, namely; Compatibility (COMP A), Complexity (COMPLE), Relative Advantage (RA), Coordination (COORD), Immediate Access (IA), Social Presence (SP), Facilitating Conditions (FC), Social Influences (SI), Knowledge Quality (KQ), Service Quality (SEQ), System Quality (SYSQ), Intention to Use / Perceived Benefits (IUPB), User Satisfaction (US), and Net Benefit (NB). Each construct was represented by multiple standardised statements adopted from the literature.

The statements were presented on a five-point precoded Likert scale as: Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. Questions were mainly geared towards meeting the objective of measuring the effectiveness of social media platforms when used to support the KMS in SMMEs.

Section D: Perceptions about Social Media evaluation processes in SMMEs

Lastly, section D of the survey questionnaire aims to ascertain the perceptions of SMME owners and managers about the current methods of evaluating social media in their organisations. The section also comprises a five-point precoded Likert scale presented as: Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree – for participants to indicate their reasons. This section also ascertains the challenges experienced with current evaluation processes and the gaps that the model can address.

Overall, the final version of the web-based survey questionnaire was refined to collect data that assisted in addressing the main areas of the research problem, including research questions, objectives (*cf* Chapter One), and the model (*cf* Chapter Three). The questionnaire comprised 83 questions spread over 13 pages including the first two pages of instructions and guidelines. A complete web-based survey questionnaire can be found in Appendix A. The next section discusses an online tool used to deploy the web-based survey.

5.1.3 Survey questionnaire deployment tool

As the name suggests, a web-based survey is administered on the internet. Scholars such as (Rowley 2014; Bakla et al. 2013) assert that administering the survey online aids the research with further testing of the reliability, compatibility, usefulness, and ease of use on different browsers and devices (i.e., desktops and mobile devices).

Although online surveys are sometimes mistrusted for privacy and security reasons because of their bad reputation of misuse for advertising and promotional purposes (Simmon 2011), recently they have been having a profound effect on research and are increasing in popularity among IS related studies (Andreadis 2015; Rowley 2014; Baltar &

Brunet 2012). Their ability to record the average time taken to complete a survey serves as their strength to establish the likelihood of achieving a good response rate (Blair et al. 2013). Moreover, online surveys are equipped with many features for easy creation and management of user-friendly instruments with less effort (Bakla et al. 2013).

There are endless numbers of online survey tools available today. Some of the most commonly used include: Google Forms, Survey Monkey, Zoho Survey, SoGoSurvey, Typeform, Client Heartbeat, and Microsoft Forms (WordStream 2019). Most of these surveys are freely available for download and use. However, depending on the requirements for the research, some limitations may prevent one from using other tools. For example, most of the free versions have limitations on the number of surveys one can create, the number of responses, the number of questions asked by the survey, and many others.

After comparing different survey tools, Microsoft forms (<https://forms.office.com>) (Microsoft 2019) was selected and found suitable for the current study. The first version of Microsoft forms was released in June 2016 as part of the *Microsoft Office 365* Education package. Contrary to other online survey tools, Microsoft forms is easy to use, works in multiple web browsers, and comes with themes and question branches to provide a simpler layout of questionnaires. The tool also allowed the researcher to design questions with mandatory fields to avoid the occurrence of missing data. Moreover, the data was easily exported to *Microsoft Excel* spreadsheet for analysis.

The next section explains how model constructs were operationalised in the questionnaire to collect data that would assist in addressing the primary objective of developing and proposing a model for evaluating the effectiveness of social media on KMS of SMMEs in South Africa

5.1.4 Operationalisation of model constructs

The definitions and measurement items of the main constructs of the model were derived from the underpinning theories explained in Chapter Three of the current thesis. The constructs represent the variables (independent, moderating and dependent variables) of the model and a five-point Likert scale ranging from 1= Strongly Disagree, 2= Disagree,

3= Neutral, 4= Agree, to 5= Strongly Agree, was used as a measurement instrument. Altogether, the model was derived with 14 constructs consisting of one dependent, five moderating and eight independent variables. The next sub-section presents how the constructs were operationalised.

Measurement of Compatibility (COMPA)

Compatibility (COMPA) construct measures how social media platforms are compatible with the existing practices, experience, and values within the SMME (Henderson 2017). COMPA is an independent variable in the research model of the current study. Five measurement items adapted from Odoom et al. (2017) and Moore & Benbasat (1991) were used to understand the level at which SMME owners and managers agree with the COMPA of social media in their SMMEs. Table 5.2 shows the measurement items for COMPA.

8. Compatibility		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
8.1	I believe social media helps my organisation to become more knowledgeable by providing us with the information we need in the shortest amount of time					
8.2	I find it easy to share knowledge using social media platforms					
8.3	I find it easy to locate subject matter expert using social media					
8.4	I believe social media provides relevant knowledge to help my employees do their job					
8.5	Social media platforms have the necessary knowledge management functions that suite for my organisation					

Table 5.2. Measure of Compatibility (COMPA)

Source: Adapted from Odoom et al. (2017); and Moore & Benbasat (1991)

Measurement of Complexity (COMPLE)

Complexity (COMPLE) was used to measure whether social media is easy to understand and use (Conrad 2013). COMPLE is an independent variable derived to determine the

extent to which SMME owners and managers understand social media applications to support their KMS. The construct was measured using five complexity items adapted from Laukkanen & Cruz (2009); Rogers (2003); Tan & Teo (2000) to understand the level at which SMMEs owners and managers agree with the COMPLE of social media to support the KMS. Table 5.3 shows the measurement items for COMPLE.

9. Complexity		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
9.1	I believe that social media are difficult to use					
9.2	Using social media to do work for my organisation takes too much time					
9.3	It is difficult to understand the information provided on social media platforms					
9.4	It takes too long to learn how to use social media platforms					
9.5	Working with social media platforms is very complicated					

Table 5.3. Measure of Complexity (COMPLE)

Source: Adapted from Laukkanen & Cruz (2009); Rogers (2003); Tan & Teo (2000)

Measurement of Relative Advantage (RA)

Relative Advantage (RA) as an independent variable in the research model was used to measure how SMMEs perceive social media platforms as having an advantage over existing tools and practices of KM in the SMME (Henderson 2017). Five measurement items for RA were adapted from the literature of Rogers (2003); Tan & Teo (2000) and Moore & Benbasat (1991) and used to understand the level at which SMMEs owners and managers agree with the RA of social media. Table 5.4 shows the measurement items for RA.

10. Relative advantage		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
10.1	I believe social media provides my organisation with the knowledge needed to accomplish tasks much faster					
10.2	Using social media improves the quality of work in my organisation					
10.3	I believe that using social media for our knowledge needs gives my organisation a competitive advantage					
10.4	I believe using social media improves the competencies of my organisation					
10.5	Working with social media platforms improves the productivity of my organisation					

Table 5.4. Measure of Relative Advantage (RA)

Source: Adapted from Rogers (2003); Tan & Teo (2000); and Moore & Benbasat (1991)

Measurement of Coordination (COORD)

Coordination (COORD) was used as an independent variable measuring the extent to which SMMEs use social media to distribute knowledge (Scholtz et al. 2017; Xu et al. 2012). Four measurement items relating to COORD adapted from Scholtz et al. (2017) were used to understand the level at which SMME owners and managers agree with the COORD function of social media to disperse knowledge in their SMMEs. Table 5.5 shows the measurement items for COORD.

11. Coordination		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11.1	I believe social media is able to spread news (messages, events and other information) fast and easily					
11.2	I believe social media is able to disperse news (messages, events and other information) to multiple employees at one time quickly and easily					
11.3	I believe social media has the capability to make arrangements for my employees to share knowledge					
11.4	I believe social media has the capability to organize social events among my employees					

Table 5.5. Measure of Coordination (COORD)

Source: Adapted from Scholtz et al. (2017)

Measurement of Immediate Access (IA)

Immediate Access (IA) was used as an independent variable measuring the extent to which SMMEs use social media to serve their immediate needs for knowledge located in different sources accessible over the internet (Scholtz et al. 2017; Xu et al. 2012). Four measurement items relating to IA adapted from Scholtz et al. (2017) were used to understand the level at which SMME owners and managers agree with the IA capability of social media. Table 5.6 shows the measurement items for IA.

12. Immediate access		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
12.1	I believe social media provides access to my employees at anytime					
12.2	I believe social media provides access to my employees anywhere they are					
12.3	I believe social media allows me to be available for my employees anytime they need to reach me					
12.4	I believe social media allows me to be available for my employees no matter where I am					

Table 5.6. Measure of Immediate Access (IA)

Source: Adapted from Scholtz et al. (2017)

Measurement of Social Presence (SP)

Social Presence (SP) as an independent variable was used to measure social media’s ability to provide a sense of connection with knowledge experts that is similar to face-to-face practices (Weisberg et al. 2011). Four measurement items relating to SP adapted from Weisberg et al. (2011) were used to understand the level at which SMME owners and managers agree with the SP capability of social media. Table 5.7 shows the measurement items for SP.

13. Social presence		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
13.1	I believe social media allows me to have a sense of human contact with my employees					
13.2	Social media allows me to share knowledge with my employees					
13.3	I always feel my employees' presence on social media platforms					
13.4	I always feel availability of efficient service when using social media					

Table 5.7. Measure of Social Presence (SP)

Source: Adapted from Weisberg et al. (2011)

Measurement of Facilitating Conditions (FC)

Facilitating Conditions (FC) is an independent variable used to ascertain the extent to which SMME owners and managers believe that their operating environment allows for enough support to use social media to facilitate the KMS processes (Venkatesh et al. 2012). Four measurement items adapted from Venkatesh et al. (2012) were used to understand the level at which SMME owners and managers agree with the FC of social media in their respective SMMEs. Table 5.8 shows the measurement items for FC.

14. Facilitating conditions		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14.1	My organisation encourages all staff members to exchange knowledge using social media platforms					
14.2	Management is very flexibility, which makes it easier for us to use any social media platforms we wish to use					
14.3	My employees are always available to assist one another if there are difficulties with social media use					
14.4	The environment of our organisation has full internet coverage to facilitate the use of social media					

Table 5.8. Measure of Facilitating Conditions (FC)

Source: Adapted from Venkatesh et al. (2012)

Measurement of Social Influences (SI)

Social Influences (SI) is an independent variable used to ascertain the perceptions of SMME owners and managers on the belief of their significant others (e.g., family and friends) about using social media to support KMS functions (Venkatesh et al. 2012; Gruzd et al. 2012). Three measurement items adapted from Venkatesh et al. (2012) and Gruzd et al. (2012) were used to understand the level at which SMME owners and managers agree with the role that SI play in SMMEs to use social media in their KMS processes. Table 5.9 shows the measured items for SI.

15. Social Influences		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
15.1	Our customers, suppliers and business partners demand that we use social media when engaging with them					
15.2	Our competitors are using social media, therefore we have to follow suit to avoid being left out					
15.3	People who are important to me think that my organisation should use social media to do business					

Table 5.9. Measure of Social Influences (SI)

Source: Adapted from Venkatesh et al. (2012) and Gruzd et al. (2012)

Measurement of System Quality (SYSQ)

System Quality (SYSQ) is used as a moderating variable to understand how well social media executes KMS processes (Jennex & Olfman (2006). Seven measurement items adapted from the literature of Petter et al. (2013); Lwoga (2013); Al-Shibly (2011); Masrek et al. (2010) were used to understand the level at which SMMEs owners and managers agree with SYSQ of social media to enhance their KMS processes. Table 5.10 shows the measurement items for SYSQ.

16. System quality		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
16.1	Social media platforms are flexible and easy to use (Usability)					
16.2	Social media platforms are easily accessible from anywhere by anyone (accessibility)					
16.3	Social media platforms are easy to learn and adapt (adaptability)					
16.4	Social media platforms are flexible (flexibility)					
16.5	Social media platforms are stable (stability)					
16.6	Social media platforms are reliable (reliability)					
16.7	I trust the information provided on social media platforms and often use it as new knowledge to grow my business					

Table 5.10. Measurement of System Quality (SYSQ)

Source: Adapted from Lwoga (2013); Al-Shibly (2011); Masrek et al. (2010); Petter et al. (2013)

Measurement of Knowledge Quality (KQ)

Knowledge Quality (KQ) is a moderating variable to ascertain whether social media is capable of capturing knowledge and accurately transfer it to those that need it (Masrek, Jamaludin & Mukhtar 2010; Jennex & Olfman 2006). To measure KQ, six measurement items adapted from Petter et al. (2013); Kulkarni, Ravindran & Freeze (2007) were used to understand the level at which SMMEs owners and managers agree with the KQ of social media to enhance the KMS processes of their SMMEs. Table 5.11 shows the measurement items.

17. Knowledge quality		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
17.1	The knowledge provided by social media platforms is accurate (accuracy)					
17.2	The knowledge provided by social media platforms is reliable (reliability)					
17.3	The knowledge provided by social media platforms is relevant (relevance)					
17.4	Social media platforms provide knowledge which easier to understand (easiness)					
17.5	Social media platforms provide enough and detailed knowledge to assist with my work (completeness)					
17.6	Social media platforms provide knowledge which up-to-date (timely)					

Table 5.11. Measurement of Knowledge Quality (KQ)

Source: Adapted from Petter et al. (2013); Kulkarni et al. (2007)

Measurement of Service Quality (SERVQ)

Service Quality (SERVQ) is a moderating variable used to measure the overall support provided by SMME management and service providers to ensure that social media achieves the intended function of facilitating KMS activities (Jennex & Olfman (2006). Six measurement items adapted from the literature of Petter et al. (2013); Lwoga (2013); Al-Shibly (2011); and Masrek et al. (2010) were used to understand the level at which SMME owners and managers agree with the SERVQ of social media to enhance KMS processes. Table 5.12 shows the measurement items for SERVQ.

18. Service quality		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
18.1	Social media platforms are very responsive to our knowledge requests (responsiveness)					
18.2	Our organization provides reliable internet to support the use of social media					
18.3	Social media provides prompt support to us when we search for knowledge					
18.4	I always find the information I need through social media platforms to improve my knowledge					
18.5	All members of my organisation are able to provide support to one another regarding challenges of social media platforms use					
18.6	My organisation encourages learning and upskilling employees through social media platforms					

Table 5.12. Measurement of Service Quality (SERVQ)

Source: Adapted from Petter et al. (2013); Lwoga (2013); Al-Shibly (2011); Masrek et al. (2010)

Measurement of Intention to Use / Perceived Benefits (IUPB)

Intention to Use / Perceived Benefits (IUPB) was posited as a moderating variable in the research model to measure the perceived benefit and favourable attitude towards using social media that results in continuation of use to enhance the KMS (Petter et al. 2013). To measure IUPB, five measurement items were adapted from the work of Wang (2008) to understand the degree to which SMME owners and managers agree with the IUPB of social media regarding the KMS processes. Table 5.13 shows the measurement items used in this study.

19. Intention to use		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
19.1	I intend to continue using social media to search for knowledge in my organization					
19.2	I intend to continue using social media to record my knowledge about the business					
19.3	I intend to continue using social media to communicate knowledge about the business with my employees					
19.4	I intend to continue using social media to improve knowledge within my organisation					
19.5	I intend to continue using social media to help with decision making in my organisation					

Table 5.13. Measurement of Intention to Use / perceived benefit (IUPB)

Source: Adapted from Wang (2008)

Measurement of User Satisfaction (US)

User Satisfaction (US) as a moderating variable was used to measure the level of fulfilment (Jennex & Olfman 2006) that SMMEs have with social media. Five measurement items adapted from the literature of Lwoga (2013); Masrek et al. (2010); and Wu & Wang (2006) were used to understand the level at which SMME owners and managers agree with US with social media to enhance their KMS processes. Measurement items of US are shown in Table 5.14.

20. Usersatisfaction		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
20.1	I am satisfied with the efficiency of social media platforms used in my organisation					
20.2	I am satisfied with the effectiveness of social media platforms used in my organisation					
20.3	I am satisfied that social media meets my organisation's knowledge processing needs					
20.4	I find pleasure using social media as a tool to search for organisational knowledge					
20.5	I am gratified with the amount of knowledge stored on social media platforms					

Table 5.14. Measuring User Satisfaction (US)

Source: Adapted from Lwoga (2013); Masrek et al. (2010); and Wu & Wang (2006)

Measurement of Net benefit (NB)

Net Benefit (NB) is a dependent variable to represent the positive outcomes of using social media to facilitate KMS processes in SMMEs (Jennex & Olfman 2006). Five measurement items adapted from the literature of Al-Shibly (2011) were used to understand the level at which SMME owners and managers agree with a NB of using social media to enhance the KMS of their organisations. Table 5.15 shows the measurement items.

21. Net benefits		1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21.1	Social media help my organisation acquire new knowledge and innovative ideas					
21.2	Social media help my organisation to coordinate and manage knowledge effectively					
21.3	Social media provides my organisation with knowledge that helps us accomplish tasks more efficiently					
21.4	Knowledge acquired on social media improves the quality of work and helps my organisation to be more productive					
21.5	Social media platforms improve the turnaround time in my <u>organisation</u> .					

Table 5.15. Measurement of Net Benefit (NB)

Source: Adapted from Al-Shibly (2011)

The details of the web-based survey design process, its associated deployment tool, and how model constructs were operationalised has been discussed. The next step will explain the processes involved during pretesting of the web-based survey in the pilot study.

5.2 Pilot study

Having constructed the web-based survey questionnaire in the previous section (*cf* section 5.1), the researcher found it necessary to first conduct a pilot study to identify all potential issues with the questionnaire. Pilot studies assist with addressing reliability and validity issues before the data collection instrument is deployed in the main study (Arora, Sinha, Malhotra & Ranjan 2017; Blair et al. 2013). Generally, pilot studies are small-scale studies

that assist the research to gain first-hand information about how research participants will respond to a large-scale study and to resolve potential issues that could arise in the large-scale study (Thabane, Ma, Chu, Cheng, Ismaila, Rios, Robson, Thabane, Giangregorio & Goldsmith 2010).

During the pilot phase, the web-based survey questionnaire was pretested to ensure its reliability, compatibility, usefulness, and ease of use with different internet-enabled devices (i.e., tablets, smartphones, PCs and laptops). The questionnaire was designed with close-ended questions; however, at the end of the survey, participants had the opportunity to provide remarks on the overall questionnaire and areas that needed clarification and improvement.

A total of 16 SMME experts volunteered to participate in the pilot survey to obtain feedback regarding the reliability and validity of the question ‘wording’, question ‘ordering’, layout of the questionnaire, and the categories of responses. The participants were identified by research on Facebook, a social networking platform (Facebook 2019) where they created a small network (group) of SMME business experts who exchange ideas and help one another grow their SMME businesses in South Africa. The researcher joined the group and requested the participants to volunteer. A link for the survey was then emailed to the first 16 SMME experts who confirmed to participate.

Generally, there is no acceptable minimum nor maximum number of participants that are adequate to participate in a pilot survey. Scholars such as Larossi (2006) and Kothari (1991) suggest that participants in a pilot study can be any number between 12 and 30 to produce a sensible statistical measure. However, there is not enough evidence from the literature to support this claim (Cottrill, Pereira, Zhao, Dias, Lim, Ben-Akiva & Zegras 2013). Thus, the participation of 16 volunteers in this pilot study was never proven to be scientifically valid. Nonetheless, the pilot study produced several interesting findings that were useful in helping with the construction of the final survey questionnaire to be used in the main study.

Initially, the selected 16 SMME experts were sent the email on the 21st December 2018 soon after the Ethical clearance certificate was provided by Unisa (*cf* Appendix C). The pilot survey was administered anonymously so that participants cannot be linked to any of

the responses received. The researcher followed up with all 16 participants via Facebook Messenger to ensure that they had completed the survey by the due date of 21st February 2019. Because the pilot survey was aimed at refining the questionnaire, all 16 responses were analysed to take into consideration the remarks of the participants. Furthermore, some questions had to be clarified to minimize the ambiguity of questions in the main survey and to check the validity of the questions (Jahanmir & Lages 2016).

Although the pilot survey was scheduled between 21st December 2018 and 21st February 2019, the researcher decided to leave it open to see the number of additional responses that could come up. It was discovered that more participants continue to complete the survey even beyond the deadline of 21st February 2019. Taking into consideration the involvement of the volunteering participants received in the pilot survey, it can be concluded that more participants were interested in the survey although their additional responses were excluded from the analysis. Some interesting findings of the pilot survey are depicted in Appendix B.

As suggested by Booysen (2003), it is important to consider the comments and remarks of the pilot participants since such can be helpful and often insightful for the main study. This suggestion was considered in the pilot of this study. Overall, the participants shared the same sentiments about the pilot survey, stating that it was easy to complete with clear and appropriate questions and instructions. There were only a few remarks made about more questions to be included, to ensure that SMMEs participating in the study understand the KMS processes and how they can leverage the types of social media platforms they are currently using. These suggestions were considered and assisted with the refinement of the final questionnaire that was used for the main study. The next section presents the main survey execution process.

5.3 Main survey

This section discusses the process which was employed to conduct the main survey of the study. Contacts of SMME owners and managers who participated in the main survey were provided by a facilities manager from The Innovations Hub, an enterprise development incubation organisation located in the Gauteng province, South Africa (*cf* Section 5.2.2).

As previously mentioned, The Innovations Hub has a database of approximately 450 SMMEs in their program, spread across the Gauteng province.

The Innovation Hub served as a gatekeeper for the researcher; to facilitate the necessary participation from the SMME owners and managers. A letter confirming acceptance to serve as a gatekeeper can be found in Appendix D. Because SMMEs in the program are scattered all over the Gauteng province, it is assumed that the responses given by participants in the community will provide a good measure to generalise the findings across all SMMEs in the province (and in the country).

The use of web-based surveys does not guarantee the effective use of a random sampling technique (Toepoel & Lugtig 2015; Blair et al. 2013; Baltar & Brunet 2012) and the likelihood that the responses received are actually from sampled participants who are relevant enough to represent the targeted population is not usually known (Rowley 2014). Therefore, the researcher relied on feedback received from the SMME gatekeeper who followed up with the participating SMME owners and managers to provide an account of their involvement in the survey. Furthermore, the participation of SMMEs doing business in different parts of Gauteng made it possible for the researcher avoid bias by only selecting participants from SMMEs nearby (Geddes 1993). This approach also increased the external validity of the study.

5.3.1. Reliability and Validity

At the centre of any research project lies reliability and validity issues which need to be clarified to ensure the effectiveness of the research project. They are the two important aspects to assist with improving the quality of data derived by a research study (Pallant 2016; Drost 2011). A research study deals with issues of reliability by using approaches that are consistent with those used by other researchers across different research projects. In other words, a research study is reliable if other researchers have faith in its resultant data (Mohajan 2017). On the other hand, validity is ensured by employing consistent and accurate procedures for checking the truthfulness of the resultant data (Mohajan 2017; Joppe 2000).

Addressing issues of validity and reliability allows the researcher to communicate the rigour and robustness of the research project (Heale & Twycross 2015). Furthermore, Creswell & Creswell (2017) add that research instruments that are valid and reliable have a high potential to provide data that is meaningful for interpretation and concluding. However, sometimes a measure can have a high reliability score but a low validity score (Jackson 2014). Meaning that, a reliable measure can also be invalid for a research study. Therefore, to ensure that the research project stands a good chance of success, one must develop a data collection instrument based on already existing questions from previous IS-related studies that have been tested for reliability and validity (Blair et al. 2013; Sue & Ritter 2012).

Because validity focuses on the accuracy of the data received, further details of how issues of validity of the current research instrument were discussed in the construct validity section (*cf* Section 5.4.11).

Creswell & Creswell (2017) explain reliability as a measure of ensuring that a research instrument produces repeatable results through similar methodology and consistent measurements items over time. It is the degree of consistency among the questions being asked (Salkind 2018). It also ensures that participants have a common understanding of the questions being asked notwithstanding the different responses (Boynton & Greenhalgh 2004). Nevertheless, researchers should expect the same outcome from utilising the same research instrument across different samples of participants with similar characteristics (Crowther & Lancaster 2012; Roberts, Priest & Traynor 2006). If an instrument is producing inconsistent results, it is regarded as unreliable and its value is dubious and invalid (Marshall 2005).

Several procedures ensure that a research instrument is reliable (Heale & Twycross 2015; Phillips, Aaron & Phillips 2013): (1) test/retest procedure which involves administering an instrument to the same group of participants at two different times, and calculating the correlation of the scores to check for degrees of positive/negative correlations; (2) alternate-form procedure which involves constructing two similar instruments and administering those to participants at the same time, and analysing the correlations between the two scores to check for degrees of positive/negative correlations; (3) internal consistency reliability, ensuring that question items reflecting the same construct yield the

same results; (4) inter-rater reliability procedure which involves individual observers who collect data and tests to ensure that those observers are consistent in their scoring.

In this study, reliability testing was done using internal consistency of web-based questionnaire items. In IS research, the Coefficient alpha (Cronbach's α) is commonly used for measuring internal consistency of research instruments (Pallant 2016; Tavakol & Dennick 2011). Cronbach's α uses coefficients between 0 and 1, with 0 denoting no internal consistency and 1 denoting an excellent internal consistency between items. Generally, 0.7 is a recommended value to ensure a good and acceptable level of reliability (Bryman & Bell 2015; Drost 2011). Guidelines provided by Manerikar & Manerikar (2015) for checking the level of reliability suggest that if Cronbach's α of a construct is ≥ 0.9 , then the construct is excellent; if ≥ 0.7 , then the construct is good; if ≥ 0.6 , then the construct is acceptable. Any Cronbach's α value ≤ 0.5 indicates a poor reliability. Moreover, Cronbach's α is mainly applied to measure internal consistency on Likert scale questions (Tavakol & Dennick 2011). Thus, the reliability of all construct included in the research model was tested through Cronbach's α as shown in Table 5.16 below.

No.	Constructs	Corresponding question items	Number of items	Reliability (Cronbach's α)	Acceptable level
1	Compatibility (COMPA)	Q8.1 - Q8.5	5	0.929	Excellent
2	Complexity (COMPLE)	Q9.1 - Q9.5	5	0.964	Excellent
3	Relative advantage(RA)	Q10.1 – Q10.5	5	0.911	Excellent
4	Coordination(COORD)	Q11.1 – Q11.4	4	0.888	Good
5	Immediate access(IA)	Q12.1 – Q12.4	4	0.955	Excellent
6	Social presence (SP)	Q13.1 – Q13.4	4	0.912	Excellent
7	Facilitating conditions (FC)	Q14.1 – Q14.4	4	0.870	Good
8	Social Influences (SI)	Q15.1 – Q15.3	3	0.653	Acceptable
9	System quality (SYSQ)	Q16.1 – Q16.7	7	0.919	Excellent
10	Knowledge quality (KQ)	Q17.1 – Q17.6	6	0.953	Excellent
11	Service quality (SERVQ)	Q18.1 – Q18.6	6	0.936	Excellent
12	Intention to use / Perceived Benefit (IUPTB)	Q19.1 – Q19.5	5	0.975	Excellent
13	User satisfaction(US)	Q20.1 – Q20.5	5	0.947	Excellent
14	Net benefit(NB)	Q21.1 – Q21.5	5	0.967	Excellent
Overall			68	0.963	Excellent

Table 5.16. Reliability analysis for instrument constructs

Most of the constructs had an excellent reliability result of ≥ 0.9 except for COORD with a value of 0.888 and FC with a value of 0.870, as well as SP with a value of 0.653 as shown in table 5.16. However, in keeping with the guidelines of Manerikar & Manerikar (2015), these values are at an acceptable level and the construct can be considered for analysis. Overall, the Cronbach's α of the instrument was found to be excellent with an overall value of 0.948. These results confirm that the web-based questionnaire was reliable and the data obtained were appropriate for further analysis.

5.3.2. Administration of the web-based survey questionnaire

The researcher considered all remarks which seemed relevant in the pilot survey and added them in the main survey. Microsoft forms was used to conduct the main survey and a link was distributed to the participants through the help of the facilities manager at the Innovation Hub. To engage with participating SMME owners and managers and to facilitate the survey completion process, the facilities manager created a social networking group on WhatsApp messenger for all interested SMME owners and managers at the Innovations Hub to participate. WhatsApp is a social networking site (SNS) application that allows users to exchange text, images, documents, videos, audio, and user locations. The application can create groups of users with similar interests (i.e. WhatsApp groups).



Figure 5.1. WhatsApp messenger

Source: WhatsApp Inc. (2013)

Using the WhatsApp group, the facilities managers at the Innovation Hub was able to share survey instruction with SMME owners and managers to facilitate the data collection process and encourage them to complete the survey timeously.

5.3.3. Monitoring survey responses

From the experience gained in the pilot phase where it was difficult to get abundant responses in two months, the researcher had to allow the data collection process of the main survey to run for approximately six months to collect enough responses for statistical

analysis. During the six months, the researcher had to ensure that monitoring takes place at intervals.

The process of monitoring of responses meant following up with the facilities manager at the Innovation Hub to engage with participants on the WhatsApp group chat. It was necessary to do follow ups at least once a week to ensure that participants have completed the online survey. Although the researcher had to ensure timeous completion of the survey by research participants, it was important not only to be patient, but also to encourage (through the facilities manager) those who had not completed the survey to make time for it.

From the original 450 questionnaires that were expected to be returned, the researcher received 227 that were successfully completed at the six-month cut-off time. Conflicting arguments support the adequacy of response rates for quantitative studies: Bryman (2012:235) asserts that 50% response rate is barely acceptable; while Babbie (2020:261) argue that achieving a response rate of more than 50% is enough justification. Thus, compared to the expected response from the literature, this research managed to receive a 50.4% response rate – which is satisfactory and acceptable according to Simmon (2011).

The data was then extracted from Microsoft forms and converted to an *Excel* spreadsheet to make it readable and analysed using *IBM SPSS* version 25. An exercise to check for data quality was carried out to ensure all the data was complete. Furthermore, the data was checked for normality through the central limit theorem. The central limit theorem monitors the growth of the sample size and makes assumptions about the normal distribution of the sample mean when sample sizes get large enough (Levine et al. 2016: 255). Thus, in this study, normality was achieved with a sample of 227 observations which was 50.4% of the sampling frame.

The quantitative data was analysed using various statistical techniques. The next section presents the different methods and techniques used to analyse quantitative data.

5.4 Data analysis and presentation activities

This section discusses various activities involved in the analysis and presentation of quantitative data. The activities include presentation of how missing data was handled, demographic information, data coding, descriptive analysis, T-Test analysis, ANOVA, SEM and CFA using *IBM SPSS* and *AMOS* version 25.

5.4.1. Frequency distributions of Demographics data

The demographic statistics section presents the characteristics of sample participants and SMME organisations for the current research. *IBM SPSS* version 25 was used to analyse the 227 responses received during data collection. The participants were requested to complete demographic information such as their role in their organisation and gender, while also indicating the number of employees working for their respective organisation, turnover of the organisation, and municipal area/location of their organisations. The demographic section also included some enquiries about KMS processes carried out in SMMEs and social media platforms that are commonly used to support the KMS processes.

Demographic characteristics of participants

Demographic characteristics of participants are tabulated in terms of the frequency distribution in Table 5.17.

		Frequency	Percent (%)	Cumulative Percent (%)
Role	Manager	23	10.1	10.1
	Owner	53	23.3	33.5
	Owner/Manager	151	66.5	100
	Total	227	100	
Gender	Female	87	38.3	38.3
	Male	140	61.7	100
	Total	227	100	

Table 5.17. Demographic characteristics of participants

As shown in Table 5.17, participants' demographical information regarding their roles (positions) and gender is presented. Concerning role, it was discovered that most participants assume the responsibility of being both owner and manager at the same time.

This is evident with 66.5% (n=151) of the participants in the owner/manager category. This finding might be owing to the general characteristics of SMME businesses where at inception, owners usually fund the business from their own coffers and are in control of business operations. Until such time the business makes traction, the owner will release some control of business operations to someone they can trust to serve as management of some parts of the businesses. Hence there are about 23.3% (n=53) participants whose role is purely ownership and about 10.1% (n=23) whose roles are in the management category.

In respect of gender, the survey indicated that males took part more than females with 61.7% (n=140) representation in this category. With only 38.3% (n=87) women representation as SMME owners/managers, the results show that there is under-representation of females in the business community of South African SMMEs. This finding further confirms the notion that there is a small fraction of women entrepreneurship globally (Belwal, Belwal & Al Saidi 2014). Interestingly, in South Africa, businesses that are owned by women are arguably more profitable than those owned by male counterparts (SMESURVEY 2019). This is owing to intervention from the government to improve and strengthen the support for women empowerment programs in the country.

Demographic characteristics of SMMEs

Characteristics of SMMEs such as annual turnover, number of employees, and the local municipality are presented in the frequency distribution in Table 5.18.

		Frequency	Percent (%)	Cumulative Percent (%)
Number of Employees	1 to 10	104	45.8	45.8
	11 to 50	60	26.4	72.2
	51 to 100	32	14.1	86.3
	More than 100	31	13.7	100
	Total	227	100	
Annual turnover	Less than R100K	95	41.9	41.9
	R100K to R499K	39	17.2	59.0
	R500K to R999K	38	16.7	75.8
	R1M to R4.9M	32	14.1	89.9
	R5M or more	23	10.1	100
	Total	227	100	
Area Municipality	City of Tshwane	125	55.1	55.1
	Ekhuruleni	28	12.3	67.4
	City of Johannesburg	40	17.6	85.0
	Sedibeng district	11	4.8	89.9
	West rand district	23	10.1	100
	Total	227	100	

Table 5.18. Demographic characteristics of SMMEs

Given the definition of SMMEs in South Africa, the survey data indicated that most of the sampled SMMEs employ staff members less than 10 employees. As shown in Table 5.18, 45.8% (n = 104) of SMMEs have a staff base of 1 to 10 employees; 26.4% (n=60) have 11 to 50 employee base; 14.1% (n=32) have 51 to 100 employees; while only 13.7% (n=31) have more than 100 employees. These findings are in line with the official category of SMMEs provided by the DNT (2017). The results suggest that the limited number of employees make SMMEs less complex with open structures where all employees are accessible to one another at any point in time.

With respect to annual turnover, it was discovered that 41.9% (n=95) of the sampled SMMEs are making less than R100K. This was followed by 17.2% (n=39) of SMMEs with an annual turnover between R100K and R499K; 16.7% (n=38) with an annual turnover between R500K and R999K; 14.1% (n=32) with an annual turnover between R1M and R4.9M; and lastly 10.1% (n=23) with an annual turnover of R5M or more. These results suggest that the SMME sector is dominated by small organisations with limited funds. They often find it difficult to compete in the market and to sustain themselves (DNT 2017). Thus, SMME survival is dependent on innovative solutions that are not costly to the

business. Hence this study evaluates the effectiveness of such low-cost innovative solutions – particularly social media platforms – as tools for enhanced KMS processes in SMMEs.

The demographic section also describes the local municipality of participating SMMEs. It was important to ensure that all participating SMMEs are located within local municipalities of the Gauteng province. The results of the survey indicate that 55.1% (n=125) of participants have their SMMEs located in the City of Tshwane; 17.6% (n=40) in the City of Johannesburg; 12.3% (n=28) in Ekurhuleni; 10.1% (n=23) in the West Rand District; and 4.8% (n=11) in the Sedibeng District municipalities. All these municipalities cover the Gauteng province (Gauteng 2019).

Using Social Media as a tool to enhance the KMS of SMMEs

Social media usage as a form of enhancing the KMS processes of SMMEs has been central to the discussions in the current study. To set the scene and to ensure common understanding among participants, it became prudent to ask questions that are directed to how SMMEs understand their KMS processes and use social media to support them. The frequency Table 5.19 shows the Likert scale with measurement items to understand the level at which SMMEs owners and managers agree with their SMMEs encouraging KM processes and using social media to support them.

Item	Scale	Frequency	Percentage %	Cumulative Percentage %
My organisation applies knowledge management activities	Strongly Disagree	4	1.8	1.8
	Disagree	6	2.6	4.4
	Neutral	0	0	4.4
	Agree	75	33.0	37.4
	Strongly Agree	142	62.6	100
	Total	227	100	
My organisation encourages the use of social media platforms to support knowledge management activities	Strongly Disagree	3	1.3	1.3
	Disagree	1	0.4	1.8
	Neutral	3	1.3	3.1
	Agree	80	35.2	38.3
	Strongly Agree	140	61.7	100
	Total	227	100	

Table 5.19. Frequencies of Social Media usage to support KM processes

Most of the participants confirmed to be applying KM activities in their SMMEs. As shown in Table 5.19, about 62.6% (n= 142) indicated that they strongly agree, while 33% (n=75) indicated that they agree. Contrarily, only 1.8% (n=4) of participants indicated that they strongly disagree, while 2.6% (n = 6) indicate that they disagree. These results could mean that SMMEs that are not applying KM processes are simply not aware of the KM phenomenon and how the practices are applied, or that they are unable to see any value to applying KM processes.

However, it is encouraging to discover a high number of SMMEs using social media to support their KM processes. About 61.7% (n=140) participants indicated that they strongly agree that their SMMEs are using social media to support the KM processes, while 35.2% (n=80) indicated that they agree. Only a small fraction of participants is not using social media to support the KMS. About 1.3% (n=3) indicated that they strongly disagree, while 0.4% (n =1) indicated that they disagree. At the same time, 1.3% (n=3) participants indicated that they are not sure of such activities.

Relationship between gender and Social Media usage to support the KMS

The relationship between gender and social media usage to support the KMS has been measured to ascertain whether gender plays a significant role when social media are used to support the KMS. Table 5.20 shows crosstabulations (crosstabs) of the relationships.

Item	Scale	Crosstabulations	Gender		Total
			Male	Female	
My organisation encourages the use of social media platforms to support knowledge management activities	Strongly disagree	Count	3	0	3
		% within What is your gender	2.1%	0.0%	1.3%
	Disagree	Count	1	0	1
		% within What is your gender	0.7%	0.0%	0.4%
	Neutral	Count	3	0	3
		% within What is your gender	2.1%	0.0%	1.3%
	Agree	Count	47	33	80
		% within What is your gender	33.6%	37.9%	35.2%
	Strongly agree	Count	86	54	140
		% within What is your gender	61.4%	62.1%	61.7%
Total		Count	140	87	227
		% within What is your gender	100.0%	100.0%	100.0%

Table 5.20. Crosstabs of the relationship between gender and Social Media usage

Although the findings revealed that more males own or manage SMMEs than females, it was interesting to discover that more female-owned SMMEs incorporate social media to support KMS processes than male-owned SMMEs. Table 5.20 shows about 62.1% (n=54) female-owned compared to 61.4% (n=86) male-owned SMMEs strongly agree that the use of social media supports the KMS. It was further discovered that 37.9% (n=33) female-owned SMMEs agreed to use social media to support the KMS compared to 33.6% (n=47) male-owned SMMEs.

Commonly used Social Media platforms to support the KMS of SMMEs

The survey also aimed to collect information about social media platforms that are commonly used by SMMEs to support the KMS. Table 5.21 shows the observed frequencies in order of preference.

Platform	Frequency	Percentage (%)
WhatsApp	225	99.1
Facebook	165	72.7
LinkedIn	163	71.8
YouTube	149	65.6
Twitter	145	63.9
Skype	83	36.6
Instagram	65	28.6
Google+	39	17.2
Pinterest	22	9.7
<u>SnapChat</u>	3	1.3

Table 5.21. Commonly used Social Media platforms in SMMEs

A significant number of sampled SMMEs in South Africa make use of WhatsApp to serve their knowledge needs. As shown in Table 5.21, about 99.1% (n=225) of surveyed participants indicated that their SMMEs make use of WhatsApp. The results also indicate that Facebook, LinkedIn, YouTube, and Twitter are also mostly used in SMMEs. About 72.7% (n=165) sampled participants indicate that they use Facebook; 71.8% (n=163)

indicate that they use LinkedIn; 65.6% (n=149) indicated that they use YouTube; while 63.9% (n=145) indicated that they use Twitter in their business.

In summary, survey results indicate that WhatsApp, Facebook, LinkedIn, YouTube and Twitter are the commonly used and popular social media applications to serve the knowledge needs of SMMEs in South Africa. Other platforms such as Skype, Instagram, Google+, Pinterest, and Snap Chat are less often used among SMMEs in South Africa.

Perceptions about Social Media evaluation processes in SMMEs

The last part of the questionnaire required participants to indicate if they apply social media evaluation processes in their SMMEs and to understand the challenges, if any, regarding the evaluation methods. The frequency table in Table 5.22 shows the survey responses.

Item	Scale	Frequency	Percentage %	Cumulative percentage %
We use social media monitoring tools to evaluate the success of social media platforms in our organisation.	Strongly disagree	40	17.6	17.6
	Disagree	154	67.8	85.5
	Neutral	8	3.5	89.0
	Agree	19	8.4	97.4
	Strongly Agree	6	2.6	100
	Total	227	100	
We use a metrics to evaluate the success of social media platforms in our organisation.	Strongly disagree	40	17.6	17.6
	Disagree	154	67.8	85.5
	Neutral	10	4.4	89.9
	Agree	16	7.0	96.9
	Strongly Agree	7	3.1	100
	Total	227	100	
Lack of support from members of the organisation is a challenge which hinders us from effectively evaluating our social media platforms.	Strongly disagree	49	21.6	21.6
	Disagree	112	49.3	70.9
	Neutral	50	22.0	93.0
	Agree	14	6.2	99.1
	Strongly Agree	2	0.9	100
	Total	227	100	
Lack of time is a challenge which hinders us from effectively evaluating our social media platforms.	Strongly disagree	48	21.1	21.1
	Disagree	107	47.1	68.3
	Neutral	54	23.8	92.1
	Agree	16	7.0	99.1
	Strongly Agree	2	0.9	100
	Total	227	100	
Lack of adequate skills and knowledge is a challenge which hinders us from effectively evaluating our social media platforms.	Strongly disagree	48	21.1	21.1
	Disagree	104	45.8	67.0
	Neutral	52	22.9	89.9
	Agree	20	8.8	98.7
	Strongly Agree	3	1.3	100
	Total	227	100	
Lack of motivation is a challenge which hinders us from effectively evaluating our social media platforms	Strongly disagree	48	21.1	21.1
	Disagree	110	48.5	69.6
	Neutral	50	22.0	91.6
	Agree	16	7.0	98.7
	Strongly Agree	3	1.3	100
	Total	227	100	
Lack of policies and guidelines is a challenge which hinders us from effectively evaluating our social media platforms	Strongly disagree	5	2.2	2.2
	Disagree	28	12.3	14.5
	Neutral	105	46.3	60.8
	Agree	75	33.0	93.8
	Strongly Agree	14	6.2	100
	Total	227	100	

Table 5.22. Perceptions about Social Media evaluation

Respondents were asked specific questions to ascertain their perceptions regarding social media evaluation processes in their SMMEs. As shown in Table 5.22, the majority (85.4%) of participants disagreed that they use social media monitoring tools to measure the

effectiveness of social media in their organisations. This might mean that the majority of SMMEs are not putting enough effort into finding and using mechanisms for evaluating social media. Another possibility is that SMMEs are simply not aware of such mechanisms and how they could leverage them. Once more, the majority (85.4%) of participants indicated that they are not even using matrices to evaluate the effectiveness of social media in their organisations. This indicates that they are simply using social media as a tool to facilitate KMS processes without even measuring whether social media is effective or not in such efforts.

Respondents were also asked whether a lack of support from organisational members; the lack of time, adequate skills, knowledge, and motivation; or the lack of policies and guidelines are challenges that hinder the evaluation of social media in SMMEs. Regarding lack of support, the majority (70.9%) of participants indicated that they disagree. This implies that there is enough support from members of staff when such initiatives are proposed.

Regarding a lack of time, 68.2% indicated that they disagree that this is a challenge that hinders the evaluation of social media in SMMEs. Clearly SMMEs have enough time to work on social media, and if the opportunity to evaluate its effectiveness is made available, time would not be an issue.

Concerning the lack of adequate skill and knowledge to evaluate social media, it was discovered that the majority of participants (66.9%) also disagreed that they do not lack skills and knowledge to evaluate social media. Respondents also indicated that they have enough motivation to start evaluating social media in their SMMEs. About 69.6% of participants indicated that they disagree that lack of motivation is an issue that hinders them from evaluating social media in their SMMEs.

Lastly, regarding a lack of policies and guidelines, most respondents (46.3%) indicated that they are unaware of such policies and guidelines. Although 39.2% indicated that they do not have sufficient policies and guidelines to help them evaluate social media in their organisations, only a small percentage (14.5%) indicated that they are aware of such policies and guidelines.

Overall, these results indicate that given policies and guidelines, SMMEs will use the time they have coupled with skills and knowledge, as well as their motivation and capacity to support their members to evaluate social media as a tool for enhancing the KMS.

Having presented the descriptive statistical analysis for demographic data of sampled participants and SMMEs of the study, it is prudent to present the descriptive statistics of model constructs in the immediately following section to create an alignment in the study. Therefore, the following section presents the descriptive statistical analysis of constructs for the proposed model. The first part of the analysis presents how the constructs were coded before the analysis commenced.

5.4.2. Coding of model constructs

The coding process involved creating labels for the constructs and their associated items. Only the constructs that are part of the model of the study (*cf* Chapter three) were coded for analysis.

The codes were recorded as: Compatibility with associated factors as Q8.1, Q8.2.....Q8.5; Complexity with associated factors as Q9.1, Q9.2,....Q9.5; Relative advantage with associated factors as Q10.1, Q10.2,.....Q10.5; Coordination with associated factors as Q11.1, Q11.2,....Q11.4; Immediate access with associated factors as Q12.1, Q12.2,....Q12.4; Social presence with associated factors as Q13.1, Q13.2,..... Q13.4; Facilitating conditions with associated factors as Q14.1, Q14.2,....Q14.4; Social Influences with associated factors as Q15.1, Q15.2, and Q15.3; System quality with associated factors as Q16.1, Q16.2,Q16.7; Knowledge quality with associated factors as Q17.1, Q17.2,Q17.6; Service quality with associated factors as Q18.1, Q18.2,Q18.6; Intention to use / perceived benefits with associated factors as Q19.1, Q19.2,....Q19.5; User satisfaction with associated factors as Q20.1, Q20.2,Q20.5; and Net benefits (Effectiveness) with associated factors as Q21.1, Q21.2,Q21.5.

5.4.3. Treatment of missing data

The issues surrounding missing data need to be addressed because when data goes missing, it can have serious implications for the outcome of the survey where some questions may

not have been answered correctly (Babbie 2020). In other words, no information provided for one or more questions could lead to an incorrect report of findings. Missing data can be categorised into three types (Ullman 2006; Schreiber 2008) namely, (i) missing completely at random (MCAR) where neither the variables in the data set nor the group of participants have a relationship with the event that is assumed to have caused the data to be missing; (ii) missing at random (MAR) where the missing data happens at random and can be accounted for by other variables where there is complete information; (iii) missing not at random (MNAR) also referred to as Non-ignorable Non-response (NIMD) which occurs when the missing data is related to the reason it's missing.

Generally, missing data happens when participants skip one or more survey questions. In this study, a web-based survey was deployed on Microsoft forms with mandatory fields on each question item to ensure that all questions are answered and no missing data occurs. Usually, surveys with mandatory fields tend to be frustrating and time-consuming for participants and some participants end up dropping out of the survey. As a result, a survey may obtain low response rates (SurveyMonkey 2019). As such, the current study received 227 complete and usable responses from the expected 450 over a six-month period. Although the response rate was 50.44%, it took six months which was longer than expected. The missing value option 'Exclude cases listwise' was used in *IBM SPSS* version 25 to check for missing data and no missing data was detected.

5.4.4. Descriptive statistics of model constructs

To understand the distribution of model constructs proposed for evaluating the effectiveness of social media on KMS processes of SMMEs, the study used descriptive statistics. This process allowed the researcher to clearly describe the data in a simplified and organised manner (Gravette & Wallnau 2017). It was also important to use descriptive statistics to ensure that common assumptions underlying statistical analysis methods such as correlation analysis, t-test, ANOVA, and Structural Equation Modeling (SEM), are not violated as they are being used in the current study (Pallant 2016).

As stated in Pallant (2016), some of the general assumptions not to be violated include: (i) the use of continuous dependent variables rather than categorical variables; (ii) data must be obtained from participants that are independent of one another; (iii) the sample size

must be sufficiently broad to generalise the findings; lastly, (iv) samples must be obtained from populations of equal variances. All these assumptions were adhered to in the current study.

Descriptive statistical analysis measuring the normality of the data received in relation to all model constructs was presented to indicate averages between the maximum and minimum values of responses as well as the proximity of the spread of the data. As stated earlier, the ‘Exclude cases listwise’ option on IBM SPSS revealed no missing data on all responses received, therefore the measurement for normality was accurate.

As stated in Section 5.1.2.4, a Likert scale was used to measure the level at which participants agree or disagree with measurement items of model constructs. The averages of the responses to each scale item were given by the sample mean (*M*) and standard deviation (*SD*). Table 5.23 depicts a summary of descriptive statistics indicating normality of the data received on all constructs of the research model.

Construct	N	Minimum	Maximum	Mean	Std. Deviation
Compatibility	227	2.40	5.00	4.3031	.52591
Complexity	227	1.00	3.00	1.2828	.46679
Relative advantage	227	2.60	5.00	3.9154	.46266
Coordination	227	3.00	5.00	4.1795	.48937
Immediate access	227	3.00	5.00	4.1211	.46107
Social presence	227	3.00	5.00	4.0584	.44331
Facilitating conditions	227	3.00	5.00	4.0044	.33340
Social influences	227	2.00	5.00	3.6814	.61029
System quality	227	2.29	5.00	3.9534	.43753
Knowledge quality	227	2.00	5.00	3.7107	.53240
Service quality	227	2.33	5.00	3.9251	.41868
Intention to use	227	1.80	5.00	4.1137	.43916
User satisfaction	227	3.00	5.00	4.0352	.34869
Effectiveness (Net benefits)	227	2.40	5.00	3.9604	.41521
Valid N (<u>listwise</u>)	227				

Table 5.23. Descriptive statistical analysis of all variables

As shown in the descriptive statistical analysis in Table 5.23, starting with independent variable Compatibility, the results of descriptive statistics show an average response of $M = 4.3031$. This means that overall there is consensus among SMME owners and managers that social media is compatible with the current KMS processes within their respective SMMEs ($M = 4.3031$, $SD = 0.52591$).

When asked questions relating to whether social media is complex to work with, on average the participants disagreed and the results show a mean of $M = 1.2828$ and $SD = 0.46679$ on an independent variable Complex. Evidently, the majority of SMME owners and managers are familiar with working with social media and have no problem with its use as a KMS tool.

With regard to an independent variable Relative advantage, the survey received shows a mean $M = 3.9154$ and $SD = 0.46266$ indicating that majority of SMME owners and managers agreed that social media has a relative advantage over the already existing methods and practices of KM in their SMMEs.

Respondents were also asked whether social media can coordinate the efforts of KM activities within their respective SMMEs. The survey received a mean of $M = 4.1795$ and $SD = 0.48937$ on an independent variable Coordination. These results indicate that the majority of SMME owners and managers agreed that they use social media because of its ability to distribute information and arrange social events within their SMMEs.

In respect of an independent variable, Immediate access, the survey received an average response of $M = 4.1211$ and $SD = 0.46107$. This indicates that the majority of SMME owners and managers agree that social media helps them to access knowledge easily, regardless of the geographical location of the knowledge seeker or expert.

When asked whether using social media allows them to feel a sense of human contact with their colleagues and partners, the response on an independent variable Social presence show an average of $M = 4.0584$ and $SD = 0.44331$. This result indicates that there is consensus among SMME owners and managers that they use social media to support their KMS because they feel connected to their colleagues and business partners.

In respect of an independent variable, Facilitating condition, the participants were asked to indicate whether they think their organisation has the infrastructure that is conducive to enabling social media usage in support of their KMS. The survey received an average response of $M = 4.0044$ and $SD = 0.33340$. This means that SMME owners and managers agree that employees are free to use social media to support the KMS within SMMEs.

When asked whether they think an independent variable, Social influence, affected their decision to encourage social media usage to support the KMS, on average, the survey received $M = 3.6814$ and $SD = 0.61029$. An average response of $M = 3.6814$ is very close to $M = 4.00$ which also means that SMME owners and managers generally agree that how their significant others believe they should deploy social media in their KMS processes largely affect their overall perception of social media.

The participants were also asked whether they think the technical infrastructure and interfaces of social media are capable of facilitating the KMS processes and provide the knowledge needs of their SMMEs. In essence, they were asked whether the System quality aspects of social media such as usability, accessibility, adaptability, flexibility, stability, and reliability influence its use to support the KMS. On average, the participants agreed with a mean value of $M = 3.9534$ $SD = 0.43753$ on a moderating variable System quality.

In respect of a moderating variable, Knowledge quality, the survey received a mean response of $M = 3.7101$ $SD = 0.53240$, meaning that the majority of SMME owners and managers agreed that social media provides knowledge that is accurate, relevant, reliable, easy to understand, complete, and timely to serve their needs in the SMMEs.

A moderating variable, Service quality, shows a mean response of $M = 3.9251$ and $SD = 0.41868$. This result indicates that SMME owners and managers are supportive of their employees by providing enough resources needed to facilitate KMS processes that are supported by social media applications and encouraging the continuance of social media use in their SMMEs.

When asked about their intention to continue using social media to support the KMS, the majority of SMME owners and managers agreed that they will continue with the use. An

average response of $M = 4.1137$ and $SD = 0.43916$ on a moderating variable, Intention to use, indicate that the majority of participants agreed that they intend to continue using social media for their knowledge needs in their SMMEs.

User satisfaction was also measured to ascertain whether the participants are currently satisfied with using social media to support the KMS in their SMMEs. On average, the survey received response of $M = 4.0352$ and $SD = 0.34869$ on a moderating variable, User satisfaction, meaning that the majority of SMME owners and managers agreed that they are satisfied with using social media to support their KMS processes.

Lastly, the dependant variable, Net benefit (Effectiveness), showed a mean value of $M = 3.9604$ and $SD = 0.41521$. This means that overall, given the feedback received regarding the independent and moderating constructs, it was discovered that SMME owners and managers agreed that to achieve a successful evaluation of the effectiveness of social media on KMS processes a measurement model will be influenced by Compatibility, Complexity, Relative advantage, Coordination, Immediate access, Social presence, Facilitating conditions, Social influences, Knowledge quality, System quality, Service quality, Intention to use / perceived benefits and User satisfaction.

Given the normality of the data received against all constructs of the model, further analysis techniques can be carried out on the data. In the current study, methods such as t-test, ANOVA, Structural Equation Modeling (SEM) and Confirmatory Factor Analysis (CFA) are used and discussed next.

5.4.5. T-TEST analysis of mean scored across variables

T-tests are executed on continuous variables for making comparisons between mean scores of two different sets of data (i.e., males and females) (Pallant 2016). There are two common types of T-tests in IBM SPSS, namely Paired sample T-test, which aims to measure the changes in scores for participants tested in two separate intervals (e.g., before the intervention and after the intervention); and Independent sample test, which is used when there are two independent groups of participants and their scores must be compared.

Since the data for the current study was collected once, the Paired sample T-test was not suitable for the study. Sampled participants comprised two gender groups (i.e., females and males). The Independent sample T-test was more suitable because in this study, it was important to determine the statistically significant differences of mean scores on model constructs between the two gender groups of participants. The Independent sample t-tests are drawn on observations with three assumptions (Gravetter & Wallnau 2017), namely, (i) the observations are independent of each other, (ii) the independent observations are normally distributed, and (iii) the independent observations have equal variances. Owing to the nature of the random probability sampling as it was applied in the current study, the assumptions of the Independent sample t-test were met.

5.4.6. Independent sample t-test analysis of mean scored by gender of responses

Since the independent sample t-test assumes that the two groups being compared must have equal variance, the current study used Levene's test in IBM SPSS to check for equal variances. Generally, the test is expected to show a significance level of > 0.05 indicating that equal variances exist between independent observations, otherwise test results showing a significance level of < 0.05 will indicate a violation of Levene's test (Pallant 2016). For both situations where assumptions have been violated and have not been violated, the tests provide results that have to be explained. Tables 32, 33, and 34 show the results of the independent sample t-test across all constructs.

Group statistics					
Indicator	Gender	N	Mean	SD	Std. Error Mean
Compatibility	Female	87	4.347	.470	.050
	Male	140	4.276	.558	.047
Complexity	Female	87	1.320	.486	.052
	Male	140	1.260	.455	.038
Relative advantage	Female	87	3.908	.446	.048
	Male	140	3.920	.474	.040
Coordination	Female	87	4.124	.492	.053
	Male	140	4.214	.486	.041
Immediate access	Female	87	4.109	.507	.054
	Male	140	4.129	.432	.037
Social presence	Female	87	4.014	.432	.046
	Male	140	4.086	.450	.038
Facilitating conditions	Female	87	3.954	.338	.036
	Male	140	4.035	.328	.028
Social Influences	Female	87	3.663	.560	.060
	Male	140	3.692	.641	.054
System quality	Female	87	3.972	.478	.051
	Male	140	3.942	.412	.035
Knowledge quality	Female	87	3.763	.510	.055
	Male	140	3.679	.545	.046
Service quality	Female	87	3.956	.409	.044
	Male	140	3.906	.425	.036
Intention to use	Female	87	4.129	.450	.048
	Male	140	4.104	.433	.037
User satisfaction	Female	87	4.016	.380	.041
	Male	140	4.047	.329	.028
Net benefits (Effectiveness)	Female	87	3.974	.383	.041
	Male	140	3.951	.435	.038

Table 5.24. Group statistics for female and male participants

Table 5.24 shows the group statistics indicating the overall participants in each gender group for all model constructs. On all constructs, female participants were 87 and male participants were 140. This gives a total of 227 samples indicating that there was no missing data. The mean and standard deviations are also compared to indicate the differences in groups. The results indicate no statistical differences in the means of the observed gender groups on all constructs. Furthermore, Levene's test showed a comparison of variances between the two genders. Table 5.25 presents the findings of Levene's test.

Levene's Test for equality of variance			
Indicator	assumption	F	Sig.
Compatibility	Equal variances assumed	2.003	.158
	Equal variances not assumed		
Complexity	Equal variances assumed	2.083	.150
	Equal variances not assumed		
Relative advantage	Equal variances assumed	.033	.857
	Equal variances not assumed		
Coordination	Equal variances assumed	.603	.438
	Equal variances not assumed		
Immediate access	Equal variances assumed	.905	.342
	Equal variances not assumed		
Social presence	Equal variances assumed	3.677	.056
	Equal variances not assumed		
Facilitating conditions	Equal variances assumed	.408	.524
	Equal variances not assumed		
Social Influences	Equal variances assumed	2.168	.142
	Equal variances not assumed		
System quality	Equal variances assumed	1.057	.305
	Equal variances not assumed		
Knowledge quality	Equal variances assumed	.339	.561
	Equal variances not assumed		
Service quality	Equal variances assumed	.326	.568
	Equal variances not assumed		
Intention to use	Equal variances assumed	.942	.333
	Equal variances not assumed		
User satisfaction	Equal variances assumed	.005	.944
	Equal variances not assumed		
Net benefits (Effectiveness)	Equal variances assumed	1.556	.214
	Equal variances not assumed		

Table 5.25. Levene's results for testing of equal variances

Levene's test in Table 5.25 shows significant values larger than 0.05 on all constructs, indicating that variances are the same between the two gender groups on all constructs. Therefore, the data did not violate the assumption of equal variances. The independent T-test was also conducted to check whether the means of the two groups were significantly different on all constructs (Pallant 2016). Table 5.26 shows the results.

T-test for Equality of Means								
Indicator	assumption	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Compatibility	Equal variances assumed	.995	225	.321	.071	.079	-.070	.213
	Equal variances not assumed	1.035	205	.302	.071	.070	-.065	.207
Complexity	Equal variances assumed	.934	225	.351	.060	.064	-.067	.185
	Equal variances not assumed	.920	174	.359	.060	.065	-.068	.187
Relative advantage	Equal variances assumed	-.189	225	.850	-.012	.063	-.137	.113
	Equal variances not assumed	-.192	191	.848	-.012	.062	-.135	.111
Coordination	Equal variances assumed	-1.361	225	.175	-.091	.067	-.222	.041
	Equal variances not assumed	-1.356	181	.177	-.091	.067	-.222	.041
Immediate access	Equal variances assumed	-.307	225	.759	-.019	.063	-.144	.105
	Equal variances not assumed	-.296	161	.768	-.019	.065	-.147	.110
Social presence	Equal variances assumed	-1.180	225	.239	-.071	.060	-.191	.048
	Equal variances not assumed	-1.191	188	.235	-.071	.060	-.190	.047
Facilitating conditions	Equal variances assumed	-1.804	225	.073	-.082	.045	-.171	.008
	Equal variances not assumed	-1.791	178	.075	-.082	.046	-.172	.008
Social Influences	Equal variances assumed	-.360	225	.719	-.030	.083	-.195	.134
	Equal variances not assumed	-.371	201	.711	-.030	.081	-.190	.129
System quality	Equal variances assumed	.506	225	.614	.030	.060	-.088	.148
	Equal variances not assumed	.488	162	.626	.031	.062	-.092	.153
Knowledge quality	Equal variances assumed	1.155	225	.249	.084	.073	-.059	.227
	Equal variances not assumed	1.173	192	.242	.084	.072	-.057	.225
Service quality	Equal variances assumed	.874	225	.383	.050	.058	-.063	.163
	Equal variances not assumed	.882	188	.379	.050	.057	-.062	.162
Intention to use	Equal variances assumed	.407	225	.684	.024	.060	-.094	.149
	Equal variances not assumed	.403	177	.687	.024	.061	-.095	.144
User satisfaction	Equal variances assumed	-.651	225	.515	-.031	.048	-.125	.063
	Equal variances not assumed	-.630	163	.530	-.031	.050	-.128	.066
Net benefits (Effect.)	Equal variances assumed	.410	225	.682	.023	.057	-.089	.135
	Equal variances not assumed	.422	200	.673	.023	.055	-.085	.132

Table 5.26. T-test for Equality of Means

The values for equal variance assumed under Sig. (2-tailed) were used to reach a conclusion. As shown in Table 5.26, the value of Sig. (2-tailed) is above the cut-off value

of 0.05 between male and female groups across all constructs. This indicated no statistically significant differences in means on all constructs between gender groups. Therefore, the assumptions of the independent sample t-test were not violated and the test was significant.

5.4.7. One-way Analysis of Variance Analysis (ANOVA)

The means of multiple groups of categorical variables such as the roles of participants, annual turnover of SMMEs, the municipal areas of SMMEs, and the number of employees – across all constructs of the model – were compared in the current study. Pallant (2016) asserts that the One-way Analysis of Variances analysis (ANOVA) are commonly applied when comparing sample mean scores across multiple groups. ANOVA is also used to compare the variance that exists in multiple groups.

In this study, the test was done at a 5% cut-off level of significance ($p\text{-value} \geq 0.05$). For groups which showed statistically different variances, the Welch robustness test was applied in IBM SPSS to check for differences in mean scores across variables and a posthoc test was conducted using the Games-Howell test. The mean scores with p-values between 0.01 and 0.05 indicate that the means are different, with p-value < 0.01 indicating high significance. A non-significant p-value indicates that homogeneity among constructs exists. The next section presents the ANOVA test on means by variable role.

5.4.8. ANOVA test to determine differences in Mean scores by Role

In case of a categorical variable 'Role', ANOVA was conducted to investigate whether the three groups Manager, Owner, and Owner/Manager differed significantly regarding their mean scores obtained on all model constructs. The results are shown in Table 5.27.

		<u>Levene Statistic</u>	<u>df1</u>	<u>df2</u>	<u>Sig.</u>
Compatibility	Based on Mean	12.275	2	224	.000
Complexity	Based on Mean	4.945	2	224	.008
Relative advantage	Based on Mean	.035	2	224	.966
Coordination	Based on Mean	1.155	2	224	.317
Immediate access	Based on Mean	.375	2	224	.688
Social presence	Based on Mean	.430	2	224	.651
Facilitating conditions	Based on Mean	6.305	2	224	.002
Social influences	Based on Mean	12.079	2	224	.000
System quality	Based on Mean	2.027	2	224	.134
Knowledge quality	Based on Mean	3.475	2	224	.033
Service quality	Based on Mean	.350	2	224	.705
Intention to use	Based on Mean	.461	2	224	.631
User satisfaction	Based on Mean	4.298	2	224	.015
Effectiveness (Net benefits)	Based on Mean	1.565	2	224	.211

Table 5.27. Levene's test results by role

The results of ANOVA indicate that the roles had different views in terms of evaluating the effectiveness of social media, looking at compatibility ($sig = 0.000$), complexity ($sig = 0.008$), facilitating conditions ($sig = 0.002$), social influences ($sig = 0.000$), knowledge quality ($sig = 0.033$), and user satisfaction ($sig = 0.015$). The assumption of homogeneity of variance has been violated on these constructs. As such, the Welch robust test was applied to check the different scores and confirm the different views of the manager, owner, and owner/manager groups on each construct. The results of Welch robust test are shown in Table 5.28.

		<u>Statistic^a</u>	<u>df1</u>	<u>df2</u>	<u>Sig.</u>
Compatibility	Welch	3.459	2	61.763	.038
Complexity	Welch	1.853	2	56.337	.166
Relative advantage	Welch	3.584	2	54.453	.035
Coordination	Welch	1.362	2	55.461	.265
Immediate access	Welch	.180	2	53.123	.836
Social presence	Welch	4.162	2	59.222	.020
Facilitating conditions	Welch	.270	2	48.070	.765
Social influences	Welch	17.974	2	60.426	.000
System quality	Welch	3.269	2	51.909	.046
Knowledge quality	Welch	9.814	2	54.527	.000
Service quality	Welch	.906	2	53.647	.410
Intention to use	Welch	.011	2	52.662	.989
User satisfaction	Welch	.698	2	48.185	.503
Effectiveness (Net benefits)	Welch	.244	2	49.963	.784

Table 5.28. Welch Robust test of equality of means

The difference in roles is significant when Compatibility, Relative advantage, Social presence, Social influences and Knowledge quality are used as a measure of the effectiveness of social media on the KMS processes of SMMEs – as shown in table 5.28. The results of Compatibility (*sig* = 0.038), Relative advantage (*sig* = 0.035), and Social presence (*sig* = 0.020), were significant – with *p*-value < 0.05, and those of Social influences (*sig* = 0.000) and Knowledge quality (*sig* = 0.000) were highly significant – with *p*-value < 0.01. This means that the views were different across SMME owner, manager, and owner/manager roles regarding Compatibility, Relative advantage, Social presence, Social influences and Knowledge quality constructs being used to measure the effectiveness of social media to support the KMS in SMMEs.

Although the three groups (owner, manager, and owner/manager) indicated different views on Complexity, Facilitating conditions, and User satisfaction (*cf* table 5.27), the Welch robust test for equality of means resulted in *p*-values ≥ 0.05 on these constructs (*cf* table 5.28). This means that the difference in views across managers, owners, owner/manager groups were not highly significant on these constructs.

A comparison of mean scores by role was also conducted using ANOVA. Results of the ANOVA test on the comparison of mean scores by role are shown in Table 5.29.

		Sum of Squares	df	Mean Squares	F	Sig.
Compatibility	Between Groups	1.414	2	.707	2.592	.077
	Within Groups	61.094	224	.273		
	Total	62.508	226			
Complexity	Between Groups	.834	2	.417	1.928	.148
	Within Groups	48.409	224	.216		
	Total	49.243	226			
Relative advantage	Between Groups	1.661	2	.831	3.983	.020
	Within Groups	46.715	224	.209		
	Total	48.376	226			
Coordination	Between Groups	.630	2	.315	1.320	.269
	Within Groups	53.492	224	.239		
	Total	54.122	226			
Immediate access	Between Groups	.082	2	.041	.193	.825
	Within Groups	47.961	224	.214		
	Total	48.044	226			
Social presence	Between Groups	1.022	2	.511	2.639	.074
	Within Groups	43.392	224	.194		
	Total	44.414	226			
Facilitating conditions	Between Groups	.097	2	.049	.435	.648
	Within Groups	25.023	224	.112		
	Total	25.121	226			
Social influences	Between Groups	9.133	2	4.566	13.631	.000
	Within Groups	75.041	224	.335		
	Total	84.173	226			
System quality	Between Groups	1.519	2	.759	4.075	.018
	Within Groups	41.744	224	.186		
	Total	43.263	226			
Knowledge quality	Between Groups	5.204	2	2.602	9.903	.000
	Within Groups	58.856	224	.263		
	Total	64.059	226			
Service quality	Between Groups	.398	2	.199	1.136	.323
	Within Groups	39.218	224	.175		
	Total	39.616	226			
Intention to use	Between Groups	.005	2	.002	.012	.988
	Within Groups	43.583	224	.195		
	Total	43.588	226			
User satisfaction	Between Groups	.177	2	.089	.727	.485
	Within Groups	27.301	224	.122		
	Total	27.478	226			
Net benefit (Effectiveness)	Between Groups	.123	2	.062	.356	.701
	Within Groups	38.840	224	.173		
	Total	38.963	226			

Table 5.29. ANOVA Test for deference in Mean scores by Role

As shown in Table 5.29, ANOVA test on the comparison of mean scores by role indicated a difference of means scores on Relative advantage ($sig = 0.020$), Social influences ($sig =$

0.000), and Knowledge quality ($sig = 0.000$) constructs. These constructs had a *p-value* (Sig.) less than the recommended cut-off of 0.05. The F-ratio was also shown in the tests to reflect the ratio of variances *between groups* to the variances *within groups* (Pallant 2016). The larger the F-ratio, the more variability *between groups* than there is *within groups*.

There are more differences *between groups* than there are *within groups* on Relative advantage, Social influences, and Knowledge quality. The result also means that there is a significant difference somewhere among the pairs of mean scores of Manager, Owner, and Owner/Manager groups in terms of Relative advantage, Social influences, and Knowledge quality constructs. Thus, the assumption of equality of variance has been violated.

However, the results do not indicate which one of the three groups are different from other groups (Pallant 2016). Therefore, different pairs of groups were created and a posthoc test was conducted on Relative advantage, Social influences and Knowledge quality constructs to indicate the differences between each pair of groups using multiple comparisons.

Since there was a violation of the assumption of equality of variance on Relative advantage, Social influences and Knowledge quality constructs, the study applied the Games-Howell method for posthoc tests on these constructs. Table 5.30 shows the results of posthoc tests on multiple comparisons.

Dependent variable	(I) Role 3 groups	(J) Role 3 groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Relative advantage	1 Manager	2 Owner	<i>-.27777*</i>	.11313	.046	-.5513	-.0043
		3 Owner/Manager	-.10216	.09672	.548	-.3408	.1364
	2 Owner	1 Manager	<i>.27777*</i>	.11313	.046	.0043	.5513
		3 Owner/Manager	.17561	.07780	.068	-.0101	.3613
	3 Owner/Manager	1 Manager	.10216	.09672	.548	-.1364	.3408
		2 Owner	-.17561	.07780	.068	-.3613	.0101
Social influences	1 Manager	2 Owner	<i>-.43533*</i>	.12009	.002	-.7277	-.1430
		3 Owner/Manager	.04357	.11392	.923	-.2356	.3227
	2 Owner	1 Manager	<i>.43533*</i>	.12009	.002	.1430	.7277
		3 Owner/Manager	<i>.47890*</i>	.08139	.000	.2858	.6720
	3 Owner/Manager	1 Manager	-.04357	.11392	.923	-.3227	.2356
		2 Owner	<i>-.47890*</i>	.08139	.000	-.6720	-.2858
Knowledge quality	1 Manager	2 Owner	<i>-.52940*</i>	.12939	.001	-.8442	-.2146
		3 Owner/Manager	-.25079	.11706	.099	-.5400	.0384
	2 Owner	1 Manager	<i>.52940*</i>	.12939	.001	.2146	.8442
		3 Owner/Manager	<i>.27860*</i>	.08086	.002	.0860	.4712
	3 Owner/Manager	1 Manager	.25079	.11706	.099	-.0384	.5400
		2 Owner	<i>-.27860*</i>	.08086	.002	-.4712	-.0860

Table 5.30. Post-hoc tests with multiple comparisons using Games-Howell

As shown in Table 5.30, the Games-Howell posthoc test was used to provide multiple comparisons of different pairs of the three groups on each construct (i.e., Relative advantage, Social influences and Knowledge quality) to determine exactly where the differences lie. Statistically significant difference is indicated by an asterisk (*) which is provided with a mean difference value.

In respect of the views on Relative advantage, it was discovered that the Manager and Owner groups were statistically significantly different from one another ($M = 0.27777*$, $p\text{-value} = 0.046$). The views of the Manager group were statistically significantly different from those of the Owner group. The Owner/Manager group did not differ significantly from either the manager or owner groups.

Regarding Social influences, the two pairs of groups indicated a statistically significant difference. The first pair was manager and owner groups which indicated different views ($M = 0.43533*$, $p\text{-value} = 0.002$). Managers had statistically significantly different views from those of owners. The second pair that has statistically significantly different views on Social influences as a measure of the effectiveness of social media on KMS processes was

owner and owner/manager groups ($M = 0.4789^*$, $p\text{-value} = 0.000$). The manager and owner/manager groups were not significantly different from each other.

Lastly, in respect of Knowledge quality, the two pairs of groups indicated statistically significantly different views. The first pair of groups was manager and owner groups with $M = 0.52940^*$, $p\text{-value} = 0.001$. Managers had statistically significantly different views from owners. The second pair which had statistically significantly different views, was the owner and owner/manager groups ($M = 0.27860^*$, $p\text{-value} = 0.002$). The mean scores of the manager and owner/manager groups did not differ significantly with regard to their views on knowledge quality as a measure of effective KMS processes of SMMEs in South Africa.

5.4.9. Structural Equation Modelling (SEM)

SEM was applied to confirm the validity of the proposed structural model. As mentioned in Chapter Four, SEM is a confirmatory statistical technique used to analyse structural models using some form of hypothesis testing of variables to illustrate the phenomenon being studied (Byrne 2016:4).

In the current study, SEM was conducted using IBM SPSS package with AMOS version 25. It was necessary to apply SEM to ascertain the level of strength between the relationships of model constructs from the conceptual stage through to the final stage of the validated model. Maximum Likelihood Estimation (MLE) estimation technique was used to provide estimation to the model. MLE estimation is the most common SEM estimation procedure (Hair et al. 2019). Figure 5.1 illustrates the conceptual model of the study.

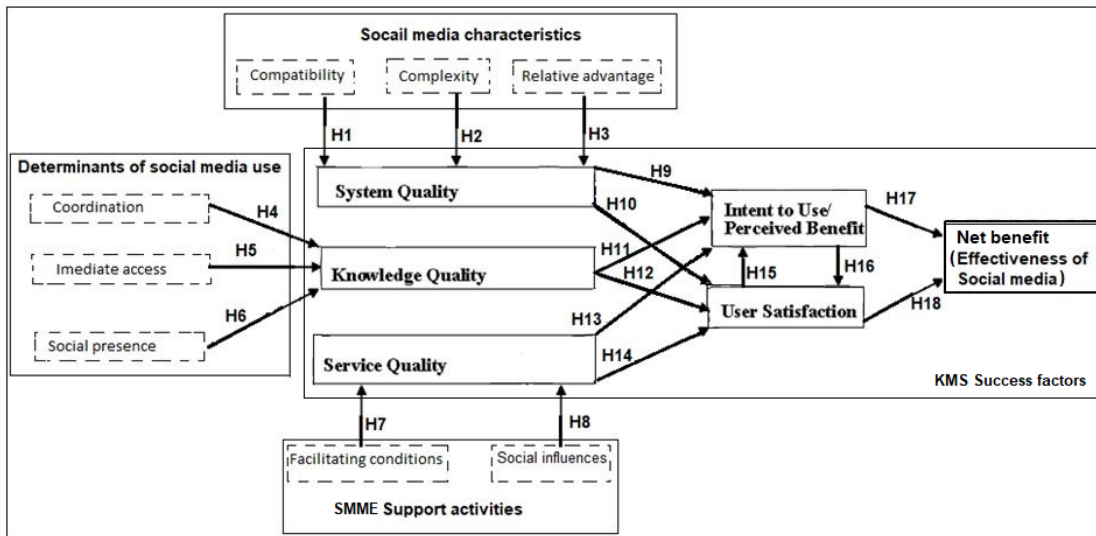


Figure 5.2. The conceptual model of the study

SEM's measurement model was derived for testing the hypothesis created in the conceptual model as shown in Figure 5.2. Tabachnick & Fidell (2019) assert that the first step of SEM analysis is specification of the model, which is a confirmatory technique. Thus, the measurement model of the current study was calculated using CFA and the results are discussed next.

5.4.10. Confirmatory factor analysis (CFA) for the Measurement model

CFA assesses the extent to which there is a fit between the predefined structure of the model and the observed data (Hair et al. 2019). CFA was applied in this study to test for the potential fitness between the measurement theory and all its measured variables and factors to the data observed. Altogether 14 latent variables were proposed for the measurement model and CFA was applied on each construct to measure the model fitness. The constructs include; Compatibility (COMPA), Complexity (COMPLE), Relative advantage(RA), Coordination(COORD), Immediate access(IA), Social presence (SP), Facilitating conditions (FC), Social Influences (SI), Knowledge quality (KQ), System quality (SYSQ), Service quality (SERVQ), User satisfaction (US), Intention to use / perceived benefit (IUPB), and Net benefit (NB).

Confirmatory factor analysis (CFA) was done first by assessing the model fitness, followed by convergent and discriminant validity. Several statistics and indices exist to assess model

fitness (*cf* Chapter Four). In the current study, model fitness was assessed using the measures shown in Table 5.31 as proposed by Hair et al. (2019)

Measure	Terrible	Acceptable	Excellent
CMIN/DF	> 5	> 3	> 1
CFI	<.90	<.95	>.95
SRMR	>.10	>.08	<.08
RMSEA	>.08	>.06	<.06
<u>PClose</u>	<.01	<.05	>.05
GFI	<.90	<.95	>.95
TLI	<.90	<.95	>.95
NFI, IFI, AGFI	<.90	<.95	>.95

Table 5.31. Measurements to determine the cutoff criteria of Fitness Indexes

According to Gaskin & Lim (2016), a combination of $CFI > .95$ and $SRMR < .08$ is a good combination and to further solidify the evidence one can add $RMSEA < .06$. When using the χ^2 tests, the model would fit the data well if the *p-value* is non-significant, that is, more than .05. The problem with the χ^2 tests is that it is affected adversely by the sample size (Hair et al. 2019). In this case it is advisable to use the χ^2 value and its associated degrees of freedom shown as CMIN/DF in Table 5.31.

Figure 5.3 illustrates the CFA of the model of the current study.

The loading factor should be at least 0.5, preferably 0.7 or more (Hair et al. 2019). As shown in Figure 5.3, factor loadings were all greater than 0.7 except Q14.2 which was .64. All standard loading figures are clearly shown in the next section (*cf* Section 5.4.11). Table 5.32 illustrates the model fit measured achieved.

Measure	Estimate	Threshold	Interpretation
CMIN	899.040	--	--
DF	386.000	--	--
CMIN/DF	2.329	Between 1 and 3	Excellent
CFI	.945	>.95	Acceptable
SRMR	.035	<.08	Excellent
RMSEA	.077	<.08	Excellent
TLI	.930	>.95	Acceptable
NFI	.909	>.95	Acceptable
IFI	.946	>.95	Acceptable

Table 5.32. Model fit measures for the CFA Model

χ^2 was measured at 899.040 with 386 degrees of freedom giving a CMIN/DF of 2.329 which is excellent as per Hu & Bentler (1999). The SRMR and RMSEA were also excellent, meeting the required level below 0.08, while CFI was acceptable. The incremental indices used to assess the model were IFI (0.946), NFI (0.909) and TLI (0.93), were all above 0.9 which is an acceptable level. Thus, the measurement model is a good fit.

5.4.11. Construct Validity

In addition to the reliability testing explained in Section 5.3.1, testing for the construct validity of a research instrument in a positivist study is another crucial activity to improve the quality of the data (Pallant 2016; Phillips et al. 2013; Crowther & Lancaster 2012; Tavakol & Dennick 2011). As Nardi (2015:62) simply puts it, construct validity describes ensures that measurement items address exactly what they intend to measure. It is

composed of convergent, discriminant, and nomological validity (Hartas 2015; Phillips et al. 2013).

Convergent validity was tested using AVE and construct reliability (CR). It was achieved at $AVE > .5$ and $CR > AVE$. Table 5.33 illustrates the results.

Construct items	Std. loading	Construct reliability	AVE
Compatibility		.957	.847
Q8.2	.902		
Q8.3	.933		
Q8.4	.743		
Q8.5	.810		
Complexity		.966	.904
Q9.1	.811		
Q9.3	.977		
Q9.4	.924		
Relative advantage (RA)		.938	.833
Q10.3	.788		
Q10.4	.880		
Q10.5	.833		
Coordination		.928	.866
Q11.1	.894		
Q11.4	.838		
Immediate access (IA)		.937	.881
Q12.3	.880		
Q12.4	.882		
Social presence (SP)		.947	.899
Q13.1	.900		
Q13.3	.897		
Facilitating condition (FC)		.887	.799
Q14.1	.963		
Q14.2	.636		
System quality		.961	.891
Q16.1	.968		
Q16.2	.765		
Q16.3	.941		
Intent to use perceived benefits (IUPB)		.972	.945
Q19.2	.944		
Q19.3	.946		
User satisfaction (US)		.912	.839
Q20.1	.826		
Q20.4	.852		
Net benefit (NB) (Effectiveness of Social Media)		.937	.881
Q21.2	.894		
Q21.4	.868		

Table 5.33. Convergent validity of model constructs

As shown in Table 5.33, the construct reliability (CR) on all constructs are greater than Average Variance Extracted (AVE), meaning that the condition for ($CR > AVE$) was satisfied. Furthermore, all AVEs were greater than 0.5 ($AVE > .5$). Thus, convergent validity was achieved successfully.

To achieve adequate discriminant analysis, the maximum shared variance (MSV) should be less than AVE ($MSV < AVE$), while the square root of AVE (\sqrt{AVE}) exceeds the inter-construct correlations (Hu & Bentler 1999; Hair et al. 2019). The matrix in Table 5.34 shows the outcome of discriminant validity.

Construct	AVE	MSV	1	2	3	4	5	6	7	8	9	10	11	12	13
1. SysQ	.891	.357	.944	**	**	**	**	.017	.173	.013	.358	.274	.191	.012	.250
2. Coord	.866	.852	**	.930	.852	.834	.748	.004	.000	.799	.001	.000	.010	.608	.020
3. IA	.881	.852	**	.923***	.939	.828	.764	.001	.005	.757	.007	.004	.011	.508	.018
4. SP	.899	.833	**	.913***	.910***	.948	.738	.002	.000	.810	.001	.000	.003	.514	.009
5. Compa	.847	.832	**	.865***	.874***	.859***	.920	.007	.000	.832	.001	.001	.005	.615	.007
6. Comple	.904	.073	.129	.060	.034	.047	.083	.951	.024	.001	.056	.048	.067	.000	.073
7. RA	.833	.391	.416	-.021	-.070	-.002	-.001	.154*	.913	.000	.391	.153	.184	.000	.246
8. KQ	.893	.391	-.114†	.894***	.870***	.900***	.912***	.033	-.004	.945	.001	.000	.012	.658	.009
9. ServQ	.798	.436	.598***	-.025	-.086	-.037	-.027	.237**	.625***	-.037	.893	.436	.310	.003	.366
10. FC	.799	.436	.523***	.008	-.062	-.011	.033	.218**	.391***	.005	.660***	.894	.261	.001	.312
11. IUPB	.945	.424	.437***	-.102	-.104	-.057	-.073	.258***	.429***	-.109	.557***	.511***	.972	.028	.424
12. US	.839	.658	-.109	.780***	.713***	.717***	.784***	.002	-.011	.811***	-.052	-.028	-.166*	.916	**
13. NB	.881	.424	.500***	-.143*	-.135†	-.094	-.084	.271***	.496***	-.095	.605***	.559***	.651***	**	.939

† p < .1, * p < .05, ** p < .01, *** p < .001

Table 5.34. Discriminant validity of model constructs

As shown in the matrix in Table 5.34, diagonal values represent the \sqrt{AVE} , while values at the bottom half represent the inter-construct correlations, and those at the top half represent the squared inter-construct correlations (SICs). All AVEs exceed SICs ($AVE > SIC$) on all constructs and the \sqrt{AVE} for each construct exceed their corresponding inter-construct correlations. As such, discriminant validity was achieved on model constructs of the study. Lastly, nomological validity was achieved because the observed CFA model reflected the initial relationships between constructs in the measurement model.

5.4.12. SEM summary statistics of the estimated model

The model fit statistics and indices used in the CFA were also applied to determine the fitness of the structural model. The model was evaluated for model fitness before looking at the paths and checking their significance. Ideally, to achieve model fitness, the following indicators must be met:

- There should be a non-significant χ^2 goodness of fit test

- CFI > .9 or preferably >.95
- RMSEA < .08 (Lower value indicates must better fit)

The following chi-square (χ^2) results in Table 5.35 were obtained.

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	101	1146.490	427	$p < .001$	2.685
Saturated model	528	.000	0		
Independence model	32	9860.043	496	$p < .001$	19.879

Table 5.35. Model Chi-square results

As shown in Table 5.35, the fit statistics revealed a χ^2 value of 1146.490 (shown as CMIN) with 427 degree of freedom (DF) and a significant value (P) of less than .001. The value is significant and according to Hair et al. (2019), this may be due to sample size since it is affected adversely by χ^2 . In such cases other fit indices are suggested. The CMIN/DF was used instead and the value obtained was 2.685 which is between 1 and 3 indicating that the model is acceptable.

For further confirmation of model fitness, the parsimonious and absolute fit indices were also applied. Table 5.36 presents the results.

Model	RMR	GFI	AGFI	PGFI
Default model	.032	.780	.728	.631
Saturated model	.000	1.000		
Independence model	.561	.151	.096	.142

Table 5.36. Results of the absolute fit and the parsimony fit indices

The GFI values are between 0 and 1 with values above .9 indicating that the model is acceptable and values above .95 resulting in an excellent model. A GFI of .780 was obtained which is below .90. Although this resulted in an unfavourable outcome, Hair et al. (2019) asserts that the effect of sample size N can affect the outcome of GFI. As such, emerging fit indices are preferable to GFI. In terms of RMR, low values indicate a better fit. In fact, RMR, SRMR and RMSEA are referred to as badness of fit indexes because

their high values are not favourable. Therefore, in the current study, the RMR value was achieved as .03 which is low, reflecting a good fit of the model.

The incremental fit indices were also applied to the model. Table 5.37 presents those results.

Model	NFI	RFI	IFI	TLI	CFI
Default model	.884	.865	.924	.911	.923
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table 5.37. Results of the incremental fit indices

The values for incremental indices should be achieved from 0 to 1 with .9 representing a good fit and values above .95 indicating an excellent model. In this study, three of the incremental indices were achieved at > .9 suggesting that the model is good. The indices are IFI, TLI and CFI with values of .924, .911 and .923 respectively.

Lastly, RMSEA was measured to check for its value less than 0. As mentioned earlier, RMSEA measures the ‘badness of fit’ of the model with a value of 0 indicating the best fit and higher values indicating worse fit. Generally, RMSEA should be below .08 for an excellent model fit. Table 5.38 shows the results of RMSEA.

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.086	.080	.092	.000
Independence model	.289	.284	.294	.000

Table 5.38. Results of RMSEA index

As shown in Table 5.38, the RMSEA is 0.086 which is slightly above 0.08. According to Hair et al. (2019), RMSEA values close to 0.08 indicate that the model fit is acceptable.

Table 5.39 presents the overall fit measures of the model.

Measure	Estimate	Thereshold	Interpretation
CMIN	1146.490	-	-
DF	427.000	-	-
CMIN/DF	2.685	Between 1 and 3	Excellent
CFI	.923	> .95	Acceptable
SRMR	.097	< .08	Acceptable
RMSEA	.086	< .08	Acceptable

Table 5.39. Overall model fit measures

The evaluation of the model showed that there are at least three measures, making the model a good fit (Hair et al. 2019), thus the model was accepted. Because the model fits the data, the significance of the paths can now be discussed. Table 5.40 shows the multiple regression weights of the structural equation model.

Hypothesis		Standardised Estimate parameter	Estimate	S.E	CR	P
H4	KQ ← Coord	2.870	3.298	1.161	2.841	.004
H5	KQ ← IA	-1.408	-1.515	.724	-2.091	.037
H6	KQ ← SP	-.574	-.598	.485	-1.233	.218
H7	ServQ ← FC	.696	.969	.092	10.531	***
H2	SysQ ← Comple	.073	.086	.073	1.177	.239
H3	SysQ ← RA	.421	.411	.062	6.603	***
H1	SysQ ← Compa	-.126	-.051	.025	-2.052	.040
H10	US ← SysQ	.001	-.002	.106	-.020	.984
H14	US ← ServQ	.025	-.066	.125	-.532	.595
H12	US ← KQ	.819	.741	.047	15.628	***
H9	IUPB ← SysQ	.177	.155	.051	3.008	.003
H13	IUPB ← ServQ	.485	.484	.064	7.598	***
H11	IUPB ← KQ	.098	.033	.039	.858	.391
H15	IUPB ← US	-.207	-.078	.044	-1.776	.076
H17	NB ← IUPB	.647	.605	.057	10.569	***
H18	NB ← US	.025	.009	.020	.440	.660
	Q11.4 ← Coord	.875	1.000			
	Q11.1 ← Coord	.903	1.072	.053	20.405	***
	Q12.4 ← IA	.937	1.000			
	Q12.3 ← IA	.937	.975	.036	26.751	***
	Q13.3 ← SP	.947	1.000			
	Q13.1 ← SP	.948	1.013	.034	29.401	***
	Q8.2 ← Compa	.950	1.000			
	Q8.3 ← Compa	.966	1.036	.030	34.014	***
	Q8.4 ← Compa	.862	.864	.039	21.886	***
	Q8.5 ← Compa	.900	1.140	.045	25.160	***
	Q9.1 ← Comple	.902	1.000			
	Q9.3 ← Comple	.986	1.145	.040	28.566	***
	Q9.4 ← Comple	.964	1.091	.041	26.800	***
	Q10.3 ← RA	.886	.968	.044	21.880	***
	Q10.4 ← RA	.945	1.000			
	Q10.5 ← RA	.905	.929	.040	23.087	***
	Q16.1 ← SysQ	.979	1.000			
	Q16.2 ← SysQ	.877	.981	.039	24.963	***
	Q16.3 ← SysQ	.975	.965	.023	42.749	***
	Q17.4 ← KQ	.952	1.000			
	Q17.3 ← KQ	.937	1.037	.035	29.742	***
	Q17.2 ← KQ	.942	1.024	.034	30.461	***
	Q18.6 ← ServQ	.936	1.000			
	Q18.4 ← ServQ	.845	1.107	.074	14.992	***
	Q14.2 ← FC	.813	1.000			
	Q14.1 ← FC	.952	1.208	.087	13.948	***
	Q19.2 ← IUPB	.970	1.009	.033	30.305	***
	Q19.3 ← IUPB	.970	1.000			
	Q21.2 ← NB	.953	1.113	.062	18.019	***
	Q21.4 ← NB	.922	1.000			
	Q20.4 ← US	.918	1.082	.055	19.681	***
	Q20.1 ← US	.914	1.000			
	*** p<.001					

Table 5.40. Multiple Regression weights from SEM

As shown in Table 5.40, statistical significance was observed on the majority of the paths at ($p < 0.05$) except for paths $KQ \leftarrow SP$ ($CR = -1.233$, $p = .218$); $SysQ \leftarrow Comple$ ($CR = 1.177$, $p = .239$); $US \leftarrow SysQ$ ($CR = -.02$, $p = .984$); $US \leftarrow ServQ$ ($CR = -.532$, $p = .595$); $IUPB \leftarrow KQ$ ($CR = -.02$, $p = .984$); $IUPB \leftarrow US$ ($CR = -.02$, $p = .984$) and $NB \leftarrow US$ ($CR = -.02$, $p = .984$), and the null hypothesis $H_0: \beta = 0$ was not rejected. The remaining paths were highly significant ($p < 0.001$) except for the path $KQ \leftarrow IA$ ($CR = -2.091$, $p = .037$) and $SysQ \leftarrow Compa$ ($CR = -2.052$, $p = .040$). Hair et al. (2019) asserts that a construct is statistically significant as a predictor of another latent construct if the p-value is less than 5%. If the estimate was positive, there was a positive impact and if the estimate was negative, there was a negative impact.

The inclusion of variable social influence (SI) caused a poor fit of the model to the data, therefore it was removed. As a result, the hypothesis 8 ($H8$) was not tested. Hypothesis 16 ($H16$) was also not tested because it was making the model unidentified. According to Hair et al. (2019:708), a non-recursive model has problems with statistical identification and it is not advisable to fit a non-recursive model on cross-sectional data. Including $H16$ made the model recursive and unidentified and thus the hypothesis was not tested. The hypotheses are presented next.

H1: Compatibility of social media positively influences System Quality of KMS in SMMEs

The $H1$ hypothesis was significant at $p = .04$ which is less than $.05$, indicating that the null hypothesis of no relationship ($H_0: \beta = 0$) was rejected. However, the estimate was negative at ($\beta = -.051$). This means that for every increase of one unit in compatibility of social media, the system quality of the KMS decreases by $.051$. Generally, the SMME community regards social media as new technology with its own objectives and that it cannot be compatible with traditional applications and systems for KM. These results are consistent with those of DePietro, Wiarda & Fleischer (1990) which suggest that innovations are often not compatible with the old environments, but their introduction provides more potential to increase relative advantage. Thus, the Compatibility of social media was found to influence the System Quality of the KMS of SMMEs negatively.

Several other IS-related studies in the SMME context confirmed positive relationships between the compatibility of social media and the decision to adopt and use (Alshamaila, Papagiannidis & Li 2013; Ghobakhloo & Sai 2013; Tan, Chong, Lin & Eze 2009). Given the amount of literature that supports that relationship between compatibility and system quality, it would be expected for the compatibility of social media to influence the quality of the KMS positively.

H2: Complexity of social media positively influences System Quality of KMS in SMMEs

The *H2* hypothesis was not significant ($\beta = .086, p = .239$). The null hypothesis ($H_0: \beta = 0$) of no relationship was not rejected at the 5% level of significance. Although social media appears as platforms that are easy to use and accessible as Software as a Services (SaaS), requiring no maintenance or installation efforts (Helms et al. 2017), SMMEs have not yet attained the full benefits of using social media to enhance their KMS. Thus, the Complexity of social media was not found to have a positive influence on the System Quality of the KMS of SMMEs.

H3: Relative Advantage of social media positively influences System Quality of KMS in SMMEs

The result of *H3* hypothesis revealed a statistically significantly positive influence ($\beta = .411, p < .001$). The results indicate that there was a consensus among participants stating a positive contribution of social media's relative advantage in the overall quality of the KMS of SMMEs at the 5% level of significance. The results further suggest that for every increase of one unit in social media's Relative advantage, the System Quality of the KMS increases by .411.

The results corroborate several other IS-related studies in the IS discipline (Araújo & Zilber 2016; Sranamkam 2012; Click & Petit 2010; Baird & Fisher 2006; Teo & Pok 2003; Rogers 2003; Tan & Thoen 2001; Tan & Teo 2000; Moore & Benbasat 1991) which confirm the relative advantage of social media as the ability to distribute digital content easily, reliably and quickly to specific intended recipients. Moreover, the ability of social media to strengthen relationships by organizing communications, marketing, and training and educating communities of shared interest (Moncrief et al. 2015; Hajli 2014; Tsai &

Men 2013; Cvijikj et al. 2013; Hussain 2012) allows SMMEs to attract a wider customer base and keep them up to date with product and service-related knowledge. Therefore,

H4: Coordination of social media positively influences Knowledge Quality of KMS in SMMEs

The result of *H4* hypothesis revealed a statistically significant positive influence ($\beta = 3.298, p = .004$). For every increase of one unit in coordination function of social media, the Knowledge Quality of the KMS increases by 3.298. The relationship was highly significant and was the largest absolute increase compared to all other constructs. Thus, the Coordination of social media significantly influences the KMS of SMMEs in a positive way. The importance of the coordinating function of social media in enhancing the quality of knowledge of the KMS was also demonstrated in the findings of previous IS-related studies (Scholtz et al. 2017; Xu et al. 2012).

H5: Immediate Access of social media positively influences Knowledge Quality of KMS in SMMEs

The *H5* hypothesis resulted in a significantly negative influence with $\beta = -1.515$ and $p = 0.037$. The null hypothesis of no influence was rejected at the 5% level of significance. For every increase of one unit in immediate access of social media, the knowledge quality of the KMS decreases by 1.515. This was the largest decrease compared to all other constructs. Thus, the Immediate Access function of social media was found to influence the Knowledge Quality of the KMS of SMMEs negatively.

Although the relationship is negative, its significance is consistent with the results of Weisberg et al. (2011) which suggest that immediate access to knowledge improves the gratification of people over social media usage. Several other studies (Scholtz et al. 2017; Xu et al. 2012; Berthon et al. 2012; Kietzmann et al. 2011; Klang & Nolin 2011; Kaplan & Haenlein 2010) confirm the importance of the social presence capability of social media that it has a strong influence on how users will engage with one another.

H6: Social Presence of social media positively influences Knowledge Quality of KMS in SMMEs

The *H6* hypothesis resulted in an insignificantly negative influence with ($\beta = -.598, p = .218$). Due to the p-value $> .05$, the null hypothesis of no influence was not rejected. Moreover, for every increase of one unit in the social presence function of social media, the Knowledge quality of the KMS decreases by .598. There is a lot of speculation about the authenticity of social media content and possible fake profiles claiming to be legitimate. These issues could be a result of such an outcome of the *H6* hypothesis testing. Thus, the contribution of the Social presence of social media was insignificantly negative.

Contrary to the findings of the current study, several studies support the positive relationship between the social presence capability of social media and the knowledge quality of the KMS (Froget et al. 2013; Lee & Ma 2012; Xu et al. 2012; Berthon et al. 2012; Kietzmann et al. 2011; Klang & Nolin 2011; Kaplan & Haenlein 2010).

H7: Facilitating Conditions of social media positively influence Service Quality of KMS in SMMEs

The result of *H7* hypothesis revealed a statistically significant positive influence. In fact, the hypothesis was highly significant at ($\beta = .969, p < .001$). For every increase of one unit in facilitating conditions of social media, the service quality of the KMS increases by .969. This could be owing to sufficient telecommunication infrastructure within the Gauteng province enabling SMMEs to take advantage of social media platforms to run their businesses. Therefore, the Facilitating Conditions of social media positively influence the Service Quality of the KMS of SMMEs.

Several other studies in the IS discipline (Weiner 2020; Gagnon, Ngangue, Payne-Gagnon & Desmartis 2016; Morton & Wiedenbeck 2009; Al-Ahmad, Al-Fagih, Khanfar, Alsamara, Abuleil & Abu-Salem 2009) corroborate the findings of this study and support the relationship between facilitating conditions and service quality.

H8: Social Influences of social media positively influence Service Quality of KMS in SMMEs

The *H8* hypothesis was never tested because Social Influence had been removed from the model because it caused a poor fitness of the model to the data. Therefore, the *H8*

hypothesis was excluded from the structural model. However, previous IS-related studies (Gruzd et al. 2012; Chang 2012; Goldsmith & Goldsmith 2011; Centola 2010; Kozinets, de Valck, Wojnicki, & Wilner 2010; Gladwell 2000) have found social influence to significantly influence the usage of new technologies.

H9: System Quality of social media positively influences Intention to Use / Perceived Benefits of KMS in SMMEs

The result of *H9* hypothesis revealed a statistically significantly positive influence ($\beta = .155, p = .003$). For every increase of one unit in system quality, intention to use / perceived benefits increased by .155. Because social media is easy to use and understand, SMMEs tend to adopt them to facilitate certain aspects of their business processes. It makes sense for the *H9* hypothesis to show a positive influence because social media is gaining popularity not only for personal use but also in business communities. Thus, the System Quality of social media positively influences Intention to Use / Perceived Benefits of the KMS of SMMEs. Several other IS-related studies (Lwoga 2013; Al-Shibly 2011; Masrek et al. 2010; Petter et al. 2013) have found system quality to have a positive influence on intention to use / perceived benefits

H10: System Quality of social media positively influences User Satisfaction of KMS in SMMEs

The *H10* hypothesis resulted in a regression coefficient, that is, $\beta = -.002$ with $p = .984$. The null hypothesis of no influence was not rejected at the 5% level of significance. The parameter β is very close to zero, indicating that no significant relationship exists. For every increase of one unit in the system quality of social media, the user satisfaction of the KMS decreases by .002. Thus, the influence of the System Quality of social media on the User Satisfaction with the KMS of SMMEs was insignificantly negative. The finding was contrary to several studies that support the relationship between system quality and user satisfaction (Lwoga 2013; Al-Shibly 2011; Masrek et al. 2010; Petter et al. 2013)

H11: Knowledge Quality of social media positively influences Intention to Use / Perceived Benefits of KMS in SMMEs

The *H11* hypothesis resulted in a regression coefficient of $\beta = .033$ with $p = .076$. Given that $p > .05$, the null hypothesis of no relationship ($H_0: \beta=0$) was not rejected at the 5% level of significance. The knowledge derived from social media platforms is not usually verified with legitimate sources. There is a lot of scepticism and reluctance to use social media information for decision-making. As such, the Knowledge Quality of social media did not influence the Intention to Use / Perceived Benefits of the KMS in SMMEs.

H12: Knowledge Quality of social media positively influences User Satisfaction of KMS in SMMEs

The result of *H12* hypothesis revealed a statistically significantly positive influence. In fact, the hypothesis was highly significant at ($\beta = .741, p < .001$). For every increase of 1 unit in knowledge quality, the user satisfaction of the KMS increases by .741. The results corroborate the findings of similar studies (Masrek et al. 2010; Wu & Wang 2006; Rai et al. 2002) that discovered a positive influence of knowledge quality on user satisfaction. Overall, people are satisfied with the content sharing capability of social media. Some of the benefits of social media, including searching and retrieving information quickly and reliably, contribute to the overall user satisfaction with the platforms' ability to meet knowledge needs. Therefore, the Knowledge Quality of social media positively influences the User Satisfaction in the KMS of SMMEs.

H13: Service Quality of social media positively influences Intention to Use / Perceived Benefits of KMS in SMMEs

The result of *H13* hypothesis revealed a statistically significantly positive influence. In fact, the hypothesis was highly significant at ($\beta = .484, p < .001$). For every increase of 1 unit in the service quality of social media, intention to use / perceived benefit of the KMS increases by .484. In the Gauteng province, there is enough internet coverage from different network service providers offering affordable internet to allow SMMEs to adopt social media platforms with less effort. As such, there is enough support for using social media which encourages SMMEs that are eager to continue using these platforms to enhance their KMS. Thus, the Service Quality of social media influences the Intention to Use / Perceived Benefits of the KMS of SMMEs positively.

H14: Service Quality of social media positively influences User Satisfaction of KMS in SMMEs

The *H14* hypothesis resulted in a regression coefficient of ($\beta = -.025, p = .595$) indicating the non-rejection of the null hypothesis ($H_0: \beta=0$). The regression coefficient was not significantly different from zero, it essentially showed a negative value – meaning that the *H14* relationship was insignificantly negative. On the contrary, previous related studies (Mosha 2017; Masrek et al. 2010; Petter et al. 2013) support the relationship suggesting that the influence is significantly positive.

Several factors could be at play in this relationship. For instance, SMME management could be lacking the time to support and encourage social media-enabled KMS processes, resulting in unfavourable user satisfaction with the KMS. Moreover, the insignificant *H14* hypothesis could have resulted in the notion that social media is used informally and not much effort is made by SMMEs to ensure that they benefit from social media strategically. Therefore, the Service Quality of social media had no influence on User Satisfaction of the KMS in the SMME context.

H15: User Satisfaction of social media positively influences Intention to Use / Perceived Benefits of KMS in SMMEs

The *H15* hypothesis resulted in a regression coefficient of $\beta = -.078$ with $p = .076$. Given that $p > .05$, the null hypothesis of no relationship ($H_0: \beta=0$) was not rejected at the 5% level of significance. On the contrary, several studies (Halawi, McCarthy & Aronson 2007; Chiu, Cheng & Chang 2007; Wu & Wang 2006; Bharati & Chaudhury 2006) discovered strong and positive relationship between user satisfaction and the intention to use / perceived benefits. However, it can be noted that the relationship is significant at the 10% level but it has a negative influence. Thus, User Satisfaction with social media does not influence the Intention to Use / Perceived Benefits of the KMS in the SMME context.

H16: Intention to Use / Perceived Benefits of social media positively influence User Satisfaction of KMS in SMMEs

The *H16* hypothesis was not tested because its inclusion made the model unidentified. Including the hypothesis was making the model non-recursive. As Hair et al. (2019:708)

put it, non-recursive models have problems with statistical identification. It is recommended to avoid non-recursive models, particularly when the data is cross-sectional.

H17: Intention to Use / Perceived Benefits of social media positively influences Net Benefit of KMS in SMMEs

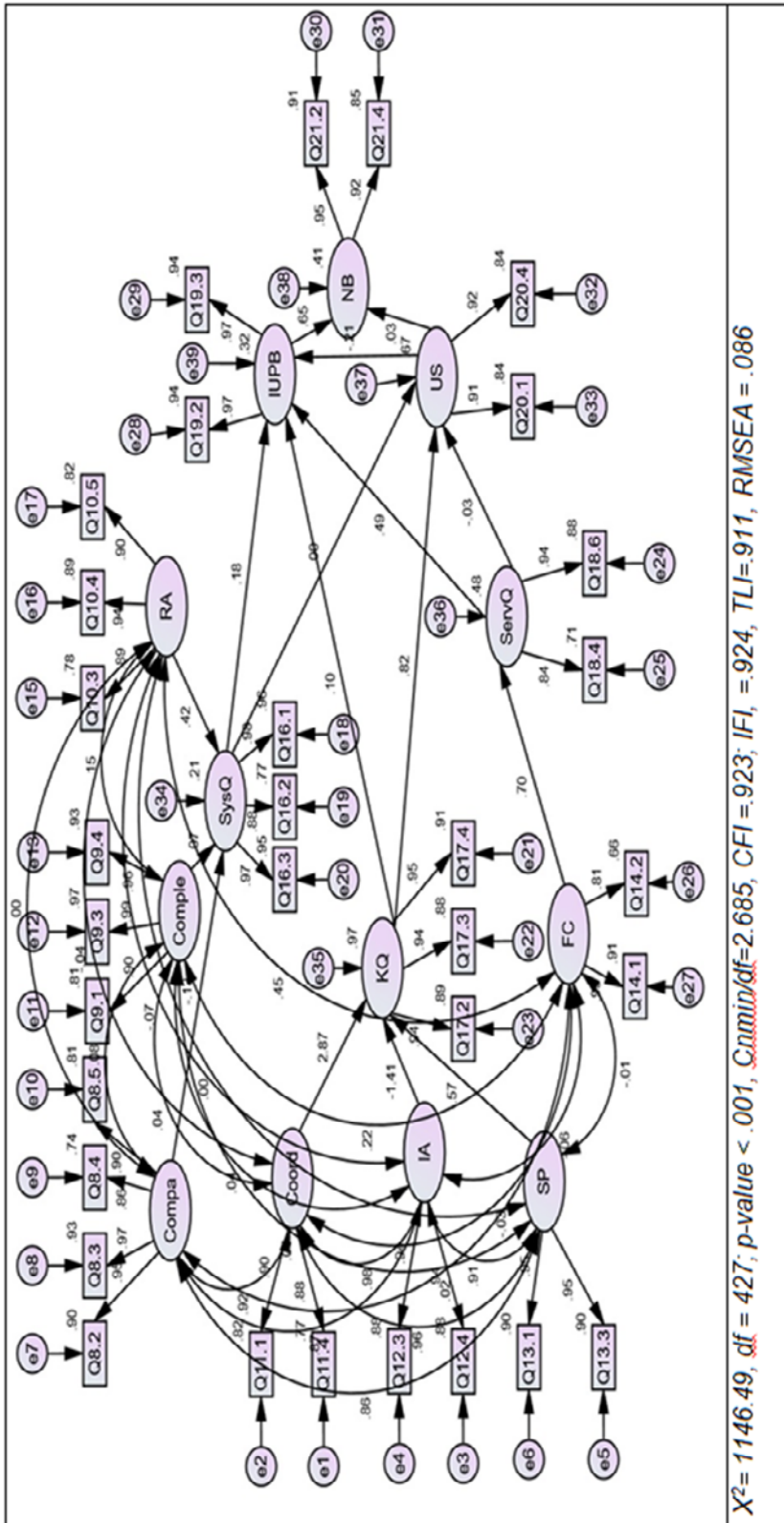
The result of *H17* hypothesis revealed a statistically significant positive influence. In fact, the hypothesis was highly significant ($\beta = .605, p < .001$) at the 5% level of significance. For every increase of 1 unit in intention to use / perceived benefits, net benefits increase by .605. The results corroborated previous related studies in the IS discipline (Mosha 2017; Petter et al. 2013) which suggest that the intention to use / perceived benefits of a technology will likely result in users' satisfaction with that technology. Hence, the Intention to Use / Perceived Benefits of social media influences the Net Benefit of the KMS positively.

H18: User Satisfaction of social media positively influences the Net Benefits of KMS in SMMEs

The result of *H18* hypothesis revealed no statistical influence ($\beta = .009, p = .660$). The results indicate that the null hypothesis of no relationship was not rejected ($H_0: \beta = 0$). Although the coefficient is positive, the relationship ($p > .05$) is not significant. Therefore, the User Satisfaction of social media did not influence the Net Benefits of KMS in SMMEs. These findings were contradictory to those of other IS-related studies (Mosha 2017; Halawi et al. 2007) that discovered a significantly positive influence of user satisfaction with technology on the net benefit of the KMS.

5.4.13. Summarised results of hypotheses tested and confirmed relationships

The relationships between exogenous and endogenous constructs are confirmed in the structural model in Figure 5.4. The properties of causal paths, including standard error of regression weight, unstandardised path coefficients (β), and probability values are also shown in Table 5.41.



$X^2 = 1146.49$, $df = 427$, $p\text{-value} < .001$, $C_{min}/df = 2.685$, $CFI = .923$, $IFI = .924$, $TLI = .911$, $RMSEA = .086$

Figure 5.4. The structural model

Hypothesis	Construct	Path	Construct	Unstandardised Path coefficients (β)	Standard Error of Regression Weight	Probability	Hypothesis Result
H ₁	SysQ	<---	Compa	-.051	.025	.040	Reject null hypothesis at α = .05
H ₂	SysQ	<---	Comple	.086	.073	.239	Fail to reject null hypothesis at α = .05
H ₃	SysQ	<---	RA	.411	.062	P < .001	Reject null hypothesis at α = .05
H ₄	KQ	<---	Coord	3.298	1.161	.004	Reject null hypothesis at α = .05
H ₅	KQ	<---	IA	-1.515	.724	.037	Reject null hypothesis at α = .05
H ₆	KQ	<---	SP	-.598	.485	.218	Fail to reject null hypothesis at α = .05
H ₇	ServQ	<---	FC	.969	.092	P < .001	Reject null hypothesis at α = .05
H ₉	IUPB	<---	SysQ	.155	.051	.003	Reject null hypothesis at α = .05
H ₁₀	US	<---	SysQ	-.002	.106	.984	Fail to reject null hypothesis at α = .05
H ₁₁	IUPB	<---	KQ	.033	.039	.391	Fail to reject null hypothesis at α = .05
H ₁₂	US	<---	KQ	.741	.047	P < .001	Reject null hypothesis at α = .05
H ₁₃	IUPB	<---	ServQ	.484	.064	P < .001	Reject null hypothesis at α = .05
H ₁₄	US	<---	ServQ	-.066	.125	.595	Fail to reject null hypothesis at α = .05
H ₁₅	IUPB	<---	US	-.078	.044	.076	Fail to reject null hypothesis at α = .05
H ₁₇	NB	<---	IUPB	.605	.057	P < .001	Reject null hypothesis at α = .05
H ₁₈	NB	<---	US	.009	.020	.660	Fail to reject null hypothesis at α = .05

Table 5.41. Unstandardised regression weights and corresponding probabilities

The summary of results from hypothesis testing – showing whether the relationships between constructs were supported or not – are shown in Table 5.42.

Hypothesis	Results
<i>H1: Compatibility of Social Media positively influences System Quality of KMS in SMMEs</i>	Supported
<i>H2: Complexity of Social Media positively influences System Quality of KMS in SMMEs</i>	Not Supported
<i>H3: Relative advantage of Social Media positively influences System Quality of KMS in SMMEs</i>	Supported
<i>H4: Coordination of Social Media positively influences Knowledge Quality of KMS in SMMEs</i>	Supported
<i>H5: Immediate Access of Social Media positively influences knowledge quality of KMS in SMMEs</i>	Supported
<i>H6: Social Presence of Social Media positively influences Knowledge Quality of KMS in SMMEs</i>	Not Supported
<i>H7: Facilitating conditions of Social Media positively influences Service Quality of KMS in SMMEs</i>	Supported
<i>H8: Social Influences of Social Media positively influences Service Quality of KMS in SMMEs</i>	Not Tested
<i>H9: System quality of Social Media positively influences intention to use/perceived benefits of KMS in SMMEs</i>	Supported
<i>H10: System quality of Social Media positively influences User Satisfaction of KMS in SMMEs</i>	Not Supported
<i>H11: Knowledge quality of Social Media positively influences intention to use/perceived benefits of KMS in SMMEs</i>	Not Supported
<i>H12: Knowledge Quality of Social Media positively influences User Satisfaction of KMS in SMMEs</i>	Supported
<i>H13: Service quality of Social Media positively influences intention to use / perceived benefits of KMS in SMMEs</i>	Supported
<i>H14: Service quality of Social Media positively influences user satisfaction of KMS in SMMEs</i>	Not Supported
<i>H15: User satisfaction of Social Media positively influences intention to use / perceived benefits of KMS in SMMEs</i>	Not Supported
<i>H16: Intention to use /perceived benefits of Social Media positively influences user satisfaction of KMS in SMMEs</i>	Not Tested
<i>H17: Intention to use /perceived benefits of Social Media positively influences net benefit / effectiveness of KMS in the SMME context</i>	Supported
<i>H18: User satisfaction of Social Media positively influences net benefits/effectiveness of KMS in the SMME context</i>	Not Supported

Table 5.42. Results of the hypotheses testing

As shown in the summarised results of hypothesis testing in Table 5.42, the research hypotheses that were not supported are H2, H6, H10, H11, H14, H15 and H18. Two hypotheses, namely H8 and H16 could not be tested and were removed due to their potential to make the model a poor fit, unidentified and non-recursive. All other hypotheses (H1, H3, H4, H5, H7, H9, H12, H13, and H17) were significantly supported. The regression weights for the paths in the resultant model are all significant and thus, the parameters are statistically different from 0. The resultant model, reflecting the significantly supported paths for evaluating the effectiveness of social media on the KMS in the SMME context, is illustrated in Figure 5.5.

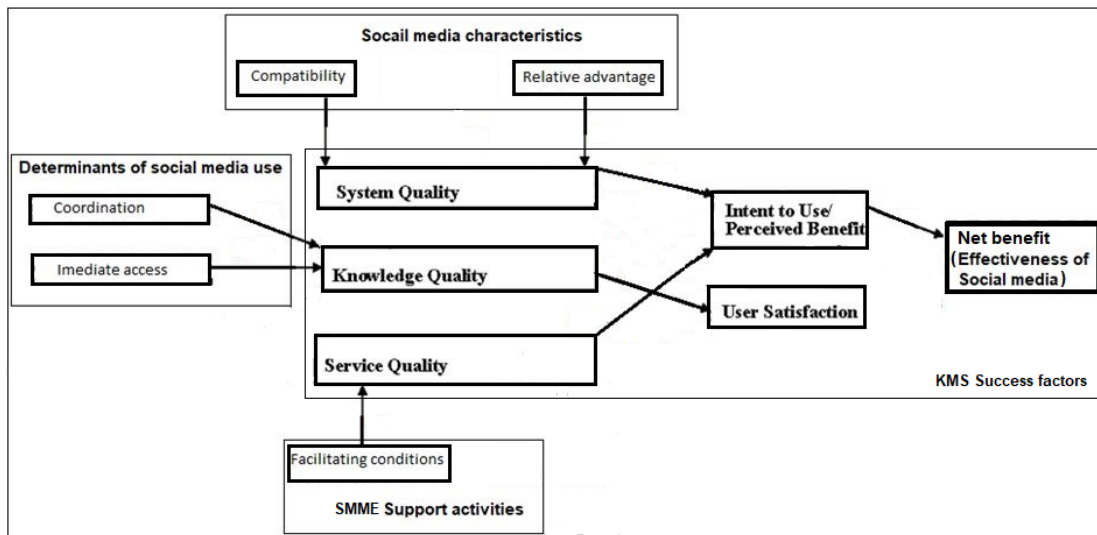


Figure 5.5. Validated model of the study

Some initial constructs were removed from the modified model after hypothesis testing because they were insignificant to predict the successful evaluation of social media on the KMS of SMMEs. Complexity (H2), Social Presence (H6), and Social Influences (H8) – as initially presented in the conceptual model (*cf* Figure 3.5)– are found to be insignificant in the current study. While there are unsupported hypotheses, their importance in the evaluation of social media for the KMS in the SMME context can never be overlooked.

Regarding Complexity, the items in the construct highlight the root of most of the reasons why social media is used to facilitate KMS processes of SMMEs. Issues like ease of use, time-saving, and accessibility were among the key aspects for measuring the complexity of

social media platforms. Similarly, the items for the Social Presence construct highlighted the extent to which social media allowed participants some flexibility to remain in contact with their colleagues and to exchange knowledge easily. Lastly, the items of social Influences highlight the influence of the significant others and their perception of using social media to enhance the KMS in SMMEs. In a different context, the study could perhaps yield different results where participants would understand better and respond differently to the constructs.

Although Intention to Use / Perceived Benefits (IUPB) had an insignificant relationship with User Satisfaction (US), its relationship with Net Benefits (NB) was significantly positive. Similar findings about these constructs were identified in other IS-related studies (Ojo 2017; Tilahun & Fritz 2015; Cho, Bae, Ryu, Kim, An & Chae 2015; Choi, Rho, Park, Kim, Kwon & Choi 2013). Nevertheless, the model and its constructs are a good fit of the data observed. As such, it can be concluded that the model and its constructs are suitable to measure the effectiveness of social media on the KMS in the SMME context. More in-depth qualitative explanation of the model is provided in the next phase of the study (*cf* Chapter Six)

5.5 Chapter summary

In summary, this chapter presented phase one, i.e. the quantitative phase of the explanatory mixed methods of the study. The focus of this phase was on presenting the results of the web-based survey administrated on Microsoft forms. First, the socio-demographic characteristics of participating SMMEs and their respective owners/managers were presented. Secondly, descriptive statistics, reliability and validity analysis of the data were presented using IBM SPSS version 25. Lastly, *AMOS* version 25 was used with SPSS to conduct inferential statistics including T-Test, ANOVA, CFA and SEM. The next chapter presents phase two, i.e., the qualitative phase of the explanatory mixed methods of the study.

CHAPTER SIX:

Phase two: the qualitative study

6.0. Introduction

Chapter Five presented the quantitative phase of the explanatory sequential mixed method approach followed in this study, where a web-based survey questionnaire was used as a research instrument to collect data from sampled ICT, advanced manufacturing, knowledge-intensive, and smart industries SMME owners and managers in Gauteng, South Africa. The current phase of the study involved collecting qualitative data through face-to-face interviews, which helped to provide more understanding by explaining the results of the quantitative phase in the previous chapter.

In the qualitative phase of this study, data was collected using face-to-face interviews with 13 purposively selected SMME owners and managers in the Gauteng province. It was not known whether the selected participants had been part of the survey in phase one since the survey was anonymously completed online. Even in the interview process, anonymity was assured by not asking questions that would reveal the names and personal information of the participants (*cf* Appendix F).

Three main sections provide structure to this chapter. Section 6.1 provides the interview protocol that was followed; Section 6.2 explains the profiles of participants in terms of their roles in the SMME, the size of SMMEs, annual turnover of SMMEs, and the location of their respective SMMEs; Section 6.3 describes a detailed account of the activities involved in the interview schedule; Section 6.4 describes the thematical analysis procedures followed for the analysis of the interview data, and lastly, Section 6.5 contains the chapter's summary.

6.1. Interview protocol

To comply with interview protocols in the participant recruitment process, the researcher consulted the corporate website of The Innovation Hub (an organisation that served as a gatekeeper for all participating SMMEs in this study) to understand its background, the services they offer, and the profiles of SMMEs in their program. From the information on the website, the researcher drafted an email to the facilities manager to request facilitation of the recruitment process of the identified potential owners and managers of SMME in the program using predefined purposive sampling criteria.

The criteria for the purposive sampling technique for selecting the participants included: individuals who are founders, owners, directors, or managers of SMMEs that have been in operation for more than one year and have an existing profile of customers. One participant per SMME was nominated for the interview.

The facilities manager then provided the researcher with contacts of 21 potential SMMEs so that meetings could be scheduled between the researcher and the owners of the sampled SMMEs. From the list provided, some contacts included email addresses of SMME owners and some were switchboard phone numbers. The researcher then started to contact each SMME using the contact list to try and secure a meeting with the owners.

From the list of 21 potential participants, 18 agreed to the initial face-to-face meetings. Meetings between the researcher and potential participants were scheduled, where the participants were sensitised to the study by explaining the objectives as well as the ethical procedures to be adhered to during the interview meetings. The envisaged outcome of the initial meeting was for the participant to give consent to participate by signing a participant consent form (*cf* Appendix G) for an interview to be scheduled.

The participants who signed a consent form were then provided with an interview pack that included an overview of the study, an ethical clearance letter, consent forms, and an information leaflet with the contact details of the researcher, the supervisor as well as the chairperson of the Unisa School of Computing Research Ethics Committee (SocEthics) for further enquiries.

The participant recruitment process was conducted from January 2020 until March 2020 when the world was dealing with the COVID-19 pandemic and many travel restrictions

had been imposed to curb the spread of the virus. By the end of March 2020, the researcher had received 13 signed consent forms and already conducted eight face-to-face interviews physically at the participants' place of work. The researcher agreed with the five remaining participants to conduct online interviews virtually using Microsoft Team. As such, the total number of interviews conducted amounted to 13. Table 6.1 shows the outcome of the recruitment process.

Recruitment process items	No.
Contacts of SMME selected to participate in the study	21
SMME participants who accepted invitations, confirmed and honoured appointments of initial face-to-face meetings	18
SMME participants who signed the consent form and attended the interview	13

Table 6.1. Outcome of the participant recruitment process

Although a qualitative study is not concerned with volume of numerical data but rather with rich information, there is a lot of debate among qualitative scholars regarding a justifiably suitable sample size for a qualitative study (Boddy 2016). Several studies determine sample sizes based on the research approach. For example, Bernard (2013) suggests that ethnoscience studies require a sample of between 30 to 60 interviews; Morse (1994) suggests 30 to 50 interviews for both Ethnoscience and Ethnography studies; Creswell (2013) suggests 20 to 30 interviews for studies that apply grounded theory and five to 25 for phenomenology studies, and Onwuegbuzie & Collins (2007) suggest a minimum of 12 interviews for all qualitative studies.

In an attempt to address the sample size issue, some scholars use theoretical saturation as a way of justifying the sample size (Boddy 2016; Mason 2010; Morse 1995). The theoretical saturation is reached when no new ideas or insights are emerging from the interviews, that new datasets are neither contradicting data already collected nor adding anything new to it. While theoretical saturation attempts to provide a convincing justification for sample size, it has been criticised for not being able to identify the number of participants at the onset – before data collection (Guest, Bunce & Johnson 2006). In other words, the actual sample size can only be stated after data saturation is reached (Hennink, Kaiser & Marconi 2017).

Another criticism is that the approach does not have a clear point where everything that can be found in the data is recorded for analysis. Moreover, the approach is limited by time to reach saturation and not satisfying the open-ended research requirements of an approach such as grounded theory.

Given the conflicting arguments concerning sample sizes of qualitative studies, this study conforms to the recommendations made by studies of Creswell (2013); Onwuegbuzie & Collins (2007) and Guest et al. (2006), which suggest that a minimum of 12 interviews are adequate for a qualitative enquiry. As such, the study has conducted 13 interviews all together including eight face-to-face and five virtual interviews to produce sufficient data for analysis in the qualitative phase of the study.

6.2. Profile of participants

A total of 13 interviews were conducted with SMME owners and managers who were purposively selected to represent their respective SMMEs. The profiles of selected participants are tabulated in the form of the roles they occupy at their respective SMMEs, size of the SMME in terms of the number of permanent employees, annual turnover of the SMME as well as the location of operations in terms of municipality as shown in Table 6.2:

Participants	Role	Size (employees)	Annual Turnover	Municipality
Participant1	Director	4	R4 000 000	City of Johannesburg; Tshwane
Participant2	Founder	7	R5 000 000	City of Tshwane
Participant3	CEO	7	R800 000	City of Tshwane
Participant4	Director	7	R500 000	City of Tshwane
Participant5	Director	3	R2 000 000	City of Tshwane
Participant6	Founder	9	R1 000 000	City of Johannesburg; Tshwane
Participant7	Founder	4	R1 000 000	City of Johannesburg; Tshwane
Participant8	Director	1	R400 000	City of Tshwane
Participant9	Director	13	R1 400 000	City of Tshwane
Participant10	Director	9	R5 000 000	City of Johannesburg; Tshwane
Participant11	Director	12	R5 000 000	City of Johannesburg
Participant12	Director	4	R2 000 000	City of Tshwane
Participant13	Director	3	R2 000 000	City of Tshwane

Table 6.2. Profile of participants

6.3. The Interview schedule

An interview schedule was designed to guide the interview process. The schedule comprised semi-structured interview questions that were based on the application of KMS and social media in SMMEs per the study's research questions and objectives.

Furthermore, specific sections of the interview schedule were developed to help our understanding and interpretation of the data received in phase one (quantitative phase) of the study, in connection with the components of a validated model which was derived from the DOI theory (Rogers 2003), UGT theory (Scholtz et al. 2017), UTAUT2 (Venkatesh 2012), and the KM success model (Jennex & Olfman 2006). The interview schedule can be found in Appendix F.

To begin each interview, the researcher engaged the participant to explain the overview of the study to ensure that each participant was well informed about the topics covered in the interview. A statement of ethics was also read to inform the participants about their rights

and how the researcher will guarantee anonymity throughout the research process. Although the interview schedule was used as a guide, due to the nature of semi-structured interviews, the researcher asked the participants ad hoc questions to probe for more information towards collecting enough data to respond to the research questions. The interviews were planned to take approximately 45 minutes on average but some participants were willing to provide more information by sharing their experiences regarding social media and knowledge management systems, while others preferred to stick to the original 45 minutes as agreed.

Each interview was recorded digitally using an audio recorder. In cases where participants could not meet face-to-face with the researcher, Microsoft Teams online meeting software was used to create video recordings of interviews. The recordings were then transcribed (*cf* Appendix M) and imported into *Atlas.ti* version 8 to be analysed using the thematic analysis process.

6.4. Rigour of the Qualitative study

Issues of rigour in the quantitative study are addressed by testing reliability and validity (*cf* Chapter Five). In a qualitative study, rigour is addressed by ensuring the trustworthiness of the study (Guba & Lincoln 1994). Trustworthiness is a measure of how truthful the analysis is as well as the interpretation of the qualitative data. There are four dimensions of trustworthiness in qualitative studies and are discussed next.

6.4.1. Credibility

Credibility of a qualitative study ensures that the study provides enough evidence to provide the claims of the study, similar to a measure of internal validity in quantitative studies (Guba & Lincoln 1994). It is concerned with measuring whether the results of a qualitative study are believable by synthesising with what is already known in the literature. Noble & Smith (2015) suggests that a qualitative study should consider the triangulation of data, theories, or models to ensure that the credibility of the study is achieved. In this study, data triangulation was achieved by interviewing the owners and

managers of several SMMEs and the findings were compared with the literature on deferent theories and models to enhance the credibility of the study.

6.4.2. Dependability

Dependability measures how consistent the results of a qualitative study are over time. Akin to reliability in quantitative studies (Guba & Lincoln 1994), dependability in qualitative studies is concerned with the stability of the research to ensure that a research design can be followed by other researchers to yield similar results (Thomas & Magilvy 2011). In this study, a research onion suggested by Saunders et al. (2009) was followed to provide a linkage between all aspects of the research design and the identified methodology. The research was also sustained by underpinning theories such as KM success model, Unified Theory of Acceptance and Use theory 2, Use and Gratification, as well as the DOI to support its basis. Therefore, the approach and methodology followed in this study could be followed in another study – to yield results guided by the applied theories.

6.4.3. Confirmability

Confirmability of a qualitative study focuses on issues relating to the accuracy and relevance of the research (Guba & Lincoln 1994). The accuracy and relevance of the study are checked by verifying the findings and ensuring that the research reports its findings from the viewpoint of the participants and not from the bias of the researcher. In this study, a codebook was developed to confirm the relevance of the codes across all interview transcripts. The relevance was furthermore enhanced by grouping related codes into themes that address specific research questions of the study.

6.4.4. Transferability

Transferability checks whether the results of the qualitative study can be applied in other research settings (Guba & Lincoln 1994). It is comparable to generalisability in quantitative studies (Remenyi 2013), where the results are extended to other, even wider areas of study. Walsham (2006) adds that transferability considers issues such as population, sampling, and the methods used to collect the data to ensure that the results can

be transferable to another setting. Thus, the results of this study can be transferable to other SMMEs in the technology sector because of the similarities in terms of the limitations on resources and flexible organisational structures.

6.5. Thematical Analysis

The thematical analysis process of this study followed the guidelines suggested by Archer et al. (2017), which include five key steps of qualitative data analysis, namely text familiarisation, coding of data, revision of the codes, theme creation, and revision of the themes – to create our own interpretation of the data in response to the research questions, from the perspective of the research participants.

6.5.1. Text Familiarisation

The first phase of analysis involved familiarisation with the data. After each interview was conducted, the researcher reflected by listening to audio recordings, reviewing video recordings, and writing field notes on interesting comments made by participants. All recordings were then transcribed and converted to text documents with timestamps, using transcription software to allow the researcher to quickly and easily read through the different segments of data that was deemed interesting and relevant – toward addressing the research questions of the study. Thereafter, field notes, transcripts, and voice recordings were compared to ensure that the data makes sense before preparing it for further analysis. The transcripts were imported into *Atlas.ti* for the data segments to be coded.

6.5.2. Coding

Coding in qualitative studies serves to capture the assumptions, insights, and complex motivations from the perspective of research participants. In the coding stage of the current study, all transcripts were read directly from *Atlas.ti* where segments of the data were assigned to codes – to allow the researcher to easily analyse and interpret the data later in the project. ‘Codes’ refers to data segments that capture interesting and relevant information that is useful for addressing the research questions in the study. They are used

to assign words or even short phrases that represent symbolic summaries that capture the essence of a portion of the information (Saldaña 2016).

Codes can be derived deductively from the conceptual model or inductively from the collected data (Nowell et al. 2017). Because the current study follows an explanatory sequential mixed-method approach, the majority of codes were identified deductively from a conceptual model, while others were derived inductively to understand data segments that were interesting and provided emergent insights.

A codebook was created to tabulate the list of codes and their descriptions (*cf* Appendix I). A codebook served as an important component of the coding process because it provided details of how each code was applied to each interview transcript so that the research questions of the study are adequately addressed. Elements used to create codes in the codebook followed the guidance of Maietta, Hamilton, Swartout & Petruzzelli (2018) and included:

- Code name: reflecting a particular construct in the conceptual model
- Description: details of how the code was applied to a data segment
- Origin: a reference to when the code became part of the study
- Importance: to describe the contribution of the code in the study
- Theme: reflecting a code group where the code was used to provide interesting insights to help answer the research questions

The study employed both deductive and inductive codes. Employing both deductive and inductive codes in one study allows the researcher to problematize earlier assumptions found in the literature by listening to new ideas which were not originally known (Saldaña 2016). As a result, the researcher may be able to understand how research participants interpret concepts found in the literature.

A total of 29 codes were created, including 17 deductive codes derived using constructs from the conceptual model in Chapter Three, and 12 inductive codes derived from reading interview transcripts thoroughly. Codes were then applied to the data segment following a process called ‘first-cycle coding’ (Saldaña 2016). First-cycle coding provided a sense of

what participants were saying about the questions asked during interviews. A list of codes and a snippet of the coding cycle applied in this study are attached in Appendix J and Appendix K respectively.

6.5.3. Themes

The researcher reviewed the codes and started to make sense of the data to initiate the first step of data interpretation. Codes addressing the same concepts were grouped into themes. A theme is a group of codes that are related (Archer et al. 2017). This process was very useful because it allowed the researcher to simplify the analysis even more by linking the key concepts of the study to their associated codes. Codes that were derived deductively from the conceptual model were grouped into themes to address specific concepts of the conceptual model (*cf* Chapter Three) while inductive codes were grouped into themes derived from examining the ideas that occurred in the interview data.

All themes were reviewed by reading the interview transcripts and making comparisons to ensure that all themes created are useful and accurately represent the transcribed data, as well as ensuring that there are no overlaps between themes. Overall, a total of eight themes were identified as follows:

- Using social media to enhance the KMS in SMMEs: A group of codes relating to how SMMEs use social media to enhance the KMS
- Social media innovation characteristics: A group of codes relating to the innovation characteristics of social media
- Determinants of social media use: A group of codes relating to social media factors that decisively affect the nature and outcome of knowledge in the KMS
- SMME support activities: A group of codes relating to available support to facilitate the use of social media in SMMEs
- KMS Success factors: A group of codes relating to KMS quality factors that are achieved through the use of social media
- Social media evaluation methods in SMMEs: A group of codes relating to methods used to evaluate social media in SMMEs

- Challenges experienced with the evaluation of social media: A group of codes relating to challenges experienced by SMMEs when evaluating social media
- Suggested approaches for evaluating social media in SMMEs: A group of codes relating to perceived approaches that can be used to achieve a successful evaluation of social media in SMMEs.

An extract of themes created from *Atlas.ti* is attached in Appendix L. Having identified the themes in the study, the next step explains how they were addressed from the perspectives of the research participants. The step followed a method suggested by Caulfield (2019) which explains the following aspects of a theme:

- What the theme means
- The elements of the theme
- How the theme helps with understanding of the data

Following the method suggested above, each theme is discussed below.

Using Social Media to enhance the KMS in SMMEs

The theme was created to understand participants' interpretation of how their respective SMMEs use social media to enhance their KMSs. The theme was created using inductive codes, thus it was not mapped to the conceptual framework of the study. However, it provides background information towards understanding the specific preferences of individual SMMEs when using social media to enhance the KMS processes. Moreover, the theme helped with the understanding of commonly used social media platforms for achieving KMS process in the context of SMME environments. Elements of the theme included: 'SMME prefers to use social media', 'social media platforms for achieving KMS processes', and 'KMS process is executed by social media'. The relationship between these elements is shown in Figure 6.1.

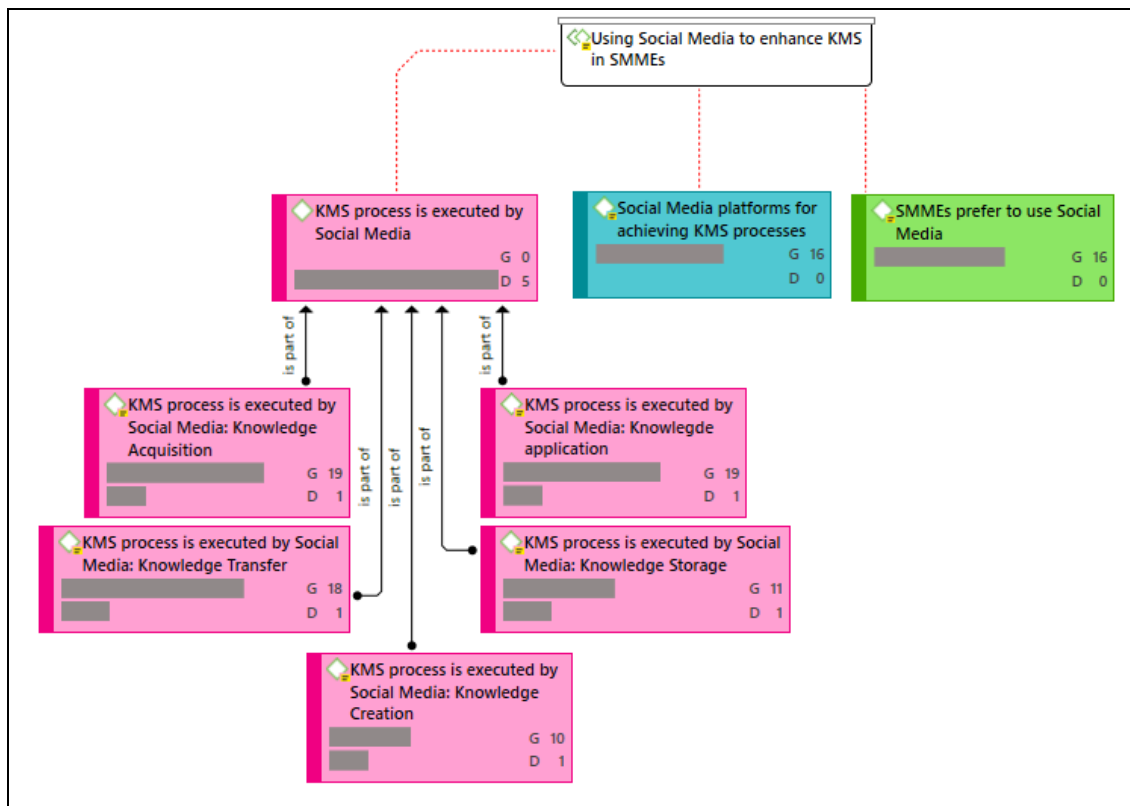


Figure 6.1. Using social media to enhance KMS in SMMEs

As shown in Figure 6.1, codes that helped with the understanding of how SMMEs use social media to enhance their KMS were grouped together. Three main codes, namely ‘SMME prefers to use social media’, ‘social media platforms for achieving KMS processes’, and ‘KMS process is executed by social media’ were used to form the theme. Since this study defines KMS processes as knowledge acquisition, creation, storage, transfer, and application, different perspectives were sought from participants to understand how specific KMS processes are enhanced by social media in SMMEs. Thus, the code ‘KMS process is executed by social media’ was split into four codes, each addressing a specific aspect of KMS processes as shown by the first-order relationship of ‘*is part of*’ in the Figure.

In terms of understanding why SMME prefer to use social media to enhance their KMS, it was discovered that social media allows SMMEs to tap into markets that would ordinarily be difficult to reach due to the limitations of the SMME business in South Africa. This view is supported by the findings of Odoom et al. (2017) who add that SMMEs in emerging markets continue to benefit as they are now conducting most of their marketing

campaigns on social media platforms. Although the specific social media platforms that are used may vary, generally social media have become affordable for SMME as tools to present knowledge (Cerchione & Esposito 2017) even to areas that are out of reach. These reflections are expressed in the following comments of participants:

'Really for us, as I said earlier, is mainly on just attracting customers by sharing the stories that we offer what we are doing so we sort of selected those platforms because of the number of people that will find in those platforms. So because of that, we then decided to say, look, is it worth it to share what we are doing on social media, but also we believe that the business that we are in is more attractive to young people. So and the young people are the people that today you'll find in the social media platforms. So then it makes sense for us to share our stories there, in that sense, we also attract people to watch what we're doing. But also we sort of share the direction that as a company we're taking and in one way or the other then contribute towards knowledge of understanding that this is possible. It can be done in South Africa (sic).' [participant 3].

'...So it makes it easier for us as SMMEs in the print industry to utilise it as another output tool that can present information in a simplified manner' [participant 11]

Interestingly, SMMEs even take advantage of the freely available social media platforms that allow them to host virtual meetings within a set time-frame, which helps them to remain focused on key discussion points of the meeting. Similar views were shared in the study of Odoom et al. (2017) suggesting that the cost-effectiveness and interactivity of social media platforms often become a motivation for SMME preference. One of the research participants emphasised the importance of using social media platforms to conduct virtual meetings as follows:

'People tend to focus quickly, because they're looking at the time, because its scheduled, say about 30 minutes to one hour, and they want to make sure that the time is used profitably... And you'll find that typically, even the meeting that's scheduled for an hour, now turns out to be 30 minutes - 45 minutes' [participant 10]

While social media platforms can be categorised into virtual/online communities, social networking sites, social bookmarking sites, media sharing sites, virtual worlds, and

Blogs/microblogs (Grewal & Levy 2013), it was discovered that the research participants prefer to use media sharing sites, social networking sites, and blogs/microblogs to enhance their KMS. The study of Ngai et al. (2015) also share this view, suggesting that media sharing sites, social networking sites, and blogs/microblogs provide a platform to facilitate the KMS processes much easier. Indeed, research participants identified Facebook, WhatsApp, Twitter, Skype and Zoom as their commonly preferred platforms for enhancing KMS processes of their SMMEs. Although other platforms such as Instagram, LinkedIn, Trello and Hangouts were also mentioned, they were not found to have a significant impact on KMS processes of SMMEs represented in the study. The research participants indicated their specific preferences of social media platforms to enhance the KMS as follows:

'I use Facebook and Twitter, okay. Yeah mainly Facebook and Twitter.' [participant 1]

'So I would highly recommend Facebook and WhatsApp for any type of business including to perform knowledge management' [participant 2]

'We use mainly it will be your Facebook and little (sic) bit of tweets' [participant 3]

'One of the things that we do a lot is most of our meetings, are online meetings because we've got clients in the USA, because of where they are, or even in GAUTENG because of traffic, we will typically either use Skype, or our preferred one is either use Zoom quite a lot, okay, Because then we can record the meetings and then get back to it, we also use the Hangouts a lot' [participant 4]

'so that it's your three major social media platform (sic) which is your Facebook, Twitter and Instagram. Okay. So for marketing, you'd want those three, but then maybe you'd add LinkedIn for some networking, but you're not really marketing anything on that platform. But for products or services, you rely on Facebook, Twitter and Instagram. To communicate we use WhatsApp' [participant 5]

'The top three, so Facebook, okay. In fact, Twitter doesn't work for us, so Facebook, Instagram and WhatsApp' [participant 7]

'WhatsApp obviously for communication as a group... What else I'm trying to think of Google docs, One drive, Skype and zoom. I can say we have what is called Trello now' [participant 8]

'Facebook is the one we mostly use for marketing purposes, WhatsApp for communication amongst ourselves, and LinkedIn for professional networks'
[participant 9]

'We use Zoom, WhatsApp, Facebook, in fact we grab any platform that we see fit and appealing to our customers...' [participant 11]

'I use GoTo Meeting, is that is regarded as Social Media, Facebook, WhatsApp, and LinkedIn' [participant 12]

Although several reports have been made about the reluctance of senior people to use social media platforms because of issues around data privacy protection (Xie, Watkins, Golbeck & Huang 2012), it was interesting to discover that senior people who participated in this study, although they do not understand the full potential of social media, find themselves relying on the platforms for their knowledge needs. Comments of some senior participants were as follows:

'Could be me as a senior. I don't really understand the power of these things if you view (sic) but I see Facebook, LinkedIn. They are two that I engage with mostly... Oh, WhatsApp, I use WhatsApp quite a lot now. We also use Skype and a bunch of others such as GoToMeeting, Zoom...' [participant 6]

'...being in the IT industry for so many years, I've seen how rapidly new technology transforms people's way of thinking. Although I prefer to use Email, I see these Social Media platforms having the same features. Everybody is on Facebook, WhatsApp and the like, and as a business we are sort (sic) guided by what the market wants'
[participant 10]

'We do a lot of international calls and the like, so Skype works for us a lot, others like Facebook, WhatsApp, etc. we just use on an ad-hoc basis. I see a lot of young stars engaging on these platforms more than us because we are slow to catch-up, hahaha'
[participant 13]

However, social media platforms are used to execute different KMS processes (Gresty 2013). In terms of knowledge acquisition, it was discovered that some research participants use bots which are built-in features of social media with the capability of locating and

accessing information of interest through the Internet (Monsted, Sapiezynski, Ferrara & Lehmann 2017). Research participants confirmed using bots to achieve knowledge acquisition as in the following comments:

'...in some cases accessing that information, we are using information that is gathered through bots on the Internet, that collect that information, compile it and then we analyse it, we use it, then we structure it within the context of the client,' [participant 4]

'...you have your bots that help study algorithms that show you when your peak hours are for people who are actually checking your content' [participant 5]

In terms of knowledge creation, several studies (Epure et al. 2017; Aisenberg-Ferenhof et al. 2016; Jones et al. 2015) suggest that social media offers great potential for knowledge creation. Research participants also confirmed how social media achieves this objective by collecting important pieces of information that are helpful in the creation of knowledge, which is crucial for the SMMEs business to operate, as demonstrated by the following comments from research participants:

'Social media is crucial on that end. Okay, the last bit was crucial. If I'm putting together a proposal I need to know who? I need to understand the potential clients' needs, Yeah, I need to understand what they do, how they do it...' [participant 6]

'...one could be able to monitor for instance, if you look at the impressions that have been on a particular point around your service and all. So obviously, if (sic) is about negative, you have to make sure that the positive response comes out of your brand or your services...' [participant 11]

Social media also has repositories where SMMEs store their knowledge for future consumption. For example, blogs/microblogs are used as repositories of knowledge about customers to help with better management of areas that need attention (Flanagin & Bator 2011), and social networks provide an accumulation of shared knowledge about customers to improve customer loyalty (Chua 2011). Research participants also believe that the KMS process of knowledge storage is achieved through populating content into common

repositories within social media platforms used within SMMEs. Research participants shared their views as follows:

'So now it's convenient for us. Our job is just to flood those platforms with content and then get customers to be attracted to our links so that they can get the content'
[participant 7]

'You can actually populate the content that you have out there in one source, and then it can be shared all over' [participant 12]

Participants also expressed their satisfaction with social media, stating that they use social media platforms to facilitate their knowledge transfer process with clients and among themselves. Several other studies in the IS discipline (Ngai et al. 2015; Moncrief et al. 2015; Hajli 2014; Kaplan & Haenlein 2014; Chua & Banerjee 2013; Ren et al. 2012) support this claim by indicating that social media provides collaboration features for people to engage and share knowledge instantly. In fact, research participants indicated that the platforms allow their SMMEs to distribute knowledge that is needed for training purposes to their clients. Moreover, the platforms can even distribute knowledge that is required by even people who are not connected to the SMME but may want clarification on certain aspects of the business itself. These sentiments were shared by participants as follows:

'Okay let's start with the clients, after developing applications, immediately we are required to do skills transfer or knowledge transfer to them. So, it varies the starting point is documentation, the application must be documented, okay. Normal SDLC setting which with some degree testing will be documented and everything will be documented. And even the development project must be documented. And there are what we call 'over the shoulder type of demonstrations' to show the clients what and how to do the application and to some degree for people who are going to be supporting the application to be able to know how to support it over time' [participant 8]

'Sometimes you want to communicate the information, which a lot of people are also probably raising issues about. You can pick issues that relate to your organisation and respond quickly.' [participant 10]

There is also the knowledge application process which social media executes by presenting knowledge to the satisfaction of SMME businesses. For example, Facebook and MySpace are popular social networking sites providing people with the ability to customise knowledge content in a manner that is presentable (Chua & Banerjee 2013). Research participants shared this view by stating that social media presents knowledge in a format that is easy to understand for their SMMEs. The following comments were shared by research participants:

'you can engage somebody on the Social Media platform and sources information that can help you to deliver a particular content better or even to structure information in a particular format' [participant 3]

'When you learn visually, ah, I get it easier' [participant 10]

'The platforms have ways of presenting information, how people like it, for example, on the Twitter activities, they have a simple graph you can see like at first glance, how many people liked it, why and then how many keep to your profile. So they've fine-tuned the presentation' [participant 12]

Having explained the activities involved in building an understanding of how SMMEs use social media to enhance their KMS, the study sought to provide insights into the factors that influence SMMEs to use social media to enhance their KMS. These factors were derived from the conceptual model and lead to the creation of the themes: Social media innovation characteristics, determinants of social media use, SMME support activities, and KMS Success factors. The next section explains the theme of social media innovation characteristics.

Social Media innovation characteristics

The theme was created to understand the innovation characteristics of social media that influence its use by SMMEs to enhance KMS. The results of the quantitative phase in Chapter Five of the study indicate that social media innovation characteristics have a positive influence on the quality of the KMS of SMMEs. Elements of the theme including ‘Compatibility of social media with KMS of SMMEs’, ‘Complexity of social media’, and ‘Relative advantage of social media’ were identified from the conceptual model of the study. Although the hypothesis to test whether Complexity has a positive influence on the quality of the KMS was not supported and the null hypothesis was not rejected, the researcher found it necessary to explore the construct further using qualitative methods. The relationships of these elements are shown in Figure 6.2.

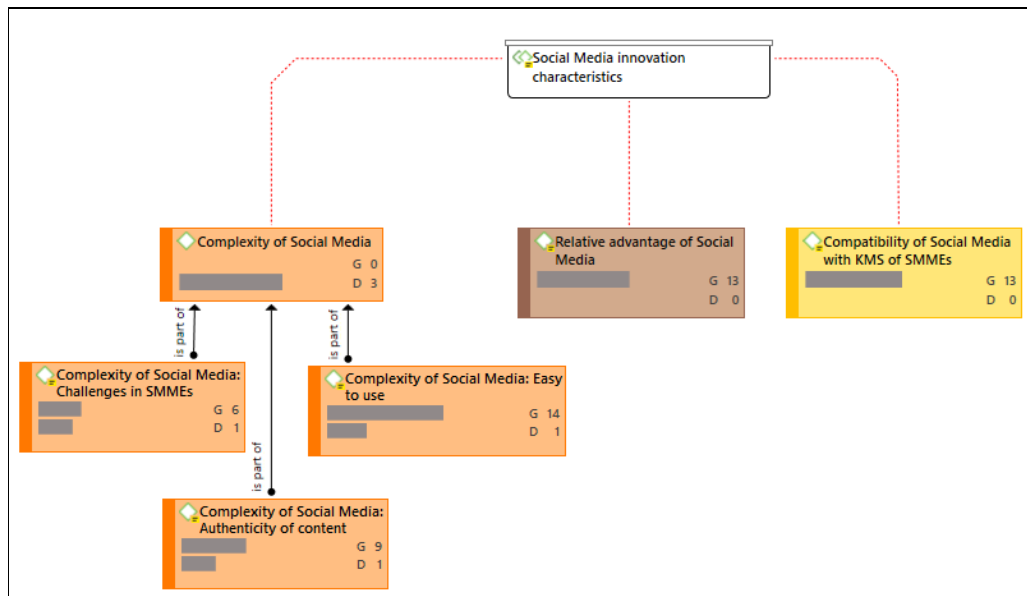


Figure 6.2. Social media innovation characteristics

Figure 6.2 illustrated the relationship between codes that help with understanding social media innovation characteristics that serve as strong motivation for use by SMMEs to enhance their KMS. Starting with Compatibility of social media with KMS of SMMEs, the research participants indicated that there is a direct compatibility between what social media can achieve and the objectives of KMS of SMMEs. Similar view was also shared in the study of Moshā (2017) which discovered that web 2.0 technologies such as social media are compatible with KM processes. The research participants emphasised the importance of social media in their KMS as follows:

'... in the process of that discussion we then use the tools within those online services, yes to either share information, capture it online, then later we then compile it, okay. To make sense of it, but because that's the business we're in in terms of managing data, social media is compatible in that sense' [participant 4]

'Like 60% of our meetings are over Skype and Zoom and then everything else is over the telephone and we are able to meet our service levels with our clients accordingly.'
[participant 8]

In terms of Relative advantage of social media, it became evident from the perspectives of research participants that social media is recent, very affordable, and provides many benefits for enhanced KMS. Several studies (Qi & Chau 2018; Greeven & Williams 2017; Mosha 2017; Rahbi & Abdullah 2017) also share this view by suggesting that social media are innovations that positively transform KMS processes. Thus, social media become ideal for SMMEs and the respondents commented as follows:

'That is the main tool today, probably the main that is easily affordable, okay, especially for us SMMEs. Because if we were to look at someone say why don't you use your, your television or other platforms, but those ones then you need to pay and as an SMME, then you find it difficult to that. So, Social Media becomes the best option in that sense that you can then be able to utilise it, in the manner that it benefits your organisation' [participant 3]

'People are on their phones all the time. Yeah. But so the advantage it gives is you reach your customer where they are. So as opposed to doing a radio advert for educating customers, you don't know whether they are listening or not. Your slot might be in the time that they are not listening to the radio, but social media then allows them at their convenience to still find the content that you want to distribute' [participant 7]

In respect of Complexity of Social Media, the results of the quantitative phase of the study indicated that no significant relationship exists between Complexity of Social Media and KMS of SMMEs. Nevertheless, it was necessary to investigate this relationship even further in the qualitative phase because many similar studies indicate that Complexity has a positive effect on system quality (Lwoga 2013; Al-Shibly 2011; Masrek et al. 2010; and

Petter et al. 2013; Jennex & Olfman 2006). Thus, the code for Complexity of social media was split into three codes, namely, ‘Easy to use’, ‘Challenges in SMMEs’, and ‘Authenticity of content’ to obtain detailed and in-depth information from the perspectives of research participants. A first-order relationship of ‘*is part of*’ in Figure 6.3 indicates how the codes are linked together.

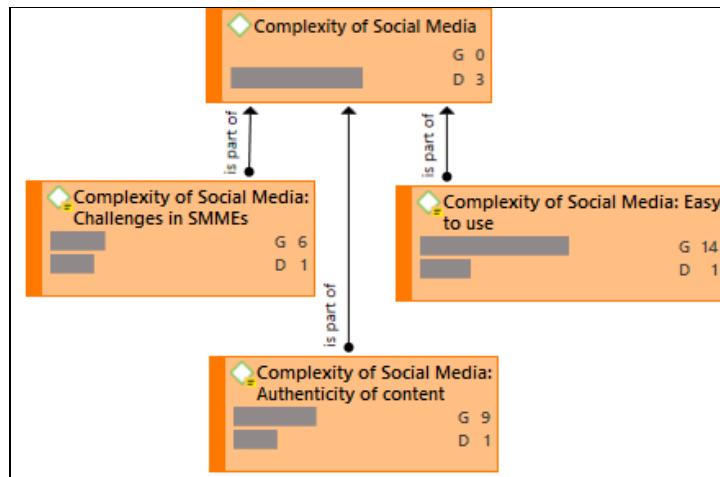


Figure 6.3. First order analysis of Complexity of social media

In terms of the code addressing easy-to-use, social media simplifies the process of knowledge presentation by enabling organisations and their customers to bond connections with knowledge content that is readily available for use (Leonardi & Vaast 2017; Treem & Leornadi 2012). The research participants also shared this view as follows:

‘So it makes it very much easier for you to present to your audience in a simplified manner that people are already accustomed to, as opposed to traditional IT systems which look scary and people don't even understand. There's an arrow going there and graphs that are difficult to understand. But social media doesn't have such complexities’
[participant 2]

‘So using Social Media through the friendship kind of a model, then you easily push one message and then a number of people are able to engaged (sic) with that content’
[participant 3]

The second code that is part of Complexity of Social Media is about the challenges in SMMEs. To make the best use of social media requires some additional costs that SMMEs are not prepared to incur because of their limited finances (Zakaria & Hashim 2016). For example, participants shared these comments:

'The challenge will be for people who may not have the resources to use these channels, for example, we're still talking about the data that is needed, yes the tools might be there if people want to interact with you, but the cost of the data package is a challenge.' [participant 1]

'The money side, you know, you can create reports, but those would be first level reports. So the minute you want to go into intense reporting and analysis, there's licenses involved, then it gets tricky. Okay, then it gets tricky if you're a small business like myself, and then you have to put money into achieving one it's either the license or secondly, the skill. So if maybe the licensing is free, or it's openly accessible, the skill to extract, you have to pay for it. From developers you can do scripting. And so it becomes the cost. That's the one challenge. And then secondly, it's all these laws that come in, one moment you can access the next that changed the law on Information Act of 2019 etc. etc... So that becomes a challenge because you can promise a client something, the next day you can't deliver. So accessibility in terms of not controlling the platforms yourself is a huge challenge' [participant 2]

The authenticity of content put through social media is also a controversial issue. Although participants have generally indicated that social media platforms are easy to use given the right resources, the content is spread through multiple sources and often there is a lack of oversight regarding the authenticity of the content and privacy protection (Xie et al. 2012). The research participants shared these comments as follows:

'I think in the platform it is difficult to find the authenticity of the content that you put there' [participant 3]

'I've got stuff in different social media platforms. Okay. I don't know what to do because I don't have oversight.' [participant 6]

It is clear from the comments above that most participants are not comfortable with the content provided by social media; thus, the provision of social media to simply distribute content is not enough if there is no oversight. The comments almost give a sense that SMMEs use social media to produce knowledge only at a high level, which may not be harmful to the business in any way if the knowledge gets tempered with or the social media platforms no longer serve their purpose in the long run because there are serious issues of authenticity of content and trust associated with social media.

Determinants of Social Media use

The theme relating to the determinants of social media use was developed to understand the factors which decisively affect the nature and outcome of knowledge in the KMS. Elements of the theme were derived from the conceptual model and includes Coordination of knowledge through social media, Social presence of knowledge sources through social media, and Immediate access to knowledge through social media as shown in Figure 6.4:

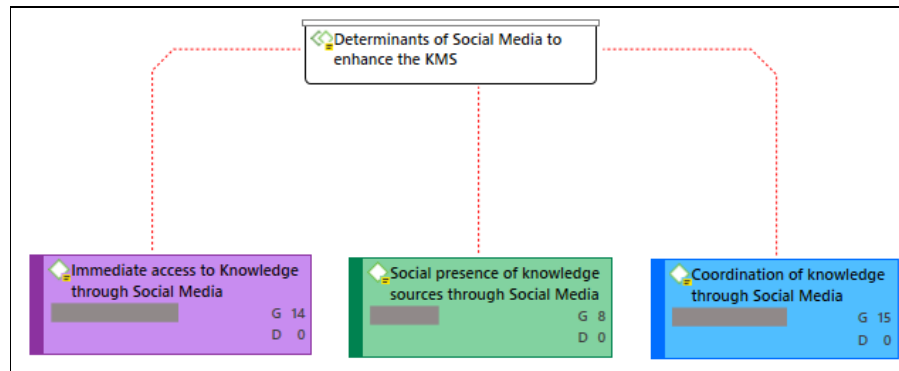


Figure 6.4. Determinants of Social Media use

In terms of Coordination of knowledge through social media, several studies (Moncrief et al. 2015; Hajli 2014; Tsai & Men 2013; Hussain 2012) support the ability of social networking sites to coordinate knowledge activities in areas such as marketing, organisational communication, education, and training. SMMEs prefer to use social media because of its ability to disperse information quickly and reliably, arrange events such as meetings, and organise information in a presentable fashion. Research participants also shared this view as per the following comments:

'Just like this interview, there is not a lot that needs to be done. We just need to be available at one time and then we are communicating and it just speeds up a lot of processes in between' [participant 5]

'But we as SMMEs use an opportunity to use social media to gather the information quickly' [participant 9]

In terms of Social presence, Kietzmann et al. (2011) asserts that social media provides people with the ability to locate others and engage on matters of interest. This view was also shared by research participants who added that the presence of knowledge sources on social media platforms allows their SMMEs to identify available sources of interest in order to build networks and hold live conversations and acquire knowledge at the time that is needed. The participants expressed this view in the following comments:

'So in the case where we lack skillsets or expertise, you find a lot of other micro-companies who are competing with you on these social media spaces. So you approach them, it's easier for them to actually locate them because they are also there. So you find each other and it's easier to now initiate conversations and to share information and even to outsource each other for things that you lack. Okay, so we've been relying heavily on that and that's how we've actually built our network to this point' [participant 9]

'...we actually rely on those connections. So it's very, very important. So the connectivity of likeminded people draws you closer to understanding what the needs of these people are. And people always follow or are followed by likeminded people. So we rely on those connections heavily. Then we can create networks and webs easy. So the connections make it easier for you to even cluster people easily and then you can segment them nicely. You know, I do love it when people connect' [participant 12]

Although the results of the quantitative phase revealed that Social presence do not influence the KMS in a positive way (*cf* Table 5.42), the qualitative interviews contradict this finding. Research participants indicated that the social presence function of social media is influential to how social media enhance their KMS. One participant expressed this view in the following comment:

'So we have scenario planning for all these, like in this scenario, this one is going to start work at eight, which means they are (sic) online between six and eight. And that's human behaviour. They'll be saying things like 'it's not me on social media, I don't like social media, blablabla', I mean, they actually do it. They check their WhatsApp, they forward videos. They check Twitter, you can see they viewed it. Yeah, they 'like', even if they did tweet for five minutes, they've done it.' [participant 2]

Social networking sites like Facebook and WhatsApp as well as blogs/microblogs like Twitter assist in providing information instantly (Ngai et al. 2015). As such, immediate access to knowledge through social media is guaranteed. Research participants also added that their SMMEs rely on these social networking sites and blogs/microblogs to retain customers and provide instant feedback to keep their customers up-to-date. They expressed their views in the following comments:

'Well the effectiveness is the instant, that reach that one can have. So you have a high number of people on social media that you can reach instantly, so that you can clarify issues as quickly as possible...' [participant 1]

'Our customers prefer instant messaging. It's convenient for them, but it's inconvenient for us. Because the pattern that you then see is because the messaging tool is sort of a personal tool, the engagement with the customer then becomes personalised'
[participant 7]

'I would say the knowledge is accessible, you know, the fact that those social media platform (sic) has got a number of people, a lot of people that you can provide information to with one post and you can be able to access those millions of people and so forth' [participant 13]

SMME support activities influencing the use of Social Media

SMME support activities influencing the use of social media were investigated to understand the impact they have on the KMS. The theme provides some interesting insights regarding the technical and organisational infrastructure that exists to facilitate the

use of social media in SMME environments. Because social media are arguably new, SMMEs are influenced to adopt and use the platforms so that they don't get left behind. Therefore, the elements of the current theme include 'Social influence of using social media to enhance KMS', and 'Facilitating conditions of using social media to enhance KMS' as shown in Figure 6.5:

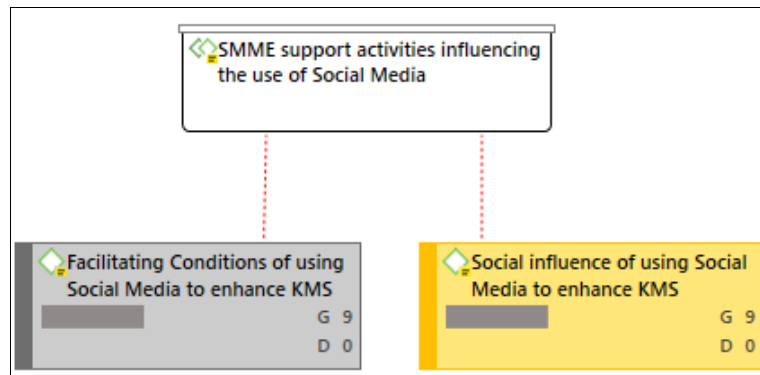


Figure 6.5. SMME support activities influencing the use of Social Media

The Social influence of using social media comes mainly from customers and competitors of SMMEs (Baird & Parasnis 2013). The relationship between Social influences and KMS was rejected in the qualitative phase of the study. However, a qualitative investigation of the impact of Social influence on KMS revealed contradicting findings. The new era of ICT requires companies to automate and integrate as much business processes as possible to attract new clients and retain existing ones (Sun et al. 2019). SMMEs are influenced by these developments to use social media to reach even bigger pools of customer segments. This is confirmed by the research participants in the following statements:

'We actually check where the market is going. So the market includes the influence from the users, the beneficiaries and the clients' [participant 2]

'... look, a lot is to do with the clients. There are some, where social media is, I know they would not communicate any other way. But through formal email channels, but then there are those who if you send them an email, it will take two days to get a response, but if you send them a WhatsApp message, its (sic) instant' [participant 4]

'I think more influence is from our customers, since we are in the space of selling technology solutions, we find ourselves following the direction of the customers.'

We would not introduce a technology that is not popular or that is not known by our target market. So yes the influence is from our customers mainly' [participant 10]

Facilitating conditions of using social media in the SMME environment also play a crucial role in ensuring that social media can enhance the KMS (Gruzd et al. 2012; Chang 2012). In the Gauteng province, where the sampled participants are based, there are no issues of internet connectivity (ITWEB 2019). As a result, internet service providers offer a variety of service offerings to ensure that SMMEs remain connected. The research participants also shared this view and explained how facilitating conditions of using social media to enhance KMS per the following comments:

'The platforms can work anywhere. We've been actually doing that with the last six members that are left of the past group last year, we actually working remotely even now and still launching projects. I am piping clients, I give them the project backlogs. Okay, yes, we push work even within a shorter period of time' [participant 5]

'We have in Hatfield a 100Mbps pipe into the building. Here we have a fibre link into the building through [Company x] being filled with just on savings. And we has (sic) good bandwidth to facilitate social media' [participant 6]

Impact of Social Media on KMS Success factors

The theme was created to group all codes relating to quality factors that influence the successful adoption of KMS. The theme provided very interesting insights regarding the impact of social media on KMS success factors. Elements of the theme included codes derived from the conceptual model of the study such as System quality of KMS through social media, Knowledge quality of KMS through social media, Service quality of KMS through social media, User satisfaction of SMMEs when social media are used to enhance the KMS, SMMEs intention to continue using social media to enhance KMS, and Net Benefits of using social media to enhance KMS as shown in Figure 6.6:

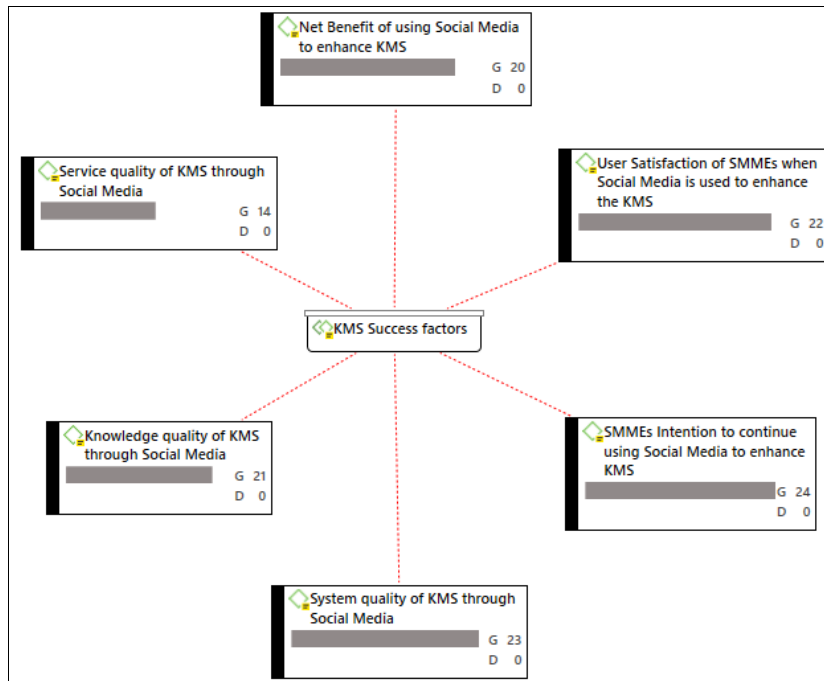


Figure 6.6. Impact of social media on KMS Success factors

Social media has the potential to execute KMS processes much quicker and accurately through socialisation and networking capabilities (Helms et al. 2017). The knowledge is presented in a more personalised and simplified manner. Research participants also shared this view by stating that social media presents knowledge in a manner that their SMMEs and customers are accustomed to. As a result, System quality of the KMS is improved (Lwoga 2013). This was explained by the participants as follows:

‘The other form of compatibility is that we have this tool that allows us to schedule content on different platforms at the same time’ [participant 7]

‘Well, the advantage is that there's minimum physical interaction from us. Okay, so everything is just done remotely over the phone as long as you have an internet connection we are good to go’ [participant 9]

At the same time, research participants explained that knowledge presented by social media is immediately available when needed. When the knowledge is made available to the right user at the right time, Knowledge quality of the KMS is enhanced (Masrek et al. 2010). The research participants expressed this view in the following comments:

'Well, we've got to sort of ah, if you want pre-qualified sources, I'll give an example. The World Economic Forum. Yeah, they've got a social feed that they have, which we know, by virtue of the fact that they are a global body, they do a thorough better job in terms of triangulating their own information. So those are the kinds of sources we go to. We might go for instance, to get sources from the World Bank, okay. We would typically not go to a newspaper to get information!' [participant 4]

'So I can say yes, it's accessible, okay, it's on the cellphone. So we know customers use their cellphones for emails, and for social media' [participant 7]

Regarding Service quality of the KMS in SMMEs, several studies (Zakaria & Hashim 2016; Berends et al. 2014) suggest that the flexible management style of SMMEs coupled with low levels of bureaucracy are motives for using social media. These motives can result in the Service quality of the KMS being improved. This view was shared by research participants who added that their SMMEs leverage from social media to conduct KMS processes remotely because social media are interoperable digital platforms that are accessible from most parts of the country where there is internet connectivity. The research participants shared these sentiments in the following comments:

'It's just time. Currently that's what everything is on, Digital. Everything is digital. It's not like you're building a house, hahaha. We are providing solutions to people using IT, and IT is evolving you know, it's the nature of the business today' [participant 8]

'I would also say as well that in terms of knowledge management, all of these platforms they are interchangeable, even now the Facebook guys they brought in everyone else, except for Twitter and Telegram. Except for Twitter and telegram, Facebook if you have a Facebook account, you can access Instagram, you can access Facebook, you can access WhatsApp. So they've made it easy on the technical side as well, in terms of plugins and embedding, and so on the technical side, they're basically the same thing. So when you have one, you have the other, and that become (sic) a huge advantage of social media platforms' [participant 11]

In terms of User satisfaction of SMMEs when social media is used to enhance the KMS, the results of the quantitative phase indicate that User satisfaction is positively influenced by Knowledge quality. These were in line with other IS-related studies such as Masrek et al. (2010); Wu & Wang (2006); Rai, Lang & Welker(2002). However, the results also indicated that user satisfaction was negatively influenced by system quality and service quality. Further investigation of these relationships in the qualitative phase revealed that overall participants are satisfied with using social media to enhance KMS of their SMMEs. This was found to be a contradiction between the results of the two studies. Clearly, the contradiction stems from the notion that social media is mostly used to support the KMS and not so much to replace it within SMMEs. As such, social media serves only as a supporting tool within SMMEs as indicated in the following comments:

'... it could be a feed to get us interested, but we then go beyond it, even if our sources could literally be coming from that feed' [participant 4]

'But nowadays, people use social media for business, purchase businesses, gather information, collaboration, and building relationship. You can use it as tools for different purpose. They're not the only tools in the toolbox. So, It's all about tools' [participant 6]

'Social media becomes a tool of gathering information. So they become an input first for gathering information. And then you still need your ICT tools such as SharePoint to process that information and extract what you want and then create those knowledge management systems. Then you use the same social media for output' [participant 10]

Participants also expressed their intention to continue using social media to enhance the KMS of their SMMEs. The results of the quantitative phase show a negative influence of knowledge quality but a positive influence of system quality and service quality on Intention to use. However, the investigation of these relationships in the qualitative phase revealed contradictory results as the participants indicated that they intend to continue using social media because it is where they attract customers and obtain tracing statistics of who is interested in their products and services but minimal effort will be put on improving the knowledge quality of their KMS as per the following comments:

'So, the movement on interactions has moved totally to social media. So we can't ignore' [participant 2]

'... we'll keep on learning and we might source relevant information from the social media platform that can then be able to help us' [participant 3]

'But in our business, because we need to communicate with a wide range of distributed sort of people, we will definitely continue to use it, but in a very managed way' [participant 4]

'Yes, almost all the time. We rely on social media a lot' [participant 5]

'I've seen it many times over 30 years of working on the IT game, the modern wave is very easy to try and subdues the old way' [participant 6]

Net benefit of using social media to enhance the KMS of SMMEs was found to be highly influenced by Intention to use in the quantitative phase and not so much by user satisfaction. The results almost give a sense that SMMEs generally intend to use social media to support the KMS and not so much to replace it in future. These findings are linked to the results of the qualitative phase which indicate that, although social media provides knowledge instantly and are easy to use, there is an issue with the authenticity of the knowledge as well as trust issues associated with some of the knowledge sources as per the following comments:

'I think in the platform it is difficult to find the authenticity of the content that you put there, okay? Or the content that is in there how authentic it is?' [participant 3]

'Issues of trust are the biggest challenge with social media' [participant 8]

'But to validate the information that is on social media is not an easy task at all, which means that if we are not knowledgeable in that space, sometimes we might end up using the information that really is not authentic' [participant 13]

Social Media evaluation methods in SMMEs

The theme was created to understand the methods used by SMMEs in guiding their efforts of evaluating the effectiveness of social media to enhance KMS. Only inductive codes were used to create the theme so as to get an in-depth understanding of the methods and how they work for SMMEs. The theme provides very interesting background information in terms of processes and tools that are used by SMMEs to evaluate social media's activities of enhancing KMS. The elements of the theme include 'Processes of evaluating social media in SMMEs' and 'Tools of evaluating social media in SMMEs'. The relationships of these elements are shown in Figure 6.7.

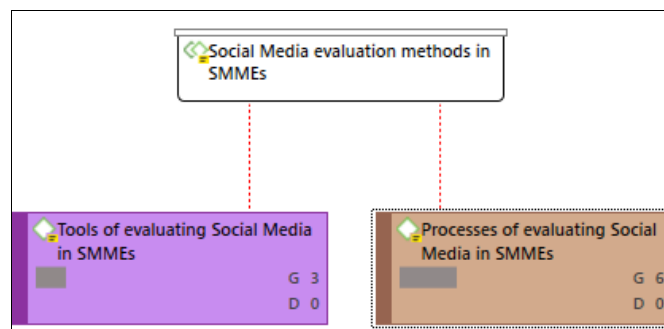


Figure 6.7. Social Media evaluation methods in SMMEs

Generally, there is a lack of processes or tools of evaluating social media in SMMEs (McCann & Barlow 2015; Divol et al. 2012). However, research participants indicated that it is important for SMMEs to understand the statistics around the number of followers they have as a measure of social media. These views were stated in the following comments:

'one can measure by viewing the followership and the responses that you're getting and the interaction with people that fall in. That gives you an indication of people following you and interacting with you' [participant 1]

'Yeah, there is a process that we follow. We try out our hypotheses in real life and then verify like, Okay, this is not working because we get assumptions from ourselves and also pushed by the client. So the client could say, it's a request, I want a social media campaign on YouTube. Okay. And then the customer segment is actually people in townships or rural areas who don't have data available to actually download youtube videos, or even stream or view YouTube videos. Yeah. So sometimes when you tell a

client they don't understand. So you have to take them through the systems, then they will have to see themselves. So through the knowledge management system, you can tell them like, you can check on this aspect of your performance, how are you performing, which platform and what's happened then they can see on YouTube, there's about 20 views, it's not working. Then they can see for themselves, it assists in that the data will speak for itself.' [participant 2]

Although several studies (Sánchez-Gálvez et al. 2019; Sołtysik-Piorunkiewicz 2015; Fernández-Luna 2015; Antunes et al. 2012; Vizcaíno et al. 2005) suggest tools for evaluating collaborative systems, the research participants indicated that they do not have specific tools that are formalised to evaluate the effectiveness of social media in their SMMEs, other than relying on the statistical data obtained within the platforms themselves as stated in the following comments:

'No, not at all. I'd say it's more a heuristic kind of decision to say, is it working or not? We don't really have a tool to track' [participant 4]

'the social media platforms already have some analysis tools for you to actually see how much coverage you get in how many likes and when people are actually interacting with your posts and so on' [participant 5]

'I'm not sure on the formalised tool that exists in the market yet' [participant 13]

Challenges experienced with the evaluation of Social Media

The theme was created to understand the challenges with the identified methods used by SMMEs in guiding their efforts of evaluating the effectiveness of social media to enhance KMS. One code derived inductively was used to create the theme for understanding the challenges experienced by SMMEs in the evaluation of social media. The code was also named 'Challenges with evaluating social media' and provided very interesting information that assisted in the development of the model proposed in this study. The theme is shown in Figure 6.8:

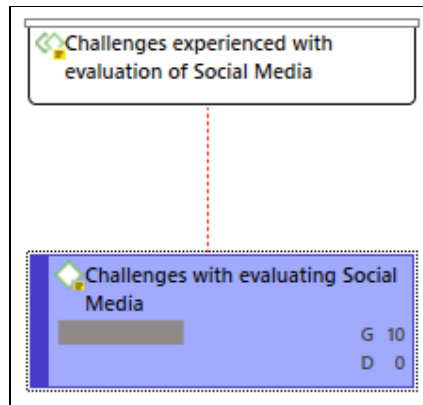


Figure 6.8. Challenges experienced with evaluation of social media

Typically, it is very difficult to evaluate social media in SMMEs, hence there is a scarcity of processes, tools or methods that can easily be accessible (McCann & Barlow 2015; Divol et al. 2012). However, several attempts are being made within the SMME environment to ensure that the efforts of using social media are not ignored in the greater scheme of business strategies. The research participants explained their efforts and the challenges experienced with evaluating social media in the following comments:

'It's a bit difficult for us for now, okay, to really test if social media really is that effective, okay. But also, especially if you use it for customer base and so forth, especially if you're an SMME in South Africa it is difficult to start to go even outside and so forth and all that. So you will first want to create some base that will keep you going as then you start to be able to even sell outside the country and most people from outside the country find that they're looking for a particular product or they want somebody that has got history in the market and so forth. So as SMMEs you find that we don't have that' [participant 3]

'If you're running your finances on a cloud-based platform, because is (sic) cheap, how do you know that Data is not being shared illegally? How do you know about that size not going to get captured?' [participant 6]

To evaluate social media is undeniably a challenge for SMMEs. The research sought to investigate how SMMEs would prefer to evaluate social media when specifically used to

enhance their KMS. This leads to the creation of a theme called ‘Suggested approaches for evaluating social media in SMMEs’ of which the findings are discussed next.

Suggested approaches for evaluating Social Media in SMMEs

The theme was created to understand what SMMEs are suggesting as processes or activities which could guide them to effectively evaluate social media as they continue to use it to enhance their KMS. The theme brought some interesting information to guide the efforts of an evaluation model as suggested in the current study. Only one code, which was developed inductively, was used to create the theme so that the research could base the foundation of the model on the perceptions of SMME owners and managers. The code was also named ‘Suggested approaches for evaluating social media in SMMEs’ as shown in Figure 6.9:

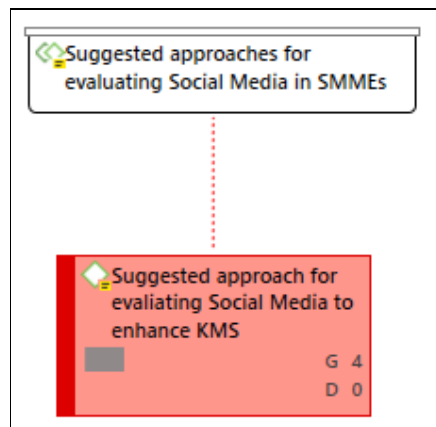


Figure 6.9. Suggested approaches for evaluating social media in SMMEs

The suggested model should include tracking the sources of data that would have been used for decision-making. This means that the knowledge quality should have details of the sources of data to assist with the authenticity of the data as well. This was expressed by a participant in the following comments:

‘Yeah, we need to do it. Because after some time, someone we’ve done work for before could asked us to so. In the work that you’ve done before, what was the use of this kind of tool and so forth and we cannot give them a quantified sort of answer because we were not

set up to do it. But it's one of those areas that we know we need to improve on' [participant 4]

Another suggestion is to target specific segments of the population to receive distinct knowledge. This could assist in identifying targeted recipients of knowledge and evaluating whether social media is effective in delivering content as it was intended by the recipients as stated in the following comments:

'... how to target the specific people, that your message go (sic) to, if it's an SMME on a particular service, you can be able now to start a segment and target within those platforms so that your message is directly targeted, that will respond to your consumption of your product or service. Other than just going up all over so you can be able to target around people that can specifically respond to you (sic) product or service' [participant 1]

'Yeah, I think in there what is critical in that space would be to easily identify people that would be of interest to your training, okay. That is important for us because, one, what we need to do is then Okay, fine. I'm providing this service but how to identify people that I need in this platform. And then once we're able to say, these are the kind of people that I can then be able to share my content with, then from there, you can customize your content, either your way of engaging those people and so forth and so forth' [participant 3]

Conducting the qualitative phase of the study based on the thematical analysis process revealed that SMMEs are generally using social media platforms such as Facebook, WhatsApp, Twitter, Skype and Zoom to enhance their KMS because the platforms are affordable for them and offer great opportunities to even attract larger segments of potential customers to remain sustainable. Although there are still issues with verifications of the authenticity of knowledge being processed through social media, generally KMS process are achieved very quickly and accurately through social media platforms. Furthermore, while there is a lack of formalised best practices for evaluating the effectiveness of social media, sampled participants indicated the intention of their SMMEs to continue using social media as a tool to enhance KMS processes. This could be an

indication that should a model be developed, tested and validated, SMMEs will adopt and use it to evaluate the effectiveness of social media.

6.6. Chapter summary

This chapter presented the data analysis and results of the qualitative phase of the study. The chapter provided some important insights through in-depth explanations of the findings of the quantitative phase in Chapter Five. Furthermore, the chapter presented the context through which the research objectives and questions were addressed qualitatively using thematic analysis. The chapter specifically focused on presenting details of how participants and their respective SMMEs were profiled, the interview protocol followed, interview schedule, and how the issue of research rigour was addressed. Subsequently, the chapter discussed how the findings of the qualitative phase were presented using a thematic analysis process. The next chapter presents the interpretation of both quantitative and qualitative findings as a response to the research questions.

CHAPTER SEVEN:

Interpretation of results and discussions

7.0. Introduction

Chapters Five and Six presented the findings of both phases of the current study's explanatory sequential mixed methods respectively. In this chapter, both findings are contrasted and interpreted in relation to the study's research objectives. The primary objective is to **develop and propose a model for evaluating the effectiveness of Social Media on KMS for SMMEs in South Africa**. Specific objectives were included as follows:

- a) To investigate how SMMEs in South Africa use social media to enhance their KMS.
- b) To identify factors influencing the use of social media to enhance KMS of SMMEs in South Africa.
- c) To assess the significance of the identified factors in the evaluation of social media to enhance KMS of SMMEs.
- d) To identify the current methods used by SMMEs in South Africa to evaluate the effectiveness of social media on KMS.
- e) To identify the challenges experienced with the current methods of evaluating the effectiveness of social media in KMS of SMMEs in South Africa.
- f) To suggest a model that can be used by SMMEs in South Africa to evaluate the effectiveness of social media on KMS

Four main sections are discussed after the introduction section to present the content of this chapter. Section 7.1 explains how the results of the study were integrated, section 7.2 discusses the interpretation of results relating to the research objectives, section 7.3

presents a comprehensive social media evaluation model developed in this study, and lastly section 7.4 concludes and summarises the chapter.

7.1. Integrating quantitative and qualitative results

As discussed in the methodology chapter (*cf* Chapter Four), the explanatory sequential mixed-method studies are conducted in such a way that the outcomes of quantitative enquiries are explained further using qualitative enquiries to present the final results of the study. The current study followed a similar approach by conducting a qualitative enquiry in the second phase of the study to provide more depth and understanding to the initial results produced by the quantitative enquiry in phase one of the study and reveals the perception of SMME owners and managers concerning the effectiveness of social media on the KMS of their organisations. Thus, the results of both phases of the study were important to guide the researcher to develop a model to evaluate the effectiveness of social media to enhance the KMS of SMMEs. The next section presents the interpretation of the results of both enquiries in the study per the objectives of the study.

7.2. Addressing the research objectives

As noted in section 7.1, the research objectives were used as themes guiding the interpretation of the findings, synthesised with the literature.

7.2.1. OBJECTIVE 1: To investigate how SMMEs in South Africa use Social Media to enhance their KMS

This objective was addressed by exploring the literature of the impact of social media on the KMS in Chapter Two (section 2.5.2). The literature indicated that social media are highly collaborative in nature, allowing for organisations to exchange knowledge and improve their sustainability through socialisation and networking functions (Greeven & Williams 2017). It was also discovered that social media adds networking and collaboration capabilities as advanced processes to enhance the KMS (Effing & Spil 2016; Ogbuji & Papazafeiropoulou 2016). This means that the social media allows SMMEs to achieve the KMS processes of knowledge creation, retrieval, storage and distribution

through collaboration and networking activities. This brings a new interesting finding to towards the explanation of how SMMEs use social media to enhance their KMS.

The follow-up interviews were held in the qualitative phase of the study to understand how SMMEs use social media from the perspectives of SMME owners and managers. The results were analysed thematically in Chapter Six (section 6.5). The outcome of thematic analysis provided very insightful information by linking specific KMS processes to social media platforms that are commonly used and preferred by SMMEs. It was discovered that SMMEs mostly use social media to connect with knowledge sources and build relationships. There are no procedures or policies governing the use of social media in the SMME.

Furthermore, the results of the study indicated that social media platforms are affordable for SMMEs to use as tools for presenting knowledge about their products and services in a simplified manner to specific customer segments. SMMEs are free to choose social media platforms that enables them to do business. Helms et al. (2017) assert that social media platforms do not require users to have advanced technical skills for implementation or maintenance because the platforms are often readily available as Software-as-a-Service (SaaS). As such, it can be concluded that SMMEs enhance their KMS by linking specific KMS processes to social media platforms that they deem suitable for their business.

7.2.2. OBJECTIVE 2: To identify factors influencing the use of Social Media to enhance KMS of SMMEs in South Africa.

In Chapter Three (Section 3.1), the factors that influence social media usage to enhance KMS of SMMEs were identified from the literature of the DOI theory (Rogers 2003), UGT theory (Lee & Ma 2012), the UTAUT2 theory (Venkatesh et al. 2012), and the KM success model (Jennex & Olfman 2006) to answer the research question (*cf* Chapter Three). These factors were put into categories and analysed in Chapter Five.

Three factors such as compatibility, complexity, and relative advantage, were identified from the literature of DOI theory and categorised as social media characteristics in the developed model of the study; three factors such as social presence, immediate access, and coordination, were identified from the literature of UGT theory and categorised, in the

model, as determinants of social media use; two factors such as facilitating conditions and social influences, were identified from the literature of UTAUT2 theory and categorised, in the model, as SMME support activities; and lastly five factors such as knowledge quality, system quality, service quality, user satisfaction, and intention to use/perceived benefit, were identified from the literature of KM success model and categorised as KMS Success factors in the developed model (*cf* Chapter Three).

7.2.3. OBJECTIVE 3: To assess the significance of the identified factors in the evaluation of Social Media to enhance the KMS of SMMEs.

A list of hypotheses were derived to determine the significant relationships between the identified factors of the model in Chapter three (section 3.4). In phase one of the study, Chapter Five (section 5.4.9), the hypothesised relationships between constructs of the model were tested using SEM to derive a structural model that confirmed the significance of the identified factors in the evaluation of social media to enhance the KMS of SMMEs. Summarised results of SEM are shown in table 5.41 (*cf* section 5.4.13). Phase two of the study in Chapter Six explains the results of the SEM through face-to-face interviews with SMME owners and managers to provide indepth understanding of the model. The model comprised of factors in four quadrants, namely; social media characteristics, determinants of social media use, SMME support activities, and KMS success factors.

Social Media characteristics

Factors such as compatibility, complexity, and relative advantage were hypothesized as social media characteristics that positively influence the system quality of the KMS. The results of both phases of the study are interpreted as follows:

H1: Compatibility of social media positively influences System Quality of KMS in SMMEs.

Compatibility is associated with the possibility of two independent objects being able to co-exist and achieve a common goal. Henderson (2017) adds that social media should co-exist with current organisational beliefs, values, experiences and practices. In this study, compatibility was hypothesized as having a positive influence on the system quality of the KMS. The hypothesis was motivated by the assumption of related studies that confirmed

the importance of compatibility in influencing the system quality of the KMS. For example, Bradley & McDonald (2011a) concluded that social media platforms are compatible with the KMS because they meet all the technical and social requirements of the KMS.

The results of the SEM in Chapter Five (*cf* section 5.4.12) indicated that compatibility of social media has a significantly negative influence on the KMS of SMMEs. This result was unexpected in this study because the intensity of compatibility was found to increase the quality of the KMS in previous IS-related studies (Odoom et al. 2017; Moore & Benbasat 1991). In Chapter Six (section 6.5.3.2), the results of the qualitative phase indicated a direct compatibility between the capabilities of social media and the KMS processes of SMMEs. To some extent, the participants indicated the danger of using social media very informally in SMMEs, by not verifying the authenticity of knowledge sources, which could result in a negative influence on the KMS.

The outcomes of both enquiries indicate important implications for SMMEs to identify social media platforms that are compatible with their culture and norms to contribute positively to the KMS. It is important for SMMEs to verify the authenticity of the knowledge that is sourced by social media to improve the quality of the KMS. As such compatibility is a significant factors in the evaluation model of social media on the KMS of SMMEs.

H2: Complexity of social media positively influences System Quality of KMS in SMMEs.

Complexity of technology refers to the ease of use, time-saving, easy to understand, and the accessibility of that specific technology (Gangwar, Date & Ramaswamy 2015). In the current study, the hypothesis for investigating the relationship between the complexity of social media and the system quality of the KMS was not supported. The results of SEM in Chapter Five (*cf* section 5.4.12) indicated that the complexity of social media does not any influence on the KMS of SMMEs. The result was unexpected because it contradicts the findings of previous related studies which confirmed positive relationships between the complexity of social media and the system quality of the KMS (Lwoga 2013; Al-Shibly 2011; Masrek et al. 2010; and Petter et al. 2013; Jennex & Olfman 2006). The result also

provide a new insight into the relationship between complexity of social media and the KMS of SMMEs that calls for further investigation.

In Chapter Six, the results of the qualitative phase (*cf* section 6.5.3) provided more depth by addressing specific aspects of social media's complexity such as ease of use – indicating that social media are readily available for use and present knowledge in a simplified; challenges in SMMEs – indicating that social media are mostly used on a personal level and SMMEs do not have the oversight on the content that is spread on social media platforms; and authenticity of content – indicating that it is difficult for SMMEs to authenticate content that is distributed over the platforms. SMMEs decide to adopt and use new technology based on its complexity to help them achieve their goals. If the technology is not easy to use and difficult to understand, the chances of it being adopted and used in SMMEs are very little.

The outcome of both the quantitative and qualitative enquiries suggest that the complexities associated with social media such as its ease of use, challenges experience by SMMEs with the use of social media, and the authenticity of knowledge produced by social media, are the contributing factors towards the lack of formalised methods that SMMEs can use to evaluate the effectiveness of social media on the KMS. As such complexity is an insignificant factors in the evaluation model of social media on the KMS of SMMEs.

H3: Relative advantage of social media positively influences System Quality of KMS in SMMEs.

Social media have become very attractive as preferred platforms for networking and collaboration for personal and business use (Effing & Spil 2016; Ogbuji & Papazafeiropoulou 2016). In the SMME environment, the degree of attractiveness of social media has become its relative advantage over traditional methods of knowledge exchange and networking. The results of the quantitative phase indicated that the relative advantage of social media has a positive influence on the quality of the KMS.

The results were further explained in the qualitative phase, findings of which indicated the important influence that the relative advantage of social media has on the quality of the

KMS. The results also indicated that social media are recent and very affordable innovations that subdue traditional methods and allow SMMEs to access market segments that would otherwise not be possible for them to reach. This means that the relative advantage of social media is realized when they are used to enhance existing methods by speeding up the process of delivering content quickly and reliably.

The results of both qualitative and quantitative enquiries suggest that the relative advantage make social media platforms much more relevant for SMMEs to enhance the KMS and to achieve a sustainable competitive advantage. As such relative advantage is a significant factors in the evaluation of social media on the KMS of SMMEs.

Determinants of Social Media use

Factors identified as determinants of social media use, such as social presence, immediate access, and coordination were tested for their influence the knowledge quality of the KMS. The results of both phases of the study are interpreted as follows:

H4: Coordination of social media positively influences Knowledge Quality of KMS in SMMEs.

The ability of social media to coordinate activities such as exchange of knowledge, arrangement of meetings, distribution of content, and reaching people in different geographical locations (Kietzmann et al. 2011) allows it to be attractive to SMMEs. The SEM results in the quantitative phase indicated that hypothesis to examine the relationship between the coordination of social media and knowledge quality of the KMS was supported. This means that social media's ability to coordinate knowledge processes contributes positively in the SMME context. The results were also corroborated in the follow-up qualitative phase, indicating that social media helps SMMEs to find knowledge that is needed and present it to the audience in a simplified manner. This means that SMMEs use social media because of how quickly and reliably the information gets dispersed, meetings get arranged, and information gets organised in a more presentable fashion.

The results of both enquiries suggest that social media's coordination function bring insightful information on the important role that the coordination function plays in the evaluation of the effectiveness of social media on KMS of SMMEs. As such coordination is a significant factors in the evaluation model of social media on the KMS of SMMEs.

***H5:** Immediate Access of social media positively influences knowledge quality of KMS in SMMEs.*

The ability of social media to provide immediate access to knowledge is essential for keeping stakeholders up to date in SMMEs. Kietzmann et al. (2011) assert that social media derives its strength from being able to attract people and 'feed' them real and intimate knowledge that is immediately accessible. The hypothesis for examining the significance of the relationship between immediate access capability of social media and knowledge quality of the KMS was found to be significantly negative. The results of the study brings new insight to understand the relationship between social media's immediate access function to access knowledge instantly and quality of knowledge produced in the process.

The follow-up qualitative phase revealed that there is an abundance of inauthentic information that is sourced by social media. Moreover, knowledge that is sources by social media in SMMEs is instant but is mostly used to report on high level statistics about the issues being studied. For instance, statistical information about the followers of their brands and analysis of developing trends. These results mean that SMMEs use social media for its ability to access information instantly, but they do not necessarily depend on that information to generate meaningful knowledge. This finding is interesting because it also indicates the importance of social media in the knowledge creation and sharing processes of the KMS of SMMEs.

The outcomes of both enquiries of the study suggest that the effectiveness of social media can be measured not so much by the quality of knowledge it produces to the KMS but mostly by its ability to access information quickly and being able to locate and share knowledge with a multitude of people at the same time. Hence, immediate access function of social media was found to have a negative influence on knowledge quality of the KMS.

Nevertheless, the inclusion of immediate access in a model for evaluating the effectiveness of social media on the KMS of SMMEs is a significant factor.

***H6:** Social Presence of social media positively influences Knowledge Quality of KMS in SMMEs.*

The ability for people to check and be aware of the availability of others on a social media platform is an important measure of social media's effectiveness. Identity management, including tools that promote data privacy controls and enable users to promote their activities on the platform, are some of the capabilities of social media that improve user gratification for the continuance of use (Weisberg et al. 2011). In this study, the hypothesis for examining the significance of the relationship between the social presence capability of social media and the knowledge quality of the KMS was not found to be insignificantly negative and not supported.

The results of the follow-up qualitative study indicated that SMMEs rely on networks built on social media to identify and locate sources of knowledge. SMMEs can track the availability of knowledge sources and immediately hold live conversations directly on platforms. However, the conversations tend to be personalised because of the nature of social media platforms. Moreover, it is difficult for SMMEs to trust the knowledge produced on social media because the sources are not mandated by any law or policy to produce authentic knowledge.

The outcomes of both enquiries suggest social media is effective only when used to locate sources of knowledge. However, social media is unable to authenticate the sources in order to contribute positively to the KMS. The results have implications of SMMEs to ensure that trust is built with knowledge sources because trust can be a major hindrance to knowledge exchange in SMMEs. As such social presence is an insignificant factors in the evaluation of social media on the KMS of SMMEs.

SMME Support activities

Factors identified as SMME support activities such as facilitating conditions and social influences are studied to influence people's behaviour in using social media (Venkatesh et

al. 2012; Venkatesh et al. 2003). The factors were hypothesised to examine their relationship with the service quality of the KMS and the results of which are interpreted as follows:

H7: Facilitating conditions of social media positively influences Service Quality of KMS in SMMEs.

Facilitating conditions of social media are associated with enablers for using social media in the SMME. Venkatesh et al. (2012) assert that organisational infrastructure, technical infrastructure, money, time, and commitment from organisation leaders are all facilitating conditions that promote the use of technology in organisations. In this study, the support from service providers, including the environment that enables social media usage in SMMEs, are hypothesised as facilitating conditions that positively influence the service quality of the KMS. The results of the quantitative phase of the study showed a statistically significant positive relationship between facilitating conditions of social media and service quality of the KMS in SMMEs. This means that SMMEs provide for environments that are allow for social media to effectively enhance in the KMS processes. This result was also evident in the qualitative phase of the study.

The sampled SMMEs of the study are in the Gauteng province which is regarded as the economic hub of South Africa where major industries are found to operate (SEDA 2018). The province has the highest population coverage of internet coverage in the country (ITWEB 2019). The results of the qualitative study indicated that the flexible management style of SMMEs coupled with the technical infrastructure in the province, are the biggest enablers of using social media to enhance the KMS of SMMEs.

The overall findings presented in both phases of the study suggest that facilitating conditions of enabling social media usage contribute positively in the efforts of evaluating the effectiveness of social media on KMS of SMMEs. The results of the study provides new insight by suggesting the SMMEs in Gauteng needs to leverage on the internet coverarage of the area to use social media platforms in their KMS. Thus, facilitating conditions is a significant factor in the evaluation of social media on the KMS of SMMEs.

H8: Social Influence of social media positively influences Service Quality of KMS in SMMEs.

Social influence has been studied to create a platform for understanding the spread of sustainable practices among communities (Goldsmith & Goldsmith 2011). The influence of social communication is a big part of social media. However, the hypothesis to determine the relationship between social influence of social media and service quality of the KMS was removed from the model of this study because its inclusion resulting in the model being a poor fit of the data. This results means that social influences should never be considered in the evaluation of the effectiveness of social media on the KMS of SMMEs.

Further investigation using qualitative methods revealed conflicting results. It was discovered that SMMEs get a lot of influence from clients and competitors regarding the types of social media platforms to use. There are specific social media platforms used for specific target groups. For example, in cases where they provide products and services to millennials, they often use WhatsApp, Facebook, Twitter, and Instagram to exchange knowledge because those are platforms that are very attractive to young people. On the other hand, when dealing with senior people, Skype and LinkedIn appear more attractive to them. The findings suggests that social influence can not be applied broadly to generalise the effectiveness of social media in the KMS of SMMEs.

KMS Success factors

Factors identified as KMS Success factors such as service quality, system quality, knowledge quality, user satisfaction, intention to use/perceived benefit, and net benefit have been studied to influence adoption and use of KMS (Jennex & Olfman 2006). The relationships between these factors were examined to guide the development of the model of evaluating the effectiveness of social media on the KMS of SMMEs in this study. Thus, the KMS success factors formed a composite framework guiding the model of the study and the results of which are interpreted as follows:

H9: System quality of social media positively influences intention to use / perceived benefits of KMS in SMMEs.

System quality addresses issues surrounding the performance of the KMS (Urbach & Muller 2012; Jennex & Olfman 2006; DeLone & McLean 2003). In the current study, the capacity of social media to support and enhance the KMS processes was hypothesised to positively influence the intention to use / perceived benefits of the KMS within SMMEs. Findings of the quantitative phase showed that the relationship between system quality of social media and the intention to use / perceived benefits of the KMS was statistically significantly positive. This finding means that social media improves the performance of the KMS of SMMEs.

The results of the qualitative phase brought more insight to the finding and reveal that social media platforms present knowledge in a more personalised manner to which the customers are accustomed. The findings further revealed that social media allows SMMEs to reach their target markets much easier from different remote locations to distribute knowledge content to them.

The results of both enquiries have implications to SMMEs to first check the suitability of social media platform used to achieve the intended purpose of the KMS. Furthermore, the results suggest that SMMEs must choose the right social media platform that are preferred by targeted customer segments to increase the effectiveness of social media use in the KMS. Thus, system quality is a significant factor to measure user's intention to continue using social media to improve its effectiveness on the KMS of SMMEs.

H10: System quality of social media positively influences User Satisfaction of KMS in SMMEs.

The hypothesis to determine the influence of system quality of social media on user satisfaction of the KMS was rejected. In the quantitative phase, it was discovered that there is an insignificantly negative influence of system quality of social media on user satisfaction with the KMS. One would expect the system quality of social media to influence the user satisfaction of the KMS positively especially because social media usage in businesses has risen considerably (Ogbuji & Papazafeiropoulou 2016). However, the results could mean that the use of social media could be welcomed broadly by SMMEs but not necessarily to produce knowledge that they can rely on to make decision.

The results of the follow-up qualitative phase revealed that social media platforms are merely used as personal applications which are not formalised in the KMS of SMMEs. As such SMMEs can not fully rely on the knowledge produces by social media because it not formalised. The results suggest that SMMEs are not satisfied with the manner in which social media executes the KMS processes. The results brings out very insightful information about the effects of not using social media in a manageable way, implying that it can erode all efforts of the KMS as well as user satisfaction with the KMS itself.

Therefore, the results of both enquiries of the study suggest that the use of social media does not neccessarily increase SMMEs's satisfaction with the KMS. The results does not indicate specific reasons elements that would incease the satisfaction of SMMEs with the use of social media in the KMS. Perhaps this is an area that needs further reseach to understand specific activities of social media that could increase the satisfaction of SMMEs when social media is used to support the KMS. Nontheless, the overall results of this study highlighted new insights about the insignificant relationship of system quality of social media and the user satisfaction with the KMS.

***H11:** Knowledge quality of social media positively influences intention to use / perceived benefits of KMS in SMMEs.*

Being able to capture and deliver the right knowledge with enough content to the right knowledge seekers at the right time is a measure of knowledge quality within the KMS (Jennex et al. 2016; Masrek et al. 2010; Petter et al. 2013; Delone & Mclean 2003). An effective KMS must include a knowledge strategy to ensure that the recipients of knowledge are identified and provided with knowledge that is accurate and timely and linked to topic maps of knowledge sources. In the current study, the relationship between the knowledge quality of social media and the intention to use / perceived benefits of the KMS was not supported. This result was unexpected since the literature suggests that social media provides content that is timeous, easy to understand, and usable (Gresty 2013; Kulkarni et al. 2007). The results of the quantitative phase indicated that the knowledge produced by social media is not neccessarily of good quality. This means that the reason for SMMEs to show their intentions to continue using social media has got nothing to do with the quality of knowledge produce by social media.

Interestingly, the results of the qualitative phase contradict those of the quantitative phase. The qualitative phase revealed that social media are capable of presenting knowledge instantly in a format that is easy for people to understand. The results revealed that social media provides collaboration features which allows people to engage on matters and exchange knowledge instantly. The results bring new perspectives SMMEs highlighting the positive effects of collaborative capabilities of social media on the knowledge quality of the KMS and the user's intentions in SMMEs.

The contradiction of both the quantitative and qualitative enquiries present new areas to be explored by future studies. Because of the inability of social media to authenticate knowledge, the efforts of the KMS of SMMEs can be eroded. The results of the study have implications for SMMEs to employ mechanisms for authenticating knowledge sources of social media to improve the knowledge quality and intention to use /perceived benefits in the KMS. As such, knowledge quality is not a significant factor to measure user's intention to continue using social media on the model to evaluate the effectiveness of social media on the KMS of SMMEs.

***H12:** Knowledge Quality of social media positively influences user satisfaction of KMS in SMMEs.*

The hypothesis to determine the influence of the knowledge quality of social media on user satisfaction with KMSs in SMMEs was supported in the study. The results of the quantitative phase revealed that the knowledge quality of social media significantly positively influences user satisfaction with the KMS. This means that SMMEs are generally satisfied with the use of social media as sources of knowledge.

The results of the qualitative phase support those of the quantitative phase and reveal that SMMEs are satisfied with the way social media can assist them with knowledge acquisition, storage, transfer, and presentation. The ability of social media to present knowledge instantly in a format that users prefer it to be can potentially improve users' satisfaction with the KMS. Since the results highlight the important role that knowledge quality plays as it influences the user satisfaction with the KMS, it is concluded for SMMEs to evaluate the effectiveness of social media on KMS, they must ensure that all employees are accustomed to the social media platforms used and the way in which the

platforms present knowledge. As such, knowledge quality is a significant factor on the model to measure SMMEs satisfaction with the use of social media to evaluate the effectiveness of social media on the KMS of SMMEs.

***H13:** Service quality of social media positively influences intention to use / perceived benefits of KMS in SMMEs.*

The overall support within SMMEs to encourage the use of social media to enhance the KSM was hypothesised to as the service quality that have a positive influence on the intention to continue using social media in the KMS of SMME. In the quantitative phase of this study, the hypothesis to examine the relationship between service quality of social media and the intention to use / perceived benefits of the KMS in SMMEs was supported. This means that SMMEs provide enough support to encourage the staff to use social media in their KMS processes.

The follow-up qualitative enquiry revealed that SMMEs rely on the social media's ability to create networks which help with knowledge acquisition to keep up to date with developing trends. The results further revealed that SMMEs intend to continue using social media to link with knowledge sources as well as reach prospective customers in far reaching areas. This means that social media allows SMMEs to reach a large audience of customers to share knowledge about their products without any limitation of time or location.

Both qualitative and quantitative enquiries presented findings that have implications to SMMEs to ensure the full support of social media applications and provide an environment that enables all employees to freely contribute to the KMS using social media platforms. Thus, service quality a significant factor to measure user's intention to continue using social media on the model to evaluate the effectiveness of social media on the KMS of SMMEs.

***H14:** Service quality of social media positively influences user satisfaction of KMS in SMMEs.*

The hypothesis for examining the relationship between service quality of social media and user satisfaction of the KMS could not be supported. The quantitative phase indicated that the influence of service quality was insignificantly negative on user satisfaction of the KMS. The results further showed that SMMEs use social media very informally without proper procedures governing the use to support the KMS. These results has implications to SMMEs to consider developing policies to govern the use of social media to improve the satisfaction of staff with the outcomes of the contributions of social media to the KMS.

The qualitative phase of the study revealed that generally SMMEs are satisfied using social media for business purposes; however, they cannot convert the content spread on social media platforms into business knowledge because some of the knowledge is inauthentic. Evidently, there is a lack of management intervention programs within SMMEs to ensure that knowledge that is sourced from social media is validated for contribution to the KMS.

Both the quatitative and qualitative enquiries of the study produced some implications for SMMEs to pay more attention to their support programs for monitoring content that is produced over social media. The results further suggest that SMMEs need to support and encourage their employees to use social media more formally in order to achieve a successful KMS. As such, conclusions can be drawn to say that the management support enabling the use of social media need to be strengthened so that user satisfaction with the KMS can be improved to ensure the effectiveness of social media on KMS of SMMEs. Thus, service quality is a significant factor on the model to measure SMMEs satisfaction with the use of social media to evaluate the effectiveness of social media on the KMS of SMMEs.

***H15:** User satisfaction of social media positively influences intention to use / perceived benefits of KMS in SMMEs.*

The hypothesis for examining the influence of user satisfaction with social media on the intention to use / perceived benefits of the KMS was not supported. The results of the quantitative phase of the study indicated that the influence of user satisfaction of social media is insignificantly negative on intention to use / perceived benefits of the KMS. The results mean that the intentions of SMMEs to continue using social media does not necessarily suggest that they are satisfied with its use to generate business knowledge.

The results of the qualitative phase revealed that although SMMEs are generally satisfied with using social media to enhance their KMS, they use the platforms to execute the basic processes of the KMS such as monitoring the statistical information pertaining followers of their brands and distributing content. The results further revealed that SMMEs prefer to meet with experts face-to-face to build relationships and exchange knowledge. This means that SMMEs use social media only at the initial stages to initiate conversations, to schedule meetings, and distribute learning materials.

Both the qualitative and quantitative enquiries bring useful insight, suggesting that the influence of the user satisfaction of social media on the intention to use / perceived benefits of the KMS has no bearing on the evaluation of the effectiveness of social media on KMS of SMMEs. As such, user satisfaction is an insignificant factor to measure user's intention to continue using social media on the model to evaluate the effectiveness of social media on the KMS of SMMEs.

***H16:** Intention to use / perceived benefits of social media positively influences user satisfaction of KMS in SMMEs.*

The hypothesis for examining the influence of the intention to use / perceived benefits of social media on user satisfaction of the KMS in SMMEs was removed from the model because the inclusion of the hypothesis resulted in the model being non-recursive and unidentified. Contrary to existing literature (Halawi et al. 2007; Chiu et al. 2007; Wu & Wang 2006; Bharati & Chaudhury 2006), the results of the study means that the it is not necessary to consider the relationship in the model for evaluating the effectiveness of social media on the KMS of SMMEs.

The qualitative phase of the study revealed that SMMEs do not use social media in a formalised way. The results further revealed that SMMEs use the social media platforms to exchange knowledge informally at a personal level because the platforms are installed on their personal mobile devices. Therefore, it is not necessary to associate social media usage in SMMEs with the intended outcome of the KMS because social media is mostly used as personal platforms. These results have implications to SMME management to put more

efforts to encourage the continuance of social media usage in support of the KMS so that social media can be more effective as formalised platforms to enhance the KMS.

***H17:** Intention to use / perceived benefits of social media positively influences net benefit / effectiveness of KMS in the SMME context*

The hypothesis for examining the influence of intention to use / perceived benefits of social media on net benefit /effectiveness of the KMS resulted in a highly significant and positive influence. The result means that SMMEs intentions to continue using social media is an important factor to understand the effectiveness of social media to achieve success of the KMS.

A further enquiry using qualitative methods revealed that social media only becomes effective in enhancing the KMS of SMMEs because they are easy to use, freely available, and present knowledge in a simplified manner for users to understand. The qualitative study also revealed that that social media is suitable for SMME environments and that SMMEs intend to continue using it to exchange knowledge to stay ahead.

Both quantitative and qualitative enquiries brought useful insights to understand the significance of user's intention to continue using social media towards achieving a successful KMS in SMMEs. Overall, the results of the study implications for SMMEs to first lay out some rules that will formalise social media platforms in the business to ensure that social media continues to meet the objectives of the KMS.

***H18:** User satisfaction with social media positively influences net benefit / effectiveness of KMS in the SMME context*

The results of testing the hypothesis to measure the influence of user satisfaction on the net benefit /effectiveness of the KMS showed no support for the relationship. In fact, the results indicated an insignificantly positive relationship. This means that the achievement of a successful KMS of SMMEs is not a result of the satisfaction of SMMEs with the use of social media. This result was unexpected because existing studies (Mosha 2017; Halawi et al. 2007) support the relationship, suggesting that user satisfaction with technology promotes productivity within the organisation.

The results of the qualitative phase confirmed those of the quantitative phase and revealed that SMMEs are using social media to gather content; to create and package knowledge in a manner that is convenient to targeted audiences. The results suggest that SMMEs mostly rely on the collaboration and networking functions of social media to reach masses of prospective customers.

Therefore, both the qualitative and quantitative enquiries of the study make important implications for SMMEs to ensure that all employees are satisfied with the platforms that are decided upon to execute the intended KMS processes.

7.2.4. OBJECTIVE 4: To identify current methods used by SMMEs in South Africa to evaluate the effectiveness of Social Media in KMS.

Social media are regarded as collaborative and networking systems that allow organisations to improve communication (Arpaci 2017; Ngai et al. 2015). Generally collaborative systems have been evaluated for the impact they have within organisations and to further determine future adoption and acceptance (Antunes et al. 2012). In Chapter Two (section 2.5.4) the literature explaining methods for evaluating collaborative systems were discussed. The qualitative phase of the study sought to investigate specific methods of evaluating the effectiveness of social media used by sampled SMMEs. The responses were analysed in Chapter Six (section 6.4.3.6) using thematical analysis techniques.

Collaboration systems are mostly evaluated for their user friendliness to ensure that their use results in improved user experience (Sánchez-Gálvez et al. 2019; Sołtysik-Piorunkiewicz 2015; Antunes et al. 2012; Vizcaíno et al. 2005). However, there is a scarcity of literature suggesting specific evaluation methods for social media, especially in the KMS context of SMMEs. As a result, evaluations of collaborative systems in SMMEs are not formalised and only performed on ad-hoc basis.

The results of thematical analysis revealed that SMMEs prefer to setup their own methods of evaluating the effectiveness of social media platforms. The methods are in a form of processes or tools. In terms of processes, although there are no specific best practice approaches, some SMMEs try out hypothesis which guide them with the evaluations. The

hypothesis would be tested to measure the extent to which specific social media platforms satisfy the expected performance of the KMS. On the other hand, regarding ICT tools, while there are no formalised tools for measuring the effectiveness of social media, some participants stated that they use analysis tools embedded in social media platforms to understand the market and how their products and services are received.

7.2.5. OBJECTIVE 5: To identify the challenges experienced with the current methods of evaluating the effectiveness of social media in KMS of SMMEs in South Africa.

The qualitative enquiry was carried out to understand whether SMMEs have any approaches in place to evaluate the effectiveness of social media in the KMS and to address any challenges that could exist with the approaches. The results revealed that there are no best practice approaches and methods for evaluating the effectiveness of social media in the SMME context. In particular, the results of the study revealed that because SMMEs prefer to setup their own methods of evaluating the effectiveness of social media, a decision to evaluate becomes heuristic to test whether social media is effective or not. Moreover, the results indicated that SMMEs find it very useful to have tools to measure the effectiveness of social media for their clients for future analysis.

Owing to the lack of formalised approaches for evaluating the effectiveness of social media in SMMEs, the results of the study makes important contributions to the literature – by suggesting a model for evaluating the effectiveness of social media on knowledge management systems of SMMEs, to the methodology – by using the explanatory sequential mixed methods approach to develop a model, and to the practitioners – by suggesting guidelines on how SMMEs can use the developed model for their future sustainability.

7.3. A model that can be used by SMMEs for evaluating the effectiveness of social media on KMS

The model presented in this section serves as the main contribution of the study. Given that an enquiry to understand the current methods and challenges of evaluating the effectiveness of social media on the KMS was presented, the model developed in this study

takes into consideration different inputs from the research participants in both phases of the study. More importantly, the literature of KMS Success, as well as theories such as UGT, DOI and UTAUT2 were considered to guide the development of the model.

In Chapter three (Section 3.3), an evaluation model was conceptualised using constructs derived from underpinning theories such as UGT, DOI, UTAUT2 and KM Success model (*cf* Figure 3.5). The hypothesised relationships between the model constructs were tested in the quantitative phase of the study (*cf* Chapter Five), the results of which were further explained in the qualitative phase (*cf* Chapter Six). The resultant comprehensive model for evaluating the effectiveness of social media in the KMS of SMMEs was presented in Figure 5.5. The model defines three dimensions of evaluating the effectiveness of social media in the KMS of SMMEs as follows:

Social media characteristics

This dimension presents the relationship between social media attributes such as compatibility and relative advantage with the KMS of SMMEs. The two attributes were derived from DOI theory (Rogers 2003). These attributes were found to have a significantly positive influence on how the KMS is able to work effectively. This dimension of the model has implications on SMMEs to adopt social media platforms that are compatible with the KMS. Moreover, the adopted social media platforms must have a relative advantage to digitise the knowledge processes of SMMEs.

Determinants of social media use

This dimension presents the relationship between social media capabilities such as coordination and immediate access with the KMS of SMMEs. The two social media capabilities were adopted from the UGT theory (Lee & Ma 2012). The attributes are found to have a significantly positive influence on the quality of knowledge produced in the KMS. This dimension of the model implies that SMMEs must take advantage of the coordination and immediate access capabilities of social media to improve the quality of knowledge produced in the KMS.

SMME support activities

This dimension presents the relationship between facilitating conditions enabling the use of social media in SMMEs with the KMS. The facilitating conditions construct of SMMEs was adopted from the UTAUT2 theory (Venkatesh et al. 2012). The facilitating conditions construct was found to have a significantly positive influence on the quality of service provided by the KMS. This implies that the flexible management style of SMMEs can be leveraged upon to encourage the use of different social media platforms that have the ability to improve the KMS of SMMEs.

KMS Success factors

This dimension presents the relationships between the six quality attributes determining the success of the KMS, namely service quality, system quality, knowledge quality, intention to use, user satisfaction, and net benefit, adopted from the KMS success model (Jennex & Olfman 2006). The significant relationships were found between the following constructs:

- System quality and intention to use - the ability of social media to digitise knowledge results in SMMEs' intentions to continue using social media to enhance the KMS.
- Knowledge quality and user satisfaction – the knowledge produced by social media is satisfactory for SMME to use in the KMS.
- Service quality and intention to use – the ability of social media to improve the quality of service of the KMS results in SMMEs' intention to continue using social media in the KMS.
- Intention to use and net benefit – the intentions of SMMEs to continue using social media to digitize knowledge results in the net benefit of achieving a successful KMS.

7.4. Chapter summary

In summary, this chapter gives a presentation of the interpretation of the results of empirical research done in two phases of the current study's explanatory sequential mixed-methods. The interpretation of the results was done based on the objectives of the study, which were derived in response to the primary and secondary research questions in

Chapter One (*cf* section 1.5). The chapter concludes by presenting the key dimensions of a model that SMMEs in South Africa can use for evaluating the effectiveness of social media on their KMS processes. The next chapter presents the research contributions, recommendations and conclusions of the study.

CHAPTER EIGHT:

Contributions, recommendations and conclusion

8.0. Introduction

The current chapter presents reflections of this study to evaluate the relevance of the approach that was followed for obtaining the overall study results. It is important for an IS research project to be evaluated for its relevance, appropriateness, approach, contribution and attainment of set objectives (Benbasat & Zmud 1999). The evaluation process will ensure that the research applies to practice because the practitioners need to be provided with strategies and set of procedures to guide them with the execution of the project. In concurrence, Klein & Myers (1999) further suggest that evaluation principles for IS research should address the suspicions, interpretations, generalisation, contextualisation, dialogical reasoning, as well as the interactions of the researcher and the research subjects.

In keeping with the suggestions for evaluating IS research, the current chapter discusses the study's evaluation using six main sections. Section 8.1 follows the introduction and presents an evaluation in terms of the overview of different chapters of the study; section 8.2 presents an evaluation in terms of contributions of the study; section 8.3 presents the significance of the study; section 8.4 explains the limitations from which a direction for future research is derived in section 8.5, and lastly section 8.6 presents the conclusion of the overall study.

8.1. Evaluation based on the overview of the study

This study was motivated by the realisation that there is a scarcity of literature that addresses social media evaluations in the context of KMS of SMMEs. Since social media's inception in the early 2000s, there has been a proliferation of studies addressing social media adoption factors in the global business community. However, there is not enough

research that evaluates the effects of social media on KMS of SMMEs. In the developing countries like in South Africa, the lack of research that investigates how social media is evaluated for its effectiveness to enhance the KMS is much evident.

The primary research question that this study sought to address was: **‘how can the effectiveness of social media on KMS of SMMEs in South Africa be evaluated?’** To address the primary research question, the study comprised of eight chapters, including the current chapter, to ensure that a model that can be used to evaluate the effectiveness of social media on KMS of SMMEs in South Africa is developed and validated.

Chapter One presented the rationale of the study including the background to the research, the research gap, research problem, research questions and objectives, the scope of the research, structure, and time frames and deliverables; Chapter Two presented the literature review and the research gaps; Chapter Three presented the theoretical foundations that underpinned the developed model of the study; Chapter Four presented the research methodology and design issues; Chapter Five presented phase one (the quantitative study) of the explanatory sequential mixed method study; Chapter Six presented phase two (the qualitative phase) of the study to explain the results of the quantitative phase; Chapter Seven presented the interpretation of results of both the quantitative and the qualitative phases based on the study’s research objectives and the model development process.

The key findings of the study presented important insights into how attributes of social media such as compatibility, relative advantage, coordination, and immediate access are regarded to enhance the KMS from the perspectives of SMMEs. The findings also revealed that the facilitating conditions in which SMMEs operate enable the use of social media in the KMS processes. Overall, the SMMEs are satisfied with the quality of knowledge contributed by social media to the KMS. They intend to continue using social media because of its ability to produce quality knowledge that can improve the service offered by the KMS.

8.2. Contributions of the study

There is a need for studies that close the gap which exists between theoretical propositions and the reality of practice in as far as KM in SMMEs is concerned (Talebi 2009). The results of this study will make a significant contribution to the literature and practices of KMS in SMMEs on the following three levels:

8.2.1. Theoretical level

The existing literature of digital transformation suggest that social media emerges as the new phenomenon to digitise organisational knowledge (Jorge et al. 2020). Although many studies explore the KMS success model from the lenses of service quality, knowledge quality, system quality, intention to use, user satisfaction, and net benefit as the key dimensions of evaluating the effectiveness of the KMS (Cerchione et al. 2015; Hung, Chou & Tzeng 2011; Jennex 2011; Nissen & Levitt 2011; Jennex & Olfman 2006), there is limited literature that investigates the role that social media plays in achieving a successful KMS from the same lenses. With a considerable amount of literatures on social media and KMS adoption in SMMEs, little is known about frameworks or models applicable to SMMEs in developing countries. This study developed a model for evaluating the effectiveness of social media in the KMS of SMMEs.

The developed model suggest that the theoretical attributes of social media, such as compatibility, relative advantage, coordination, and immediate access play a big role to ensure that the KMS efforts are successful in SMMEs. This has implications to the emergent social media studies to explore these attributes for digitising knowledge. The developed model of this study also suggest that the SMME operational attributes like facilitating conditions enable them to easily adopt social media in their KMS processes. This contribution implies that the SMMEs can leverage from the flexibility and adaptability of their management style to use social media in their KMS for competitiveness. Furthermore, SMMEs can formalise the use of social media platforms to contribute meaningfully to their KMS. Thus, the study makes a good contribution to the literature on the significant role played by social media attributes such as compatibility, relative advantage, coordination, and immediate access to ensure that KMS efforts of SMMEs are successful.

8.2.2. Methodological level

The study adopted the explanatory sequential mixed method approach to explore the factors that influence the effective use of social media in the KMS of SMMEs and to develop a model for evaluating those factors. The application of an explanatory sequential mixed method approach revealed very useful insight about SMMEs' perceptions on the use of social media in their KMS processes.

Firstly, the quantitative phase of the study, in phase one, presented the attributes of social media as well as characteristics of SMMEs that strongly influence the success of the KMS. The study revealed constructs such as compatibility, relative advantage, coordination, immediate access, service quality, knowledge quality, system quality, intention to use, user satisfaction, and net benefit, for the development of the model for evaluating the effectiveness of social media on KMS of SMMEs. Although the findings of the quantitative phase can be generalised across SMMEs in the similar context, it was not clear why SMMEs regarded the constructs and how they were relevant to the model. The nature of quantitative approaches is to use statistical measures of variables to generalise the finding (Creswell & Creswell 2017). This is problematic when applied to SMMEs in South Africa where different operational characteristics and turbulent environments are at play. SMMEs in South Africa are unique to one another and studies that generalise their characteristics may fail to produce an understanding of the issues affecting SMMEs holistically.

Secondly, the follow-up qualitative phase of the study in phase two revealed more information to understand the reasons why SMMEs prefer to use social media and how the identified constructs in the quantitative phase of the study were relevant in the development of the model to evaluate the effectiveness of social media in the KMS. The strength of the qualitative approach is its ability to extract meaning and understand the issues from the point of view of the respondents (Babbie 2017; Creswell & Creswell 2017). In the qualitative phase of the study, face-to-face interviews were held with SMME owners and managers to obtain more insight about the implications of the model from their point of view.

Therefore, the application of the explanatory sequential mixed method approach produced useful insights to develop a model for evaluating the effectiveness of social media in the KMS of SMMEs. Several studies (Creswell & Creswell 2017; Cooper & Schindler 2014; Goldkuhl 2012; Creswell & Clark 2011) have supported the notion of using several research methods in one study and added that research projects that employ a mix of research methods from different approaches produce richer and reliable results. Previous social media evaluation studies have followed either the qualitative approach (examples: Kramer et al. 2017; Cerchione et al. 2015; Sołtysik-Piorunkiewicz 2015), or the quantitative approach (examples: Behringer & Sassenberg 2015; Vizca'ino et al. 2005). Thus, this study contributes methodologically by combining principles of quantitative and qualitative approaches to develop and validate a model for evaluating the effectiveness of social media on KMS of SMMEs.

8.2.3. Practical level

A research project in IS should not be an end to itself (Grover 1997). It should contribute to practice in the organisational context as a means of achieving organisational goals. This study has important implications to SMMEs in South Africa. SMMEs use social media platforms to collaborate and exchange of ideas that are needed for innovation and to improve the quality of the KMS. In particular, the model developed by the study provide useful guidelines for SMMEs to use social media to improve their KMS. Without clear guidelines governing the use of social media, SMMEs are able to quantify the measurable return on investment of social media platforms (Ogbuji & Papazafeiropoulou 2016). Hence, the developed model of this study addresses different aspects of social media that SMME practitioners can take into consideration to achieve a successful KMS. The model suggest that key aspects that SMMEs need to look into are:

- SMME need to consider the compatibility of social media with the existing processes and practices of managing organizational knowledge. This will allow them to make a choice of social media platforms that can be adopted. For instance, some social media platforms like WhatsApp, allow for a limited number of participants to collaborate at the same time.

- SMMEs need to consider the relative advantage that their chosen social media platforms bring to the existing KMS. This implies that that SMMEs need to identify the KMS processes that must be executed well and decide on social media platforms that are able to digitise those knowledge processes.
- SMMEs need to keep track of social media coordinated activities to improve the quality of knowledge produces with the KMS
- SMMEs need to use social media to access knowledge residing not only in subject matter experts but also in different sources to improve the richness of knowledge within the KMS
- SMMEs need to leverage on their dynamic and flexible structures to encourage the use of different social media platforms that can contribute to the KMS.

Taking the above into consideration, SMMEs will be able to realise the value of social media and be able to quantify its use in their KMS. Indeed, to support this contribution, Ngai et al. (2015) asserts that SMMEs will benefit from quantifying the value of social media in the context of KMS processes. The application of a social media evaluation model in this study aims to increase the business value of social media and KMS of SMMEs. The model may assist SMME owners and managers to identify KMS processes that must be digitised through social media. This will in turn allow SMMEs to apply social media in a formalised way to compete and remain sustainable.

8.3. Significance of the study

This study is very significant and timely, considering the current evolution of social media platforms and their potential to influence how small business service their need for managing the most crucial knowledge for business sustainability, particularly in developing countries.

SMMEs are faced with a lot of challenges including a lack of funds needed for adopting and maintaining technology of which the costs have continued to rise, as well as complex competition with large organisations that continue to dominate industries. Moreover,

SMMEs have adopted cost-effective (often free) social media platforms in their businesses but have not yet set up proper guidelines and frameworks to evaluate their effectiveness to achieve visible returns. This study presented the significant contribution of social media on KMS of SMMEs by using the DOI theory, UGT theory, UTAUT2 theory, and the KM success model as guiding theories towards the development of a social media evaluation model.

Therefore, this research serves to address key KMS issues in the SMME context and suggests a model that can be used to evaluate the effectiveness of social media on KMS of SMMEs. In this regard, the researcher hopes that the study makes a significant contribution to the current body of knowledge in addressing issues about social media and KMS in the context of SMMEs in developing countries.

8.4. Limitations of the study

The scope of the current study was only limited to SMMEs in the ICT, advanced manufacturing, knowledge-intensive, and smart industries located in Gauteng, South Africa to provide an understanding of the phenomenon. Research participants were owners and managers of SMMEs in the sample frame and the questions asked were targeted specifically on the SMMEs' business environment and their applications of social media platforms to support the KMS processes.

During the collection of interview data in the second phase (the qualitative enquiry) of the study, the process of recruiting participants involved initial face-to-face meetings between the researcher and the potential participants to familiarise the participants with the study and explain the objectives and the ethics process so that participants could freely volunteer to attend the semi-structured interviews. However, while the recruitment process was in progress, the world was faced with a deadly COVID-19 pandemic which required people to remain indoors and avoid physical contact where possible to curb the spread of the virus. A nationwide lockdown and travel restrictions were imposed to limit the movement of people. The researcher was restricted from meeting with potential participants to recruit them for participation in the interviews. As a result, only 13 participants who met with the researcher in the recruitment meetings before the nationwide lockdown and volunteered to participate, managed to attend interviews. Eight of which were face-to-face interviews

before nationwide lockdown and five were online interviews during lockdown via Microsoft Teams.

Although the study was limited to SMMEs in South Africa, its findings and recommendations can be generally applicable to SMMEs across the African continent with similar context.

8.5. Recommendations for future research

The current study developed a social media evaluation model to be used by SMMEs in South Africa for enhancing their KMS. Although the study was conducted during a difficult time when the movement of the researcher was restricted due to the world-wide Covid-19 regulations, the study managed to produce a valid model that can be used by SMMEs in the South African context.

The model highlighted significant relationships between constructs to be considered by SMMEs for the evaluation of the effectiveness of social media in the KMS. Although the model was valid, some of the conceptualised relationships were insignificant and warrant for further research. For example:

- The complexity attribute of social media was found to be an insignificant indicator of achieving a successful KMS. This implies that the assertions made by the existing literature (Lwoga 2013; Al-Shibly 2011; Masrek et al. 2010; and Petter et al. 2013; Jennex & Olfman 2006) that social media is less complex to use, has no bearing on achieving a successful KMS in SMMEs.
- The social presence attribute of social media was found to be an insignificant indicator of achieving a successful KMS. This implies that the assertions made by the existing literature (Berthon et al. 2012; Kietzmann et al. 2011; Klang & Nolin 2011; Kaplan & Haenlein 2010) that social media provides a sense of connection with knowledge experts does not mean that a knowledge that is produced by social media will be authentic for the KMS.
- The inclusion of social influence attribute of social media made the model to be non-recursive and unidentifiable for the statistical analysis procedures applied in the study. This means that the attribute was not relevant in the study.

Because the study was carried out in the ICT industry, advanced manufacturing industry, and smart industries, it is recommended that future studies could investigate the contribution of social media's attributes like complexity and social presence on KMS of SMMEs that operate in the marketing and sales industries where social media is predominantly used at a larger scale for the promotion of brands and services offerings. Moreover, due to the limitation of 227 and 13 samples in the quantitative and qualitative studies respectively, it is recommended that future studies could investigate a much bigger sample frame of SMMEs to measure the impact on the outcome.

8.6. Conclusion

In conclusion, this study makes significant contributions to IS literature by employing an explanatory sequential mixed-method approach to develop, test and validate the model of evaluating the effectiveness of social media in enhancing the KMS of SMMEs in South Africa. The study also explored IS-related literature attempting to evaluate collaborative systems from the point of view of KMS and found that the studies are geared towards evaluating collaborative systems only to improve user experience. Thus, the current study is one of its kind since such methods of evaluating the effectiveness of social media on KMS of SMMEs are lacking.

Several theoretical foundations including the DOI, UGT, UTAUT2, and KM success model were used to underpin the study and assist with the development of the model. The hypotheses were created for examining the relationships between model constructs. Descriptive and Inferential statistical techniques on *SPSS* and *AMOS* version 25 were applied for testing the hypothesised relationships among model constructs in the quantitative phase of the study. The findings of which were further clarified and explained through qualitative approach in phase two of the study by using the *Atlas.ti* version 8 analysis tool.

Findings of both quantitative phase and qualitative phase were interpreted in relation to research objectives, derived to address the research questions. Lastly, the study concluded by presenting a model which SMMEs in South Africa can use to evaluate the effectiveness of social media on their KMS processes.

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Appendices

APPENDIX A – WEB-BASED SURVEY QUESTIONNAIRE



Evaluating the effectiveness of social media on knowledge management for SMMEs

Dear Prospective participant,

You are invited to participate in a survey conducted by Stevens Phaphadi Mamorobela under the supervision of Doctor Sheryl Buckley, an Associate Professor in the School of Computing towards a PhD Information systems degree at the University of South Africa.

The survey you have received has been designed to study the effectiveness of social media on knowledge management processes for small, medium and micro enterprises in South Africa. You were selected to participate in this survey because of your expertise and experience in the SMME sector and the researcher believes that you are knowledgeable enough to provide meaningful information that would carry the study forward. You will not be eligible to complete the survey if you do not own or manage an SMME. By completing this survey, you agree that the information you provide may be used for research purposes, including dissemination through peer-reviewed publications and conference proceedings.

It is anticipated that the information we gain from this survey will help us to develop a model which could be used by SMMEs to evaluate the effectiveness of social media on their knowledge management initiatives. You are, however, under no obligation to complete the survey and you can withdraw from the study prior to submitting the survey. The survey is developed to be anonymous, meaning that we will have no way of connecting the information that you provide to you personally. Consequently, you will not be able to withdraw from the study once you have clicked the send button based on the anonymous nature of the survey. Any identifying information that is obtained in connection with this survey will remain confidential and will be disclosed only with your permission or as required by law. If you choose to participate in this survey it will take up no more than 20 minutes of your time. You will not benefit from your participation as an individual, however, it is envisioned that the findings of this study will contribute towards the development of a model that could aid SMMEs to leverage social media as a solution for knowledge management to support business sustainability. We do not foresee that you will experience any negative consequences by completing the survey. However, the inconvenience could be experienced if the researcher may find the responses as insufficient and requires more information from the participants. The researcher(s) undertake to keep any information provided herein confidential, not to let it out of our possession and to report on the findings from the perspective of the participating group and not from the perspective of an individual.

The records will be kept for five years for audit purposes where after it will be permanently destroyed. Hard copies will be shredded and electronic versions will be permanently deleted from the hard drive of the computer through the use of a relevant software program to ensure that there are no audit trail of the data after it has been destroyed. You will not be reimbursed or receive any incentives for your participation in the survey.

The research was reviewed and approved by the Unisa Research Ethics Review Committee of the School of Computing with Ref# 071/SPM/2018/CSET_SOC. The primary researcher, Stevens Phaphadi Mamorobela, can be contacted on 0736248917 or 58524304@mylife.unisa.ac.za. The study leader, Dr Sheryl Buckley, can be contacted on 0825747457 or sherbuck@gmail.com. Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the Unisa Research Ethics Review Committee of the School of Computing, on SocEthics@unisa.ac.za. Alternatively, you can report any serious unethical behaviour at the University's Toll Free Hotline 0800 86 96 93.

You are making a decision whether or not to participate by continuing to the next page.

* Required

1. Please indicate your job role in the organisation? *

- Owner
- Manager
- Owner / Manager

2. What is your gender? *

- Female
- Male

3. About how many employees work in your organisation? *

- Less than 10 employees
- Between 10 and 50
- Between 51 and 100
- Between 101 and 200
- Between 201 and 500
- More than 500 employees

4. About how much is the annual turnover of your organisation? *

- Less than R100K
- Between R100K and R499K
- Between R500K and R999K
- Between R1M and R4.9M
- Between R5M and R9.9M
- Between R10M and R49.9M
- More than R50M

5. KNOWLEDGE MANAGEMENT IS DEFINED AS A PROCESS OF CREATING, STORING, SHARING AND APPLYING KNOWLEDGE. THIS SECTION AIMS TO ASCERTAIN PERCEPTIONS ABOUT THE EMPLOYABILITY OF SOCIAL MEDIA ON KNOWLEDGE MANAGEMENT PROCESSES IN SMMES. *

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
My organisation applies knowledge management activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My organisation encourages the use of social media platforms to support knowledge management activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. What are the common social media platforms used in your organisation? *

- Facebook
- WhatsApp
- Twitter
- Yelp
- Google+
- LinkedIn
- Instagram
- Pinterest
- YouTube
- SnapChat
- Other

7. Compatibility of social media *

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I believe social media helps my organisation to become more knowledgeable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it easy to share knowledge using social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it easy to locate subject matter expert using social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe social media provides relevant knowledge to help my employees do their job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media platforms have the necessary knowledge management functions that suite for my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Complexity of social media *

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I believe that social media are difficult to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using social media to do work for my organisation takes too much time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is difficult to understand the information provided on social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It takes too long to learn how to use social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working with social media platforms is very complicated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Relative advantage of Social media *

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I believe social media provides my organisation with the knowledge needed to accomplish tasks much faster	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using social media improves the quality of work in my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that using social media for our knowledge needs gives my organisation a competitive advantage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe using social media improves the competencies of my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working with social media platforms improves the productivity of my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Coordination of Social media *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I believe social media is able to spread news (messages, events and other information) faster	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe social media is able to disperse news (messages, events and other information) to multiple employees at one time quickly and easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe social media has the capability to make arrangements for my employees to share knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe social media has the capability to organize social events among my employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Immediate access of Social media *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I believe social media provides access to my employees anytime	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe social media provides access to my employees anywhere they are	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe social media allows me to be available for my employees anytime they need to reach me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe social media allows me to be available for my employees no matter where I am	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Social presence of Social media *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I believe social media allows me to have a sense of human contact with my employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media allows me to share knowledge with my employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I always feel my employees' presence on social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I always feel availability of efficient service when using social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Facilitating conditions for social media use *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My organisation encourages all staff members to exchange knowledge using social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Management is very flexibility, which makes it easier for us to use any social media platforms we wish to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My employees are always available to assist one another if there are difficulties with social media use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The environment of our organisation has full internet coverage to facilitate the use of social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Social Influences for social media use *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Our customers, suppliers and business partners demand that we use social media when engaging with them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our competitors are using social media, therefore we have to follow suit to avoid being left out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People who are important to me think that my organisation should use social media to do business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. System quality of social media use *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Social media platforms are easy to use (Usability)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media platforms are easily accessible from anywhere by anyone (accessibility)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media platforms are easy to learn and adapt (adaptability)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media platforms are flexible (flexibility)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media platforms are stable (stability)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media platforms are reliable (reliability)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I trust the information provided on social media platforms and often use it as new knowledge to grow my business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Knowledge quality of social media use *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The knowledge provided by social media platforms is accurate (accuracy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The knowledge provided by social media platforms is reliable (reliability)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The knowledge provided by social media platforms is relevant (relevance)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media platforms provide knowledge which is easier to understand (easiness)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media platforms provide enough and detailed knowledge to assist with my work (completeness)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media platforms provide knowledge which up-to-date (timely)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Service quality of social media use *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Social media platforms are very responsive to our knowledge requests (responsiveness)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our organization provides reliable internet to support the use of social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media provides prompt support to us when we search for knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I always find the information I need through social media platforms to improve my knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

All members of my organisation are able to provide support to one another regarding challenges of social media platforms use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My organisation encourages learning and upskilling employees through social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Intention to use social media *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I intend to continue using social media to search for knowledge in my organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to continue using social media to record my knowledge about the business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to continue using social media to communicate knowledge about the business with my employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to continue using social media to improve knowledge within my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to continue using social media to help with decision making in my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. User satisfaction with social media *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am satisfied with the efficiency of social media platforms used in my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied with the effectiveness of social media platforms used in my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied that social media meets my organisation's knowledge processing needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find pleasure using social media as a tool to search for organisational knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am gratified with the amount of knowledge stored on social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Effectiveness of social media (Net benefits) *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Social media help my organisation acquire new knowledge and innovative ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media help my organisation to coordinate and manage knowledge effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media provides my organisation with knowledge that helps us accomplish tasks more efficiently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledge acquired on social media improves the quality of work and helps my organisation to be more productive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media platforms improve the turnaround time in my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. Perceptions about the social media evaluating processes in SMMEs *

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
We use social media monitoring tools to evaluate the success of social media platforms in our organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We use a metrics to evaluate the success of social media platforms in our organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of support from members of the organisation is a challenge which hinders us from effectively evaluating our social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of time is a challenge which hinders us from effectively evaluating our social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Lack of adequate skills and knowledge is a challenge which hinders us from effectively evaluating our social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of motivation is a challenge which hinders us from effectively evaluating our social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of policies and guidelines is a challenge which hinders us from effectively evaluating our social media platforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Were all instructions and questions clear and appropriate?
Please comment! *

Enter your answer

Submit

APPENDIX B – REMARKS OF PILOT SURVEY RESPONDENTS

22. Were all instructions and questions clear and appropriate? Please comment!

16 Responses

ID ↑	Name	Responses
1	anonymous	Questions are too long. Try to limit them to 10. Make the sentences shorter. Divide the survey into two parts. The first part must be to find the organisations that use social media. The second part must find the organisations that use and are familiar with knowledge management. The third part must only interrogate the relevant targets audience based on the first and second survey. The challenge is SMMEs do not know much about knowledge management. Most are not even thinking of social media as a platform for knowledge management. They mostly use it for advertising. You have a gap in this case to use social media for knowledge management. But another gap is SMMEs especially micro organisations do not even know what is meant by knowledge management. The survey presentation looks well. Thank you.
2	anonymous	The instructions and Questions were straight forward.
3	anonymous	The questions were clear. Advice is that you should start with the different types that the participant may be using to drive the idea of their experience. Also ask about frequency of social media usage. Social media is a common platform for communication enabling knowledge management but at times it crates incorrect impressions about the people involved. People tend to us the medium for advancing their interests and and times with no truth and accuracy.
4	anonymous	Yes, no further comments survey was straight forward and was easy to understand
5	anonymous	yes
6	anonymous	Yes
7	anonymous	The survey was clear and understood
8	anonymous	Yes they were and a bit provoking for ones perspective
9	anonymous	Yes...
10	anonymous	Yes
11	anonymous	Yes. The question were clear.
12	anonymous	All clear and appropriate
13	anonymous	Yes...indeed.
14	anonymous	Yes
15	anonymous	Yes
16	anonymous	Yes but survey was too long

APPENDIX C – ETHICAL CLEARANCE CERTIFICATE



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

26 November 2018

Ref #: 071/SPM/2018/CSET_SOC
Name: Mr Steven Phaphadi Mamorobela
Student #: 58524304
Staff #:

Dear Mr Steven Phaphadi Mamorobela

**Decision: Ethics Approval for 5 years
(Humans involved)**



Researchers: Mr Steven Phaphadi Mamorobela, 216 Michau Avenue, Danville, 0183,
58524304@mylife.unisa.ac.za, +27 12 382 9666, +27 73 624 8917.

Project Leader(s): Dr Sheryl Buckley, sherbuck@gmail.com, +27 82 574 7457

Working Title of Research:

Evaluating the Effectiveness of Social Media on Knowledge Management Systems of Small, Medium and Micro Enterprises in South Africa

Qualification: PhD in Information Systems

Thank you for the application for research ethics clearance by the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee for the above-mentioned research. Ethics approval is granted for a period of five years, from 26 November 2018 to 26 November 2023.

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



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3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. Field work activities may only commence from the date on this ethics certificate.
8. No field work activities may continue after the expiry date (26 November 2023). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

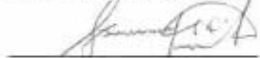
The reference number 071/SPM/2018/CSET_SOC should be clearly indicated on all forms of communication with the intended research participants, as well as with the Unisa College of Science, Engineering and Technology's (CSET) Research and Ethics Committee.

Yours sincerely



Dr. B Chimbo

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



Prof I. Osunmakinde

Director: School of Computing, CSET



Prof B. Mamba

Executive Dean: CSET



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APPENDIX D – PERMISSION LETTER FOR APPROVAL OF RESEARCH



Mr Stevens Phaphadi Mamorobela
University of South Africa
Faculty of Engineering, Science & Technology
School of Computing

06 March 2018

Re: Permission to conduct research at The Innovation Hub Management Company's Business Incubation Programmes (BIC)

Reference is made to your letter of March 2018 on the above subject.

In my capacity as General Manager to the Climate Innovation Centre and head of the Business Incubation Committee (BIC), I grant permission to Mr Stevens Phaphadi Mamorobela to conduct research within The Innovation Hub's Business Incubators.

The following information is agreed upon by the student and the organisation:

The student will not use the name of our organisation in the dissertation;

The student will share the survey/questionnaire in order for it to be distributed by each programme to their start-ups which are approximately 450 combined;

The student will contact Ms Ingrid Mhlophe on imhlophe@theinnovationhub.com 012 844 0012 for any contact or personal information of the other Programme Managers for site visit purposes;

The results of the study will be shared across The Innovation Hub's Business Incubators;

The start-ups are not obliged to meet with the student unless they wish to; and

The incubators are not obliged to conduct the research on their premises, it will only be upon request and approval from individual Programme Managers.

Sincerely

Dr Rethabile Melamu
General Manager: Climate Innovation Centre

Signature : 

Date : 06/03/2018

The Innovation Hub Management Company (SOC) Ltd, Box 1, Mark Shuttleworth Street, The Innovation Hub 0007, Pretoria, South Africa
The Innovation Centre, 6 Mark Shuttleworth Street, The Innovation Hub 0007
Tel: +27 12 844 0000 Fax: +27 12 844 1107 www.theinnovationhub.com

Directors: Dr N Muzoni (Chairman), Mr M Mufwafa, Mr H J Monyokolo, Dr L Marwala, Ms M Medisa, Ms S S Lowitt, Mr G Zencaka
Mr M Sibanda (Chief Executive Officer), Mr M Thomas (Chief Financial Officer) Mr J Mutsaers (Group Company Secretary)
Reg. No. 200501287/06-A (SOBA Group Company)



APPENDIX E – PARTICIPANT INFORMATION SHEET



PARTICIPANT INFORMATION SHEET

Ethics clearance reference number: 071/SPM/2018/CSET_SOC

12 December 2018

Title: Evaluating the effectiveness of Social Media on Knowledge Management Systems of Small, Medium and Micro Enterprises in South Africa

Dear Prospective Participant

My name is Mr Stevens Phaphadi Mamorobela and I am doing research under the supervision of Prof Sheryl Buckley, an Associate Professor in the School of Computing towards a Phd Information Systems degree at the University of South Africa. I am inviting you to participate in a study entitled: Evaluating the effectiveness of Social Media on Knowledge Management Systems of Small, Medium and Micro Enterprises in South Africa.

WHAT IS THE PURPOSE OF THE STUDY?

Researchers have revealed that organizations are highly dependent on the knowledge that is held by employees in order to stay in business and be competitive. It is therefore imperative for organizations to evaluate their systems of managing such critical knowledge in order to ensure that they compete and remain sustainable. However, research shows that majority of Small, Medium and Micro Enterprises (SMMEs) still lack formal processes of managing knowledge effectively as opposed to their large counterparts. The lack thereof could be linked to multiple factors attached to the SMME business. Financial constraints are among the many challenges hindering such activities in the SMME sector of South Africa.

The purpose of this study is to develop a model for evaluating the effectiveness of Social Media on Knowledge Management Systems (KMS) of SMMEs in South Africa. This study is expected to collect relevant information that could assist in the development of a model and your participation as an expert in the SMME sector is important to this study.

In order to achieve the main purpose of this study, several objectives are targeted including:



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1. To investigate how SMMEs in South Africa use Social Media to enhance their KMS.
2. To identify the factors that can be used by SMMEs in South Africa to evaluate the effectiveness of Social Media on their KMS.
3. To assess the significance of the identified factors in the evaluation of Social Media to enhance KMS of SMMEs.
4. To identify current methods used by SMMEs in South Africa to evaluate the effectiveness of Social Media in KMS.
5. To determine the challenges experienced with the current methods of evaluating the effectiveness of Social Media in KMS of SMMEs in South Africa.
6. To suggest a model that can be used by SMMEs in South Africa to evaluate the effectiveness of Social Media on KMS

WHY AM I BEING INVITED TO PARTICIPATE?

This research requires meaningful information obtained from SMME owners and managers with expertise and experience in the SMME sector, who use Social Media in their work environments. Therefore, you have been chosen to participate in the study because of your expertise and experience. Your details have been obtained from your company's website. An approval letter was also provided by the Innovation Hub Management Company's Business incubation Programme (BIC) to conduct interviews at your company's premises at your convenient time.

The study follows a mixed method research approach with prominence on quantitative data. The researcher aims to understand the perceptions of SMME owners and managers regarding the use of Social Media on their organizational knowledge activities in order to develop a model for evaluating the effectiveness of Social Media on KMS of SMMEs in South Africa. This objective will be achieved by collecting data through closed questionnaires, semi-structured interviews, observations and document reviews in order to obtain meaningful and rich information that is critical for analysis.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

If you decide to be a participant of the study, you are required to:

- Read the participant information sheet
- Sign the informed consent form
- Complete the closed-ended questionnaire at your convenient time



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- Attend a face-to-face interview with me as the researcher where you will be asked a series of questions pertaining to social media use and knowledge management activities in your company.

The expected duration of the interview is about 45 minutes to 1 hour, the details of which will be audio recorded. After the interview, I would like to observe how the knowledge management activities are actually conducted in your company, taking notes of the process. You will also be asked to produce standard procedure documents to confirm the knowledge management process.

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

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. However, you are free to withdraw from participation at any time and without giving a reason.

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

If you agree to participate in the study, you will make a contribution towards establishing a model for Social Media evaluation on knowledge management practices in the SMMEs sector as a solution to support business sustainability and economic growth. The results of the study will be shared freely with your organization as a token of appreciation for participating in the study.

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

There is no risk of harm to the participants of this study. The only inconvenience may be if the researcher may find the responses obtained from the interview insufficient and would request to have a follow-up interview. This would have an adverse effect on your work schedule since you would be required to participate in the interview more than once.

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



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Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

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

At the end of the study, a report of the study may be submitted for publication as a research report, journal article, or conference proceedings, but individual participants will not be identifiable in such a report.

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

All collected data through interviews, including audio recording and notes taken during observations will be stored in secure places. Hard copies of your answers will be stored by the researcher for a minimum period of five years in a locked cupboard in my office at my house for future research or academic purposes while electronic information will be stored on a password protected computer with encryption software. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. Hard copies will be shredded and/or electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software program to ensure that there is no audit trail of the data after it has been destroyed.

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

There is no payment or rewards offered, financial compensation or otherwise, for participation in this study.

HAS THE STUDY RECEIVED ETHICS APPROVAL

This study has received written approval from the Research Ethics Review Committee of the School of Computing, Unisa with reference number: 071/SPM/2018/CSET_SOC. A copy of Ethical clearance certificate has been attached.



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

If you would like to be informed of the final research findings, please contact the researcher, Mr Stevens Phaphadi Mamorobela on 0736248917 or 58524304@mylife.unisa.ac.za or phaphadi@gmail.com. The findings are accessible from June 2021.

Should you require any further information or want to contact the researcher about any aspect of this study, please contact Mr Stevens Phaphadi Mamorobela on 0736248917 or 58524304@mylife.unisa.ac.za or phaphadi@gmail.com

Should you have concerns about the way in which the research has been conducted, you may contact my research supervisor, Dr Sheryl Buckley on 0825747457 or sherbuck@gmail.com. Contact the Research Ethics Review Committee of the School of Computing, Unisa, on SocEthics@unisa.ac.za if you have any ethical concerns.

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

Thank you.



Mr Stevens Phaphadi Mamorobela



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APPENDIX F – INTERVIEW SCHEDULE



INTERVIEW PROTOCOL

Ethical clearance #: 017/SPM/2018/CSET_SOC

EVALUATING THE EFFECTIVENESS OF SOCIAL MEDIA ON KNOWLEDGE MANAGEMENT SYSTEMS OF SMALL, MEDIUM AND MICRO ENTERPRISES IN SOUTH AFRICA

The aim of this interview is to collect perspective of Small, Medium and Micro Enterprises' (SMMEs) owners and managers regarding the use of social media to enhance knowledge management systems (KMS). The collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on KMS of SMMEs. You are kindly requested to participate. The interview will take approximately 45 minutes to 1 hour of your time. All information will be treated as strictly confidential with full anonymity to participating companies and research participants. You are welcome to withdraw at anytime during the interview process.

SECTION A: DEMOGRAPHIC INFORMATION OF RESPONDENTS

This section aims to collect demographic information of the research participants

1. What is your gender? _____
2. What role do you assume in the organisation? _____
3. About how many employees work in your organisation? _____
4. About how much is the estimated annual turnover of your organisation? _____
5. Under which municipality is your organisation located? _____

SECTION B: SOCIAL MEDIA AS A KNOWLEDGE MANAGEMENT TOOL

This section aims to ascertain how SMMEs use social media platforms to enhance KNOWLEDGE MANAGEMENT SYSTEMS?

1. Would you take me through the process you follow to manage knowledge in your organisation?
2. Can you describe a project in which team members used social media platforms to acquire, store, share or apply knowledge?
3. Which specific social media platforms were used in the above mentioned project?



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SECTION C: FACTORS USED TO EVALUATE SOCIAL MEDIA ON KMS

This section aims to ascertain the factors which can be used to evaluate the effectiveness of social media on KMS of SMMEs in South Africa as well as their significance.

1. Compatibility
 - How compatible are these social media platforms in your knowledge management systems?
2. Complexity
 - What are the challenges that your organisation experiences when using social media to aid the knowledge management systems?
3. Relative advantage
 - What are relative advantages of social media over other technologies to aid specific needs of your organisation's knowledge management systems?
4. Coordination
 - How do you perceive social media platforms capability to organize knowledge within your organisation?
5. Immediate access
 - How do you perceive social media's immediate access to knowledge and its effects on the quality of knowledge within your organisation's knowledge management systems?
6. Social presence
 - How do you perceive the effect of social connections of staff on quality of knowledge within your organisation's knowledge management systems?
7. Facilitating conditions
 - How does the infrastructure of social media affect the quality of your organisation's knowledge management systems?
8. Social influences
 - How does the influence of other organisations to use social affect the quality of your organisations knowledge management systems?
9. Intention to use/het benefits



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- What are your organisation's intentions with social media to enhance knowledge management systems?
10. User satisfaction
- What is your organisation's satisfaction with social media to enhance knowledge management systems?
11. Net benefits
- Can you describe your organisation's main benefits of using social media to enhance knowledge management systems?

SECTION D: CURRENT EVALUATION METHODS AND THEIR CHALLENGES
--

This section aims to ascertain the challenges experienced with the current evaluation methods

- How do you use and evaluate the social media platforms for your organisation's knowledge management systems?
- What challenges does your organisation face when evaluating social media platforms in the knowledge management systems?
- Are there any other challenges that were not covered in this interview that you would like to have discussed?
- Before we conclude, would you like to raise some points that have not been raised so far?

-----THANK YOU FOR PARTICIPATING-----



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APPENDIX G – PARTICIPANT CONSENT TO PARTICIPANT FORM



CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.


I agree to the recording of the Interview.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname..... (please print)

Participant Signature..... Date.....

Researcher's Name & Surname... STEVENS PHAPHADI MAMOROBELA

Researcher's signature: 

Date: 12 February 2020



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APPENDIX H – INTERVIEW DOCUMENTS

The screenshot displays a software interface for document analysis. The top menu bar includes File, Home, Search Project, Analyze, Import & Export, Tools & Support, Document, and View. The main workspace shows a document titled "Unknown Speaker2_24:17" with the following text:

I think social media doesn't replace ICT tools. Rather Social Media will enhance ICT tools. Social media becomes a tool of gathering information. So they become an input fest of gathering information.

And then you still need your ICT tools to process that information and extract what you want and then create those knowledge management systems.

Then you use the same social media for output. So now you can from what you've extracted from management systems, you can put it on a dashboard, put it in social media, but social media becomes now the input, one of the inputs, so it can't replace ICT tools because it's one of the inputs. There is still real life where you can get information from people by talking to them directly as another input.

There is also your content that you get from your financial systems which IT systems, There is also the real registers, the physical registers which can give you information and input on how you performing and what your customers want.

So, it cannot be a replacement, it's just one input resource to feed the knowledge management system.

The sidebar on the left shows a search results list for "Evaluating the Effectiveness of Social Media on Knowledge Management Systems of S...". The list includes 13 documents, with "D 2: Interview2 (45)" highlighted.

APPENDIX I – THE CODEBOOK

No.	Code name	Code Definition			Theme name
		Description	Origin	Importance	
1	Compatibility of Social Media with KMS of SMMEs	Respondents' insight regarding social media's association with values, past experiences and practices in the SMME	Deduced from Rogers (2003); Henderson (2017)	To contribute to research question (RQ2, RQ3)	SM innovation characteristics
2	Complexity of Social Media	Respondents' opinion on the their experience with the use of SM in the KMS processes	Deduced from Henderson (2017); Laukkanen & Cruz (2009); Rogers (2003);	To contribute to research question (RQ2, RQ3)	SM innovation characteristics
3	Complexity of Social Media: Authenticity of content	Respondents' opinion on the authenticity of content			
4	Complexity of Social Media: Challenges in SMMEs	Respondents' insight regarding the difficulty of use			
5	Complexity of Social Media: Easy to use	Respondents' insight regarding the ease of use			
6	Relative advantage of Social Media	Respondent's insight on advantages of social media when used to enhance KMS	Deduced from Rogers (2003); Henderson (2017)	To contribute to research question (RQ2, RQ3)	SM innovation characteristics
7	Coordination of knowledge through Social Media	Respondent's insight on the use of social media to improve knowledge stored in the KMS	Deduced from Xu et al. (2012); Scholtz et al. (2017); Xu et al. (2012)	To contribute to research question (RQ2, RQ3)	Determinants of SM to enhance the KMS
8	Immediate access to Knowledge through Social Media	Respondent's insight on how social media provides access to knowledge on demand	Deduced from Xu et al. (2012); Scholtz et al. (2017); Xu et al. (2012)	To contribute to research question (RQ2, RQ3)	Determinants of SM to enhance the KMS
9	Social presence of knowledge sources through Social Media	Respondent's insight on social media's effect of providing a sense of awareness of the presence of knowledge experts similar to face-to-face practices	Xu et al. (2012); Weisberg et al. (2011)	To contribute to research question (RQ2, RQ3)	Determinants of SM to enhance the KMS
10	Facilitating Conditions of using Social Media to enhance KMS	Respondent's insight on the environment, organisational and technical infrastructure that exists to support the use of social media to enhance the KMS	Deduced from Venkatesh et al. (2012)	To contribute to research question (RQ2, RQ3)	SMME support activities influencing the use of SM
11	Social influence of using Social Media to enhance KMS	Respondent's insight on how significant others influence their decision to use SM to enhance the KMS	Gruzd et al. (2012); Chang (2012)	To contribute to research question (RQ2, RQ3)	SMME support activities influencing the use of SM

No.	Code name	Code Definition			Theme name
		Description	Origin	Importance	
12	Service quality of KMS through Social Media	Respondent's insight on the how social media facilitates the KMS functions of knowledge creation, acquisition, storage, transfer and application	Deduced from Lwoga (2013); Al-Shibly (2011); Masrek, Jamaludin & Mukhtar (2010); Petter et al. (2013); Jennex & Olfman (2006)	To contribute to research question (RQ2, RQ3)	KMS Success factors
13	Knowledge quality of KMS through Social Media	Respondent's insight on the ability of social media to capture knowledge and accurately transfer it to those who need it	Deduced from Siemens (2005); Petter et al. (2013); Masrek, Jamaludin & Mukhtar (2010) Kulkarni, Ravindran & Freeze (2007); Jennex & Olfman (2006)	To contribute to research question (RQ2, RQ3)	KMS Success factors
14	System quality of KMS through Social Media	Respondent's insight on the overall support provided by the service providers to ensure that social media achieves the intended functions of facilitating KMS activities	Deduced from Lwoga (2013); Al-Shibly (2011); Masrek et al. (2010); Petter et al. (2013); Jennex & Olfman (2006)	To contribute to research question (RQ2, RQ3)	KMS Success factors
15	SMMEs Intention to continue using Social Media to enhance KMS	Respondent's insight on the perceived benefit and favourable attitude towards using social media that results in continuation of use to enhance the KMS	Deduced from Petter et al. 2013; Wang (2008); Jennex & Olfman (2006)	To contribute to research question (RQ2, RQ3)	KMS Success factors
16	User Satisfaction of SMMEs when Social Media is used to enhance the KMS	Respondent's insight on the fulfilment they get from using social media to enhance the KMS	Deduced from Lwoga (2013); Masrek et al. (2010); Wu & Wang (2006); Jennex & Olfman (2006)	To contribute to research question (RQ2, RQ3)	KMS Success factors
17	Net Benefit of using Social Media to enhance KMS	Respondent's insight on the resultant positive outcome achieved through the use of social media to enhance the KMS	Deduced from Al-Shibly (2011); Delone & Mclean (2003); Jennex & Olfman (2006)	To contribute to research question (RQ2, RQ3)	KMS Success factors

No.	Code name	Code Definition			Theme name
		Description	Origin	Importance	
18	KMS process is executed by Social Media	Respondent's insight on how SM is used to achieve KMS processes in SMMEs	Inductive with reference from Meske & Stieglitz (2013); Epure et al. (2017); Ferenhof et al. (2017); Jones et al. (2015)	To contribute to research question (RQ1)	Using SM to enhance KMS in SMMEs
19	KMS process is executed by Social Media: Knowledge Acquisition	Respondent's insight on how SM is used to acquire knowledge in SMMEs			
20	KMS process is executed by Social Media: Knowledge Creation	Respondent's insight on how SM is used to create knowledge in SMMEs			
21	KMS process is executed by Social Media: Knowledge Storage	Respondent's insight on how SM is used to store knowledge in SMMEs			
22	KMS process is executed by Social Media: Knowledge Transfer	Respondent's insight on how SM is used to transfer knowledge in SMMEs			
23	KMS process is executed by Social Media: Knowledge application	Respondent's insight on how SM is used to apply knowledge in SMMEs			
24	SMMEs prefer to use Social Media	Respondent's insight on why SMMEs prefer SM as a tool for KMS	Inductive with reference from Høgevoid et al. (2016)	To contribute to research question (RQ1)	Using SM to enhance KMS in SMMEs
25	Social Media platforms for achieving KMS processes	Social media platforms used to support the KMS functions of knowledge acquisition, storage, transfer and presentation	Inductively coded from the data	To contribute to research question (RQ1)	Using SM to enhance KMS in SMMEs
26	Challenges with evaluating Social Media	Respondents' opinion regarding the challenges with evaluating SM	Inductively coded from the data	To contribute to research question (RQ5)	Challenges experienced with evaluation of SM
27	Tools of evaluating Social Media in SMMEs	Respondent's opinions on ICT tools used to evaluate the effectiveness of SM in SMMEs	Inductively coded from the data	To contribute to research question (RQ4)	Social Media evaluation methods in SMMEs
28	Processes of evaluating Social Media in SMMEs	Respondent's opinions on processes followed in evaluating the effectiveness of SM in SMMEs			
29	Suggested approach for evaluating Social Media to enhance KMS	Respondents' opinion on and suggestions on how SM can best be evaluated as a method of enhancing the KMS	Inductively coded from the data	To contribute to research question (RQ6)	Suggested approaches for evaluating SM in SMMEs

APPENDIX J – LIST OF CODES

Code Groups	Name	Grounded	Density	Groups	Created by	Modified by	Created
Challenges experienced with evaluation of Social Media (1)	[KMS process is executed by Social Media: Knowledge application~	19	1	1	Steve	Steve	30/05/2020
Determinants of Social Media to enhance the KMS (3)	[KMS process is executed by Social Media: Knowledge Creation~	10	1	1	Steve	Steve	30/05/2020
KMS Success factors (6)	[KMS process is executed by Social Media: Knowledge Transfer~	18	1	1	Steve	Steve	30/05/2020
SMME support activities influencing the use of Social Media (2)	[KMS process is executed by Social Media: Knowledge Acquisition~	19	1	1	Steve	Steve	30/05/2020
Social Media evaluation methods in SMMEs (2)	[KMS process is executed by Social Media: Knowledge Storage~	11	1	1	Steve	Steve	30/05/2020
Social Media Innovation characteristics (3)	Challenges with evaluating Social Media~	10	0	0	Steve	Steve	29/05/2020
Suggested approaches for evaluating Social Media in SMMEs (1)	Coordination of knowledge through Social Media~	15	0	0	Steve	Steve	28/05/2020
Using Social Media to enhance KMS in SMMEs (3)	Immediate access to knowledge through Social Media~	14	0	0	Steve	Steve	29/05/2020
	Social presence of knowledge sources through Social Media~	8	0	0	Steve	Steve	29/05/2020
	SMMEs intention to continue using Social Media to enhance K...~	24	0	0	Steve	Steve	29/05/2020
	Net Benefit of using Social Media to enhance KMS~	20	0	0	Steve	Steve	29/05/2020
	User Satisfaction of SMMEs when Social Media is used to enhan...~	22	0	0	Steve	Steve	29/05/2020
	System quality of KMS through Social Media~	23	0	0	Steve	Steve	29/05/2020
	Knowledge quality of KMS through Social Media~	21	0	0	Steve	Steve	29/05/2020
	Service quality of KMS through Social Media~	14	0	0	Steve	Steve	29/05/2020
	Social influence of using Social Media to enhance KMS~	9	0	0	Steve	Steve	29/05/2020
	Facilitating Conditions of using Social Media to enhance KMS~	9	0	0	Steve	Steve	29/05/2020
	Processes of evaluating Social Media in SMMEs~	6	0	0	Steve	Steve	29/05/2020
	Tools of evaluating Social Media in SMMEs~	3	0	0	Steve	Steve	29/05/2020
	Complexity of Social Media: Authenticity of content~	9	1	1	Steve	Steve	30/05/2020
	Complexity of Social Media: Challenges in SMMEs~	6	1	1	Steve	Steve	30/05/2020
	Complexity of Social Media	0	3	3	Steve	Steve	30/05/2020
	Relative advantage of Social Media~	13	0	0	Steve	Steve	28/05/2020
	Compatibility of Social Media with KMS of SMMEs~	13	0	0	Steve	Steve	28/05/2020
	Complexity of Social Media: Easy to use~	14	1	1	Steve	Steve	30/05/2020
	Suggested approach for evaluating Social Media to enhance KMS~	4	0	0	Steve	Steve	29/05/2020
	Social Media platforms for achieving KMS processes~	16	0	0	Steve	Steve	26/05/2020
	SMMEs' need to use Social Media~	17	0	0	Steve	Steve	26/05/2020

APPENDIX K – FIRST-CYCLE CODING

The screenshot displays a software interface for qualitative data analysis. The main window shows a document titled "D 2: Interview2" with the following text:

Unknown Speaker2_24:17
 I think social media doesn't replace ICT tools. Rather Social Media will enhance ICT tools
 Social media becomes a tool of gathering information. So they become an input fest of gathering information.]
 And then you still need your ICT tools to process that information and extract what you want and then create those knowledge management systems.
 Then you use the same social media for output. So now you can from what you've extracted from management systems, you can put it on a dashboard, put it in social media, but social media becomes now the input, one of the inputs,
 so it can't replace ICT tools because it's one of the inputs. There is still real life where you can get information from people by talking to them directly as another input,
 there is also your content that you get from your financial systems which IT systems,
 There is also the real registers, the physical registers which can give you information and input on how you performing and what your customers want.
 So, it cannot be a replacement, it's just one input resource to feed the knowledge management system]

Unknown Speaker1_25:34
 Okay, Now, how would you perceive social media platforms capacity to organise knowledge, how would you perceive it in terms of putting knowledge in order within your organisation?

Unknown Speaker2_26:01
 Oh, okay. All right. See The nice thing about social media is that they've done the work of presentation, okay?
 So it makes it very much easier for you to present to your audience in a simplified in a manner that people are already accustomed to using, as opposed to traditional IT systems which look scary, then people don't even understand.]
 There's an arrow going there and graphs that are difficult to understand.
 But social media doesn't have such complexities. [The platforms have ways of presenting information, how people like it,
 for example, on the Twitter activities, they have a simple graph you can see like at first glance, how many people liked it, why and then how many keep to your profile
 So they've fine tuned the presentation. So it makes it easier for us as SSMEs in this knowledge management industry to utilise it as another output tool that can present information in a simplified manner.]

The interface includes a top menu bar with options like File, Home, Search Project, Analyze, Import & Export, Tools & Support, Document, and View. A central toolbar contains icons for various functions such as Create Free, Open, Code, List, Quick, Auto, Focus Group, Coding, Quotation, Unlink, Flip, Relation, Comment, Cloud, Word, Word, List, Search, and Document. A right-hand sidebar shows a list of documents and interview segments, with "D 2: Interview2 (45)" selected. A bottom toolbar contains icons for coding and analysis, including "Coder (28)", "Challenges with evaluating SM (10-0)", "Compatibility of SM with KMS of SSMEs (13-0)", "Complexity of SM (0-3)", "Complexity of SM: Authentic content (9-1)", "Complexity of SM: Challenge (6-1)", "Complexity of SM: Easy to use (14-1)", and "Coordination activities (15-0)".

APPENDIX L – THEMES

The screenshot displays a software interface for managing code groups. At the top, there is a toolbar with several tabs: 'Codes', 'Search & Filter', 'Tools', and 'View'. The 'Codes' tab is active, showing a 'Free Code(s)' icon and a list of actions: 'New Group', 'Create Smart Group', and 'Smart Code'. The 'Tools' tab contains 'Create Snapshot', 'Duplicate Code(s)', 'Rename Code', and 'Delete Code(s)'. The 'View' tab includes 'Edit Comment', 'Edit Smart Code', 'Open Group Manager', 'Change', 'Merge', and 'Split'. Below the toolbar is a search bar labeled 'Search Code Groups' with a magnifying glass icon. The main area is titled 'Code Groups' and contains a list of code groups, each with a diamond icon and a count in parentheses:

- Challenges experienced with evaluation of Social Media (1)
- Determinants of Social Media to enhance the KMS (3)
- KMS Success factors (6)
- SMME support activities influencing the use of Social Media (2)
- Social Media evaluation methods in SMMEs (2)
- Social Media innovation characteristics (3)**
- Suggested approaches for evaluating Social Media in SMMEs (1)
- Using Social Media to enhance KMS in SMMEs (3)

APPENDIX M – INTERVIEW TRANSCRIPTS

Interview 1

Interviewer 0:00

Aim is just to get a sense of, you know, your, your your viewpoints regarding the use of social media. I take it you've gone through, you know, a brief of what the study is all about and stuff from the doc that I said, Okay, Okay, awesome. The title of the study is evaluating the effectiveness of social media on knowledge management systems for small, medium and medium and micro enterprises in South Africa. The aim of the interview is to collect perspectives of small and medium enterprise owners and managers regarding the use of social media to enhance knowledge management systems, the collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge management systems of SMME; you are kindly requested to participate. The interview will take approximately 45 to an hour of your time. So without wasting any time, I'll just get on to it because usually the interview will take 45 minutes, but because it's going to be virtual, I'll try to shorten that time to like 30 minutes strictly or so. Also note that the interview is recorded. Are you happy to start?

Interviewee 3:45

Yeah. No problem.

Interviewer 3:52

Okay thank you. So what's the name of your company?

Interviewee 4:14

The name of the company it's called ***.

Interviewer 4:29

Okay. So your role? what is your role their?

Interviewee 4:35

Im a director in the company, okay.

Interviewer 4:50

Okay. And then how many employees including yourself work for this organisation?
partners and some of the admin people?

Interviewee 5:13

Currently I am running solo, so you can say one employee, okay,

Interviewer 5:35

so it's just one for you currently it's just you right?. Okay.

And then what is your estimated annual turnover, including, you know, the resources that
you would need to get the business running?

Interviewee 5:54

I would say roughly about R500 000. Because the company is not very old and its just me
alone in the business

Interviewer 6:24

okay. And in which municipality does it operate?

Interviewee 6:42

Okay, my clients are nationwide but I am located in Centurion, Pretoria, City of Tshwane

Interviewer 7:00

Okay, what does this business do? and how do you actually manage the knowledge that's
needed to run the business?

Interviewee 7:49

So in my line of business is to ensure that we provide the technology that will enable the
organisation to operate, operate that about infrastructure applications. And, you know,
security and investment related Technology Services.

Interviewer 8:24

Okay, Do you perhaps use social media platforms to acquire store share and apply
knowledge exchange with clients?

Interviewer 8:53

Okay which specific tools do you use?

Interviewee 9:10

I use Facebook, okay. On Twitter, okay. Yeah mainly Facebook and Twitter. Mainly Okay.

Interviewer 9:39

All right. So how compatible are these social media platforms with what you are currently doing? Would you regard social media platforms as an effective tool to conduct your business? considering the currently lockdown situation the whole world is in?

Interviewee 10:14

Yes, they are comfortable because they become a channel that people, even when they are at home they could be able to inquire about information and providers response for information and to be able to understand difficulties, where people are, and even guide in terms of, you know, what will be the available services on which channel and be able to unblock areas of challenges. So they become ideal platforms to use. Where you're in a lockdown and people have limited mobility. So that is the time in which they are mostly and easily used to continue to provide services. And even keeping people up to date.

Interviewer 11:15

Okay, awesome. So But now what could be now the anticipated challenges now currently, because you're used to face to face you know, going to the office on a day to day but now all of a sudden things have changed. You have to now use social media platforms to conduct your business, what could be potential challenges, especially for your business?

Interviewee 11:40

The challenge will be for people who may not have the resources to use these channels, for example, we 're still talking about the data that is needed, yes the tools might be there if people want to interact with you, but the cost of the data package is a challenge. But when people have access then the disadvantage is that yes, in areas where they might be able to do that and you might not be able to render all services through that. But the positive side...

Interviewer 12:23

Can you repeat the positive set? I lost you there?

Interviewer 12:44

I lost you a little bit.

Interviewer 14:46

I'm not hearing anything now.

Interviewer 14:49

Are you still connected?

Interviewer 14:59

I'm not saying Unit I lost you completely completely.

Interviewer 15:12

Yeah, so now we're back. Yeah, I lost you.

Interviewer 15:20

Okay. Yeah. Can you can you repeat what you were talking about? The positives of using it?.

Interviewee 15:29

Yeah the positive part is that now with this you will be able to change your models, okay. So delivery of services, not to be purely on physical sense, if you look at the lockdown what, what is doing around the world over, is to say we need to adopt models that will enable us to continue doing business, in the absence of normality. And that's what those are the new models that we'll see. And I think after 21 days or even when we go back to normality organisation, will have altered their way of operating and even customers will be used to starting to adopt new models. Because you can say, I do not want to jump into social media or technology, but if you want to get information those are the channels that are available and we might adopt and find that becoming mainstream going forward.

Interviewer 16:39

Okay, but now with these new models, is it something that is being developed currently or do we perhaps have one that exists? on how to do things now? take one task and say, in the past, we used to do face to face but now we are using this platform and this is how we formalise our strategies around social media? So is it something that you're those formal structures, do they exist on formal models? Do they exist currently? Or are they under development?

Interviewee 17:16

So they will not be existing because it was something that you say, by the way, you also have this online platform. But as we are going, I think they'll be formalised probably after but now you're just saying the more effort goes to online platforms because of the need to keep your customers constantly engaged, so that will be that move. So I'm saying the formality will be realised as we go back to normal activity. See the adoption of these formalised models.

Interviewer 18:04

Yeah, So earlier on you were saying you were busy with some work related stuff are you currently working from home?

Interviewee 18:31

Well, it's a matter of saying, how do we keep business continuing? Because even in lockdown, we can't stop but we keep that business continuing. Oh, it's about continuing in the absence of normality. So it means yes remote and also making sure that services are continuing.

Interviewer 18:58

So now being That is it May, looking at the current situation you working from home you want to continue business continuity. How effective is social media in making sure that whatever that you need, be it may be someone providing you with information, is immediately available during this time of lockdown. How do you perceive that aspect of social media or how effective is social media in providing you with it?

Interviewee 19:34

Well the effectiveness is the instant, that reach that one can have. So you have a high number of people on social media that you can reach instantly, so that you can clarify issues as quickly as possible. And there's no room for things to be to be misinterpreted or miscommunication you can be able to put a position very quickly. Yeah,

Interviewer 20:19

Yeah, look, I like the point that you're raising now but, you know, Misinformation and getting access to information that is relevant. Do you think social media is able to provide that validation of the information and the relevance of information based on you know, you know, how you get it and from whom you get it? From your own view, do you think social media isn't able to provide that validation?

Interviewee 20:58

As much as there is a lot of misinformation or fake news, I think if there's information said about a brand or about a certain services, the owners of the services then have got the opportunity to set the record straight. When something is said about a brand, and the owners response, that's where they put in the misinformation that is being communicated, or at all levels when you already and even you can validate from the valid account, if it's twitter you can validate from the valid Twitter account of the whoever information you sent about, So is that valid that can come because people can go against the valid accounts so that they know that the information that is coming from this account we know is valid. You put your information through that and even Whether the Facebook account, there must be a valid Facebook account that they can reference. Other than sometime you have misinformation and you don't respond to it

Interviewer 22:11

Do you perhaps have any sense of how social media is effective for the business as a whole in terms of measuring through a matrix to measure the return on investment of social media platforms, or measuring whether social media platforms is working effectively for marketing and the likes? Do you have any tool that you use to measure whether social media is effective or not?

Interviewee 23:08

Well, the measure we'll be looking at for instance, the followership and the responses that are there. I'm not so sure on the formalised tool that exist in the market yet? But one can measure by viewing the followership and the responses that you're getting and the interaction with people that fall in. That gives you an indication of people following you and interacting with you. But obviously, most cases here might be people who already advanced within that area. It's about knowing if you're growing and communicating and interacting to know that you have got followership.

Interviewer 23:58

So now by now can Because the study aims to come up with a model now, for evaluating the effectiveness of social media which is along the lines of measuring whether we have a return on investment, formalizing this model for small and medium enterprises, because we aim at targeting small and medium enterprises, because of the challenges that they have, lack of resources, financial muscle, you know, the banking sector is reluctant to give them loans and stuff like that. But then social media is now changing the game to say, but we have these tools, these platforms, most of them are free. All you need is just that data to make it available and make it work. But now there is no formal method that is formalised, especially within the SMME environment. Even in large organisations, social media is still used as a personal tool but then we still we see a lot of companies relying on social media. Especially during this time, and I use this time as an example of lockdown because that's where we start realizing the benefits of social media, how it can actually help us to conduct our business. So in the process of formalizing this process, what sort of pointers Can you give? Or can you highlight from your own experience for someone to actually consider when we come up with this comprehensive model of measuring the effectiveness of social media? What sort of pointers can you share with me?

Interviewee 25:45

Yeah, obviously, if you look at some of this social media you could be able to track, you know, the uptake, the followers around it, and then you can also now understand areas that you still need to target. But out of that you can understand that as you are targeting, how to target the specific people, that your message go to, if it's an SMME on a particular service, you can be able now to start a segment and target within those platforms so that your message is directly targeted, that will respond to your consumption of your product or

service. Other than just going up all over so you can be able to target around people that can specifically respond to you product or service.

Interviewer 27:10

Okay, this concludes our interview. Thank you very much. You've given me enough information of this. Thank you for your valuable input. It's going to help really, really going to help and what's going to happen next when I finish up when I finished with the right app I'm going to share with you know, the report of the study. So, hopefully towards the end of the year, if you can just hope and pray for me.

Interviewee 27:50

Yeah, will do. All the best.

Transcribed by <https://otter.ai>

Interview 2

Interviewer 0:01

Okay, so I'll be going through the interview protocol. Just to read the basic rules of the interview.

Interviewee 0:15

Who are you? Haahahahah

Interviewer 0:19

Thank you, thank you for making the time to actually participate in the study. This is the interview with *****, she will explain her role in the company. The interview protocol goes as such, the title of the study is evaluating the effectiveness of social media on knowledge management systems for small, medium and medium and micro enterprises in South Africa. The aim of the interview is to collect perspectives of small and medium enterprise owners and managers regarding the use of social media to enhance knowledge management systems, the collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge management systems

of SMME, you are kindly requested to participate. The interview will take approximately 45 to an hour of your time. I understand that you request that for only 30 minutes and we try to keep it as such as short as you've requested. All the information will be treated as strictly confidential. With full anonymity of participating companies and research participants, meaning your name will not be revealed anywhere in the reporting of the study. You are welcome to withdraw at any time during the interview process. Another important aspect is that there is no payment or reward offered or financial compensation or otherwise for participating in the study. However, your contribution will help in the contribution to the body of knowledge. Please note that the interview is recorded. Are you happy to start the recording? Is all in order?

Interviewee 2:09

Yes, I understand and I agree to participate.

Interviewer 2:15

May you please kindly explain to us your role in your organisation? Okay.

Interviewee 2:21

My name is ***. I'm the founder and owner of a company called ***, which is an application development company. The services that we offer they range from software development, project management services, business analysis, facilitation, and training. And then we're also involved in the aspect of business development for SMMEs. So what do you do we offer business development services, we also running a township incubator. We are assisting digital entrepreneurs to access markets and to develop their own products. We also are involved in digital platforms where we are actually using digital platforms to create trends analysis. So, all the content that you receive there and the information, the data we actually make it out and to enhance our product services or to create your product. So, all of this comes into what you can easily call a the most basic part of knowledge management where we are collecting the data itself, before it even goes into information and then it goes into subject matter experts. So we are involved from the beginning, from the raw collection of data into any type of knowledge management system or process.

Interviewer 4:07

Thank you very much about how many employees work in your organisation?

Interviewee 4:14

At any point there are four (4) permanent employees and it varies on the students graduates and interns we take in and that could vary from four to 10 at a time. So at any given point they could be about 14 employees

Interviewer 4:36

Roundabout how much is your annual turnover? Okay.

Interviewee 4:42

My annual turnover is less than a Million (<R1 Million). Okay.

Interviewer 4:49

And under which municipal area you currently operating? or where Is your business located?

Interviewee 4:58

We have been lucky enough to actually get clients across all provinces but we are based mainly in Gauteng. And then we have had interactions with the South African cities networks. So we've worked with city of Tshwane on a pilot project around trends analysis, and then we piloting that, then we move it to Ekurhuleni and City of Johannesburg. We've also worked with other municipalities in other provinces, the Ndlambe municipality, and also another Municipality in Limpopo that I can't recall the name. And besides the municipalities, you've worked with companies across all provinces. Okay.

Interviewer 5:53

Okay, Now, would you because you've already mentioned a little bit about knowledge management In your business, could you kindly take me through the process of how you actually manage knowledge or how your knowledge management system is like?

Interviewee 6:09

Alright. So, my background being technically IT, I have the privilege of understanding things from first principles. So, the process that we do is we first understand what the requirements of your client are. So you understand the overview for the client needs. And

then from that we derive processes and what processes are needed to influence the vision that the client is in to achieve their primary requirements. After those processes, the processes are obviously related to tasks or resources in any other thing that is connected to that process. We map all these out to a point. We actually have a requirement, then we have a requirement, okay? From the vision, the processes that are available, the data that is available the systems that are in the process in the in the company. And then these are the requirements from the training side. But here is actually the knowledge management aspect of it. So, sometimes they don't even know the term 'knowledge management', they hardly ever use it. So they just want what they want. And it's always based on their lack of knowledge management systems, because there's a lot of silos. Most of them they don't have centralised information repositories from simple sharing, to actually keeping content to follow their retention policies. So, we go right to the point of a one aspect of knowledge management which is the documents and records management. We offer those services as well. So moving from the processes, the systems, we've analysed everything up to the point where we know that Okay, these are the requirements. Now we now move like for this requirement to be fulfilled, what is it? What are the technical aspects that we can do? So we know that, okay, fine, these ones the media repository, not only do they need a repository, they need a collaboration platform. After that, they actually need some way where they can manage the intellectual property of the companies, which is when the knowledge management comes in, where you bring in all the intellectual information into one space in shade with the people who are supposed to hear the information at the time they're supposed to hear it, protecting the intellectual property of the company. Not only that, it also provides an opportunity to improve on the services that they're offering to their clients and internal stakeholders. Okay, then after we know exactly what needs to be done, only then do we recommend technology and a tool. Okay, so now we come back the other way up now because we started with an overview now we can come down. Now that we know all the requirements, we're choosing tools, we are responsible for actually recommending the tools that are needed, from the database, to the processing the functional stuff, to actually the output with, with how it's going to be displayed. So one of the products, the tools that we recommend, but are not tied up to them is SharePoint. SharePoint it's easy to use, it's easy for the mind and easy to maintain. So you don't need a lot of technical people. You don't need a big database management system. It's all managed in the clouds. All you need to know is this is the functionality to do, and this is how I want to do it and going to do it. And then these functions come predefined. Microsoft has done a

very good job with SharePoint. Not only is it a repository, but it is also in a collaboration space because you can work on their raw content itself. So you start it from the raw content, build it to some type of information to a process to a product that you can use later. So we take clients through the process, from their raw data into the information into the processing, and also to the final product. So on the knowledge management side, once we've established what they need to do, we come to a point where now, as an unintended result, they actually have a knowledge management system, because now they have all their processes made out, They have the resources that they need to fulfil those processes.

Interviewee 11:01

They've got the people allocated, they know their functions up to the point of defining the function of each person on the HR side, a SharePoint provides you with that as well. So you can quickly define a person's role under the HR module, you get a template of job profiles. So you can just link that for this role in this process, link it to this one. So it forms now a network of data and information that forms processes that tend into requirements and products

Interviewer 11:34

And now, seeing that we're ready the processes of knowledge management and you have sort of a framework to actually conduct a knowledge management scenario in your organisation, can you take me through a project where social media platforms were used in the process of knowledge management, acquisition stories and the like, that you've just explained?

Interviewee 12:04

I hope I don't mention the company name. But I'll mention the industry, So we had a client whose main objective was to increase their market share, okay? But in that when we analysing, we actually found a whole lot more of issues that they had within the organisation, One, they had too many images. So their brand management was wrong, they had no knowledge management system in that if a new person would know, for when I want to communicate about this. Which logo do I use? And then which platform, which social media platforms do I use and things like that. So everyone was doing it for the fall. So it was mix the mixing up the, the message to their clients, even up to today, people are

very confused by the we're still in the process of assisting with some of the requirements is actually to use social media to reach more clients. So they wanted to use Twitter, Facebook, Instagram, YouTube, okay, so we analysed it, and then we told them like, Okay, this is very easy. You must have one image and so you know, we're doing this brand management as you go along. So it was like a nice adoption process where we are not enforcing. We are saying for you to reach your clients, your ultimate goal, this is what you need to do. So you were introducing all these elements without being technical. A lot of claims when they here that you are being technical, they hold back. We didn't say to them guys, you don't even have a knowledge management system. No, we say, Okay, do you have a gallery or a pack of your logos? And then is it does it show like this one is there a guide? This one is there a standard of procedure that you've documented? Is it accessible and can be shared and has rights on who can share it, how and why? And then, the other thing with the SharePoint, you can scratch it out. That collaboration platform is that you can actually choose how to protect the information so it goes on to the documents and records side later. Certain type of information you cannot share when you don't have a certain profile. When you print it records, when you forward it records, when you email it records. So in that way, there's an audit trail. And then now you can even come back and analyse the trends within your company. Like, okay, this type of profile is higher risk, because they don't understand that you can share, which means this training that needs to be done, so we do this softly, but we get to the ultimate technical goals of whatever we need to achieve. So on social media, the other thing that we did is that we gathered all this information and easily, easily like in one month, we were able to show them on their trends dashboard, to say you guys are concentrating on this particular social media, but actually your audience is on this one. This is where you have a lot of views. This is where nothing is ever happening. You have no interactions here, this this and that. So, from that, they were able to derive some analysis from the content that was gathered from social media. So we created digital platforms. So in these digital platforms, where we gather all this content from all types of social media into one platform, and then that platform can then be analysed. And then from there, you can derive what needs to be done. So from there you can see like, okay, from this trend and from this and that, it means we are not reaching our clients the way we want to reach them, we need to do it this way and that way. So for us, we don't sell concepts. We don't sell terms like Knowledge Management, we sell a service that you need to enhance of achieve your vision.

Interviewer 16:53

Thank you. So on those social media platforms, do you have perhaps specific ones that you mainly worked on, or was it just the generic? Are they all doing the same thing?

Interviewee 17:20

It depends. It depends on the customer segment. So the low, even lower, there's a certain type of persona. Let me start with Instagram. The persona for Instagram is people who like to show off, that is their persona. They like public validation. So people who like public validation, or, they're in the business of publicity. They are mainly on Instagram. So if your product is something that needs to have pictures and videos, Instagram becomes more attractive because on the technical side as well, it's easier to utilise it. So now and then the persona for Twitter is the ones who think they are intellectual. They think they are knowledge thinkers, knowledge workers etc. they think so, that is still in dispute. Okay, so those are knowledge thinkers, then they look down on everything and everyone so most people actually use it to influence okay and but not to reach clients. They use Twitter it to influence certain, so when they want to create a media storm about something, they go on Twitter and then they know that people will be interested. But to get the clients, you'll will be shocked, a lot of people use Facebook and WhatsApp. Oh

Interviewee 18:40

They use Facebook and WhatsApp, for Facebook. It's the ordinary people you and me
Okay, I'm not on Facebook. I don't have the time because it's too personal for me, okay, for my public life to be to be outgoing, like limiting. Limiting exposure, I limit my exposure to WhatsApp

Interviewer 19:00

So would you recommend Instagram and WhatsApp for business purposes?

Interviewee 19:06

I would recommend it, if that type of product is the product needs to see and changes content regularly, Instagram will do. And it has to be top quality because Instagram people dont have time, they are Insta. So I would highly recommend Facebook and WhatsApp for any type of business including to perform knowledge management.

Interviewer 20:12

Awesome. Okay. Now in terms of compatibility, when you look at a social media platform, what is it that you look out for to ensure that it improves the quality of your knowledge management system?

Interviewee 21:11

Okay, if it's accessible, so if it's not easy to plug into, okay? And then the security risks around it, then I avoid it, because you don't want to open up your clients information to Cyber danger. Okay. And then also, if it's difficult, they create more work on our technical team, they spend more time debugging or whatever to access it. To access the content, so easy to use, and also safety, in terms of security threats, information security, and ease of usage. So those are the main things that you look out for.

Interviewer 21:14

So when you look at your organisation, for instance, and how you actually conduct your knowledge management system, how comfortable would you think would you would you look at social media, in terms of comparing social media and how you actually perform knowledge management in your organisation? Do you think there's compatibility?

Interviewee 21:37

There is direct compatibility, because we move with the time, so you go when you receive information. So knowledge management is about knowing the content to start with. So you can't divide or separate the two because when you don't have or when you're not in this space where you can extract data from your own clients or potential clients, you are not in business. So they are connected and interconnected. They are not exclusive. They're inclusive of each other.

Interviewer 22:12

Thank you. Now, the complexity now, the challenges of wicked with social media, in achieving your knowledge management system, what are those that come to mind?

Interviewee 22:27

The money side, you know, you can create reports, but those would be first level reports. So the minute you want to go into intense reporting and analysis, there's licenses involved,

then it gets tricky. Okay, then it gets tricky if you're a small business like myself, and then you have to put money into achieving one it's either the license or secondly, the skill. So if maybe the licensing is free, or it's openly accessible, the skill to extract, you have to pay for it. From developers you can do scripting. And so it becomes the cost. That's the one challenge. And then secondly, it's all these laws that come in, one moment you can access the next that changed the law on Information Act of 2019 etc. etc... So that becomes a challenge because you can promise a client something, the next day you can't deliver. So accessibility in terms of not controlling the platforms yourself is a huge challenge.

Interviewer 23:51

Alright now, on the positive sides, looking at social media, comparing it to sort of controversial ICT technologies when you compare that to what would be your relative advantage that comes with social media, specifically using it for Knowledge management?

Interviewee 24:17

I think social media doesn't replace ICT tools. Rather social media will enhance ICT tools. You can from what you've extracted from management systems, you can put it on a dashboard, put it in social media, but social media becomes now the input, one of the inputs, so it can't replace ICT tools because it's one of the inputs. There is still real life where you can get information from people by talking to them directly as another input, there is also your content that you get from your financial systems which IT systems, There is also the real registers, the physical registers which can give you information and input on how you performing and what your customers want. So, it cannot be a replacement, it's just one input resource to feed the knowledge management system

Interviewer 25:34

Okay, Now, how would you perceive social media platforms capacity to organise knowledge, how would you perceive it in terms of putting knowledge in order within your organisation?

Interviewee 26:01

Oh, okay. All right. See The nice thing about social media is that they've done the work of presentation, okay?

So it makes it very much easier for you to present to your audience in a simplified manner that people are already accustomed to, as opposed to traditional IT systems which look scary and people don't even understand. There's an arrow going there and graphs that are difficult to understand. But social media doesn't have such complexities.

Interviewer 27:02

All right, Now you mentioned access to real life information. Okay? How would you perceive that? getting access to real life information? feeding the knowledge management system in your organisation, how would you? How do you perceive? Yeah,

Interviewee 27:24

As I said, like, these things cannot be totally replaced because on social media, remember I said, there's different personas, sometimes it's just personas, they are reflecting their desires, whereas in real life, it's not a reflection, is the reality.

Interviewer 27:39

Okay? Okay. So now the quality of knowledge now, how's that affecting the quality of knowledge within the knowledge management system?

Interviewee 27:49

It affects it positively. So like with social media, what you also do, for example, we there's a whole project that we did where we were crowdsourcing and It is very important for the client to know that this information is authentic. Because now, you wouldn't want to compromise the quality of your content. Okay? So you need to have measure. So you need to be experienced enough to understand these small little things, as an organisation that not all the content that you receive from social media is the truth. The only truth, okay, so you need to have processes and measurements and validations and verifications within your system. So the example of the crowdsourcing was actually with the municipality as well. We crowdsourced the information from the communities, so we asked them to report municipal services issues that they're having. So to authenticate that information that they sent us, we will require a picture. If you cannot provide a picture, will require a location, okay? So it's either or, otherwise that information cannot be accepted. So the reason for that type of authentication is that also, we had, we have a partner, and she actually has a drone so the drone can easily be sent to take your area's picture. And then we're also

working with the South African National Space Agency, which can actually give you historical data. We can show information from last weekend this week. So we can see like okay, actually, this information is correct from the crowdsourcing. So before we even publish to our clients, or from the social media content or from crowdsourced information, we actually had to clean up the data. It is very, very important. So we assure our client SMME that we will clean the data to ensure that there's quality and the reflection of the truth. So but the ones who are not experienced in this field they take from social media, exactly as it is. Who knows how many crazy ideas people have? It's probably their aspirations and not the truth, which is why I'm saying like real life is still important.

Interviewer 30:10

Okay, still on real life content, because I believe this is like it allows people to have social presence to have a sense of belonging and send. So now, if people connect in that setting, and share this real life knowledge, yeah. Do what's your view on that in improving your knowledge management system?

Interviewee 32:24

It is one form on the crowdsourcing part of the social media aspect, particularly where we want to ensure that the quality is there on the other knowledge management aspects of quality, we have automated processes of checking information. Okay. See, for example, if you tell us that if the information comes through maybe from SANSA and then it says there's an ocean in Pretoria, we already have some classifications that we check. So, the classification of the information we receive will tell us that this type of class does not belong in this landscape. So, we have automated processes from other sources that we utilise.

Interviewer 33:36

Okay. All right, okay. Now, for you to decide on using social media and to enhance your knowledge management systems, was it that influence from other organisations in your industry?

Interviewee 33:41

What do we actually check where the market is going. So the market includes the influence from the users, the beneficiaries and the clients. So, the movement on interactions has

moved totally to social media. So you can't ignore. So when ignoring that you're ignoring the most important aspect of gathering content. So you're not even a player in the field.

Interviewer 34:12

Okay, so would you say you will continue your organisation intends to continue using social media to enhance knowledge management systems?

Interviewee 34:19

So, the movement on interactions has moved totally to social media. So we can't ignore! If that's what the market is doing will continue using social media. If this is the market decides they're going to use social media anymore. They are now doing telepath. We are going to investigate about it. So we're always moving with the trends and what the market is doing. So to stay relevant, we actually deliver what the clients want, because we rely on data information. So where the data is, that's where we are going.

Interviewer 34:44

Okay. So would you safely say you are satisfied currently with how social media is able to enhance your knowledge management systems?

Interviewee 34:59

Yes.

Interviewer 35:04

Okay. And then another question on the benefits side. What else To the main benefits of social media, to enhance knowledge making systems apart from those you've just explain earlier?

Interviewee 35:10

I did mention the reporting aspect right, okay so...then No, I have nothing more to add. Yeah. Okay.

Interviewer 35:24

All right. So now, from the challenges point of view, because the study is about evaluating the effectiveness of social media. Is there any other evaluation process that you follow to, to actually evaluate the effectiveness of social media in your organisation?

Interviewee 35:45

Yeah, there is a process that we follow. We try out our hypotheses in real life and then verify like, Okay, this is not working because we get assumptions from ourselves and also pushed by the client. So the client could say, it's a request, I want a social media campaign on YouTube. Okay. And then the customer segment is actually people in townships or rural areas who don't have data available to actually download youtube videos, or even stream or view YouTube videos. Yeah. So sometimes when you tell a client they don't understand. So you have to take them through the systems, then they will have to see themselves. So through the knowledge management system, you can tell them like, you can check on this aspect of your performance, how are you performing, which platform and what's happened then they can see on YouTube, there's about 20 views, it's not working. Then they can see for themselves, it assists in that the data will speak for itself. When the data speaks for itself, the information you can tweak.

Interviewer 37:03

Okay, so is there a set method that works for you?

Interviewee 37:07

It works wonders. On a personal level? Okay, on a technology level on a process level on a systems level? So its fine tuned. So I've used it in corporate and incorporated it in my own company.

Interviewer 37:19

Okay. And do you perhaps have any challenges with that method? Okay,

Interviewee 37:30

It is full proof. I must add aswell that I do business analysis. And I've lots of experience in business analysis to know that people are the same. People like to think they're not the same, they are actually the same, they are triggered by similar things. Yeah. Okay.

So it's fullproof, we actually have set of persona Yeah, we had sets of scenarios. So we have scenario planning for all these, like in this scenario, this one is going to start work at eight, which means they are online between six and eight. And that's human behaviour. They'll be saying things like 'it's not me on social media, I don't like social media, blablabla', I mean, they actually do it. They check their WhatsApp, they forward videos. They check Twitter, you can see they viewed it. Yeah, they 'like', even if they did tweet for five minutes, they've done it. Yeah. Then you know, like, I'm going to target so that you know that you've got information and knowledge about that sector, and that persona, these ones, when I want to target them, i'm doing it at this time, for two hours. Then you know, the same persona or another persona, let's use another persona, the ones who actually attend school, from one o'clock or so, they are not doing anything. Even when they're in class, they are not even concentrating their attention span is gone. Now they're on Facebook, on Instagram, liking this and liking that, wishing that they had kings house. So you know, this target market is my kid. I'm going to target them between one and four. Then for the others, the commuters and stuff, you know, like, they're going to spend two hours of their time in traffic, you target them between those hours of pick hour traffic to get them. So you see, it's fullproof. There is personas, scenarios, timelines etc. It's a whole network of algorithms that are already built. Some are built and some we tweek.

Interviewer 39:44

Over and above all that we've just mentioned. Because I'm trying to come up with a model of evaluating the effectiveness of social media, what else can you share in terms of your experiences and helping us in the development of this?

Interviewee 40:17

I would say what you need to do is not only look at SMMEs in the technology side, you must also look at the ones who are directly in product or services. Okay, so they will give you information from their pain points, because me I'm trying to resolve the pain point. They have their real pain points. So they'll give you more insight on how social media has helped them on how they using it within their knowledge management systems because for me they are a client, for them it's their business. So there's the advisor I can share with you. Approach the ones who are in products and services using social media as a knowledge management system. But they won't even know that they're using it as a knowledge

management systems. Just approach them on: How are you using social media to enhance your business!

Interviewer 41:08

Yes. Okay. All right. Thank you very much.

Interviewee 41:11

It's a pleasure is the end of 15 minutes?

Interviewer 41:19

Thank you. I tried to keep it short.

Interviewer 41:21

Thank you so much. Okay. Thank you.

Transcribed by <https://otter.ai>

Interview 3

Interviewer 0:03

Okay, good morning. This is the recording for an interview conducted at *** with ***. I'm going to go through the interview protocol. And I've already finished you with the information sheet with which gives you sort of a background of the study. And I assume that you went already went through it, but I'll just reach the important parts. Most of the parts are in the information sheet. If you have any questions you can ask at any time, and then we can pause at any time during the interview. So the title of the study is evaluating the effectiveness of social media and knowledge management systems for small and medium enterprises in South Africa. The aim of the interview is to collect perspectives of small medium and micro enterprise owners and managers regarding the use of social media to enhance knowledge management systems. The collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge management systems have SMM ease, you are kindly requested to participate. The interview will take approximately 45 to an hour, but we will try to shorten it to at least 30 minutes. All the information will be treated as strictly confidential with full anonymity

of participant while participating companies and research participants meaning if you make mention of any company, partner or whatever the names of the company, when I do the writeup, I will not mention our code the names so I will not mention the names Your name will not be mentioned and the name of the participating companies will not be mentioned in there. So, you are welcome to withdraw at any time during the interview process. And another important aspect is that there will not be any payment reward offered financial compensation or otherwise for participating in the study. However, your contribution will be most valuable to the body of knowledge. Lastly, the interview is recorded. Do you give consent to have a recorded interview?

Interviewee 2:45

I have no problem at all.

Interviewer 2:51

Okay, so those are the terms of the interview. And then without wasting any time I will start by asking the questions as structured in the interview protocol. Okay. Can you kindly explain to me the role that you assume in your organisation and the background of what your company does?

Interviewee 3:05

Oh, well, our companies more is an IT company focusing on new innovation and new solutions to existing problems So in the main what we do, we do what we call it advisory service based on the understanding and transition that as a country or as the world we find ourselves part taking to the 4th industrial evolution (4VR), then we find that companies and different organisations do adapt so we offer those kinds of support on the strategic point of view to assist organisation to be able to navigate in that space. So that business we unit to call it, advisor support services, then we have got what we call up to smart systems. On the smart systems. That's where we look at the latest technologies like Internet of Things, training that of that goes with that. And we'll look at for example, your big data analytics training components there, we look at a look at training there. So there's kind of those are the main focus but is complete complemented by a software development component within our business within a focus on developing apps, portals and, and so forth. Even mobile apps, so that's what this what we do.

Interviewee 4:43

My role is I'm the managing director, the founder of the company. So at the present moment, what I'm doing is just to make sure that the company is able to make money.

Interviewer 4:45

Okay, and then about how many staff members do you have,

Interviewee 4:51

At the present moment, if would include the current Interns that I'm having, we are total of nine (9) people. That in the in the business, but we have got access to a pool of resources within our partnership arrangement. So with some of these small SMEs and even big, medium and too big enterprises so we have got some arrangements where then if we have a good project, then we can be able to call out the resources as in when necessary.

Interviewer 5:29

And then around how much is your annual turnover?

Interviewee 5:33

And the business really started putting in or to be with it in full last year where then I was able to, to make an annual revenue of probably around 900,000. Okay. So close to a million. So I think this year, I'm hoping to make probably double that amount that one. Okay.

Interviewer 6:03

Great. All right. And in which part of the province do you mainly operate and serve your customers?

Interviewee 6:10

Mainly will be in, I have a client in Mpumalanga. I've got clients in Gauteng, and I have a client in KZN. Okay.

Interviewer 6:21

And specifically which municipal areas in Gauteng are your clients?

Interviewee 6:26

So in the main it will be one of my clients that I'm serving in Gauteng, in fact is existing in all the provinces so that's okay. And then I'm also I think most of my business will come from Gauteng, than then the other two provinces.

Interviewer 6:45

Okay. And you are based in Gauteng?

Interviewee 6:46

Yes. Yes. I'm mainly based here in Midrand. Yes. Yeah.

Interviewer 6:53

What's the Municipality in Midrand?

Interviewee 6:54

Is the City of Johannesburg. Okay.

Interviewer 7:02

Because you mentioning some trainings that you are conducting as part of the service offering, can you take me through the process of actually managing this knowledge within your organisation? Or do you perhaps refer to it as a knowledge management system within your organisation or how do you how can you explain that process?

Interviewee 7:30

In the main based on the fact that we are innovative business, then we find ourselves then having to share what we have learned during that process of coming up with innovation and then that we package it in the form of a training. Okay, so that is that is the first component, even though what we're also looking into is then to say how can we then just expand this to even include as other SETA accredited kind of a training going forward, because I think that is also important even customising our own training that we are giving from the lessons that we have learned as we are doing the innovation and so forth, to customise it to be in that what we call the SETA credited kind of content. So that's what this what we are looking into. In the present moment, the way we're doing it is that one as we do that study, then from that study, and then we would customise. Mainly we started by

our own internal consumption, because we want to develop our own people first, and then once you've done that, then we see that as useful and then other people did show interest and then we do training. For example, we've done training for SENTEC in the space of IoT. It was mainly based on our experience and everything, and what we have done in that space when we even talk them through what we have done in that space to, to sort of show that knowledge and then how they can then utilise it. So that's what we have done in the training space. Yeah. Okay,

Interviewer 9:20

Okay, in terms of storing this knowledge do you perhaps have a repository where you have either maybe a filing system where you extract these training materials?

Interviewee 9:31

Well, we develop it, once we are done developing it, obviously, we need to put it in a cloud environment, okay. And then from there, that's where we can access it and so forth. But also, our training is more practical than your normal kind of a training where we'll go and then we'll sit with an instructor. But in this one we give people a toolkit to play with, okay, and then we take them through that toolkit from putting together two components to put together three components, making those components connect to the cloud, controlling them with your phone and so forth. So basically, that is more practical training. So this one is the kind of a training that probably if you were to look at the SETAs is the training the one cannot get there. So that's the kind of training that we are offering to our clients

Interviewer 10:24

So in that training, Do you often find yourself working with social media platforms? Or maybe in any of the projects that you're involved in, do you find yourself using social media platforms to manage knowledge?

Interviewee 10:44

Mainly what we're doing in the social media space, I think it will be just to the awareness of what we're doing okay. To just share what is it that we are doing, and so on and so forth. So there is very little that I would say we are consuming from the social media platform but I think we use it mainly for sharing our stories for people to know who we are and what we are doing.

Interviewer 11:16

And which specific social media platforms are you using for such activities?

Interviewee 11:19

We use mainly it will be your Facebook and little bit of tweets. Okay, those are the two platforms that we're using. Okay.

Interviewer 11:32

So for your reason to select these platforms, for instance, and the nature of conducting business. To what extent are these platforms compatible with your nature of conducting business?

Interviewee 11:50

Really for us, as I said earlier, is mainly on just attracting customers by sharing the stories that we offer what we are doing so we sort of selected those platforms because of the number of people that will find in those platforms. So because of that, we then decided to say, look, is it worth it to share what we are doing on social media, but also we believe that the business that we are in is more attractive to young people. So and the young people are the people that today you'll find in the social media platforms. So then it makes sense for us to share our stories there, in that sense, we also attract people to watch what we're doing. But also we sort of share the direction that as a company we're taking and in one way or the other then contribute towards knowledge of understanding that this is possible. It can be done in South Africans.

Interviewer 13:04

Now still on those social media tools in terms of their use sharing, posting whatever messages to reach your market. What sort of challenges do you often experience? When using those platforms?

Interviewee 13:21

I think the challenge would be if for example, you were to look at feedback that you want to get from that, which then in the main is not structured and formalised. Okay, so then that's what we have to recognise, to say, look, it becomes very difficult to really evaluate

whatever that we've done based on how whatever you've posts have engaged people a lot and that platform. So as much as we are sending or putting our content there, but really I don't think we have the mechanisms to measure the effectiveness of the tool itself to say look are people learning from what we are sharing? How many people know about us in terms of not only going through what you just post but internalising the content that you share and so forth. So those are the kind of things that I think are a challenge in using social media in our business

Interviewer 14:41

Okay. And you mentioned which attracting young people. So could that be one of the major advantages of social media over other ICT tools or is there any other?

Interviewee 14:55

That is the main tool today, probably the main that is easily affordable, okay, especially for us SMMEs. Because if we were to look at someone say why don't you use your, your television or other platforms, but those ones then you need to pay and as an SMME, then you find it difficult to that. So, social media becomes the best option in that sense that you can then be able to utilise it, in the manner that it benefits your organisation.

Interviewer 15:32

Okay, all right. Now in terms of the capability to actually provide or share the content that you need, how do you perceive social media to have this potential to share content that has to be shared, the true facts that have to be shared among yourselves as a team and with your market customers?

Interviewee 16:00

I think in the platform it is difficult to find the authenticity of the content that you put there, okay? Or the content that is in there how authentic it is? So those are the other challenges and especially if you're a small business, those are the things that you need to be mindful of, because not all the content that is out there is really authentic, or that is there because most of the content that would find that people put there are to drive a certain specific message that people want. So if then you then decide to consume it for another particular strategy or approach, you find that the real is not is not suitable for that. So it's not always as much as they will be content that is relevant that you can get, but in most

instances then requires that to verify, okay. So we need to find have mechanisms to verify the content.

Interviewer 17:32

This leads me to the next question. Since social media gives you this immediate access to knowledge through instant messaging, for your knowledge that you share with your partners and customers and also the other that you use for training. How likely is it that you will use this knowledge from social media in your business? Because it's immediately available and but then there's a problem with authenticity. So how likely is it that you will still use that knowledge that comes with social media platforms?

Interviewee 18:07

The knowledge that comes with social media in the present moment is a matter of them just, I would say is a very high level kind of a thing. Okay, we probably will use the statistical side of it but not really the content itself. Okay, so then if then you will want the content, for example, to say I want content around the Internet of Things, it will be that I need to then find platforms where I can then Google and search about that, and then try to read, but if you want to know how many people are engaging in the IoT space and so forth, statistical in terms of the numbers that we can get from from Google, but in terms of For what is it that is happening in the IoT space and so forth? Then it would be a matter of using another platform to get to source of the knowledge.

Interviewer 19:09

Okay, all right. Now another capability of social media is to allow people to have a sense of belonging. Hmm, you have your content is whatever that you say, whatever I say, because we have that connection tend to be more believable. Yes, yes. So, how would you how does it work in your environment?

Interviewee 19:30

Now, if it's that still works a lot because then you need to identify individuals or sources of that information, which then then assist a lot too because once you know that this is a kind of a person and then you then can then be able to develop your own systems that will lead you to even Best understand or best to use that content from that person because we have find that the person share authentic information and so forth. So it's a matter of having that

way of saying especially because you find that you will link with even people that you don't know that you have not met. So, but for you to get to the stage to say this person is sharing the authentic information, you will need to do your own exercise. Yes. Yes, yeah. But you will find that I know, for example, you know, they say the Chancellor have a particular institution, then you tend to believe that based on the position and so forth, because the person that you know, so those are the kind of other things that that you'd find there to say look, is find different personalities, but then if you know those different personalities, it makes it easy for you to judge data that comes from those different.

Interviewer 21:04

Again, you mentioned very, something very interesting, then you create the systems around how you will actually use this information or the knowledge. Yeah. But now does it affect the way you conduct your training at all?

Interviewee 21:21

Not really, because in our it, it might be yes or no, because you may find that we can then be able to source information because our training is we keep on improving, and we customise it for that particular client for that particular purpose. So we'll keep on learning and we might source relevant information from the social media platform that can then be able to help us even though we are not that much in that space, but you find that there is a way in which then you can engage somebody on the social media platform and sources information that can help you to deliver a particular content better or even to structure information in a particular format. So that can appeal to a certain community and so forth and so on. So those are the kind of things but also you learn from that social media platform because remember, in social media, relationships or friendships that are established, they're based mainly on people, they see some commonalities with that particular person, or is because they see that person is in the position that person is holding within the society and community in general, and so forth. So based on all of those things, then people then they tend to them accept to be friends with you and so forth.

Interviewee 22:49

So then from that, then that's when then you can then be able to start to understand your audience because they want some content that you share. And then see that these certain individuals, they are not sort of engaging with that content, but there are certain groupings

that engage those that to understand your friends in that network to say which part, what kind of content if I put in there and they respond to then use that to sort of make sure that you structure your content in a manner that is able to address all the different kind of friends that you have in that platform

Interviewer 23:29

Interesting. So now since you are mentioning things like personalities and stuff, for your organisation to actually decide on using those platforms to share this information and to market itself. Was that the influence you got from these companies in the similar setting? Oh, How did you get to that decision?

Interviewee 24:03

In the main, as I said, initially, the reason why we use platform one is mainly because we believe that people that are more interested in what we're doing as young people and it makes us become not only local, but it makes global in that sense, because then now you're able to, as you put that content on there anyone around the country, be the word can be able to engage with that content, which then is a bonus for us than to say, Let me send an email from one person to the other and so forth and so forth, which is going to be a lot of work. But also today I find that people they are not much into their emails but more on social media, because they don't read emails, they select emails. If the emails that is coming from people that probably they know, then they tend to attend to those. But if is sort of an email that they don't know and so forth, you find that is not really taking much priority. So using social media through the friendship kind of a model, then you easily push one message and then a number of people are able to engaged with that content.

Interviewer 25:43

So based on those trends, would you then say your organisation is intending to continue to use social media with what you're doing training?

Interviewee 25:54

Yes, I think we'll continue using the social media mainly for marketing and putting out there what is it that we're doing, to sell our strength, to sell our products and so forth. So, I think it's a good platform for us to do that. So, we will, the most critical thing that we need to develop from the main is then to say, how do we structure our content for that

purpose because it helps because you need to structure that content in a way that you understand your audience and then from disorder that can then be able to give you the information that you require. For example, if you want to take I particular thinking, so understanding the audience then you need to put in such a way that is going to be able to give you that the response that you want. So is that is important, even though is not going to be sort of What to say you will still need to go through that content because you remember that that is not a guided platform. Anyone can so you still need to filter in and take one to what works for you.

Interviewer 27:16

All right, okay. So we are almost at the end of the interview, but at this point, this is when I have to ask about how do you currently, because this study aims to create a model valuating the effectiveness Yes. So currently have you got anything that you use evaluate the effectiveness of social media?

Interviewee 27:40

As I said is, it's a bit difficult for us for now, okay, to really test if social media really is that effective, okay. But also, especially if you use it for customer base and so forth, especially if you're an SMME in South Africa it is difficult to start to go even outside and so forth and all that. So you will first want to create some base that will keep you that going as then you start to be able to even sell outside the country and most people from outside the country find that they're looking for a particular product or they want somebody that has got history in the market and so forth. So as SMMEs you find that we don't have that. But the challenge that we're facing is the fact that the markets in South Africa they're not free is mainly connection or conducts and so forth and sort of that then makes it even if you use social media, then it's not that effective because people are used to the referral (word of mouth) model whereby somebody would need to say do you know somebody that is doing this so you're then you see then social media they override social media because then is not adding any value because now is more like a referral kind of a business model recently put in that in that fashion. So that those are the challenges that they're facing as a small business, where to then to come in, make your name and so forth, and if from where you sort of exist, there is nothing activity that is happening as difficult for you to know about you. So you need to always find where really you can be able to begin because in

that sense, then it is going to help you to be known and recognised because you have done something and so forth. But before that it becomes very difficult

Interviewer 30:05

So lastly, what sort of advice can you give? What sort of recommendations can you give to someone like me who wants to come up with this model to assist SMEs because currently there are no measurement tools or models. So what sort of input Can you check to say, you know, maybe an angle pointer to say this is what will actually help me to start with the measurement model?

Interviewee 30:32

So I think the vertical thing is them to understand I don't think it will be one size fit all okay, in the sense that different social media platform were developed with a particular mindset or direction or what it takes to achieve. For example, Facebook will have its own, Instagram and so on, and their target market and understand. So I think it will be a different tool that will look at different variables given the social media platform and, and so forth. So given example Instagram, many people use it for pictures, picture content that you find there, and then Facebook is more like a way to say when you exist as a business and so forth. So the way in which you examine content would be different. So you've got LinkedIn, and these days' people treat LinkedIn as a more professional platform. So you will need to strike a balance that say what kind of content, then, given the background of that particular platform, what is it was it developed to then from there and you say, okay, fine, probably social media was close to business is easy to be able to extract the business information to be able to extract, to diagnose and to see that probably, Facebook might not be that close for you to gather information. So you need them to also get the way in which How can we use such data from Facebook to ensure that you give business value because initially it was just something just to share information, Instant messaging and so forth so forth and so forth.

Interviewee 32:40

So all of those kind of things, so many people there, you'll find that they tend to share jokes and so forth and so forth, not really business related content and or the Meek's and so forth. So there won't be a way in which then you need to start to understand those and find a way To filter it and gather content that will be.

Interviewer 33:03

So for the type of business that you do specifically on training, what sort of input perhaps that you get, can you share to say these are actually what we want and this is how social media can be able to assist us. And we should be able to reflect that by measuring its effectiveness because our training is structured.

Interviewee 33:30

Yeah, I think in there what is critical in that space would be to easily identify people that would be of interest to your training, okay. That is important for us because, one, what we need to do is then Okay, fine. I'm providing this service but how to identify people that I need in this platform. And then and then and then once we're able to say, these are the kind of people that I can then be able to share my content with, then from there, you can customise your content, either your way of engaging those people and so forth and so forth. So, the very first thing is to say, how do we find a way in which we can be able to identify those people and I know you'll find that people create their profiles, then but you find that most of the profiles are that they are fake. So far, one person has got multiple profiles and it makes it difficult. One might you say they have 6000 followers, but in reality, the number is not that much you know

Interviewer 34:56

All right, thank you this concludes our interview. Thank you for agreeing to participate in this study. The findings will be shared with you later on when the data has been analysed. This concludes our interview.

Interviewee 35:14

Okay, thank you. Thank you

Transcribed by <https://otter.ai>

Interview 4

Interviewer 0:02

Okay. On the day when today's date is the 20th of February 2020. Having an interview session with ***. He will be explaining how his organisation actually uses social media, which is part of the major part of the study, and then we can start I'll start by explaining the interview protocol, because most of the details have been already emailed to *** and he went through it and he also already also confirmed and consented to participate in the study. The title of the study is evaluating the effectiveness of social media or knowledge management systems of small and medium enterprises in South Africa. The aim of the study is to interview and collect the perspectives of SMME owners and managers regarding the use of social media to enhance knowledge management systems. The collected information will guide the researcher in developing a model for evaluating the effectiveness of social media or knowledge management systems of SMEs, your kindly requested to participate, The interview will take approximately 45 minutes, but we will limit the time to at least at most 30 minutes, because of the constraints. All information will be treated as strictly confidential and with full anonymity to participating companies and research participants. So this means whatever that you mentioned, if maybe you make mention of your company name and other partners that you are partnering with or your customers in the recording or in the in the write up of the study, I will not mention any of those names. I'll use the quotes just to protect your information, you are welcome to withdraw at any time during the interview process and there will be no compensation offered because this is purely for academic purposes. Also please note that the interview is recorded. Are you okay with the recording?

Interviewee 2:31

I understand, you need the records for your reports wright? I have no issues with that.

Interviewer 2:41

Yeah, alright, so, we may start with the questions for the interview.

Interviewer 2:58

Can you kindly explain to us the background of your company and what you do and what is your role in the company.

Interviewee 3:15

The company is called *** we essentially are involved in providing services in trends analysis, find out what trends I for different industries or different businesses and we use this information to provide visual graphics when what is trends are, whether they they be economic, social and that kind of thing. Okay, there's one thing that we do in So, we provide that is a service as a consulting service. I think the broad term that is used in that is horizon scanning, but we also internally develop software services, okay, that uses that information to provide that kind of service to a broad range of clients.

Interviewer 3:41

Okay. All right. And your role?

Interviewee 3:48

I am the managing director of the company,

Interviewer 3:57

Thank you very much. And how about how many employees work in your organisation?

Interviewee 4:12

Okay, essentially, this company is has got Three employees that we typically work in projects, with various strategic partners, okay, So at any point in time in a project, the number can grow to about 50 and drop down to about three or four, depending on how big the project is.

Interviewer 4:26

Okay. And roughly annually, how much does your organisation make your annual turnover?

Interviewee 4:34

I know turnover varies between say two (R2 Million) to about five (R5 Million). Okay. Okay.

Interviewer 4:55

Okay. And since you mentioned that you work with different partners, varying from three to 50 in which municipalities areas are they located?

Interviewee 5:19

Okay. let's say because you're based in GAUTENG, most of them are here, but it's broad we cover the whole country. And even beyond the borders of South Africa, we've done work in Botswanan, let's say the SADEC region was also provided similar services in USA, but our premises of the company is in GAUTENG, Pretoria. The City of Tshwane

Interviewer 5:45

So it's interesting to know that you are actually using some data or information in your trend analysis and stuff like that. Would you kind of explain to me if perhaps you have, you know, a knowledge management process that you follow for you to actually gather these trends and share with you know, your partners and stuff like how is this process working?

Interviewee 6:03

What we do is in a typical horizon scanning I'll give you an example. What we did recently we did this for a company in the energy sector, they provide cables basically to the major client in this case is Escom. Okay? But they do provide that kind of products to different types of clients across the African continent.

Interviewee 6:27

So they wanted to know what is the what's the status of industry, what is the future in that industry in terms of not just the technical cables that they provide, but even in terms of business models, okay? Because simple things like that they will discuss was most of the problem that they have now is cables are now a commodity. So in terms of the markup that can put on the cables in the competition is really quite intense. So, in that industry really have to develop innovation based products. For instance, one of the things that they came up with was that instead of just providing a cable that provides electricity, the end point, you put a dual service, which links in the same pipe of an electrical cable, together with the fibre optic cable that provides data, okay, So when you the user of that, is buying a dual service, electricity and data at the same time.

Interviewer 7:10

All right. And in that process or in that pro project, was it any point in which social media was used any tool on social media to mainly maybe share knowledge or to present knowledge? Okay,

Interviewee 7:26

Okay not in a structured manner. Okay. It was very ad-hoc, okay, because our typical sort of approach would be to go onto the web, to grab that that information, okay. But invariably, in that process, if you're dealing with accessing that information from the millennial, the first thing you notice, they will send you a whatsApp, then they'll refer you to some Facebook page and that kind of thing. So but it's more ad-hoc, it's not structured in the sense that we consciously think of using social media for that purpose. It's that's how we, we sort of gather information and most of it is via email in terms of communication. Okay, In terms of compiling, analysing that information, we're using web based tools, okay, all right, okay. And then in some cases accessing that information, we are using information that is gathered through bots on the internet, that collect that information, compile it and then we analyse it, we use it, then we structure it within the context of the client.

Interviewer 8:48

okay. All right. Now in terms of compatibility, looking at how you do things, although you mentioning social media is not being used as in a structured way but The knowledge that is being acquired through social media. And do you think it compatible with how you do things in the organisation?

Interviewee 9:11

It is, in the sense that, because we come from, our world is data science. So whatever form the data comes in, it's really easy for us to reconfigure it so that we can put it in a particular manner. Okay. Okay. One of the things that we do a lot is most of our meetings, are online meetings because we've got clients in this in the USA, because of where they are, or even in GAUTENT because of traffic, we will typically either use Skype, or our preferred one is either use Zoom quite a lot, okay, because then we can record the meetings and then get back to it, we also use the Hangouts a lot. And in the process of that discussion we then use the tools within those online services, yes to either share information, capture it online,

then later we then compile it, okay. To make sense of it, but because that's the business we're in in terms of managing data, social media is compatible in that sense.

Interviewer 10:21

Yes. Yeah. Okay. Make sense. Now, you mentioned Skype and zoom. How difficult is it to actually work with these technologies? In your business? Okay.

Interviewee 10:35

Is very easy, they are very easy to use. All right. Maybe it's a mindset thing we, we promote it. to even our clients. Okay.

Interviewee 10:42

So, because of that, I suppose we are tuned to working in that kind of environment, and we actually find it easy.

Interviewer 12:06

So would you say that it is a relative advantage of using social media?

Interviewee 12:18

Absolutely, Yeah.

Interviewer 12:19

Okay. All right, awesome. Now in terms of organising, because, you know, using social media tools, and you mentioned that it's not structured, you could use any tool. In terms of actually authenticating this information, that knowledge that comes in, how effective is these tools in terms of, you know, organising this information and then to a point that you can actually use it, you know, either to sell a product or whatever that you want to do. Yeah.

Interviewee 12:41

Yeah. Okay. I suppose, because when we do Horizon scanning, it's trying to look at trends. What's coming into the future? What's happening? What impact will it have on us in our clients? Okay, so we are very finicky about where we get our sources of data. So we triangulate we do all sorts of things to make sure that what you're getting is true. I suppose,

isn't the nature of the business because you don't want to pass on information to a client, which has come from a random source, which cannot be verified. So we do triangulate our data. We verify where it has come from that kind of thing,

Interviewee 13:25

So it's in the nature of what we do. So we are very conscious of that.

Interviewer 13:32

So do you have separate tools? Apart from social media that helps you with the verification?

Interviewee 13:41

Exactly, Yeah. Okay.

Interviewer 13:45

All right. Now, in terms of, because now, you mentioned very interesting aspect of source of data coming from different sources, okay. In terms of getting access to this information that you need using social media, is there a particular one that you think is reliable in Getting immediate access to this knowledge that you need? And how do you base your selection in terms of getting access to this knowledge that you need immediately, at that particula point in time?

Interviewee 14:18

Well, we've got to sort of ah, if you want pre-qualified sources, I'll give an example. The World Economic Forum. Yeah, they've got a social feed that they have, which we know, by virtue of the fact that they are a global body, they do a thorough better job in terms of triangulating their own information. So those are the kinds of sources we go to. We might go for instance, to get sources from the World Bank, okay. We would typically not go to a newspaper to get information!

Interviewer 14:55

Okay. All right. Okay.

Interviewee 14:58

It could be an entry point that this is interesting. Yes, let's say we're talking about Coronavirus. But when we now need to get information, we'll go to sort of pre-selected academic or peer reviewed sources.

Interviewer 15:14

Okay. All right. And social media being one of the tools?

Interviewee 15:18

Exactly, it could be a feed to get us interested, but we then go beyond it, even if our sources could literally be coming from that feed. But at times, we don't really have, okay, for my subordinates, there is a guidelines of how to get verifiable information, okay. But with time and training, it becomes common sense, that you don't touch these, these are the sort of sources that you do use.

Interviewer 15:53

Okay. All right. Well, thank you so much. Now, there's this hype around social media. People use it because of the Someone else, you know, using it for you and your business operations to actually rely on social media on certain aspects of the business. What sort of influence do you get from peer companies? Or could it be from the clients that you're serving?

Interviewee 16:27

Yeah, look, a lot is to do with the clients. There are some, where social media is, I know they would not communicate any other way. But through formal email channels, but then there are those who if you send them an email, it will take two days to get a response, but if you send them a WhatsApp message, it is instant, okay, all right. So we sort of are sensitive to the kind of communication, which the client is comfortable with. But on our side, we are very open in terms of what we can use. We prefer to use online tools, because we know how to maybe sift through them and refine that quickly because of the kind of business we are in

Interviewer 17:21

okay, all right. And in terms of now, because social media is mainly for to have access to, you know, people, whatever information. So, having that social presence or the sense of

human of the sense of being human using the social platform (social presence). How best do you think the social media is able to achieve that objective of having a sense of belonging, For instance, you want to part your knowledge to someone else when you want a particular knowledge from someone. In terms of trust, how would you rate social media in terms of that, to say this knowledge, I can trust it, I can use it to my client. How would you rate social media in terms of it?

Interviewee 18:14

Okay, it has two phases. At the extreme end, it can be really bad. Like, you know, these WhatsApp groups, where experts get together and because people are not emotionally at the same level in terms of being emotionally sensitive to EQ, A small thing can just rub off people the wrong way. And the whole discussion just degenerates. Almost like SONA Frankly, so we went when that happens, we just we just withdrawal. Okay, okay. We typically consciously use tools to manage groups, especially if it's if you're dealing with where we are collecting data or from various sources, or where we need interaction. Because we do get involved in group discussions that are managed, they will use very specific tools. Okay. All right. Like we don't just try and put in whatsapp group and hope for the best. We actually have a structured, delphi is one of the tools that we use, to access information.

Interviewer 19:36

Yeah, yeah. Yeah. Okay. Thank you so much. So now based on what you've mentioned, would you then say your organisation will intends to continue using social media because of the benefits that it provides, like that relative advantage that you just mentioned? To say that instant access to knowledge and you can part your knowledge and you can have meetings. It saves a lot of time. So would you say your organisation will continue using social media?

Interviewee 20:06

Yeah, definitely. Okay. Yeah. Because it's it's same world that we live in, demands that yes, it's just a person of course, you need to manage negatives, in sift amount, because it's a very useful tool. I've had situations where I tried to put in a group, a Facebook sort of group, okay.

Interviewee 20:32

But this is a closed one with one which I belong to, which is a leadership fellowship network, okay. And because people hate that it was Facebook, there was a NO, because of safety. It was a time when Facebook was being accused of passing on information. So that would vary negatively. For us, so that group was actually closed. Okay, which was unfortunate because while it was running, it provided instant communication for us. So, those are some of the things that one has to be sensitive to it. So it can really be, that's why I said, there's two phases. One is extreme but in our business, because we need to communicate with a wide range of distributed sort of people, we will definitely continue to use it, but in a very managed way.

Interviewer 21:36

Okay. All right. This is now we are about to reach the end of the interview. This is the part where I need your input moving forward because the study aims to develop a model for measuring the effectiveness of social media. Currently, have you got anything that you use to measure whether social media is effective for your organisation?

Interviewee 22:05

No, not at all. I'd say it's more a heuristic kind of decision to say, is it working or not? We don't really have a tool to track. Okay, although I must say, for some of our clients, because we we also because we, we are data science, so when you do data analytics and so forth, we also help clients who want to collect data, okay? So they want to know, to track metrics, like mobile apps, what is the click in how much presence is there? That kind of thing, so we help them develop those kinds of tools, okay. To Collect that kind of data. So in that space, we do get involved in tracking that kind of thing. So we know which tools to use, but we because we are not really in the business of doing data analytics, on our own, do it for our clients. Okay, so events we are dealing with at any point in time. But for good practices, we need to do it,

Interviewer 23:17

So you need to best practice?

Interviewee 23:18

Yeah, we need to do it. Because after some time, someone we've done work for before could asked us to so. In the work that you've done before, what was the use of this kind of tool and so forth and we cannot give them a quantified sort of answer because we were not setup to do it. But it's one of those areas that we know we need to improve on.

Interviewer 23:44

Yeah. So in your own view, how best can I improve this model or come up with this model? What sort of areas must I look at in order for SMMEs to actually say, this is a method or a model that I can follow to actually measure whether social media is effective in everything that I do?

Interviewee 24:10

So, I think they are some publications that are out there which have gone through where there are specific methodologies which are used, okay. But most of them because I'm from an IT background, there is a bias towards tricking, data collection, analysing storage. Okay, so I would say that's an area which is developing fast, okay. And also in my own sort of area, I didn't actually give this information up front. I'm also a student, a PhD student in a sort of similar environment. I'm developing an Artificial Intelligence tools to manage data. Okay, all right. So one of them would be social media data. So, yeah, but my area is how do you contextualise information that is delivered to a specific person? So it could come from very different sources. But you want to give them relevant contextual information at the right time. Because so you sift out the noise that they need that they don't need so that they don't get overwhelmed with spam data. Yeah, so that's, that's my research area I'm very interested in. So yeah, so it's about managing knowledge for the purposes of delivering it to very targeted Pacific.

Interviewer 25:42

Really. Yeah. So So with this model, also, I must focus on because we have different personalities. So it will not be because one would say but we use different tools for social media like LinkedIn for this persona, Facebook for that persona. So it cannot be one size fits all kind of approach.

Interviewee 26:11

That was what I learned with the leaders group I was working with. I assume that it's a natural to us Yay, see, but because of sensitivities, some of its well-founded, some of it is not but he point is it was rejected. And I was really surprised when I set it up. It is working for you. Yeah. Which I would have wanted to embrace it, but it wasn't because of the technology is because of that perception that we don't know whether this data is going to fall apart.

Interviewer 26:43

Okay, this, reaches is the end of our interview, I thank you very much for participating in the study. The findings of some of the study or the end of the study, you will get a copy of the thesis you have to go through it. Thank you very much

Interviewee 27:00

You are welcome!

Transcribed by <https://otter.ai>

Interview 5

Interviewer 0:02

Good day sir. I hope you are doing well today?

Interviewer 0:51

Hi sir, yes i'm fine, I hope the same goes for you too.

Interviewer 1:11

I'm okay, please note that I will be recording this interver. Is it okay with you?

Interviewee 1:31

It's fine as long as I can hear you and provide the correct responses to your questions

Interviewer 1:52

Yes, and I can also see you, can you see me, Okay?

Interviewer 2:03

Awesome. So the aim of this interview is so that I can get a sense of how social media works for you in your business. Right? So the technical terms such as knowledge management systems, but don't stress too much about that, because it's just a process of acquiring knowledge, storing knowledge, disseminating knowledge, you know, how, if you work with, with someone who obviously that person would want to understand your business processes and how you do things, and that's how you relate that information. So that information becomes knowledge within the business because without that information, your business will not be able to run, you understand? Yes, yes. So I'm just going to read a preamble. I hope you received, you were able to open the zip file that I sent you The zip file has its pack, it's got the consent form that's very important.

Interviewee 3:06

Thats the one I have to send you back right?

Interviewer 3:09

Yes, is just one page. There's just one page that needs a signature. And you just complete your details and then you sign. I need that if you can scan it, or you can even just take a picture and send it via WhatsApp I'll appreciate. So yeah, okay, so the title of the study is evaluating the effectiveness of social media or knowledge management systems of SMEs in South Africa. The aim of the interview is to collect perspectives of small medium enterprise owners and managers regarding the use of social media to enhance knowledge management systems. The collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge management systems of SMEs. You are kindly requested to participate. The interview will take approximately 45 minutes But I'm aiming to less than that. Because usually it's 45 minutes if it's face to face because of the logistics, you know, but if it's virtual, like that won't be 45 minutes. All information will be treated as strictly confidential with full anonymity of participating companies and research participants. You are welcome to withdraw at any time during the interview process. So is it all clear? Okay, so, Oceana, yeah, so that means now, if there's commercially sensitive information about your clients about some sensitive information that you want, you don't want to disclose, you will not be forced to disclose anything that is commercial sensitive. And also if you mention the names of companies that you are

working with during the interview, when I do that, according or when I write up the thesis, I will not mention the names. So meaning I'm going to be using pseudo names. Okay.

Interviewee 5:00

Okay.

Interviewer 5:06

Yes. So the interview can start now. What is your role? How would you describe your role in your organisation's

Interviewee 5:20

I am the director but I take up a lot more responsibilities since we still don't have a lot of people within. So I am, I'm a mentor, I am a director. I am. I am the manager and the marketing guy. So I okay, my role is interchangeable at the moment.

Interviewer 5:45

I see, Okay. All right. Awesome. And how many employees including yourself and your interns do you have in your organisation?

Interviewer 6:20

So how many employees would you say you have in your organisation? Sorry tell me the name of the company?

Interviewee 6:31

***. So we've been trading under *** and now since I'm busy with my SETA, they have dissolved the name because the company is not registered under *** so the company is actually ***So I am represent *** limited projects. Okay. So we've been trading under *** but they don't allow it since we haven't petitioned the name or registered the trading name. Okay.

Interviewer 7:09

No, it makes sense. Okay. Yeah. Back to the question of number of employees?

Interviewee 7:15

Okay, so the number of employees that we currently have, because it's not confirmed. So it's the group that I had last year that six members and I'm 7th one. Okay, So those are the ones I intend on placing into mentorship positions this year for the new group that's coming in. Okay. But as soon as the accreditation is done, we are taking 72 new interns, and then they'll be the six mentors plus myself and an admin so that's around 80 people in total. Okay,

Interviewer 7:52

All right.

Interviewee 7:58

So the 72 are still yet to be confirmed, because they're not officially hired, but we've interviewed and shortlisted and we're just waiting to take them officially after the 21 days of COVID-19 Lockdown.

Interviewee 8:10

Okay, all right now then it's fine. Now, Counting everything inclusive, right. Now you're going to tell me the number of what you said the number of employees is 8. Right?

Interviewee 8:33

It's eight and then 72 new Interns, which will make it 80 in total

Interviewer 8:40

80. Wow, okay. So are you in position now to tell me an annual turnover including these 80 new employees, assuming that you will be paying them from your own pocket hypothetically.

Interviewee 9:03

No, I still can't give like an estimate as to an annual turnover, okay, I wasn't making money or I wasn't paying them directly. So I really don't have like, actual figures of how much this and that would cause but I do have maybe estimates of monthly operating costs, operating costs, okay.

Interviewer 9:31

Monthly operating costs? okay.

Interviewee 9:47

Okay, So on a monthly base. I'm spending at least around R11 to R15,000.

Interviewer 9:54

Okay, so you just say times 12 becomes your turn over? Yes. Okay.

Interviewee 9:59

Oh yeah. That will be My estimate for just operations but not payments included into that.

Interviewee 10:04

So let's say 15 times 12. It's 180 thousand. So if you include the labour each will be 4500, right? Each intern that's 4,500. Which is about 500,000 that we're making. Okay.

Interviewer 10:57

If I put it there as R500K Is it okay? Yes..

Interviewee 11:00

Yeah, okay. K500 would be the annual turnover.

Interviewer 11:02

All right. And then now, where do you usually do your services? Where do you operate your business and where are your clients located?

Interviewee 11:27

Okay, we are in Pretoria, innovation Hub. We're in Sunnyside last year we relocating to Madrid this year okay to accommodate a bigger team. But my clients are all around Pretoria because it's that's the market have only been able to tap into

Interviewer 11:45

Okay, Pretoria

Interviewer 11:47

Okay, so can you roughly Tell me what what is your business all about? What do you do as a business and what is your knowledge management process?

Interviewee 12:02

So we offer comprehensive business and ICT solutions to micro businesses (SMMEs). Okay. So in the long run we I intending on getting bigger projects and all of that, but right now, we just wanted to build a profile so that we can prove that we do have the skill set and the capacity to actually handle those type of projects, okay. So we are mainly focusing on micro businesses now, startups and even just ideas, we are putting ideas to life and that is what we are doing. So we are offering them tech solutions, as well as business analysis.

Interviewer 12:57

Okay, so now in these procedures of yours. Do you find yourself using social media at one point or another? social media platforms?

Interviewee 13:08

Yes, almost all the time. We rely on social media a lot. Okay. Okay.

Interviewer 13:16

Yes. So which specific social media platforms do you rely on? Because I think there's a there's a diverse and each with its own purpose.

Interviewee 13:27

Okay, so that it's your three major social media platform which is your Facebook, Twitter and Instagram. Okay. So for marketing, you'd want those three, but then maybe you'd add LinkedIn for some networking, but you're not really marketing anything on that platform. But for products or services, you rely on Facebook, Twitter and Instagram.

Interviewer 13:57

Okay, all right, and amongst yourself to communicate what do you use?

Interviewee 14:01

To communicate we use WhatsApp, WhatsApp, okay. All right.

Interviewer 14:09

Okay, now I'm looking at how social media provides these capabilities, especially now that we are facing a lot of lockdown nationwide. How comfortable are these tools with the operations of your business and enabling you to continue even with a lockdown like this?

Interviewee 14:35

Well, the very effective because business doesn't stop. In fact, now it actually gives you more coverage than we usually get. Because around these times, people are usually at work so they don't have access to their phones and on access social platforms as much as they probably are between them. This period of this 21 days of lockdown. So what you usually do is you wait for peak hours, you have your bots that help study algorithms that show you when your peak hours are for people who are actually checking your content. By from now, it's actually it's actually easier because no one's available from now. And there's a lot more of potential clients at this point. So you get to continue marketing and you, you still address in a new audience and so on. But it doesn't really stop because it's social media and they get to access it remotely.

Interviewer 15:43

Awesome. So what are some of the challenges then, in terms of marketing or product accessing these new clients or potential customers? Because usually, you would want to perhaps meet with them and pitch your idea and stuff like Oh, you don't do it. On top you do that do you do it online? Or was it was it a face to face thing?

Interviewee 16:06

Some do actually. But some are still skeptical, because we are a startup and not a name brand that people really familiarise with. So some people still prefer to okay they engage with you on these social media platforms and then they initiate a face to face meeting to just wrap up and maybe to to be secure that they met someone physically and they exchanged views and so on, before actually paying money. Because you know, people are really skeptical in comes to paying, especially with your online payments and where you must collect the credit numbers and so some people are still reluctant of that part. So that's to initiate to say, Okay, let's meet and talk And then yeah, from there, some people still even after that they still prefer to pay you from your account so you don't debit they rather deposit the money into your account. Okay, they feel that is a bit stiffler. So yeah, there's

there's different types of people and then you have different approaches for every one of them hmm

Interviewer 17:23

All right. So now on the flip side in terms of the advantages now that come with these social media platforms, especially this time because now you mentioned you can still market your product you can still reach out and stuff like that. So compared to traditional methods, what could be the relative advantage of social media compared to traditional ICT methods where some you know will enable you to create, ahh... let me give an example of SharePoint for instance, SharePoint, where people document management systems which are more physical than, you know, relying on collaborative social media platforms. What could be the advantage of this during this time we you're not meeting people are face to face, especially in your business. I mean, among your guys as a team. Let alone with customers, but among you and your interns and getting the work done, you know, even during this lockdown, what could be the relative advantage?

Interviewee 18:39

Well, the advantage is that there's there's minimum physical interaction from us. Okay, so everything is just done remotely over the phone as long as you have an internet connection we are good to go. Just like this interview, there is not a lot that needs to be done. We just need to be available at one time and then we are communicating and it just speeds up a lot of processes in between.

Interviewer 19:13

Okay, all right. Okay.

Interviewee 19:15

It's just the time factor it saves time.

Interviewer 19:19

Oh, okay. I see. So I take it in terms of arranging meetings and coordinating events that will be the same in terms of saving time?

Interviewee 19:28

Absolutely, Yes. Okay. All right.

Interviewer 19:30

Okay. And then now, if you need this information that is critical for a particular project, for instance, and you don't have the skills with amongst yourselves as a team, how do you see social media platforms coming in to assist there in order for you to upskill yourselves and get the knowledge?

Interviewee 19:56

Well, at this point, we've actually realised on a lot of social media for such instances, because we actually take in interns, so in, in a broader aspect, we don't actually expect them to know everything so they're there to learn. Okay, okay.

Interviewer 21:01

All right. So now, your interns, because like you said, these are the guys who are not really experts in what they are doing. They just come fresh from university they don't sometimes they don't have enough knowledge to do certain things. One of the tools that they would need or the resources that they would need is, you know, having access to those social media platforms and data being the main thing. So how do you see social media being effective in that scenario, where you have a challenge of these interns, they don't have they struggling with data. Do you think it's, you're still, you're still able to provide the same service as you did. Even if you didn't have the interns.

Interviewee 22:01

I'm sorry, can you rephrase that one? I didn't get it clearly.

Interviewer 22:07

Okay. So if you look at if you look at your interns, right, currently, is that the guys work who don't have resources, one of the resources could be the struggle to get data to access the social platforms. So now, being that as a challenge within the business, are you still able to achieve your objectives in delivering your services the same way? As before? You know, before you had these interns, as yourselves, only maybe just their business partners with enough capacity with enough resources.

Interviewee 22:48

Yes, we do pull through.

Interviewee 22:52

We, at first we do struggle a bit with meeting deadlines because it is a challenge. When you are studying virtually, that's something they are used to even coming from the traditional academic backgrounds. So everyone is just used to someone physically being there and teaching and the interaction is, is as more as more genuine than when you are watching someone on a YouTube tutorial and so on but it's just something that needs a little bit of adapting. Everyone adapts to every environment. Yeah, it does take longer for some, but some catch on quicker. But yeah, eventually you get on to that. And then it no longer becomes that much of a challenge. And the challenge becomes, where are the best platforms because you want to learn online. Yeah. But you want to go to where there's what you want at that point in time. So you don't want to be reading 4 chapters of one thing, you just want this particular one that's going to assist with this particular point in the project. So they go around backwards and forward and yeah, it becomes they get in sync, as soon as I'd say two months from that month going forward did not really see it as a challenge. Okay. Okay. All right. We do manage to still provide the same quality project.

Interviewer 24:29

Okay, because maybe that was a concern when you're saying what about 80 still coming. And you know, now that raises the question of how many projects do you have to cover and will you still be able to meet the deadlines the targets because especially now that you mentioned that you're only going to start after the lockdown, right? So assuming that the lockdown happened later, when you already assigned the tasks and stuff like that. Was that going to be a challenge for them to carry on with the execution of tests?

Interviewee 25:07

For the serious ones, it wouldn't be, you know, in every group is there's those that you need to run after. So for the ones that are really, you know, embracing the challenge, it wouldn't really be much of a challenge, but a, a new experience. So there are just those that slow down the group in general they are always there and you need to kind of give special attention to them. That would be the only challenge that okay you find someone who is doing this internship and they don't really see the importance of the intention. That is okay,

this is my potential recommendation for employed and all they see is graduation. So for those that you might encounter, below Problem with, okay working remotely because at some point we do say, okay, they must work remotely. And we just want them to submit projects, you know, to kind of even give me time to do other things like market the business and get more clients and do so and so. And it always becomes a challenge that the group members would come back and tell you that so and so wasn't as active social wasn't as active.

Interviewee 26:29

So for some people work is, is a physical location. Yeah, come and talk every morning. And then only then does it register to them that I need to contribute my own my own portion of why I'm here. Yeah. So unless some people are guided that they wouldn't do much in general, someone who knows why they're here who embraces the challenge and take the opportunity with both hands. The platforms can work anywhere. We've been actually doing that with the last six members that are left of the past group last year, we actually working remotely even now and still launching projects. I am piping clients, I give them the project backlogs. Okay, yes, we push work even within a shorter period of time. They really know what they're doing. All they do is just compile, compile, compile, there's a new challenge, then that's the new part that they need to work on. But in general, all ecommerce sites will require a card or this and that. So all these processes they're really familiar with. Okay? It's not much of a problem.

Interviewer 27:41

Okay. All right. Awesome. So for you guys to rely heavily because you mentioned that you rely heavily on social media, especially for collaboration exchanging knowledge with one another. Where do you get the influence the influence of influence of using social media to run a business because I mean, it's social media, the term itself is a social platform, you do it for your personal use. So what influence Where do you get this influence of using this for business?

Interviewee 28:13

So we get a lot of influence. I personally let me not speak for everyone in the team. But as I speak for myself, I get a lot of influence from people like ***, he runs ***. Okay, so we will even go to some of *** hackathons. And they are organised virtually on social media

untill the actual day of the hackathon. So you see how easy it is to kind of locate people and get feedback and allow them to engage on even, you know, social, socio economic problems. And we all on one scale in terms of, we see the same problems and everyone wants to do something. But how to go about that. That's where you see the influence or the power of social media. Yes to how it brings us together for one objective and initiate conversations and so on. So *** are a major influence in terms of how to use social media, they are really is doing that well.

Interviewer 31:42

So now on the last portion of the interview, you mentioned something. I think you mentioned bots, algorithms, which check how many likes you got and who visits your website and stuff like that. Is it your sort of measurement instrument to check whether people are whether social media is working for you is effective for your organisation?

Interviewee 32:12

Yes. Okay. Because you, we invest, you know, we invest some finances on digital marketing, especially your social media marketing, content marketing and so on. So all these platforms without the bots, the social media platforms already have some analysis tools for you to actually see how much coverage you get in how many likes and when people are actually interacting with your posts and so on. Because you do want to know if the content you posting is being received well by the people you're trying to, you're trying to attract into your business.

Interviewer 32:56

Awesome. So now with these bots, I take it you have not experienced any challenge with these bots where you want an alternative to rather?

Interviewee 32:56

Not really, They seem to be working. Okay,

Interviewer 33:15

Awesome. Now this concludes our interview. Thank you very much for availing yourself. Please don't forget. Thank you. No problem. Thank you. Thank you very much. Don't forget the thing, that consent form I really need that as well.

Interviewee 33:30

Okay, I'll send it back by no today. I'm sure I would have signed and scanned it back.

Interviewer 33:36

Awesome. Thank you very much.

Interviewee 33:41

Thank you very much, sir. Thanks. Thanks.

Transcribed by <https://otter.ai>

Interview 6

Interviewee 0:00

Mary had a little lamb!

Interviewer 0:01

My name is Steven Mamorobela having an interview with ***, the founder of ***. Thanks, ***, for participating in the study. I'm just going to go through just the basic rules of the interview, so that we are on the same page. The aim of the study or the title of the study is evaluating the effectiveness of social media, or knowledge management systems of small, medium and micro enterprises in South Africa. The aim of this interview is to collect perspectives of small medium and micro enterprise owners, or managers regarding the use of social media to enhance knowledge management systems. The collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge management systems of SLM ease, you are currently requested to participate. The interview will take approximately 45 minutes, we could shorten it to 30 minutes. All the information will be treated as strictly confidential. With full anonymity of participating companies and research participants need all the immense make mention of the companies that you've worked with. When I do the write up, I won't mention any of those names. I'll use the quote. You're welcome to withdraw at any time during the interview process. There won't be any compensation because it's a common academic purpose. And yeah, thank you for your time. Thank you for agreeing to

participate in the study.I will also be recording this interview for my report later. I hope you dont have a problem with the recording?

Interviewee 1:43

I agree to all conditions. As long as I don't go to jail.

Interviewer 1:43

You won't Okay, so we can start. Um, can you briefly tell us what, what your company does and your role in the company.

Interviewee 1:56

My role is CEO

Interviewee 1:59

The company is called ***

Interviewee 2:02

We develop Virtual reality based content especially for learning and training programmes. We don't do the training ourselves. We prefer to work with third parties who are in the training field. So we're creating content that they can use in their existing training programmes. And the basic idea is to visualise areas where learners struggling to understand

Interviewer 2:34

Okay, thank you so much and how many employees currently work for your organisation

Interviewee 2:42

Currently we have 1234567 so seven, including yourself, okay.

Interviewer 2:52

And then roughly your turnover per annum?. Round about how much is it?

Interviewee 3:05

Last year 5.9 million. Okay. I know of that because I've just done the financials.

Interviewee 3:09

That was the February 29 turnover. Okay, I'll make this expected issue because of what's been going on.

Interviewee 3:18

And the fact that I've just written off R3 million worth of bad debt to a company called neon reality in the US, there's probably going to be R800,000 turnover. Okay, we're in a, we're in a rebuilding stage.

Interviewee 3:33

That will be as of February 2020.

Interviewee 3:37

So February 2021. If all goes well, I'm expected return over be back to R5 or R6 million .

Interviewer 3:45

Okay. Well, thank you so much. And where do you mainly run your operations?

Interviewee 3:47

Innovation hub in Tshwane (pretoria)

Interviewer 3:58

All right, in your operations? Can you kindly explain to us how do you actually manage knowledge? What's the process that you normally follow?

Interviewee 4:11

What we do is not managing knowledge knowledge, our main purpose is to visualise knowledge, okay? In a way that can be understood. I'm going to bore you for a minute and give you the elevator pitch. And I'm going to start by asking you a question. Do you read novels?

Interviewer 4:30

Yes, I do.

Interviewee 4:32

I'll ask you again. Do you read novels?

Interviewee 4:36

If you read a good novel, you actually do not read it. You visualise it.

Interviewee 4:44

You play the story in your brain that is how the brain works. So for example, when it comes to understanding Newton's three laws of motion, school kids, 10-11 years old. struggle to Grab classic concept all if you picture it in VR where you can actually play. You get it in 30 seconds, 30 seconds. After starting, you've got it. Yeah, if you haven't got all the maths behind it. So the idea is when you come to a textbook, or SLP standard operating manual in a factory, yeah. factory workers, school kids, artisans, bricklayers, plumbers, they struggle to understand the words taking health and safety in mind. For example, He struggled to visualise he struggled to picture because it's hard to understand. So you do record signing off get a certificate early on the Goddess, yeah, if you can show how something works, Then the brains got a basic framework upon which to add the rest of a lot of the knowledge so therefore what's being taught programme B school stem, t vet skills, Article skills, suddenly the textbook becomes a novel.

Interviewee 6:11

Because now they can see or visualise. Then suddenly everything makes sense. So then you can go back to the textbook to understand the mathematics. Yes. You know, you know what's going on. And it can this will transform learning. And it is already I mean, in the global markets, now VR is being used more and more

Interviewee 6:32

To over aspects in Africa. language.

Interviewee 6:36

And you'll understand this from your younger days. schools use English, typically these days.

Yeah, that's your second, third or fourth strongest view. Yeah. So you lose a lot of trouble in the translation process and then that leads to poor scores. When it comes to the trick. Yeah. If so the language issue is huge, visualisation? Yeah, he's not a language. We haven't invented a language for the eyes yet. Yes. So language is an issue in Africa and then we have literacy.

Interviewee 7:13

You can take skills into rural areas, technical skills, trace deals in such a way but literacy, you can overcome. To learn English you need to be literate in English, not very low pass a major problem in rural areas. Yeah. Suddenly, we have evidence to prove with farmers in Zimbabwe, just how quickly the implementation of a learning is not sometime in the future is tomorrow. And we've seen it, yes. So that is why we visualise knowledge

Interviewee 8:00

Sorry, if you're gonna write back up, give me a copy.

Interviewer 8:04

I'm going to share with you that. Yes. So, in the process of visualisation knowledge, to what extent to use social media platforms as an organisation?

Interviewee 8:20

Okay background first.

Interviewee 8:24

I spent 20 historically I'm actually a transport engineer. I've got a master's in transport engineering, okay, from Birmingham University 40 years ago. I joined the CSR as a researcher in 81. In the transport traffic field, in the late 80s, Assad's migration towards the it applied new ITs into the transport sector is Africa. So, PC networks email Yeah, basic stuff today. Yeah, but as involved in getting those going, Yeah, and it was interesting. You voted how we had to what we had to do to get simple things like email into an organisation like CSIR. It took two years. Sure well,

Interviewee 9:14

So I've got a good it background. The last two years in the CSR, I was running a VR centre, which is what led in 2000 to the League of 3d. And I'll be working the IoT technology sector since we've done a visualisation of time. And we're still under I still understand what we're building websites before the internet was invented.

Interviewee 9:36

My first email address was a dot alt as it was called those days. One of probably 20,000 on the planet. So I've grown up with the technology. So the first question is what is defined to social media? And in these days is publications like Facebook, LinkedIn and various platforms, Instagram, All the rest of the collaboration. Yeah, it was systems that I use, because I find the machine useful business. Facebook is interesting that is now it started after the social media platform. A lot of companies now have the corporate websites on Facebook. Yeah, absolutely. But do have a formal old fashioned website. Yeah. LinkedIn.

Interviewee 10:28

I use that a lot. I'm very sceptical on LinkedIn. It's a lot of people connected to each other every day. But I don't see how those conditions get used in business. A lot of companies now especially SMEs, they you flooding LinkedIn, with marketing messages, about their products. They're being sent to the world. How much of that world is interested in what that company does? Yeah. No great deal, I suspect. So I'm not I'm fairly sceptical about the marketing, about the business of faces of LinkedIn, even more Facebook, because it's a website where you can actually find people Facebook is probably verse two out of all the social media platforms. I use an old fart. Now I know a lot of people use Instagram and a bunch of other sites for networking

Interviewee 11:31

But from what I see a lot of networking is social.

Interviewee 11:36

Example, Sharing pictures of what I had for breakfast, or how many times I went to the toilet today. Yeah, yeah. As opposed to business development. Could be me as a senior. I don't really understand the power of these things if you view but I see Facebook, LinkedIn. There are two that I engage with mostly. The problem I do have is I don't have capacity these days to do a professional presence on these platforms, even though a website is two

or three years out of date. I've got somebody who's busy rebuilding our website. Okay, using a modern 21st century template, our old website is something that's grown since 2000. Yeah, it's based on service information. There's got a lot of information around VR what we've been doing in VR. Yeah, I'm finding this modern new website, which is the reason why it's taking so long is because to be honest, it's got a nice picture. You know, it's modern template where you have a picture on the home screen. Yeah. And all the text is down below. And we sort of flows in a pretty way Yeah. But the amount of information it's just not there. There's so many websites now using this modern 21st century template, sort of, it's got very few sub pages.

Interviewee 13:13

Quite often we don't even say where they're based, who the hell you're talking to. Quite often, I'm noticing more and more that don't actually say who's in the company.

Interviewee 13:26

So you don't even know who you're dealing with. It's just basically this is what we do. Please give us money. And we'll do it for you. Yeah.

Interviewee 13:36

But who are you? Where exactly are you?

Interviewee 13:39

I'm sitting today with a lot of that information is now it's not seem to be important. Yeah. For me, it's crucial. I'm not gonna talk to somebody who might be in China, who might be an India, or might be down the road, without me knowing.

Interviewer 13:55

So, for you to prefer social media platforms such as Facebook and LinkedIn, what could be those relative advantages that you seem to observe from these platforms?

Interviewee 14:11

Well, question first for you, does social media include email?

Interviewer 14:16

It depends collaborative. So email is not really collaborative, which is passive, you send and email and wait for someone to respond as and when they need to respond

Interviewee 14:26

Yes true, but still is internet based platform. Which a lot of companies use today. Yeah. How the hell to you send an invoice on LinkedIn. Well, you can't. Oh, whatsApp, I use WhatsApp quite a lot now. Okay, all right. I forgot that one.

Interviewee 14:45

I mean, running a business. I mean, nobody these days, post an invoice!

Interviewee 14:53

Is email. You send an email in business. If you don't send me an email with an invoice. You've got no freaking business.

Interviewer 15:01

Okay, So email takes precedence?

Interviewee 15:16

If you want an old fart opinion! And I've seen it many times over 30 years of working on the IT game, the modern wave is very easy to try and subdues the old way. Yeah, so email is old, is legacy, why use it? Yeah. Most of the business platforms are Email based. And modern social media platforms cannot replace. I've just picked up a new project. I need to have a contract. How do we discuss that contract? We discuss it on Email. We also use Skype.

Interviewee 16:02

And a bunch of others such as GoToMeeting, zoom.

Interviewee 16:11

A few of us we use Yeah. Okay.

Interviewee 16:13

The ones we use a bit are based on what the client wants

Interviewee 16:20

We can't tell the client that we use ZOOM therefore, don't use GoToMeeting, no. We got to use GoToMeeting.

Interviewee 16:27

Okay. So you got to follow the trends.

Interviewee 16:31

I mean, you can't tell your clients to change their strategy.

Interviewee 16:39

Which is one of the challenges because he's continually bouncing between different platforms. Overall they are easy to use. So what the hell? it's just a question. How do you instal it? So, back to email, I think is a very powerful tool for SMMEs, okay.

Interviewee 16:56

Which is, young people say poopoo it because it's old. It's legacy. But is not! It's a document sharing, ideas sharing, here is my invoice, can you please pay in seven days?

Interviewee 17:11

It doesn't have to be collaborative. But is passive, I've given him the invoice please pay me in seven days.

Interviewer 17:19

Another school of thought has it that email is very structured, to say you have to be very formal when drafting a business Email, but when you're on platforms such as WhatsApp you dont need to. In your opinion, Is Email email is part of social media?

Interviewee 17:35

It may not be social media, but its a fundamental part of SMME business operation!

Interviewer 17:46

Yes, yes. Now specifically SMMEs, another school of thought may say, but SMMEs are very flexible, and they don't really have formal structures and email seems to be very formal, and it takes time, you know, to respond to emails, you know, one would just send an email and then you only see maybe a couple of days. That's when you get feedback, but then with WhatsApp, a lot of people are now online chatting on WhatsApp. If you ask something, you don't have to be formal about it. You just quickly hit the nail and say, here's what I want and then you can immediately get a response. What's your take on that?

Interviewee 18:33

Listen old fellows perspective. I heard that same argument. When emails came out, compared to writing a letter

Interviewee 18:44

In the old days we used to the invoice, these days we don't even have a postal service. Yeah.

Interviewee 18:52

In the same argument about emails being more informal was used. I can relate Lotus notes.

Interviewee 18:58

I'm hearing the same thing. It's like, miniskirts. There's a fashion.

Interviewee 19:05

Miniskirts were in fashion in the 60s. Okay, back in the 80s. Yeah, yeah, these things always come round and its the same in IT. I heard people say, but what's up is informal.

Interviewee 19:18

And you can backwards and forwards. Yeah, you can backwards and forwards on the email. The emails are very unstructured in terms of what's being written. Yeah. Companies send out an email or a whatsapp so are they speaking on behalf of the company? Are they getting the company into the legal shit? I mean, whatever you say WhatsApp or on email, you can still get yourself into a legal situation. Because it's informal. A lot of things are said on email, exactly the same as on whatsapp, which are contentious? Potentially? Yeah, yeah. When you wrote a letter in the old days, you'd write

it. It would go typed by Secretary. Yeah. And the group head, division head or boss would sign it. Yeah. So he goes out and it's a form of communication from the organisation. Now is everybody in the organisation, communicating informally with the outside world. And whether it's WhatsApp or email, same, same issue and when it comes to it's backwards and forwards. It's got advantages, sometimes you want to respond to something. Yeah, I'm in the meeting.

Interviewee 20:36

I can quickly type the reply. Like it's got the elements, otherwise its... there is a guy in Cape Town in Parliament who sent me a whatsApp message this morning.

Interviewee 20:43

He was still waiting.

Interviewee 20:46

Yeah. Because I was busy this morning and now I'm talking to you. So he may gets ruined tomorrow. Uh huh. Exactly. Thats exactly like email.

Interviewee 20:57

Look, I'm not defending Email over anything else

Interviewee 21:06

The way I use email, email is my to do list. Okay, I've got something in my inbox, then I can see what I need to do. Yeah. So even today, I don't say send them off. So I'll just say send an email. It's in my to do list. Yeah. Somebody's waiting for some information or a document. I use email. There's all in one place. Yeah, yeah, to respond. I think my email box has gotten about 35 emails in my inbox going back 20 years, which are waiting for my response.

Interviewee 21:49

I managed my life by my inbox.

Interviewee 21:52

Okay. is about 35 which I haven't responded to.

Interviewee 21:57

Some for good reason a few because I haven't gotten around to it. There's no difference really, at the high level. It's not really any different to WhatsApp. The guy in Parliament is wan answer. Yeah.

Interviewer 22:16

Now let's talk about Facebook for instance, because we can't compare Facebook with email, but we can compare WhatsApp right?

Interviewee 22:18

Yes, very much.

Interviewee 22:20

They are serving the same purpose. Yeah, just before you ask a question, just park it out. Just appoint that came to my mind. Do you do DIY?

Interviewee 21:57

Uh huh. Yeah, I do.

Interviewee 21:57

Okay, so you go a toolbox? Yeah. Have you got one screwdriver in your toolbox? or Do you have about 20?

Interviewer 22:40

Well, I've got multiple

Interviewee 22:42

You've got pliers. Yeah. Yeah, you've got pliers. Yeah. And you've got a couple of hammers. And you've got a couple of you do woodwork, you've got two clubs, etc, etc, etc. social media, whatever you can read about but it or not, is your toolbox to run your business. Yeah,

Interviewee 23:07

You can use it as tools for different purpose. Yes. If I want to formally get an invoice to a client I can't post it! I Email it.

Interviewee 23:16

Then I've got a record. Sending you a invoice or not. So there's a real bit of a client, because how the hell we print it out? Yeah. For all the purposes you need two copies, one for the payments file and another for the project file

Interviewee 23:37

So like it or not you got to find a way of getting it out to some other system so you can print it out. So thats why all this is needed. The best intention in the world, if you are working with government.

Interviewee 23:52

You need a written record because one day things will shift, you may end up having to say that all to come in. Yeah. So we'll say and it will be asked to audit that project because we suspect corruption.

Interviewee 24:09

You haven't got a printed record on file. Yeah, you failed before you started.

Interviewee 24:14

So in WhatsApp how the hell do you printout to get a printout of a document. pdf.

Interviewee 24:22

How do you do it?

Interviewee 24:25

You open a whatsApp and forward it to the email system. Yes. And then you can print..
Hahaha

Interviewee 24:35

So in many ways, I see social media as a toolbox. A toolbox like you have a toolbox in the garage. You can use either a physical toolbox to do physical DIY Yeah, house repairs.

What you really enjoying, mainly furniture. What can you do? woodworking. Yeah, or a hobbyist? And just say moving to IT side of things. There's tools in the toolbox. There's lots of different tools. The Purists will add tools in the toolbox and marks doesn't belong.

Interviewee 25:05

Maybe broader minded people, older people say we still have Email. As is a filing system on the shelf, just in case you get hit by Audit one day.

Interviewee 25:21

You haven't got that in place as an SMME. You do deserve to be business. It's a risk risk to the business, which is not going to satisfy banks. Too difficult to learn.

Interviewee 25:42

No, don't keep I don't keep records. End of Business. Simple...Hahahahaha

Interviewer 25:52

So what would you say?Especially for SMM is social media. It's more beneficial because now as a toolbox yes We agree to two reports that you need to carry out your business. But there are those that come very costly, like, you know, your enterprise systems, which are very expensive. Now, if you have to use social media, which, which has all those tools in it, for SMME type of business, would you say the use social media platforms is beneficial because of the cost implications that comes with enterprise systems?

Interviewee 26:31

We use social media to network and use it to connect.

Interviewee 26:40

Cloud based accounting is a part of social media?

Interviewer 26:44

I don't know? tell me more!

Interviewee 26:49

If you need accounting system, you actually get very powerful cheap. Yeah. Cloud based systems, HR systems if you get cloud based systems. Yeah. I should use a couple in here in Hatfield.

Interviewee 27:02

Asset Management these are all cloud based systems are they include the question or social media?

Interviewer 27:15

No, they're not included in the study!

Interviewer 29:38

I think I think we're almost at the end of the interview. Because most of the things you know, I've structured the interview, but then you covered a lot of my questions. Yeah.

Interviewer 31:19

How accessible is the important knowledge that you as an organisation would need to do something maybe to run an operation. Does social media assist in accessing this knowledge? It could be from a subject matter expert, whom you identify on social media and start asking questions?

Interviewee 31:54

Social media is crucial on that end. Okay, The last bit was crucial. If I'm putting together a proposal I need to know Who? I need to understand the potential clients needs. Yeah, I need to understand what they do, how they do it.

Interviewee 32:10

So that can, as you put in the document together? You know, like putting a decent proposals is two or three day's work at least.

Interviewee 32:17

Then part of how to understand the business, what website, maybe a site visit but typically websites get an understanding of what we do how they do it and what how they think.

Yeah, Come through very, very clean website. You may start talking to individuals in the company.

Interviewee 32:42

Let's say you've got a couple of meetings. You've got a champion

Interviewee 32:47

Who's the one who's gonna take the proposal forward into an approval process?

Interviewee 32:54

How do you talk to that person who can be there's going to be various going to be built good old fashioned phone calls? Yeah.

Interviewee 33:01

Is going to be WhatsApp

Interviewee 33:10

I find WhatsApp extremely useful to talk about, as you said.

Interviewee 33:14

There's no that's not the only tool in the toolbox. Absolutely. It's all about tools. Yeah.

Interviewee 33:20

So I'm not talking about individual by phone by email now and again. Yeah. And

Interviewee 33:27

Potentially informally, it's it's WhatsApp or telegram is a new platform that is sort of developing. Telegram seems to be a duplication of WhatsApp and its claims to be secure. Yeah. So there's no written record. But I dont know is thats true of not,

Interviewee 33:53

WhatsApp the claims to be encrypted? Which is probably true. Yes,

Interviewee 33:59

Since it was taken over by Facebook. Yeah.

Interviewee 34:05

His his horses his tools in the toolbox. Yeah. So you can get information. When it comes to the I've got the proposal ready as a PDF, I use email.

Interviewee 34:19

The source of that information was gathered through media social media. Yeah. The term social media implies social communication. Absolutely. This is what I have for breakfast. I'm just cooking a nice meal click.

Interviewee 34:34

Yeah. But nowadays, people use social media for business, purchase businesses, gather information, collaboration, and building relationship. You can use it as tools for different purpose. They're not the only tools in the toolbox. So, It's all about tools.

Interviewee 34:47

That's whatsApp and becomes very important and very, very powerful and informal than email and email is a much more informal than a letter. In the early days of email, companies will get into trouble. Because somebody will say something on behalf of the company, which was wrong, and the company becomes liable. I think the law is now changed to cover that kind of eventuality.

Interviewee 35:15

The law is maturing to catch up with these kinds of developments. So even the term social media could be a problem, maybe should be called business media or Collaborative media.

Interviewer 35:36

Yeah. The thing is, there's no formal framework, you know, it's not done in a structured way. You know, social media should be used, right, like email you can say, Okay, this is a company policies use email for this and that but with social media, it's open.

Interviewee 35:49

I suspect in a company, especially in the corporate level. We still trying to struggle with what is social media? emails now? What is everybody using? Yeah. Social media in how to how to set up a company isn't a situation where email was 20 years ago. Yeah, it's not matured yet. new platforms come out. Yeah. Different people who will be organisation use it. We use Skype, Yeah. The American company users are used to use gotoMeeting. But now cant afford it, and moving across to zoom. Okay. Interesting. Well, they have a lot of meetings, global company, they have a lot of global meetings. Refer to your food for two people in Yeah, all around the planet. It's an interesting experience. The sales team in Eon it's over different salespeople in 30 countries.

Interviewee 36:50

And we all meet at five o'clock on a Monday afternoon. Wow.

Interviewer 36:55

All made possible by social media?

Interviewee 36:59

So yes, and that how things work in the real world?

Interviewer 37:08

If gotoMeeting was a social media platform, I don't think anybody would use social media as a social gathering.

Interviewee 37:17

For the simple reason you gotta pay for it. It's not cheap.

Interviewer 37:19

Okay. So gotoMeeting is a paid for service platform?

Interviewee 37:25

As with a lot of good tools are!

Interviewee 37:28

So the fall out of the free tools are probably not as powerful. Yeah,

Interviewer 37:35

yeah, no, absolutely.

Unknown Speaker 37:40

It's a free medium type of service

Unknown Speaker 37:45

You get a free level of free. nobody's really using something useful. Yeah. He's tough, unless you say, Well, what are these cloud based systems? You get a free HR kit?

Interviewee 37:57

Bam, boom.

Interviewee 37:59

And would cater for two people is free.

Interviewee 38:04

And they have hidden costs too. Because I mean, you can't use social media without a data. You have to pay for the data, which then makes social media, not a free platform.

Interviewee 38:17

Every platform which I mean even email these days. Yeah, absolutely. If you touch it up your Dropbox or something, okay, okay.

Interviewee 38:29

I haven't quite used most of Microsoft System cloud 101 Cloud. Okay, keep getting, I'm gonna feed into the surgical move on the laptop. Okay, I'll still use it. Okay.

Interviewer 38:46

Okay. And then now in terms of because you're operating in the City of Tshwane, Is the area conducive enough to use this platforms because other areas have issues with coverage in terms of you know the City of Tshwane and where your business is premist and where your clients are located?

Interviewee 39:25

We have in Hatfield a 100Mbps pipe into the building. Here we have a fibre link into the building through [Company x] being filled with just on savings. And we has good bandwidth to facilitate social media. Yeah.

Interviewee 39:51

And we has good bandwidth

Interviewee 39:54

One of the big problems really was when we moved out to TLMA,

Interviewee 40:01

(A) there was low bandwidth, so students couldn't even get hold of online tutorials.

Interviewee 40:09

And (B) this is an interesting one, which may or may not be part of your interest area, but the city had a five (5) megabyte file limit on emails.

Interviewer 40:32

But then was a 5Mb limit on attachments only?

Interviewer 40:35

No, per Mailbox!

Interviewee 40:56

So as the guys at the top we don't quite understand yet. Yeah. Which is quite a problem, but that's not just social media. Yeah, that's ICT and collaboration

Interviewee 41:16

And that company is one of the biggest companies in the country. just saying,

Interviewee 41:33

Well, yeah, so there is still those big corporate constraints. As SMMEs we don't have those constraints but we have limits on data (needed for social media)

Interviewee 41:40

We cant afford to buy the data required, even today.

Interviewer 41:44

So over and above these limits on data, assuming you don't have these limits. And what would you say as the challenges of using social media in your business particularly

Interviewee 42:00

Let's call it 'social unbusiness media'. Okay.

Interviewee 42:04

I've got stuff in different social media platforms. Okay. I don't know what to do because I don't have oversight.

Interviewee 42:28

I'm a very open when it comes to control, I believe in empowering people

Interviewee 42:35

But it's a risk to an SMME. You've got different people different messaging going out. Yeah.

Interviewee 42:49

How many times do you go to a meeting as a CEO of an SMME?

Interviewee 42:54

They say something that somebody says about your guy said this. Yeah.Hahahhaa

Interviewee 43:13

I think another constraint is ethics, okay.

Interviewee 43:19

I could share this with you? We had a situation yesterday we use a couple gaming platforms, obviously in virtual reality

Interviewee 43:28

And suddenly the innovations hub have decided to throttle, not throttle, or to stop. This all new firewall has stopped all multimedia downloads. Multimedia, okay. So suddenly yesterday morning, find ourselves with a big hand held up. This side has been locked by the innovation hub

Interviewee 43:53

End of businesses. The reason why we had to do it and say that when I spoke to IT guys a great guy and what he's done that kept everybody,,,

Interviewee 44:19

As a way of controlling the problem.

Interviewee 44:23

The number was 17 terabytes of data coming into the Hub

Interviewee 44:31

People just downloading films. What we did was blocked it because of service providers. And if you don't lock it, we will

Interviewee 44:42

17 terabytes is a lot.

Interviewee 44:46

So there's a lot of young people doing this.

Interviewee 44:51

Download, download the movie for home tonight.

Interviewee 45:08

So, we've done a lot of exciting stuff on the firewall, we brought in the policy and firewall of YouTube. If you've got more than eight hours of YouTube usage per day you get a flight.

Interviewee 45:38

People are just sitting all day playing youtube

Interviewee 46:02

So we have a big problem of solving by clamping down.

Interviewee 46:05

So people will now go into the IT group and say, oh, I've got this problem. Yeah, we need that for business, which is what I did yesterday afternoon. Three minutes later he was open to change the policy for the layer three me what allowed

Interviewee 46:26

So it's managing the risk. The other one which actually made a note about is data security, which I think is a big issue. If you're running your finances on a cloud based platform, because is cheap, how do you know that Data is not being shared illegally? How do you know about that size not going to get captured? I mean *** is a huge company, but has been nailed a few times for selling data. They've been accused of swaying elections. In the US, ***, there was a Cambridge, there was a company in the UK who was buying data from *** and using it to develop strategies for political parties...Data Security is a big issue and Trusting all these cloud based sites, or even whatsApp as a separate chatline

Interviewee 47:58

Because a lot of things get said on WhatsApp that if it is given or sold to a third party, how many people talk about the tax affairs on Facebook on their whatsApp? Skipping ducks, yeah. And if I did to get sold to sauce. That guy in Greece, the racist one, who posted a video on a beach in Greece couple years ago. Remember? Who posted on Facebook and said it is great here. There's no black people. He was probably drunk. And this is a South Africa probably a white racist. I think he almost went to jail. Yeah.

Interviewee 49:03

The problem is that's another risk. You say things and probably just making a Joke, suddenly it gets into the wrong hands; I think that's a risk. Yeah. In my experience most people in South Africa as a White person I'm speaking now.

Interviewee 49:36

Most of the people I know in the white community are not racist, but make a stupid comment every now and again. But they're not fundamentally racist going around saying I want to shoot every black in the culture. Think of the bell curve, subtlest 10% down in one end.

Interviewee 49:57

The people should be controlled Let everybody else it's about I think it's about re-education, and understanding. Have you come across this Facebook site? 'I'm stain on' Facebook.

Interviewee 50:17

It's a reaction to the Thabo Mbeki, Julious Malema, ANC politics, okay. They've now got over a million members in five months go past a million. And it's just a group a platform of people who just share daily experiences of good. Okay.

Interviewee 50:39

There had a movement that have occurred over Christmas. Started with people who are waiting for a meal. You give 10% for the tip. Yeah. We started the programme where you go to a restaurant and you're going to restaurant. You double the invoice. You double the bill as a waiter's tip. And hundreds of people started doing this. Wow. Transform the waitresses' life. Yeah, absolutely. It's like goes into the schools fund. We've got a whole pile of things to do. We started talking to how do we share clothes? school uniforms, grew up as a thing. There were the kids on the last day of school each year, take a change of clothing. And the last day they go to the changing rooms change into the normal casual clothes. And leave a school uniform on my desk.

Interviewee 51:44

And there's a million people. Black, White, Indian, Coloured, all just talking in a nice? The real South Africa? Yeah, absolutely. But the ideas of Africa the world we should be living

in right? It's a reaction to all this politics is going on which is very polarising. And I enjoy it. Since you are doing your PhD in social media using SMMs. You should try and get into that.

Interviewer 52:16

Yeah, absolutely. Yeah. Because just this morning I was into, I was speaking to a student, and she's a social influencer, social media influencer. So she was just telling me about how she manages, or she tries to avoid the issue of unemployment. She's still studying, but then she's at a point where she doesn't need to find a job because what she does on LinkedIn, Facebook, WhatsApp makes enough money to sustain herself in her varsity life, meaning, I mean, she's got the potential to increase a fellowship. Yeah, you know, and stuff like that. Follow us you to make enough money.

Interviewee 52:58

That's a business I don't quite understand.

Interviewer 53:05

That's what he does is he goes into a shop and sees, okay, what's trending in this shop? What's like, let's say clothing outlet. What is it that's new, you know, the new, the latest, maybe shoe or whatever she is that takes the photo, and then put it on Facebook, and then links or vertical, it takes that company that's shown. And then all of a sudden followers by increasing that shop cause a big set of contracts, and then she gets paid every month for how she ties in the products,

Interviewee 53:41

Actually she is in social media advertising.

Interviewer 53:44

Yeah, absolutely. Yeah. She doesn't have to stress and worry a lot about how to make money the next day and he already owes it. There's a new income exactly what is. So that could be a solution to this animal. Because we see a lot of youngsters on social media, but then why are they doing it? Because we want to make opportunities

Interviewee 54:07

Well there is only one in a thousand or 10,000. When a company can't pay everybody they can pay your person is exposing their brand or exposing product. Yeah, sales are going up. Yeah, exactly.

Interviewee 54:19

But that's one in 10,000. There's a good business opportunity. So if you think about it, it's actually not social influence. And it's actually the old term will be marketing. Or sales.

Interviewer 54:34

Yeah, yeah. And you don't have to go to the store ask for a job. Already. You just use what they ever expose them to the world cuz that's what they want. Yeah.

Interviewee 54:44

Yeah. When you say that person's right. Yeah, yeah. Again, you know, there's a risk. The marketing people are never write. As I was saying there's always a risk. Scrupulous people who will follow you on WhatsApp and create a fake account and pretend as if they are this clothing outlet. Yeah, invite you to places and then human trafficking starts. I was actually gonna come to that. Yeah, false news is a huge risk on social media and that change the world in a bad way. *** in Britain. Yeah. He got there because he lied. Like, in UK out of Europe, Brexit. He was based on lies. On social media. He used that

Interviewee 56:00

A very good case study for you. Hmm. He actually lied on social media, his own social media company. Yeah. And the country fell for it. Well, he is the *** he actually got that's what led has led to Brexit. Which is the biggest disaster. Yeah, yeah. Both sides. Yeah. To be honest. And in the US, *** got it and because of lies on social media. Mm hmm. Yeah. Change the world will change us. Words. Change the world. Americans are quite happy with him now because he's probably going again again. Yeah, because he's getting jobs back into the us into the US. Yeah. less impact on the rest of the world. That's killing the developing worlds. I must muscles. Yeah, we'll be going down. There must be awesome. Reason about creating social media

Interviewee 57:05

Should be very, very good. It's a good case to be. Why social media should be closed down

but again, you can't, how do police it?

Interviewer 57:18

And that's that's exactly I think that's what drove this whole thesis to say but okay we have the social media being used in businesses started as a personal thing now people are using it for to run their businesses. But then that is no is not done in a controlled manner. And there are no policy frameworks to govern social media use. How best can we protect people's information?

Interviewee 57:53

I did a project 20 years ago more about websites and it was something ethics was a big research project for UN on ethics of information. Or rather we did we did research work for somebody else who wrote the report, it was about information Ethics. That opened my eyes to a lot of Ethical issues that are going on, especially around pornography.

Interviewee 58:44

Which is the biggest driver. Is those things that we know they are happening but no one talks about. In those days when I was single, I was dating on the platform and I got nailed for a bit of money. Luckily, I saw I saw what was happening and I stopped bothering people lose a whole. Did you see on carte blanche a few weeks ago. A lot of pensioners have actually lost their life savings. Through scams on social media and on these dating sites Yeah. Which is part of social media, so everybody's watching Yeah, yeah. Well, people have lost everything and more. And its about Ethics on information that takes around information as opposed to the area of its own right. So another risk is in respect to the ethics. All right.

Interviewer 1:00:09

Thank you very much.

Interviewee 1:00:11

I enjoyed it.

Interviewer 1:00:13

It was very, very useful. Thank you so much. Because the whole idea is to get the perceptions around the use of social media in business. If there has to be a framework, a governance framework of social media, where do we start? And this is just, you know, a drop in the ocean because I mean, it's just the one study but there are a lot more than I was worth during the years that I actually tried to cover up how we can actually come up and structure this social media using business. Thank you very much.

Interviewee 1:00:49

I do have one parting question. And I've been saying this since the mid 80s.

Interviewee 1:00:58

This is important. Probably more. What happens if the lights go out?

Interviewer 1:01:11

Hence we have to find alternatives for Eskom. Hahahah

Interviewer 1:01:16

Thanks again , thank you so much!

Transcribed by <https://otter.ai>

Interview 7

Interviewer 0:02

Okay, so the recording is started. I hope it will work.

Interviewer 0:40

All right, so this is a recording. It was given by Stevens Mamorobela and the participant to whom is a founder of ***. Just read a brief of this interview what this study is all about. I'll share with you the consent forms. Later on, since you've signed and agreed to participate thank you for the research title is about evaluating the effectiveness of social media on knowledge management systems for small, medium and micro enterprises in South Africa, this is a PhD study with UniSA. The aim of the study is to the aim of the interview is to collect perspectives of small medium and micro enterprise owners or managers regarding

the use of social media to enhance knowledge management systems. The collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge many and systems of SMEs. You are currently requested to participate. The interview will take approximately 30 minutes of your time, all the information will be treated as strictly confidential, with full anonymity of participating companies or research participants in the interview process should you make mention of any company that you work in with, or the names of the individuals that are involved in any of the projects that you will be mentioning, Will those names will be coded when I do that right now. So it will not be any mention of names of people or companies. And whatsoever, when I do the write up of the thesis, you are welcome to withdraw at any time during the interview process. And there is no compensation because this is just purely for sure. There won't be any monetary or any other compensation.

Interviewer 2:37

It is purely structured. Some of the questions I'll try to you know, just to get the depth because the interview to get the depth I'll post a question maybe multiple times just to see if it talks to the themes that I'm trying to unpack. All right. The interview will be recorded. Are you okay with the recoded interview?

Interviewee 3:09

No problem

Interviewer 3:17

So we can start with the interview. Can you perhaps I'll just briefly tell us what your company does and your role in the organisation.

Interviewee 3:39

I'll start with my role? So, I'm a founder/owner, okay. And play an executive role, executive director to be specific, okay. My job is to oversee everything, okay? What we do is build systems and solutions for other businesses right alongside providing cloud hosted solutions, okay.

Interviewee 4:21

But my main job in what the company does is to align business strategy to the use of technology within organisations. It's mainly targeting small SMMEs as you haven't it.

Interviewee 4:38

Small Medium and Micro enterprises. Okay?

Interviewee 4:43

We go with the tagline 'business and societal relevance'. Okay? So the aim of the business is to assist others to ensure that they are relevant in the business context or the societal context. Okay? By exploiting the use of technology.

Interviewer 4:51

Awesome. Thank you very much. And how many employees in total including yourself,

Interviewee 5:13

Including myself, we have a team of seven members, okay.

Interviewer 5:34

Okay, and then what's the estimated turnover per annum?

Interviewee 6:02

We are still under 5 million per annum.

Interviewer 6:24

Okay. That's fine. Okay. And then you are located here in Tswane? And then is there any other premise that you have around Gauteng?

Interviewee 6:43

Virtual, Yes. Virtually. So, virtual office in the northwest province Mahikeng to be specific

Interviewer 6:58

Okay. Okay.

Interviewee 7:08

And another one in Durban. Okay.

Interviewer 7:29

All right. And your clients, you're in technology so they assume they're all over?.

Interviewee 7:35

So yeah, it's cross sector. Okay. So we provide technology agnostically to industries. And they range from Small to medium sized businesses, public sector, large enterprises, okay. Okay. All right.

Interviewer 7:54

Okay. And would you kindly take me through the process of managing The most critical knowledge that you need in your organisation be it for training new stuff, for sharing with your partners and stuff like that

Interviewee 8:11

Managing it?, its a tough question!

Interviewer 8:24

In terms of acquiring knowledge, storing knowledge, and accessing knowledge and sharing knowledge?

Interviewee 8:39

So we use a CRM system, okay? That comes with a cloud drive shared folder. So it becomes our information repository for contract for client files. But by and large, we depend unfortunately, on email. Email, as a central repository.

So this is a huge disjunction between what I designed In what we're doing, so I designed the process that says okay, for communications, the main communication is by email, right? Or telephonic otherwise, and the CRM system has a recording feature. But the way we operate is we only used it to after we've gone through the entire arrangement.

Interviewer 9:25

Oh, you mean the CRM? Okay. Okay,

Interviewee 9:39

For lessons or for knowledge management. So, you know, everything go by email by email, and yes, later information will be uploaded to the CRM, but what I would prefers is that Information sits on the CRM and all the communication happens via the CRM.

Interviewer 10:15

Okay, so it's still work in progress?

Interviewee 10:29

Ultimately, it's going to be the main system.

Interviewer 10:52

Okay. All right.

Interviewee 10:57

And an example is like today we got a lead, ive added it to this system, okay. The idea is from making calls to doing contracts to post customer acquisition to support, all of it is supposed to sit on the system. That whole value chain is comfortable. Exactly. Yeah.

Interviewer 11:20

All right, cool. I see. Now in this whole value chain, how often do you get to rely on social media platforms be to exchange knowledge or information? You know, in these processes, communication and and...

Interviewee 11:42

It's how often do we rely on social media? So our main use, not often, so let me first answer the question. It is not oftern. Okay. Our use for social media for now is has not been successful in Creating new business, okay for us, okay. It has been more successful in creating awareness,

Interviewer 12:07

Awareness?

Interviewee 12:08

Yes, of just the brand and also educating, trying to educate our customers.

Interviewer 12:16

Okay, all right. Okay. And which social media platforms specifically?

Interviewee 12:19

The top three. So Facebook, okay. In fact, Twitter doesn't work for us, so Facebook, Instagram and WhatsApp.

Interviewer 12:38

Okay. And in these platforms mainly with a study because as I said, it's about measuring the effectiveness of social media. So it can be any tool within it, which is classified under social media. So most of the questions about the contest. You will be based on those platforms and how effective are they in your business. So, with these tools that you have, are looking at how you rely or depend on them in on certain aspects of the business and looking at how your organisation traditionally does, you know, ordinarily would do things would you say. How comfortable are these tools, you know, with your ordinary execution of knowledge management, if you were to choose what is it that you look for within these platforms, that your business mainly will benefit from?

Interviewee 13:16

That's a multi layered question, its a packed question because on the one end it's sort of the features on those platforms. On the other end is what we are wanting to achieve if the features on those platforms are compatible with what we want to achieve, so I think maybe let me start with what we would want to achieve. Our reason as Maru Africa specifically for using social media is to educate our customers.

Interviewer 13:39

Educate?, okay. It's that's the main thing?

Interviewee 13:50

Because of the kind of products and solutions we sell, there's a lot of DIY activity. So, you know, and what we would because we provide platforms. So there's a lot of DIY that the customers should be able to do, right? So we use it to then say, Okay, if you would like to

do this and that, here's an article, here's a picture, here's an explainer video, here's an explainer image on what this is, how you're supposed to do it yourself. So that we can in our ordinary operations, so that you can minimise the amount of calls, emails that are support request related by educating our customers. So ordinarily the to use social media for and it allows for that. So the three that I've mentioned, allow the use of graphics. So we can use images, we can use even text and so the compatibility therefore suits what we need to do

Interviewer 14:58

Okay, I see. And then in terms of the challenges with these tools?

Interviewee 15:15

The tools are not challenging, okay. They're easy to use. What is a challenge is creating the content? Okay, creating the content that ensures that you achieve your goal. Okay? Not so much the tools. Okay. Okay, I would say link to the tools is whether you can attract your customers onto these platforms. And the challenge then is not the tool itself. It's, it's understanding whether your customers are using those tools and if you will be able to get through them using those things.

Interviewer 15:58

Okay. Okay. Okay. So Since these are the tools I can say, are not really challenging, would you rate them as having a competitive advantage over other traditional methods of doing the same thing? Okay.

Interviewee 16:28

Absolutely, and I'm sure in the hundreds of interviews you've conducted, you've had the same story? People are on their phones all the time. Yeah. But so the advantage it gives is you reach your customer where they are. So as opposed to doing a radio advert for educating customers. You don't know whether they are listening or not. Your slot might be in the time that they are not listening to the radio, but social media then allows them at their convenience to still find the content that you want to distribute. The other form of compatibility is that we have this tool that allows us to schedule content on different platforms at the same time. So now it's convenient for us. Our job is just to flood those platforms with content and then get customers to be attracted to our links so that they can

get the content. I think I forgot also to mention some of the tools we use, email marketing, okay, not gonna mention brands. You know, now they're starting to see what we're doing wrong. I read something yesterday which says 'sell the problem you're solving, not the solution'. Yeah. So we tell people what the solution is. So I'm measuring the effectiveness of our compain here! Ha ha ha. So, the tools for us being a tech company are easy to use, they allow us to do what we want to do. But I don't think I think the challenge then for us as an organisation is sending out the right message that gets us the sort of responses we want.

Interviewer 19:35

okay. Okay. Which then triggers another question about, you know, access to this message through these tools. How accessible are these messages or is because now you're in the space of educating people. Now, when you speak to those customers about the information that you posted through those tools. What is their sense in accessing that kind of information? And is it really usable information for them and, you know, for the DIY is that you've just metioned.

Interviewee 20:21

So I can say yes, it's accessible, okay, it's on the cellphone. So we know customers use their cellphones for emails, and for the social media. One of the things that we're not using to educate customers is SMS okay. But yes, they are accessible and they have an impact. So when we analyse the statistics, we are able to say how long somebody spent on let's say this page on a website, okay, alone. And on average, how much time does one person spend on an article, okay. And what we do is we check that amount of time we spend, okay? against. So there's another tool there to estimate how long it should take for somebody to read an article. But when you do the analysis, customers go through 50% of the content if you just compare the two. And often, they still come back to us and ask the same question. So the information is accessible, but they are not doing what we want them to do.

Interviewer 21:40

And then when they come back to you through, do they do that via social media tools like WhatsApp?

Interviewee 21:56

Yes, in fact the main form of communication right now is whatsApp, and the second one is email. No, no, first is whatsApp, Second is telephone calls. Okay, and third is email.

Interviewer 22:45

Okay. All right. And in your own view, which one do you think they prefer?

Interviewee 23:14

WhatsApp because its instant messaging. Our customers prefer instant messaging. It's convenient for them, but it's inconvenient for us. Because the pattern that you then see is because the messaging tool is sort of a personal tool, the engagement with the customer then becomes personalised. However it's supposed to be you know, I have an issue, our processes is that if there's an issue one has to open a ticket, okay, so that we can address the issue here. Once the issue is addressed, we close the ticket so that you have an incident tracking ability. Because this tool is a personal tools. Now, you know, the engagement is is made personnel whereas is not supposed to, you know, they are blurred lines, I guess we'll try and find a way to formalise it and structure it. So what we're trying to do actually, is build a robot. The robot will say, okay, what's your issue? Right on this instant messaging? Okay, what's your issue? Okay. Have you tried this DIY, so then it will share the links and say this is a DIY have you tried this? If there is no answer, okay, do you want to open a ticket? All right. Give a description. What's your client account number? Okay, perfect. One of our agents will get back to you.

Interviewer 26:17

So how far are you with that concept?

Interviewee 26:19

The only thing that delaying us now is that the the use of that robot requires APIs which are expensive. So it's just an expense thing. Otherwise, we can switch it on a few days. Okay. Okay.

Interviewer 26:27

And now looking at how your industry is doing things currently. What is your view on the influence that comes from your peer companies in terms of the use of social media to manage knowledges? It's that it's

Interviewee 26:50

The influences is automate, automate, automate, automate, okay. Two, artificial intelligence, robots, chat bots. So one is to automate and two is to personalised. Okay. So the creation of content should be personalised. No longer this, you know, we are the corporate you're the client and we are telling you about us. The influences is that we are engaging with you in a virtual collaborative manner. Collaborative messaging as opposed to, you know, we are telling you, yeah, what can you tell us and what story can you share as a client

Interviewee 27:36

I think the third thing is empower the client to do what they would depend on you for Okay, through integrating with social media. So, I gave an example of the chat board. You know if we automate that process and a person says I want to reset my password as an example.

Interviewee 28:04

And they can do that from whatsapp or Twitter, allow them to do that through integrations. So the third thing is after automating automating content is integration. So the sort of a cohesive use, so it shouldn't matter whether I'm on your website, or on your platform on different social media systems is, if I want to do something, Wherever I am, I should be able to. That is sort of the influence that is coming to use. The other influence as a form of integration, is the use of progressive web applications. Okay.

Interviewee 28:51

So people don't have a lot of space on their phones, because they've downloaded all the apps that matter to them. So, you know, trying to get a customer to install your app, and they will use it once a month, when it's time for invoicing is not really the best way to go about it. So can you get them to use progressive web apps that are accessible through social media?

Interviewer 29:25

Awesome. Now we are actually at the end of the interview.

Interviewer 29:33

And the last question, actually, I have two last questions. It's about your capability or your ability to measure whether social media is working for you in the organisation. One, you know, currently when we look at the currency in social media, it's not necessarily money but is about how people Follow us. In essence, some people call themselves social media influences because of the number of followers they have and the tech companies, maybe big brands and those big brands that have contracts and say, we pay you for advertising our product. Now, that is one effectiveness that again, the study will try to address.

Interviewer 30:34

But first before we come with that model, to actually measure this effectiveness, I have to first understand whether for you this statistics that you are using to track the number of how many times or the time spent on a particular maybe on your website by a client, how effective is that statistic, or statistical analysis? Does it not take you away from your daily operations? And how much time you know, how much of your operational time does it take? Is it worth is something that it's working for you?

Interviewee 31:10

The answer is yes. It's so great to see. So, this is how long it takes me. Okay.

Interviewer 31:21

So what is this tool? Okay.

Interviewer 31:30

I wish I can see it, but it's just an observation.

Interviewee 31:52

I can Yeah, this is our own thing. So, go open an app. You know, choose their website, okay. I can do real time analysis, right? I can check statistics on a dashboard. And that's it.

Interviewer 33:02

Awesome.

Interviewee 33:04

Okay, all right, then, you know, and this is now categorised into different platforms to say let's face Facebook, these are the number of people that are viewing on this one. I'm only using it for the website. Okay. All right, but I can check traffic, okay. And the sources of the traffic, right? Okay.

Interviewee 33:51

So yes, if we are running a campaign, this is ineffective because within a matter of seconds we can understand the situation, is what is working, what isn't working, I can make adjustments in terms of social media, the tools so the three that I mentioned, if be Instagram, also, same thing. Yeah, a few minutes. But because because we are not really heavy on the social media for what is crucial to the life line of the business. generating income income. Yeah.

Interviewee 35:04

You know, just to it for now they're nice to have. Yeah, yeah. When we are running campaigns like we're going to be doing soon. We have all the tools at our disposal to then say, okay, are people spending as much time as we want them? Are we anticipating issues on a page? Because it's content heavy to the clicking on the buy button, you know, if the campaign the three way through other social media platforms, for what time do they do these all of these years? logistics and analytics, so it doesn't take much time. It doesn't take what this is. I don't digress from my routine operation. Okay. Quick, and the best thing about it is it helps you make decisions. Whether whether these things are useful or not, we can make a decision withing 5 minutes.

Interviewer 37:11

This is awesome in deed, but the question really is, is if you have a tool to measure whether the, you know, platforms work for you, okay.

Interviewee 37:25

Do we have things that help us make effective decisions for the business? Is it because not everyone? Yes, we have social media. We use it on a personal level, sometimes in business, but not everyone is really measuring whether social media is effective or not.

Interviewee 37:51

And it sad because all the tools are there Yeah, yeah. But I think there isn't. Remember when when you told me about this survey. First time, and the topic is we're explaining today about understand a lot of businesses attempting to achieve, which is the business goal. And how the use of social media such tools contribute to those goals. He fears and you're right in saying that there isn't a framework that then says follow these rules to measure the effectiveness of these tools.

Interviewer 38:53

Awesome. Well, thank you very much now over and above what we've just discussed, and is there anything perhaps that you feel we should maybe include in the study about, you know, like you said, frameworks, helps businesses to measure the effectiveness. What do you think, over and above because obviously, there's a lot of studies in social media to make This one stand out.

Interviewee 39:39

Not sure if we can include it in this study. Is your study going? You're going to make recommendations. Yes.

Interviewer 40:15

Okay. Yeah. Okay.

Interviewee 40:22

I think building, maybe we'll call it a model, okay. For a tool that helps sort of bring business objectives, okay. And social media, okay. Together, all right in the form of a road map.

Interviewee 40:47

So, I want to, let's say, I'm studying your personal brand, right? That is a form of a business, right? I'm studying personnel printing business, let's call it Okay. Well Let's use

the example you made an influencer brand. And I want to be able to hit 10 or more generic revenue of R100,000 from affiliate marketing, which is what to influence influence and so, if I want to generate 100,000 worth of revenue, right, and I started my business and all of that, so I'm ready to operate. Yeah, build a sort of roadmap where somebody can see like, okay, I want to generate and 1000 right and then when they see that sort of that target, then says okay, on average consumer goods and products brand would pay you 500 rand for every time you show your post is like 1000 people, okay? And another sector will do this. And this is these are the things they are looking for. And then say okay, and you go through that filtering and drilling down till it gets to a point say, okay, your first action is create a nice logo. Yeah, cool, you know, post an article around industry trends and do that for three months, and then hopefully in six months, you would have hit the target picture. Good luck, okay. All right. So, you know, a road map type of model like that as a recommendation because I think it will help a lot especially because we are in the gig economy. You know, South Africa, we work 50% 60% unemployment.

Interviewee 44:30

There's a word for it. It's just escaped me. So, then using that model, such as the approach, say, Okay, if this is something that you want to do towards using social media for economic benefit of some sort, yeah, this is a suggested model.

Interviewer 44:52

Yeah. Awesome. Awesome. Thank you very much, this is the end of our interview. Really appreciate your time. No. I

Interviewer 45:03

know your contribution really, really helped. At the end. Sure. Hopefully towards the end of the year, I will share with you the book

Interviewer 45:16

Im expecting to submit by September, September, we'll see of when the results come back, share with nothing

Transcribed by <https://otter.ai>

Interview 8

Interviewer 0:02

Can you hear me?

Interviewee 0:09

Yeah, I can hear you.

Interviewer 0:14

Um, did you go through the documents I sent you? It's just a background of the study what the study is all about and stuff.

Interviewer 0:28

No, it's fine I can I can read you a brief because you know as we conduct research some time while we have to declare, you know the protocol things like you know, you are you are willing to participate, you can withdraw at any time and there is no confidential information that you have to disclose and everything that we are discussing as part of the interview will if there are any commercially sensitive information that information will not be will not will not be recorded or will not be written down. So, those are the type of things here. So, but I will just go through because this on top of that as a consent , there's a consent form, you know, consent to participate. If you can just sign it for me, you know, I'll appreciate time for me and maybe you can Yeah, you can do it digitally sign it, email it and then so that I can have I can file it as a record

Interviewer 2:17

I saw you using a different email address, have you branched out or what's happening?

Interviewee 2:30

I'm running two businesses. Both are in IT services

Interviewer 2:50

Okay. So basically in this interview, you can use any experience from any of the businesses, so it is not strictly based on one of the businesses, because I take it both of them are within the ICT space? So it's just to ascertain your perceptions, your experience

regarding the use of social media, and how that works for you in terms of acquiring knowledge, sharing knowledge, storing knowledge and stuff like that. So basically, that's the focus of the study. The study is all about that. So the title is evaluating the effectiveness of social media on knowledge management systems of small, medium and micro enterprises in South Africa. The aim of the interview is to collect perspectives of small, medium and micro enterprises, owners managers regarding the use of social media to enhance knowledge management systems. The collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge management systems of SMMEs, You are kindly requested to participate. The interview will take approximately 45 minutes. But since this is an online virtual platform, I think it's going to be quicker, it's not going to take even 45 minutes. All information will be treated will be treated as strictly confidential with full anonymity of participating companies or research participants. You are welcome to withdraw at any time during the interview process, and there won't be any financial compensation because this is basically for research purposes. So the interview will be recorded for my reports. Is it all clear and are you okey being recorded?

Interviewee 4:39

Okay, all right. Sure.

Interviewer 4:40

Hundred percent. Okay. So we are about to start now with the questions of the interview. Can you briefly tell us what is the role that you're playing in your organisation, you can just pick one, because you just mentioned that you have two, so specifically on the IT one, let's rather focus on the IT company

Interviewee 5:03

I'm the director of the company and from the Board perspective I am the secretary.

Interviewer 5:15

Okay. Well, sorry, what's the name of the company? I forgot to ask that.

Interviewee 5:21

The name of the company is ***

Interviewer 5:31

Okay, perfect. And then in terms of the number of employees, including yourself as a director, how many in total?

Interviewee 5:45

four

Interviewer 5:46

You are four altogether?, okay, four. Okay.

Interviewer 5:51

And then your estimated turnover? your annual turnover?

Interviewee 5:58

About 4 million rands

Interviewer 6:09

okay. All right.

Interviewer 6:13

And then where do you mainly operate?

Interviewer 6:20

Where are your offices? As in like the location or the area where you provide your service?

Interviewee 6:36

We have our offices in Midrand. Our clients are government institutions mainly.

Interviewer 6:40

Okay. All right. Okay, awesome. So awesome. So would you take me through the process that you follow in? Perhaps managing knowledge? by managing I mean, how do you acquire knowledge? How do you store it? How do you share it or be distributed and stuff like that? In your business?

Interviewee 7:02

Just a question. What do you do you classify as knowledge?

Interviewee 7:08

Give me the context of what you classify knowledge as!

Interviewer 7:20

Okay. So you are running IT services, right? Well you're offering IT services to different clients like you said.

Interviewee 7:35

Sure.

Interviewer 10:15

So by managing knowledge, I was referring to, you know, when you conduct your business right, Sometimes you will exchange information that is critical within your business, you share with your partner, you share some procedures with maybe customers on how to actually use a particular tool that you probably have developed for them and stuff like that. So that would be that would be one of the knowledge aspects that you are sharing with your partners to say if we do this this way, this is these are the steps that you have to follow or for us to achieve this, we have to follow this process right. So that becomes information which will result to knowledge within the business because without that your business will not operate or you won't be able to achieve that objective. So, the question is what sort of process are you following in order to share this knowledge, to acquire or to get new knowledge from outside, maybe to upskill yourself as a business or to share amongst yourselves or to sort of raise awareness of your business with prospective clients on what you do and how you do it. stuff like that

Interviewee 11:47

I suppose, this is a bit broad now because you talk about our business partners, you talk about our clients and so on...Let me try to narrow it towards what we do with my business partners regarding knowledge hopefully you can guide me as to what you are saying about managing knowledge. Okay let's start with the clients, after developing applications,

immediately we are required to do skills transfer or knowledge transfer to them. So, it varies the starting point is documentation, the application must be documented, okay. Normal SDL setting which with some degree testing will be documented and everything will be documented. And even the development project must be documented. And there are what we call 'over the shoulder type of demonstration' to show the clients what and how to do the application and to some degree for people who are going to be supporting the application to be able to know how to support it over time.

Interviewee 13:17

Conferencing, allows us to be able to assist them remotely and there is something that we are trying to change in this demonstration where you are able to record your action, and then it becomes like a video type of demonstration

Interviewee 13:44

That you can play on top of the demonstration. So that is something we are trying right now has nothing to do but I know it's gonna come in with our next projects and so forth when we are required to do the hand overs. So that handles the part of documents and so forth. So that's one aspect I think I can try to answer your question.

Interviewer 14:13

Yes, hundred percent actually because, you know, that actually clarifies what you do. You know, you mentioned some visual aspects of it of sharing things visually. You know, the demonstrations that you are able to do some remote conferencing on how tos and stuff. Now within that, is there any aspect of social media platforms that you use in your virtual platforms? Or in your virtual meetings? You know, what sort of platforms social media platforms do you use? They're specifically, remote conferencing specifically. Yeah.

Interviewee 14:58

Tell me social media, too. What what, how to, in your research where to find it as?

Interviewer 15:07

Okay.

Interviewee 15:10

Because social media it varies depends, WhatsApp, some people call WhatsApp a social media. So it varies from person to person. So maybe we can maybe expand on that maybe I can quickly focus and narrow to answer your question.

Interviewer 15:27

Okay. Awesome, So with social media now we referring to those tools, collaborative tools. This will be ICT tools, IT tools. They come in different applications. WhatsApp being one Facebook being another, Skype, zoom being another so so these are the virtual also these are ICT tools, provide collaboration, virtually, you understand. So that's how we define it within the context of the study. But they are very, you know, there's a lot of applications and platforms that people would subscribe to. So the aim of this study is to understand which ones are more common among the SMME environment and which ones are working for you and which ones are not working for you. Like Now, you mentioned remote conferencing, where you provide the demos and stuff now, that would be classified as a part of virtual collaboration in which social media platforms can be used, such as zoom such as Skype, such as you know, other teleconference or video conferencing tools, because those are classified as social media within the study.

Interviewee 16:51

Within the study, okay. I can see we have what is called Trello. Do you know Trello?

Interviewer 16:55

Trello, I heard about Trello, yes

Interviewer 17:04

So Trello, what do you do with Trello?

Interviewee 17:10

It's sort of like project management tool?

Interviewer 17:20

Okay,

Interviewee 17:23

So something like eh, you see agile development.

Interviewer 17:25

Okay, yeah,

Interviewee 17:27

It provides a free open source tool, okay, that allows collaboration such that it is able to imulate or simulate what Scrum or agile project methodology where it would simulate the scrum, and other

Interviewer 17:52

Scrum

Interviewee 17:56

Like your sprints within the the scrum, your stand up meetings and stuff, Okay,

Interviewer 18:01

And it does all that online virtually? Meaning you can collaborate as a team?

Interviewee 18:05

You have to manage it yourself.

Interviewer 18:08

Okay, okay.

Interviewee 18:12

You are able to collaborate as a team to see who is doing what, where are they?

Interviewer 18:18

Okay, all right. Yeah.

Interviewee 18:20

So the person must manage it themselves.

Interviewee 18:22

And then a project manager is able to follow with, with what everyone's doing and how far are they

Interviewer 18:36

Okay, awesome. Okay.

Interviewee 18:47

WhatsApp obviously for communication as a group, ... What else I'm trying to think of Google docs, One drive, Skype and zoom. I can say we have what is called Trello now Okay, like we're talking right now

Interviewer 19:02

It's okay because I take it these are the general ones?

Interviewee 19:08

Microsoft 260 for document management and storage of documents.

Interviewer 19:17

Okay, so you have quite a number you don't have to mention all of them, but it's okay. Yeah, so now in terms of running your business and I like what's happening currently although you know, it's a negative it's not positive for for the, for the economy, you know, this lockdown and stuff. But this actually I think this makes this study stand out because we want to see how many of businesses will be sustainable after the 21 days. How will social media come in, you know, these tools that you just mentioned? How are we going to take them seriously now to conduct our business because in the past, you know, you rely on face to face you have an office as you meet with your clients, you set up meetings where you meet with them face to face. Now we are sort of forced because of the lockdown to actually do this virtually. Now you have to look at all these platforms to see which ones will best deliver on the documentation on the meetings and whatever that you have to do as a business to get to keep your business afloat. So, I'm looking at how DarkMatters, runs its operations, wood, how compatible are these social media platforms in general, how compatible are they in enabling *** to continue running his business?

Interviewee 20:48

Since we are not office based, we are able to respond outside an office

Interviewer 20:52

okay. Okay.

Interviewee 20:57

We are able to, how to put it, maybe to answer this question maybe, the DNA of *** is that we are consulting to our clients. So we're not at, we are not based on the client side

Interviewee 21:13

We are called on to do certainty things, and we don't need to be on site.

Interviewer 21:21

You don't need to be on site, okay.

Interviewee 21:24

So we have a client who we developed an online solution for them an enterprise solution, everything that we did ourselves using collaborative tools, okay, and then finally deployed on site. And to some degree there was no need for us to go on site but everything that we did we offered them virtually online. We had to go there just for basic meetings and so forth, okay, but I can assure you, even right now. We are able to support our clients in much the same way as we did before. There is not even a need for us to go to them. If the client has a problem, we're able to log in to their server and check what the issues are using our common tools like 5G, WinSCP those are normal do's and don't's today. So those are just not much.

Interviewer 22:19

Okay. Okay.

Interviewee 22:20

And then for some of the application that are deployed on online, on cloud services,

Interviewer 22:31

yes?

Interviewee 22:32

I can't even call it remotely, we are able to manage everything on the cloud.

Interviewer 22:37

is it on the cloud?

Interviewee 22:39

Yeah. So well, the lockdown for us, it's gonna make the biggest problem that we are not able to find new business. But in terms of supporting our clients and everything, everything still online. Like 60% of our meetings are over Skype and Zoom and then everything else is over the telephone and we are able to meet our service levels with our clients accordingly.

Interviewer 23:20

Oh, perfect. Oh, okay. So I take it now is is highly compatible, social media in with with your daily operations of *** like I've given a brief of how we classify social media within the study, to say all those ICT tools that are able to provide you with with collaboration capabilities, you know, to shy away from face to face. Yes. So you shy away from face to face traditional meetings to virtual platforms where you are able to exchange information virtually have meetings virtually, you know, that's, that's where we collaborative aspect comes in.

Interviewee 24:39

Yeah, yeah.

Interviewer 24:40

So now, I wanted to ask about the complexity now or all the difficulty and challenges that you experienced, especially during this lockdown. You mentioned that you are unable to find new business. So traditionally, how would you do it like in the past, would you how would you do it? would you do it? Physically, by knocking on doors and setting up meetings and pitching or how did you do it?

Interviewee 24:54

So we get business by networking, networking, okay. Improvement with people. Some will tell you that someone needs something. Okay. We are able to find each other or maybe for instance we are able to see opportunity of advertisement of some sort, so there's a social element to it, some sort of networking that requires a face-to-face type of engagement

Interviewer 25:45

Okay

Interviewee 25:55

And another thing, being virtual to some degree will begin with human interaction. For someone to trust you, they want to see who you are.

Interviewer 26:17

Yeah, absolutely. Yeah. Okay. Okay, so the trust aspect is the main thing, especially in networking because now when you use social media platforms, I mean, virtually trying to connect with someone, but then this person doesn't know. You know, who am I dealing with? And so that's that's the challenge that you're trying that you're faced with currently with the lockdown.

Interviewee 26:50

Sometimes people would prefer face-to-face because they don't want to be recorded

Interviewer 26:54

Yeah, okay.

Interviewee 27:00

Issues of trust are the biggest challenge with social media

Interviewer 27:01

Is it?

Interviewee 27:08

These social media platforms have what we call a digital footprint

Interviewer 27:20

Absolutely. Yeah.

Interviewee 27:23

Sometimes one dont want to be on the net

Interviewer 27:27

Ah, see, I see okay. Okay. So that's another issue, digital footprint okay. So but now okay those are the challenges and difficulties, but on the positive side now the relative advantage now looking at traditional methods, where you meet with a client, you talk about, you know how business should be done and you have meetings and also sometimes you use other tools which are not classified as collaborative or not classified as social media. would you would you regard social, how would you regard social media its advantage over that traditional way of doing things especially for your business.

Interviewee 28:15

Like I said to you, we are a digital enable business. So, pretty much everything that we do is digital. Okay. So our business, for instance let me just take you through what we call an SDL process. Okay. How are things done to show you to illustrate the points. Some department once asked us to do something for them. They have an RQ of database administration. So what we do as a team, we need to prepare a document.

Interviewer 29:18

Yeah,

Interviewee 29:20

That document is gonna be on in OneDrive.

Interviewer 29:28

sure,

Interviewee 29:29

So the first thing the person is gonna do the technical aspect, the document is gonna be divided in section, I do Section one, the other will do Section two, I do the costing of the project, the other will do Section three and so forth as part of the technical documentation. Already we are working on one document, but we are not in one office. We completed the document with everything online,

Interviewer 29:53
right,

Interviewee 29:55

So already collaboration is there within a short period of time. We did this in Trello to check in progress. Checking the document and making comments. And at the same time we are using WhatsApp to check on each other. So that's just one document. I'm not even talking about the actual project as a whole. We submit, they'll call us if we win the project, they'll call us for a physical meeting, then there after, we use emails to discuss further, then we start with the work. Everything becomes digital. So if they want something, we use email, and then skype meetings for discussions with the client. I have discussion with you as refers to the business, but then as a team, we then start the work. So we're going to have our first skype meeting, a kick start meeting to give each other roles in the project. All this is done on digital platforms. Others will go into project development, I do multiple documents which I upload on the cloud. And then we start with coding, there is a common repository for the code.

Interviewee 31:21

And when we connect to the servers, like I told you, database administration, we are able to, depending on what you're remotely logging in, we as a team are able to collaborate on all these issues here to resolve the issues or develop something for them and so forth. Our weekly meetings are on Mondays, where we are able to catchup on what was done throughout the week and so forth. And then in between that individuals can call an agent meeting to sort out an issue or something relating to the project. Yeah. But the main point is that everything is still digital. Yeah, yeah. Okay.

Interviewee 32:22

So, to answer your question we as a business we are able to do so because of digital tools.

We are still able to assemble as a company. We are able to also do other projects, right now we have another project we are working on in a similar fashion. In the cloud computing environment which is related to managing knowledge and I work with my other partners on other projects. So we are able to do work and we've got a virtual admin person to manage our office admin. So, we are a digital company.

Interviewer 34:04

Yeah, so that's your DNA, digital company! Okay. Okay.

Interviewee 34:07

Yeah, look pretty much everything with the advantage of social media, it enables us to achieve that you see?

Interviewer 34:18

Yeah. So now, that actually takes me to some questions that you have already partially answered, by just giving us that explanation of how you run your business digitally. I really need you to clarify them for the sake of this interview. One, can you explain how social media is able to coordinate events for you?

Interviewee 34:35

So when we coordinate events, you know, setting up meetings for example, we would use on social media platforms such as Trello.

Interviewer 34:48

Okay, and does social media platforms give you access to knowledge that you need?

Interviewee 34:35

Ofcourse, we rely on that, you know, to actually get access to whatever document that we need, this information that you need so we get immediate access to this information and knowledge that we need because we run a digital company. And also another advantage is that we can also trust the people that we are sharing this knowledge with. So obviously if you need to know about projects on a bank, for instance, you know who's working on projects in that bank, and then this is the person that you need information from, and you discuss with that person directly.

Interviewer 35:23

Okay, So now I'm looking at the nature of this business and through how Africa is experiencing some challenges, especially when it comes to bandwidth and network and stuff like that. Would you say your clients have the same sense of, you know, working on digital platforms, or do you have those that insist on meeting physically because they don't really trust digital platforms that match? or maybe they have a challenge of digital platforms maybe in the network bandwidth or whatever because you do your things online virtually? So how often do you come across clients that have a challenge with technology, such as your trellos and stuff?

Interviewee 36:34

I think there are common tool that everyone is comfortable with, to collaborate. Like emails, those are common ones that everyone is comfortable with and they become a common tool for them. But they then, want to make follow ups they want to see people I think they want to make contact by coming to the office, but there are others clients who prefer both physical and digital because we are in ICT

Interviewer 37:38

Okay.

Interviewee 37:46

I can say that, more people that interact with us are at that space of both digital and physical contact. They will allow us to do whatever we do digitally because they have already accepted that's what we do. And accepted that we're gonna work together. That does not become an issue or problem for them. There is that requirement that we have to visit the client, maybe once a month to see how they do their stuff but they know that we are working in this one so...

Interviewee 38:47

We are able to collaborate using online tools, such as social media tools. So there is an acceptance that gonna work in this way and so that is not reluctance or push back

Interviewer 39:08

Yes. Okay. Okay. All right now. Awesome. Awesome. So now for you guys to think about this concept of doing things digitally, Do you think it was, what sort of influence did you get? Or was it a social influence from the competitors in your space? Where did you get the influence of doing the business online like that?

Interviewee 39:38

It's just time. Currently. That's what everything is on, Digital. Everything is digital. It's not like you're building a house,hahaha. We are providing solutions to people using IT, and IT is evolving you know, it's the nature of the business today. Yeah. Yeah. Okay.

Interviewer 40:12

Yeah. Okey, And you are satisfied with how things are now happening? Or especially when it comes to now new contact? Is there anything or new business? Is there anything that you feel can be done in order for, for you guys not to have this challenge of making new business because if you aren't able to network and stuff, you are unable to have new business. So what sort of how what's the level of satisfaction now with with digital platforms now because now there's a challenge that you mentioned about not being able to start new business, creating new business or meeting new clients. So what's your level of satisfaction? What is your level of satisfaction currently, with the digital platforms? Specifically social media platforms in your to enhance your business. Because currently, you mentioned that you you are unable to create new business because your business is formed through networks. Oh

Interviewee 41:31

With a lockdown that you are experiencing or just general? Yes.

Interviewer 41:36

Look, generally because you are a digital business. So being a digital business, obviously there will be those issues of not being able to make new business because you are doing things on a digital platform. Oh, yeah.

Interviewee 41:56

Yeah, exactly. Maybe,we never approach those businesses which will require us to lose our strength.

Interviewee 42:11

So, if the client says I must be at the office all the time, then it is not a problem as long as you paid me, okay? ours, okay? Because with what we do, we dont need to be in an office. If he/she wants me to be in the office, they need to pay for travelling costs, drink or coffee and water. At the end of the day, its just fruetless expenditure. It just becomes bad for our business.

Interviewer 43:20

Okay, so now we're almost nearing the end of the interview. That's where now I want to hear whether you have the tools because the study is currently trying to develop a model for evaluating social media effectiveness in you know, knowledge management for small and medium enterprises. So with these tools that you are using, especially like your watch apps, your trellos, do you perhaps have because with any business, whatever that you are doing, you must be able to measure return on investment, right. So currently, do you perhaps have anything that you are using you know, To measure whether these tools are bringing or effective, are working as they should in your business, and are you able to sort of transform or convert that into money, you know, return on investment within your business?

Interviewee 44:35

Everything we do is online. Our revenue is measure through all digital platforms we use. So we can quantify. All the tools we have because we are a digital company, a technology company. We have Skype Which helps us to collaborate to the meeting, we have Microsoft365 that helps us to document all of the things that to the to the feature that are there on, we have gmail on the emails to communication and about 90% of our revenue is through the technologythat we use to conduct businesses

Interviewer 45:44

Okay. All right. So the second last question is, because a lot of companies use these social media platforms and say, you know, with social media revenue is not actually on monetary terms, but Rather on the number of likes, or the number of followers that you have as a business, to see whether you are reaching, you know, enough people to advertise your products. A lot of people know about you and stuff like that. But for you to know that you

must have some form of a matrix which will guide you as to how many people are actually liking what you're putting on your website. How many, people are liking your services and stuff like that. Do you perhaps have something like that?

Interviewee 46:32

We don't believe in social media matrixes.

Interviewer 46:38

Okay, okay. All right. Thank you very much, this is the end of our interview. I really appreciate your time.

Interviewee 46:47

Okay, you are welcome.

Transcribed by <https://otter.ai>

Interview 9

Interviewer 0:03

Good afternoon, thank you for availing yourself to attend this scheduled interview. I understand that this must be very difficult for you under lockdown due to COVID-19. The interview protocol goes as follows, the title of the study is evaluating the effectiveness of social media on knowledge management systems for small, medium and medium and micro enterprises in South Africa. The aim of the interview is to collect perspectives of small and medium enterprise owners and managers regarding the use of social media to enhance knowledge management systems, the collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge management systems of SMME, you are kindly requested to participate. The interview will take approximately 45 to an hour of your time. However I will try to keep it as short as I possibly can. All the information will be treated as strictly confidential with full anonymity of participating companies and research participants, meaning that your name will not be revealed anywhere anywhere in the study. You are welcome to withdraw at any time during the interview process. There is no payment or reward offered or financial compensation or otherwise for participating in the study. Your contribution will help In the

contribution to the body of knowledge. Lastly, as explained, the interview will be recorded, are you ready to begin?

Interviewee 1:49

Yes, I am so ready and I agree to participate. As long as I won't be in trouble,

Interviewer 2:18

May you please kindly tell me what is the name of the company and your role?

Unknown Speaker 2:21

Okay, My name is ***, I am one of the directors here in the company. The name of the company of *** and we are providing services such as telecommunications, software development, SMME development and training in and around the city of Tshwane.

Interviewer 3:01

Okay, thank you very much. So how many employees work for your company, including all directors?

Interviewee 3:16

We are a team of 4 executive directors and 7 operational staff. In total we are 13 permanent staff members.

Interviewer 3:42

Okay, and what is the annual turn over of the company?

Interviewee 3:58

Okay, the company is currently making a turnover of no more than 1 point 4 Million.
Okay.

Interviewer 4:19

I see, so under which municipality is the company based?

Interviewee 4:28

We are currently in Pretoria, the city of Tshwane metro and our aim is to expand to other metros

Interviewer 4:42

Okay, so how would you explain the current processes of managing knowledge in your organisation? How do you manage knowledge?

Interviewee 5:02

Well, I guess you are referring to the process of identifying the information that is important and transforming it to make decisions? If that's what you mean then, I would say that every project that we execute has stages. In each stage, we have lessons learned in a form of documentation which we share among the team to ensure that everyone is knowledgeable and understands how things are done. We first sit with all stakeholders to collect the requirements, document them and have a brainstorming session with the team on how the requirements can be fulfilled. We then identify tasks and timelines to each and ensure that we adhere to those. On a daily basis, the teams, depending on active projects, will gather around and discuss progress including challenges experienced. And this is a culture in the business to ensure that no one is left in the dark. We then document each step of the project, its challenges and success stories and store on our dropbox for all to read through later. And the process continues with any new project to ensure that knowledge is managed properly

Interviewer 6:14

I see, thank you for the insight. Are you perhaps using social media platforms in any stage of the project lifecycles you've just explained?

Interviewee 6:34

Social media platforms are used on an ad hoc basis. You know, among staff to share content that is not too serious, jokes, fashion and things they like, but we as SMMEs use an opportunity to use social media to gather the information quickly

Interviewer 16:53

Okay, so are there specific social media platforms that your organisation prefers to use?

Interviewee 17:20

Facebook is the one we mostly use for marketing purposes, WhatsApp for communication amongst ourselves, and LinkedIn for professional networks

Interviewer 17:58

Awesome. Okay. And how compatible are these platforms with the way you conduct your business?

Interviewee 18:15

I guess is a matter of saying, because we find them easy to use, we can access content quickly the content, so we are happy with them because they allow us to do business.

Interviewer 18:52

Okay, so are there any complexities or challenges that you experience when using social media platforms to gather information in your organisation?

Interviewee 19:17

Although these platforms are perceived as free, they are not necessarily free because one often has to purchase licenses of platforms that are used for professional services. For example, you cannot run your accounting services and reporting services without subscribing on a paid for website for instance. So yes we take advantage of these platforms but we really have to use them very carefully without getting ourselves into trouble

Interviewer 21:51

Okay, so what can you say are relative advantages of these platforms over other ICT tools for managing knowledge in your organisation?

Interviewee 22:06

Well, the advantage is that there's minimum physical interaction from us. Okay, so everything is just done remotely over the phone as long as you have an internet connection we are good to go, having social media platforms together with tools like microsoft sharepoint helps a lot. On the one hand, you want to have the flexibility of distributing content from wherever you are and social media allows for that, whereas at the same time you want a managed platform which is more formal for business and sharepoint comes in

very handy, so we cannot compare but rather we can say social media enhances our way of gathering content and distributing it quickly.

Interviewer 23:24

Okay, thank you, now how would you explain the capacity of social media platforms to organise knowledge within your organisation?

Interviewee 23:32

As i had explained, we use social media to gether information such that whenever there is a need within the organisation, we can easily locate the sources and retrieve that content. So social media platforms such as Facebook, Twitter, Instagram and WhatsApp do a very good job in terms of organizing knowledge for us. And also to present the information in a manner that we want it. So I suppose the whole reason behind its introduction is the presentation of information, it is accessible on mobile phones and very convenient

Interviewer 25:02

All right, since you are now talking about presentation of information, can you elaborate more on how social media provide immediate access to that information to support the knowledge management system in your organisation?

Interviewee 25:54

Okay, because everyone nowadays use a smart phone, social media platforms being on mobile apps are easily downloadable and can be used by anyone with a smart phone. So whatever information that is distributed on those platforms can be seen instantly by anyone with a particular platform installed on their phones. So it is instant

Interviewer 26:39

All right, I see, So how is that affecting the quality of knowledge within the knowledge management system?

Interviewee 27:49

Well, I geuss the ability of the platforms to access information quickly is a measure of success for us. The knowledge is always verified because we have sources which can

authenticate the knowledge before we can confirm it to be true. So I should then say that the effect is positive.

Interviewer 28:10

Okay, in your opinion, can you explain the ability of social media to allow people to have a sense of connection?

Interviewee 30:39

So social media being social, it allows people to connect, right, so people will connect with friends and colleagues and others that they trust. So I guess the power of social media lies on its ability to allow people to connect and share their experiences and the likes. In terms of my company, using social media to gather content is one aspect. We also market our services to the outside world and doing so requires a strong mentality to become relevant. So we have to build connections with people we can trust on these platforms for us to grow our business, so in the case where the lack skillsets or expertise, you find a lot of other micro companies who are competing with you on these social media spaces. So you approach them, it's easier for them to actually locate them because they are also there. So you find each other and it's easier to now initiate conversations and to share information and even to outsource each other for things that you lack. Okay, so we've been relying heavily on that and that's how we've actually built our network to this point

Interviewer 31:58

Okay. so what influence do you get from other organisations in your industry to use social media to enhance knowledge management in your organisation?

Interviewee 32:24

The influence is that social media is now business media. Everyone wants to do business on the go and social media provide just that. We want to access information quickly on our fingertips to make decisions

Interviewer 33:36

Okay, so would you say you will continue your organisation intends to continue using social media to enhance knowledge management systems?

Interviewee 33:41

I can't see why not. The markets are moving that direction so we have to follow suite

Interviewer 34:12

Okay. I know you explained your organisation's intentions to continue using social media but I have to ask, would you safely say you are satisfied currently with how social media is able to enhance your knowledge management systems?

Interviewee 34:19

Absolutely

Interviewer 34:44

I see, is there any evaluation process in place for your organisation to measure the effectiveness of social media in the context of knowledge management?

Interviewee 34:59

Not really, I suppose its something we have to work on since we are using social media, you know, to get the actual value from it we have to do it

Interviewer 35:04

Okay thanks, so since the study aims to develop a model of evaluating the effectiveness of social media, what more can you share with me in terms of your experiences to help with the development of such a model?

Interviewee 35:10

I would say look at the platforms that work well in terms of gathering and distributing content and address how they can work interchangeably towards one knowledge management solution, such that your model will be a comprehensive social knowledge management model to cater for even other capabilities that would otherwise not be possible on the current knowledge management systems as we know them. That would be my 2 cents input i suppose

Interviewer 35:24

Okay, very valuable indeed. I will look into that as a gap in the literature and propose it for further research. Thank you very much

Interviewee 35:45

Im glad I could assist

Interviewer 37:03

So this concludes our interview

Interviewee 37:07

Is is 45 minutes already?

Interviewer 37:19

Not yet, but we are on track, Yeah, thanks a lot

Interviewee 37:30

You are welcome

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Interview 10

Interviewer 0:02

Thank you for taking part in the study. I'll start by explaining the interview protocol, the title of the study is evaluating the effectiveness of social media or knowledge management systems of small and medium enterprises in South Africa. The aim of this interview is to collect the perspectives of SMME owners and managers regarding the use of social media to enhance knowledge management systems. The collected information will guide the researcher in developing a model for evaluating the effectiveness of social media or knowledge management systems of SMEs, your kindly requested to participate, the interview will take approximately 45 minutes of your time, however depending of the resonses, the time can even be 30 minutes at most. All information will be treated as strictly confidential with full anonymity to participating companies and research participants. So there won't be any mentioning of names of participating companies and

research participants in the final write up of the thesis. You are welcome to withdraw at any time during the interview process and there will be no compensation offered after participating because this interview is purely for academic research purposes. Please note that the interview will be recorded. Are you okay being recorded and may we start with the interview now?

Interviewee 2:28

Okay.

Interviewer 2:30

Can you share with me the background of your company and what role do you assume in the company?

Interviewee 2:31

The company is called Senzele Africal. We are operating in the ICT sector offering a variety of software, hardware and infrastructure solutions to SMMEs in and around Gauteng province. We have clients in different industries such as Insurance, banking, manufacturing and recently the government sector.

Interviewer 3:11

All right. And your role in the company?

Interviewee 3:25

I am a managing directors in the company.

Interviewer 3:37

Awesome, thank you. So how many employees including all directors work in your organisation?

Interviewee 3:45

Including all directors, the company has a team of 9 permanent employees.

Interviewer 4:06

Okay. In terms of the annual turnover, how much does the company make yearly?

Interviewee 4:24

Our turnover for last financial year 2019 was sitting at around five (R5 Million). Okay.

Interviewer 4:25

Wow, okay. And in which municipalities are you based as a company?

Interviewee 4:39

We have are serving clients all over the country but our main branches are in Johannesburg and Pretoria. So in terms of municipalities, I would say the City of Johannesburg and the City of Tshwane ia where our brick and moter offices are based

Interviewer 5:25

So in your daily operations, servicing clients and so forth, how do you acquire, store, share and present knowledge?

Interviewee 5:38

We have microsoft sharepoint which does wonders for us. All that we do in terms of project work gets saved on the sharepoint drive and that is how knowledge is managed in our organisation. Sharepoint provides dashboards for presentations and when we have meetings, we can easily retrieve that information quickly.

Interviewer 6:27

All right. so in that process, do you at any point use social media platforms to distribute knowledge? Okay,

Interviewee 7:26

Because the technology that we use for business has to be approved before use, we use social media in a sort of informal way. Okay. Typically what we would do on social media platforms is market our products and services with the outside world. I must also add that being in the IT industry for so many years, I've seen how rapidly new technology transforms people's way of thinking. Although I prefer to use Email, I see these social media platforms having the same features. Everybody is on Facebook, WhatsApp and the like, and as a business we are sort guided by what the market wants. Social media becomes

a tool of gathering information. So they become an input first for gathering information. And then you still need your ICT tools such as SharePoint to process that information and extract what you want and then create those knowledge management systems. Then you use the same social media for output

Interviewer 8:48

Okay. I see, so how compatible are social media platforms with how you do things in the company?

Interviewee 9:10

I think because we are in the ICT sector, social media are technologies that are driving world news today. We try out different platforms to cater for the needs of our clients and for that reason I should say social media platforms are very compatible with the way we run our business. Sometimes you want to communicate the information, which a lot of people are also probably raising issues about. You can pick issues that relate to your organisation and respond quickly.

Interviewer 10:11

Yeah. Okay. Now, what kind of complexities do you experience when using social media platforms?

Interviewee 10:28

Complexities are not that many, we find the platforms very easy to use. I think the issue of trust comes up quite often when one suggests a social media platform to adopt in the company. Although they are free to use and that, who do you hold liable for things that don't come right when using such platforms for business. I suppose it's an ongoing debate about whether the platforms are reliable for business or not but I personally think it's about time the regulators propose frameworks to formalise the use of social media for business purposes. All right. One thing that we've found just as a by the side is that when people have a face to face meeting, it takes a lot longer to get to the point, because you get to an office, like it's when you got here to the office now, we offered coffee, with a bit of small talk, but if it's online, people tend to focus quickly, because they're looking at the time, because it's scheduled, say about 30 minutes to one hour, and they want to make sure that the time is used profitably. And you'll find that typically, even the meeting that's scheduled

for an hour, now turns out to be 30 minutes - 45 minutes. Because it's mainly structure, and people are also not thinking of also of driving in and out of the next meeting and that kind of thing. The focus is there, things are done quickly, and because we do international calls, you are very much aware that during a we have a meeting with someone in Atlanta, if they know that you are about to leave, they are just getting into the office. So there are those subtle cultural understanding which are Never really communicated but people are really to sensitive to those sort of things. So it really gets very structured and very quickly to the point.

Interviewer 12:36

Interesting, would you say is that is a relative advantage of using social media?

Interviewee 12:58

Absolutely, Yeah.

Interviewer 12:19

All right, awesome. So can you briefly explain how social media is able to organise knowledge to a point that you can use it within your organisation. Yeah.

Interviewee 12:41

You know, these its funny how the term knowledge management is oftern associated with technology because to start wit, knowledge begins in the mind, acuiRED through experiences over time. If a person does not want to part with their life experiences, where is the knowledge there? and how will technology assist in its management. Nevertheless, what we share on social media platforms is what we know through our experiences and the likes. So the platforms are there to package it in such a way that is easily retrievable and presentable. When you learn visually, ah, I get it easier. So social media is able to organise knowledge in a manner that is easy to present and distribute to those that need it. Okay.

Interviewer 13:25

Okay, so in your opinion, can you explain how social media provides access to knowledge when it is required?

Interviewee 13:32

In terms of getting access to this information that you need using social media, the knowledge is immediately available because we social media allows us to create networks of knowledge sources which we use to access the knowledge that we require. So through these connected networks we sort of get qualified information that is authentic and that we trust and that becomes quick for us.

Interviewer 13:54

Yeah. Okay. So since social media platforms are used by a lot of people, are you also getting the influence from other businesses us use social media for their knowledge management?

Interviewee 13:48

I think more influence is from our customers, since we are in the space of selling technology solutions, we find ourselves following the direction of the customers. We would not introduce a technology that is not popular or that is not known by our target market. So yes the influence is from our customers mainly.

Interviewer 14:26

Yeah, okay. So in terms of having a sense of human contact when exchanging knowledge with clients or even with those that you follow on the platforms, can you explain how you perceive the ability of social media to achieve that?

Interviewee 14:58

All right. So, for instance, if you want to part your knowledge to someone else when you want to source knowledge of a particular product for instance, we use sort of sources that we can trust. Its important to build relationships up front so that whatever knowledge we get, comes from someone we trust. We are very careful on that end because a lot is being siad on social media which oftern is not neccessarily true, and it happens a lot on social media platforms. So building relationship first allows us to have that sense of connection on social media. Okay.

Interviewer 15:25

Okay, so based on the positive responses you just gave about the ability of social media in your organisation, does your organisation intend to continue using social media to enhance knowledge management systems?

Interviewee 15:14

Absolutely, yeah definitely. I think social media transforms how businesses are done. So yes, we are definitely going to continue with it.

Interviewer 15:18

Yeah, okay, all right. So what sort of pointers can you share with me to incorporate in my model for evaluating the effectiveness of social media to enhance the knowledge management systems of SMMEs?

Interviewee 15:53

I suppose you should have a sort of a matrix, a matrix to check compliance, you know, are people using social media to achieve business goals, how often are they using the platforms to source knowledge? A lot of the time people will be on social media for leisure and not for serious stuff. So having a matrix to check the time spent on leisure versus the time spent doing business.

Interviewer 16:27

Interesting, thank you very much. That will be a huge contribution. I will definitely consider that for future research

Interviewer 17:21

So do you perhaps have a tool to track whether social media is effective or not in your organisation?

Interviewee 18:14

Well because we mostly rely on sharepoint, we sort of use social media on an adhoc basis, and we don't necessarily treat it as a strategic tool. So we have not gone into that extent yet. But it's something to look into for the future you know?

Interviewer 19:36

Awesome, we have reached the end of our interview. Is there perhaps any adds that you can share with me before we conclude?

Interviewee 20:43

I think the interview was well planned and very exiting. I wish we had more time. All the best with the study. I'm looking forward to the findings.

Interviewer 21:14

I thank you very much for participating in the study. You will definitely get a copy of the thesis once published. Thank you very much!

Interviewee 22:10

It's a pleasure!

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Interview 11

Interviewer 0:01

Okay, the recording has started. I'll start by going through the interview protocol and read the basic rules of the interview. Thank you once again for giving consent to participate in the interview. My name is Stevens Mamorobela, I am conducting a PHD study under the supervision of Proffesor Sheryl Buckley in the university of South Africa. The title of the study is evaluating the effectiveness of social media on knowledge management systems for small, medium and medium and micro enterprises in South Africa. The aim of this interview is to collect perspectives of small and medium enterprise owners and managers regarding the use of social media to enhance knowledge management systems, the collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge management systems of SMME, you are kindly requested to participate. The interview will take approximately 45 minutes. All the information will recorded and will be treated as strictly confidential and full anonymity of participating companies and research participants is guaranteed. You are welcome to withdraw at any time during the interview process and there is no payment or reward offered or financial compensation or otherwise for participating in the study. Your

contribution is appreciated and make a huge contribution to the body of knowledge. Are you okay with the terms of the interview and may we start with the first question?

Interviewee 2:20

Im okay, we may start.

Interviewer 2:23

May you kindly explain what your organisation does?

Interviewee 2:30

Okay, i feel honored to take part in this interview, My name is ***, the name of my company is ***. I'm the chief executive director of a company. What we do is we offer a variety of printing solutions to address the different needs of our customers. Our products include a full stack of print solutions accessible anywhere in the country. Our clients range from private to enterprises to help our clients manage their on-premise, off-premise or hybrid printing environments. We also offer Small business empowerment programs to help them save on their printing costs, save on print related help desk calls, track and control users and printing habits. We also offer project management services and training.

Interviewer 3:57

Awesome, thank you so much. Now how many employees work in your organisation?

Interviewee 4:16

We have twelve (12) staff members working for the company.

Interviewer 4:38

Okay, and how much is your annual turnover?

Interviewee 4:42

Our annual turnover is less than a five (5) Million (<R5 Million). Okay.

Interviewer 4:56

Okay, so where are your offices based? under which local municipality?

Interviewee 4:58

We are currently based in Woodmead under the City of Johannesburg metro and have other companies we partner with across the country. Okay,

Interviewer 5:55

Okay, i understand. Now, would you kindly take me through the process managing knowledge in your organisation?

Interviewee 6:24

Okay, the process involves a lot of documentation which I see many of us not keen to do. But its a requirement for best practice in the company. We have a set of SOPs that guide our actions and we adhere to that. Being in the print business, our solutions are standardized and all our staff have to adhere to standards. Some of the printing hardware come from reputable industry partners that are well established such as Minolta and HP and we dont have to lose the plot when it comes to their standards. We try by all means to manage our solutions on the cloud. Our clients just send us their requirements and we have Trello which is accessible on the cloud to project manage those.

Interviewer 11:21

Okay, thank you. So now seeing that you have a process for managing knowledge, do you use social media platforms in any way?

Interviewee 11:53

For us social media serves as an output to present information about product offerings. So it makes it easier for us as SMMEs in the print industry to utilise it as another output tool that can present information in a simplified manner

Interviewer 12:38

Okay, thank you. So which specific social media platforms do use mainly?

Interviewee 12:56

I guess it depends on what is required by our customers. We use Zoom, WhatsApp, Facebook, in fact we grab any platform that we see fit and appealing to our customers

Interviewer 13:45

So for your knowledge management processes, would you recommend social media platforms as tools to enhance the service?

Interviewee 14:06

Most definitely, i would recommend these platforms because one could be able to monitor for instance, if you look at the impressions that have been on a particular point around your service and all. So obviously, if is about negative, you have to make sure that the positive response comes out of your brand or your services. So for knowledge gathering, they play a major role for us.

Interviewer 17:12

Okay. Awesome, so now how would you explain the compatibility of social media platforms with your current knowledge management practices?

Interviewee 17:51

They are very compatible, in terms of gathering knowledge, we have Facebook and LinkedIn that help us source knowledge from reliable sources. We also use Zoom for meetings, we get face to face kind of conversations which are real. So that level of compatibility is high.

Interviewer 18:24

Okay, now what sort of challenges are you experiencing over the use of social media platforms to support the knowledge needs of your organisation?

Interviewee 18:46

They are very easy to use, i can't think of any that comes to mind. I mean the platforms are freely available, unlike those that are conventional, they dont come with a manual, you know. We just plug and play!

Interviewer 19:32

Okay, i see, so what can you say are the relative advantages of social media platforms when used for knowledge management?

Interviewee 22:27

I would also say as well that in terms of knowledge management, all of these platforms they are interchangeable, even now the Facebook guys they brought in everyone else, except for Twitter and Telegram. Except for Twitter and telegram, Facebook if you have a Facebook account, you can access Instagram, you can access Facebook, you can access WhatsApp. So they've made it easy on the technical side as well, in terms of plugins and embedding, and so on the technical side, they're basically the same thing. So when you have one, you have the other, and that become a huge advantage of social media platforms.

Interviewer 23:51

Wow, okay, thank you. So in terms of organizing knowledge, what can you say about the ability of social media on that end?

Interviewee 24:17

I think because these platforms work hand in glove, they do a great job in as far as presenting the content that's required. So the presentation of knowledge is one capability that I know social media does very well.

Interviewer 25:34

Okay, so the knowledge that is being presented, how accessible is it?

Interviewee 26:01

Let me give an example, let's say you are looking for information about a particular printer, on Facebook, you can search for service providers, like their page and send a friend request. Once accepted, you can immediately start having a conversation with them and ask whatever question regarding a particular service. So the information becomes immediately available to you.

Interviewer 27:02

All right, thank you. So using these platforms for meetings for example, do you feel a sense of human connection like you do in the boardroom?

Interviewee 27:24

Indeed, meetings are real and since we can even see the other person on the screen, the reality becomes obvious and unquestionable.

Interviewer 28:13

Alright, thanks and what kind of influence do you get from peer companies for you to use social media platforms to enhance knowledge management in your organisation?

Interviewee 28:49

As I said, we mainly follow the direction of the market, so the influence is from our customers, competitors, suppliers and partners. Almost everyone who is in business today uses social media platforms. It could be for news feeds, for advertisement or even for tabloid gossips.

Interviewer 29:41

So does your organisation intend to continue using social media to enhance knowledge management systems?

Interviewee 30:19

I don't see why not. I mean social media has become big business today. We find many of our clients over there so we need to use it to stay in business.

Interviewer 30:88

Okay. So how can you explain the level of satisfaction in your organisation generally with how social media is able to enhance your knowledge management systems?

Interviewee 32:24

I would say we are very satisfied with how social media help us achieve our marketing and communication objectives. Only that we have not fully incorporated into our business strategy, it's something that needs to be done in the future.

Interviewer 33:16

Okay, I suppose this is where you should share some pointers then, this study aims to develop a model to evaluate the effectiveness of social media on knowledge management

systems, what do you have currently to evaluate the effectiveness of social media in your organisation?

Interviewee 33:41

We sort of use social media on an ad hoc basis. We do not necessarily have any evaluation in place because we are not in that space i suppose. But to have one would be great you know, its about time that social media becomes a revenue stream for many businesses. With the amount of content the we put there, we could make a good return.

Interviewer 34:12

Okay, what else can you share in terms of your experiences with social media platforms that can possibly assist with the development of the model?

Interviewee 34:19

I suppose you should also look into other industries outside ICT. Also bigger organisations which have social media portfolios to kind of share with you their experiences. Those can assist because they deal with the issues first hand.

Interviewer 34:44

Okay, that could help a lot. Thank you so so much

Interviewee 34:50

You are welcome.

Interviewer 34:58

And this reaches the end of our interview. I really appreciate your time and effort.

Interviewee 35:12

I'm glad I could be of assistance to you.

Interviewer 35:21

Ofcourse, your inputs really came in very useful for the study.

Interviewee 35:35

Okay. All right.

Interviewer 35:43

Thank you very much.

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Interview 12

Interviewer 0:02

Welcome to the interview session. My name is Stevens Mamorobela. I am doing a phd study under the supervision of proffesor Sheryl Buckley at the university of South Africa. Thank you for agreeing to paticipate and signing the concent forms. The title of the study is evaluating the effectiveness of social media on knowledge management systems of small, medium and micro enterprises in South Africa. The aim of the interview is to collect perspectives of small, medium and micro enterprises, owners managers regarding the use of social media to enhance knowledge management systems. The collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge management systems of SMMEs, You are kindly requested to participate. The interview will take approximately 45 minutes. But being an online virtual interview, it should take even less than the requested 45 minutes. All information will be treated will be treated as strictly confidential with full anonymity of participating companies or research participants. You are welcome to withdraw at any time during the interview process, and because the interview is purely for academic purposes, there won't be any financial compensation offered. The interview will be recorded. Are you okey with that?

Interviewee 1:39

Yes. I'm okay.

Interviewer 1:41

So can we proceed with the interview?

Interviewee 1:43

All right. Sure.

Interviewer 1:45

Okay. Can you briefly give a background of your company what it does?

Interviewee 2:03

All right, my name is *** a director of the company called ***, we are a knowledge management consultancy offering a wide range of knowledge management services to a variety of businesses. Our key focus areas include the development and cementing of key governmental and parastatal monitoring programs to enhance nation building. Our focus is to bring together in one platform the best knowledge management and structured monitoring programmes and workshops to improve the knowledge transfer in the workplace environments and aligning monitoring efforts with BBBEE codes. With that said, our clients are mainly government institutions.

Interviewer 2:45

Okay, what is your role in the company?

Interviewee 2:58

I'm one of the directors of the company

Interviewer 3:12

Okay, and in terms of the number of employees, including yourself as a director, how many are you?

Interviewee 3:31

We are four all together

Interviewer 3:46

You are four?, okay, four. Okay.

Interviewer 4:01

Okay, what is your estimated annual turnover?

Interviewee 4:18

We make about 2 million rands per annum.

Interviewer 4:29

Okay. All right. And then where are your business premises? In which local municipality?

Interviewee 4:42

Our offices are in Centurion, in the city of tshwane

Interviewer 5:06

Okay, Tshwane. I see, since you are a knowledge management institute, could you kindly take me through your knowledge management processes?

Interviewee 5:58

Okay. All right. We use what we refer to as Knowledge Swarms and Experiential Hives model which provides a solution to ensuring knowledge in context is available to those that need it, from young graduates, to the unemployed, creating a pipeline of competent and confident young leaders and entrepreneurs in SA and beyond.

Interviewer 7:10

Interesting, so do you use social media platforms in those processes?

Interviewee 7:28

We do quite a lot, for instance we have a facebook account where after each training, we engage with our clients on further support by sharing content that formed part of the training program. I use GoTo Meeting, is that is regarded as social media, Facebook, WhatsApp, and LinkedIn!

Interviewer 8:13

Okay. And how compatible are these social media platforms in your knowledge management systems?

Interviewee 8:35

The platforms compliment what we do. The processes we use to offer service to our clients are mainly enhanced by social media platforms.

Interviewer 9:26

Okey, are there any challenges that you experience over the use of these social media platforms?

Interviewee 9:57

Not at all, the platforms are very easy to use hey, I mean is one platform is challenging we can just switch to the other without any problems. The platforms have ways of presenting information, how people like it, for example, on the Twitter activities, they have a simple graph you can see like at first glance, how many people liked it, why and then how many keep to your profile. So they've fine-tuned the presentation.

Interviewer 10:30

Okay, and what would you say is a relative advantage of using social media platforms in your knowledge management systems?

Interviewee 10:53

I think social media has the advantage of populating content. You can actually populate the content that you have out there in one source, and then it can be shared all over.

Interviewer 11:15

Okay, and how would you describe the availability of that content?

Interviewee 11:29

Well its immediately available. As long as the its sent to the right people with access to it, it can be accessed instantly

Interviewer 12:13

And what influence is out there that you feel has affected your decision to use social media to enhance your knowledge management systems?

Interviewee 12:42

We try to be as relevant as possible. The influence out there is that social media is all over and it has become an effective and acceptable way of advertising and getting the word out there. So we don't want to be left out.

Interviewer 13:08

Okay, and how would you explain the feeling of being on a social media platform and having a meeting, does social media provide the same feeling as a physical face to face meeting?

Interviewee 13:19

The feeling is the same. That human connection is there and we actually rely on those connections. So it's very, very important. So the connectivity of likeminded people draws you closer to understanding what the needs of these people are. And people always follow or are followed by likeminded people. So we rely on those connections heavily. Then we can create networks and webs easy. So the connections make it easier for you to even cluster people easily and then you can segment them nicely. You know, I do love it when people connect. Okay,

Interviewer 15:28

Wow, okay, so based on that, what would you say about the intention of your organisation to continue using social media to enhance knowledge management systems?

Interviewee 15:47

Well, should I say more, I think it's obvious right, we are definitely going to continue using social media platforms for our knowledge management needs. Not only for ourselves as business but for our clients as well.

Interviewer 16:19

Okay, and how satisfied is your organisation with social media platforms in general?

Interviewee 16:28

Very satisfied.

Interviewee 16:36

Okay thank you. So now since you are in the knowledge management space, what pointers can you give me so that the model i propose in the study becomes a comprehensive one?

Interviewee 16:44

I think the key for many businesses is to retain the knowledge that is held by those who have been in the company for many years. Reward grams work wonders and there are not many frameworks that guide on reward programs. Parhaps you could look into that as a pointer in a matrix to test weather reward programs are there for the use of social media as a knowledge managemnt tool.

Interviewer 17:32

So do you have a process or method for evaluating whether social media is effective or not in your organisation?

Interviewee 17:55

Not really, we sort of rely on the responses we get from the platforms themselves to see how effective our campains are, but not neccessarily the social media platforms.

Interviewer 18:03

Okay, we have reached the end of the interview, is that any other thing you would like to add?

Interviewee 14:13

Not really, only that the study is very interesting and I cant wait to see the results of it. From the point of view of knowledge management practitioners, I think we need many more studies that address similar issues because we get to thumb such some responses in workshops because of the lack of literature. So the study could not have come at a beter time. Good luck!

Interviewer 16:03

Okay, okay. All right. Thank you very much, this is the end of our interview. I really appreciate your time.

Interviewee 16:27

Okay, you are welcome.

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Interview 13

Interviewer 0:00

Good afternoon, welcome to the interview session. My name is Stevens Mamorobela, I am conducting a study to evaluate the effectiveness of social media on knowledge management systems of Small, medium and micro enterprises in South Africa. The aim of this interview is to get a sense of your views around the use of social media in your organisation. In particular, the aim of the interview is to collect perspectives of small medium and micro enterprise owners and managers regarding the use of social media to enhance knowledge management systems. The collected information will guide the researcher in developing a model for evaluating the effectiveness of social media on knowledge management systems. SMME's, you are kindly requested to participate. The interview will take approximately 45 to an hour of your time. I have emailed you the documents pertaining to the study so that you can familiarise yourself. I take it you've read through them? Yes, okay, awesome. So without wasting any time, let us start with the interview. Yeah. As explained to you, the interview will be recorded for my reports, I hope you are okay with that?

Interviewee 2:58

No problem.

Interviewer 3:05

Okay, So what is the name of your company?

Interviewee 3:25

The name of my company is called InnSol projects and innovative solutions.

Interviewer 3:49

Okay. So what is your role in the company?

Interviewee 4:21

It will say I'm a founder and director.

Interviewer 4:40

Okay. So in terms of the number of employees, how many employees including yourself work for this organisation?

Interviewee 4:53

We are currently 3 members in total, all of us are directors, okay, i see.

Interviewer 5:21

Alright?. Okay. So when coming to turnover, what can you say is your estimated annual turnover, all resources and salaries included for the business to run?

Interviewee 5:54

We are currently running at a turnover of say, two Million rands.

Interviewer 6:24

Wow, I see, so where does the company operate? Which municipalities?

Interviewee 6:42

Okay, We have clients all over the country but we are located in Centurion, Pretoria, City of Tshwane

Interviewer 7:00

Okay, So what does this business do? and in terms of managing knowledge, how do you actually manage the knowledge that is important for running the business?

Interviewee 7:49

Okey, So the business provides different technology solutions particularly to small businesses. We have a process from gathering requirements, design of the solution until launching of the product. In this process, documentation is done to ensure that knowledge is captured and shared with clients and all members of the team.

Interviewer 8:34

Okay, Do you perhaps use social media platforms to exchange that knowledge within your organisation? or do you perhaps use it to communicate with external parties?

Interviewee 9:17

I terms of social media, you know, its a matter of, you know, saying how to, because the issue saying, bigger organisation, they can be able to tap into knowledge management that because there's more resources to do that. But we as SMMEs use an opportunity to use social media to gather or to use it to achieve competitive advantage. We use it to communicate, okay, and the organisational information and also to understand you know trends in the outside environment and what possibly the feedback to the organisation about what's happening out there.

Interviewer 9:53

Okay which specific tools do you use?

Interviewee 10:20

Facebook, Skype okay. And Twitter, okay. Yeah mainly Facebook, Skype and Twitter. Mainly Okay.

Interviewer 10:49

All right. So how compatible are these social media platforms in your organisation? Would you regard social media platforms as an effective tool to conduct your business?

Interviewee 11:23

Ofcourse, they are very compatible because we do a lot of international calls and the like, so Skype works for us a lot, others like Facebook, WhatsApp, etc. we just use on an ad-hoc basis. I see a lot of young stars engaging on these platforms more than us because we are slow to catch-up, hahaha

Interviewer 11:45

Okay, awesome. So what are challenges you experience with such platforms, especially for your business?

Interviewee 12:12

The challenge it will be for people who may not have resources to use those in areas where there are internet issues, we are not able to offer our services to them

Interviewer 12:29

Okey, so in terms of relative advantage of social media, what do you perceive as an advantage of social media for your knowledge exchange in your business?

Interviewee 12:52

However, the advantage is that social media platform has got a number of people that one can access and so forth. Whatever knowledge that we want to put there about our services, is easily accessible to a large number of users.

Interviewer 13:13

Okay, so how would you describe the availability of knowledge that you put out there using social media platforms? Are your clients finding it accessible?

Interviewee 13:26

I would say the knowledge is accessible, you know, the fact that those social media platform has got a number of people, a lot of people that you can provide information to with one post and you can be able to access those millions of people and so forth.

Interviewer 13:34

I see, so the way in which your company is using social media platforms, how compatible are these platforms with the way your company does things?

Interviewee 14:10

I should take it that, well, we need to keep the business going, so, social media allows us to do that without incurring much costs.

Interviewer 14:58

Okay, now that your organisation choses to use social media, what influence do you get from other companies to use is for business?

Interviewee 15:34

Well the influence is the instant reach of large number of people out there. There is a large number of people on social media that one can attract instantly because we often communicate about our product offerings and most of our target market are on social media platforms.

Interviewer 16:19

Okay, so is social media able to provide information that is relevant and valid?

Interviewee 16:58

I think there is a wealth of information out there on social media, some of which is fake, however, to get the validity of the information, one has to have a profile that is constantly updated with relevant and valid posts, you know, so that people on the platform can trust the content that is communicated there. yeah. But to validate the information that is on social media is not an easy task at all, which means that if we are not knowledgeable in that space, sometimes we might end up using the information that really is not authentic.

Interviewer 17:30

Okay, given that there are issues with authenticity of information that is on social media platforms, from the point of view of your organisation, is there an intention to continue using social media for exchanging knowledge with clients and among staff members?

Interviewee 17:52

Absolutely, as I said before, we use social media platforms to achieve different objectives, some of which are to make international calls over skype and interact with clients over Facebook. So yes, we are going to continue using social media. It is the main tool today!

Interviewer 18:28

Okay I see, so in terms of measuring whether social media is working for you or not, do you perhaps have a tool to measure its effectiveness?

Interviewee 18:44

Well, I'm not sure on the formalised tool that exists in the market yet, but we mostly rely on the information that we get from the number of followers and reviews of our products and services, mainly on Facebook.

Interviewer 19:38

So in terms of pointers that you can perhaps share with me on they approach i should take to develop an evaluation model, can you highlight from your own experience for someone to actually consider when when we come up with this comprehensive model of of measuring the effectiveness of social media? What sort of pointers can you share with with me?

Interviewee 19:45

Yeah, I should think that, because the capability to track the uptake and followers is there, you model could include predictive analysis, you know, to predict number of likes and dislikes that a campain will have. Obviously with reference to historical data indicating how previous campains were received. I think your model can go a long way in as far as measuring the effectiveness of social media is concerned.

Interviewer 20:42

Okay, this concludes our interview. Thank you very much for taking part, your contribution was valuable indeed. I will definnitely share with you the results of the study once published!

Interviewee 21:10


Ofcourse, i'm glad i could assist, though i was rushing some of the answers, hahahaha!!!

Interviewer 21:50

No, no, no, all information was valuable, really, Yeah, thank you. thank thank you so much.

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APPENDIX N – LANGUAGE EDITING CERTIFICATE



Certificate of Editing

This is to certify that the manuscript

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