

ROLE OF KNOWLEDGE MANAGEMENT ENABLERS IN FACILITATING  
KNOWLEDGE MANAGEMENT PRACTICES IN SELECTED PRIVATE HIGHER  
EDUCATION INSTITUTIONS IN BOTSWANA

BY

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## **ABSTRACT**

This research was set out to investigate the role of knowledge management as a coping strategy for PHE institutions in Botswana, especially given that they operate in a highly regulated environment. One of the major drivers of volatility in the educational sector is intensely volatile regulatory environment in which the institutions operate. Further, a large portion of the stakeholder community of these institutions hold a strong believe that these institutions offer poor quality education to maximise profit. The primary objective of this study is therefore to determine the role of knowledge management (KM) enablers in facilitating KM practices in selected PHE institutions in Botswana that operate in this highly regulated environment and to develop a model for effective KM in these institutions.

The study adopted a survey research design and collected quantitative data through a structured self-administered questionnaire and document reviews. The subjects comprised all five degree-awarding PHE institutions, which were strictly regulated by the Tertiary Education Council (TEC). The population surveyed came to 670 and sample size was 350. Data was analysed through various statistical measures such as Structural Equation Modelling (SEM) in the form of Analysis of Variance (ANOVA), multiple regression analysis, and Chi-square test.

The results of the study revealed that KM enablers were playing an insignificant role in facilitating KM practices in selected PHE institutions in Botswana. Results of the study can be generalised to similar institutions elsewhere operating in similar environments. In order to enhance KM practices in PHE institutions, it is recommended that the institutions adopt a systematic approach to KM, establish an organisational culture and structure that promote KM practices, and enhance the quality of their human capital including leadership. It should be noted that the state of KM in organisations operating in an uncertain environment can be enhanced if the leadership carefully controls the family-owned setting and organisational culture as these factors can detract from the organisation's effective practising of KM. However, strategic leadership, organisational structure, and the role played by stakeholders played positive deterministic factors in ensuring an enhanced KM drive.

**Keywords:** Knowledge management, strategic leadership, family management, organisational structure, organisational culture, stakeholder engagement, highly regulated environment, KM model

## **DEDICATION AND ACKNOWLEDGEMENTS**

This thesis is dedicated to my late grandfather Petros Makambe who raised me but unfortunately could not live long enough to witness the fruition of this project. It is also dedicated to my grandmother Machivei Mudzikisi who fended for me and took responsibility for my education (especially the early phases). I further dedicate this work to my uncle Professor Elliot Makambe, who took over from his mother at secondary and high school levels.

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**DECLARATION**

I declare that “Role of knowledge management enablers in facilitating knowledge management practices in selected private higher education institutions in Botswana” is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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**Signature**

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**Date**

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## LIST OF ACRONYMS

<b>Acronym</b>	<b>Full version</b>
AAT	Association of Accounting Technicians
ANOVA	Analysis of Variance
APDC	Academic Planning and Development Committee
AVE	Average Variance Extracted
BCA	Botswana College of Agriculture
BIUST	Botswana International University of Science and Technology
BOTA	Botswana Training Authority
CEO	Chief Executive Officer
CHE	Council for Higher Education
CIMA	Chartered Institute of Management Accountancy
CKO	Chief Knowledge Officer
CoPs	Communities of Practice
DTEF	Department of Tertiary Education Financing
ED	Executive Director
EQA	External Quality Assurance
GIPS	Gaborone Institute of Professional Studies
HC	Human Capital
HE	Higher Education
HR	Human Resources
IC	Intellectual Capital
IQA	Internal Quality Assurance
IT	Information Technology
KM	Knowledge Management
KMO	Keiser-Meyer Olkin
KO	Knowledge Officer

KMS	Knowledge Management Systems
LUCT	Limkokwing University of Creative Technology
MD	Managing Director
MESD	Ministry of Education and Skills Development
PHE	Private Higher Education
RMSEA	Root Mean Square Error of Approximation
NFI	Normed Fit Index
PhD	Doctor of Philosophy
PRE	Proportional Reduction Error
SD	Standard Deviation
SECI	Socialisation, Externalisation, Combination, Internalisation
SEM	Structural Equation Modelling
SI	Statutory Instrument
SPSS	Statistical Package for Social Sciences
SRC	Student Representative Council
TEC	Tertiary Education Council
UB	University of Botswana
UNISA	University of South Africa
VIF	Variance Inflation Factor

# CHAPTER 1

## INTRODUCTION AND BACKGROUND TO THE STUDY

### 1.1 Introduction

Business success in a knowledge-based economy hinges on proper harnessing of knowledge as a strategic resource that gives an organisation a competitive advantage over its rivals (Halawi, Aronson, & McCarthy, 2016). This view is supported by Omotayo (2015) who posits that it is no longer controversial to argue that people live in a globalised world, which is characterised by fast information transfer across large geographical areas through modern technology - such as the Internet. The consequence of globalisation is the emergence of knowledge-based economies. In such economies, importance is placed on effective harnessing and management of human capital (HC) to ensure that a knowledge-imbibed workforce creates the right value for the economy (Van der Meer, 2014).

As further confirmation of the importance of knowledge in the 21<sup>st</sup> century organisations, Teng and Song (2011) argue that organisations no longer compete solely on the basis of financial capital strength but through knowledge which is the new competitive advantage in business. This postulation has been reinforced by some studies as well, as they concur on the postulation that growth rate of an economy is now determined by the quantum and quality of knowledge stock that is harnessed and applied in the production process in various sectors of the economy (Desouza & Paquette, 2011; Teng & Song, 2011). These knowledge-based economies require that good practices of knowledge management (KM) be put in place to improve organisational effectiveness.

Empirical research in business operations has proven that sustainable competitive advantage is no longer entirely embedded in the availability and management of capital (physical assets and finance), land, and labour but rests more firmly on effective mobilisation of intellectual capital (Nonaka & Konno, 1998; Wang, Noe, & Wang, 2014). It is therefore expedient for any 21<sup>st</sup> century business organisation, including educational institutions, to ensure effective management of knowledge assets for business success (Mavodza & Ngulube, 2012; Ramdhania, 2012). This view is further reinforced by El Aziz, Wahba, and El Sagheer (2013) who aver that society has become more and more knowledge-based. These authors contend

that organisations that succeed in identifying, valuing, creating and evolving their knowledge assets are more likely to outperform their laggard competitors.

In support of the importance of effective KM in business organisations, Lee and Hong (2014) posit that KM research has led to the identification of KM enablers which are mechanisms for organisations to develop their knowledge and stimulate KM practices. These KM practices include knowledge generation, knowledge storage and retrieval, knowledge sharing and transfer, and knowledge retention (Mavodza & Ngulube, 2012; Bosua & Venkitachalam, 2013; Hislop, 2013).

With specific reference to private higher education (PHE) institutions in Botswana, the organisations that operate in this sector are confronted by a highly regulated, volatile and turbulent environment (Haslinda & Sarinah, 2009). These authors suggest that KM enablers that ensure synergy between technology and behavioural issues are critical in a business environment that is characterised by high levels of uncertainty and inability to predict the future with high precision. This is particularly so where the focus is not only on finding the right answers but also on finding the right questions (Jain, Sandhu and Sidhu, 2007). In this environment, organisations are confronted with the necessity to ensure the effective deployment of knowledge and intellectual capital as important strategic assets in order to conform to the industry volatility (Haslinda & Sarinah, 2009; Amayah, 2013; Lee & Fink, 2013).

Knowledge management enablers that facilitate KM practices in an uncertain environment include organisational structure, organisational culture, and strategic leadership (Kao, Wu, & Su, 2011; Jain & Jeppessen, 2013; Lee & Hong, 2014; Islam, Jasimuddin, & Hasan, 2015). These enablers, which are the primary focus of this study, support KM practices of knowledge creation, distribution, sharing, application, and retention. These KM enablers are discussed in more detail in Chapter 2 (section 2.2).

## **1.2. A highly regulated environment (contextual setting)**

The Botswana PHE sector, unlike its public sector counterpart, is highly regulated. For instance, a 20% change or more in a course outline requires written permission from the Tertiary Education Council (TEC) or the Botswana Training Authority (BOTA) while a

change of less than 20% requires institutions to inform these regulatory authorities in writing (Tertiary Education Council, 2013). Failure to observe such regulations results in heavy sanctions ranging from a strongly worded reprimand, suspension of operating licences, or outright withdrawal of a licence and ultimately closure of the offending institution. The regulatory framework in which PHE institutions in Botswana are operating is discussed in more detail in Chapter 3 (section 3.2.1).

According to Baputaki (2016), there is a general perception that the future of private tertiary institutions in Botswana is uncertain partly due to the perception that the institutions are comparatively very expensive yet they lack quality as compared to their public university counterparts. This view is reinforced by Setume (2013) who suggests that the combination of comparatively high fees charged by PHE institutions and perceived lack of quality education that they offer resulted in mistrust between the institutions and key stakeholders. The resultant mistrust has led to the reduction in the number of government-sponsored students to these institutions (Baputaki, 2016).

The mistrust between some stakeholders and PHE institutions is responsible for the highly regulated environment (see Chapter 3, section 3.2). For example, a local newspaper, the Sunday Standard, had a headline reading “There is need to save UB against emerging bogus campuses”, referring to PHE institutions (Regonamanye, 2015, p.2). This kind of mistrust has resulted in a consistent decrease in number of government-sponsored students to PHE institutions over the years. For example, the number of government-sponsored students to PHE institutions stood at 25, 748 in 2014. It went down to 12, 387 in 2015 and an all-time low of 3, 965 in 2016 (Mouwane, 2016).

According to Regonamanye (2015), the mistrust alluded to above resulted in the Government of Botswana taking a long time to decide whether PHE institutions will receive any government-sponsored students each year yet all the selected PHE institutions rely 100% on government-sponsored students to fund their operational costs. For example, for the semester starting August 2016, PHE institutions became aware only in July 2016 that they were receiving very few students (Department of Tertiary Education Financing, 2016). On the 10<sup>th</sup> of May 2016, the Government posted a notice on the Facebook informing the public that submission of applications, and receiving and processing of sponsorship for the financial year

2016/2017 was commencing on the 3<sup>rd</sup> May 2016 (Department of Tertiary Education Financing, 2016). This notification, coming in May for a semester that was starting in August, was rather late. The PHE institutions did not know what to expect for 2016. Such a volatile environment makes planning difficult.

As confirmation of the volatility of the PHE environment in Botswana, Mouwane (2016) retorts that a number of PHE institutions were forced to retrench staff due to an unexpected decline in the number of government-sponsored students in these institutions. Another reason for retrenchment of staff was the TEC's sudden policy shift barring lecturers holding level 8 qualifications (Bachelor's degree) to teach at the undergraduate level even as teaching assistants without any form of consultation (Mouwane, 2016).

The above explanation corroborates the observation that the PHE environment in Botswana is volatile and highly complex. These unique features make it imperative for the development and implementation of an effective KM programme that would culminate in effective management of these institutions. The PHE environment is dramatically different from public higher education institutions whose operations and facilities are not closely monitored by regulatory authorities unless there is a major concern. Yin (2012) argues that what makes a case compelling is that it covers a distinctive, extreme, unique, or revelatory event or subject. In this case, the regulatory environment is extreme, unique, and revelatory as compared to the public higher education environment.

Zack (2010) argues that a volatile and complex business environment such as the one enunciated above requires effective KM. In such an environment, expertise not shared quickly enough is lost through labour attrition that characterises the volatile work environment hence effective KM is imperatively required, especially to galvanise innovativeness and performance efficiency (Zack, 2010; Gloet, 2012).

The above view is supported by Kingsinger and Walch (2012) who contend that it is important to note that a volatile and uncertain environment requires agility and adaptability whereby leadership engenders transfusion of expertise (culture), process, technology, and structure which are critical KM enablers. Horney, Pasmore, and O'Shea (2010) concur that this kind of environment requires leadership flexibility and quickness in decision-making,

which are both important KM elements. These authors further posit that leadership flexibility and quickness in decision-making enable the generation of new knowledge and ideas, the creation of knowledge repositories, as well as the distribution and exchange of knowledge with key stakeholders. The effective management of these key KM enablers are expected to promote a positive reputation, business growth, and ultimately result in profitability. The PHE institutions need KM to make them adaptive firms that can easily adjust and learn better, faster, and more economically than their competitors, thus giving them an adaptive advantage.

### **1.3 Research problem**

The intense regulation that governs PHE education sector in Botswana is linked with strong perceptive belief that PHE institutions exist to maximise profit. Some key stakeholders such as students, parents, government, and industry therefore feel that these institutions offer poor quality education to maximise profit. The highly regulated environment results in lack of creativity and also reduces leadership flexibility and quickness in decision-making. The volatility and uncertainty caused by the highly regulated environment also makes planning difficult and investment in physical infrastructure risky.

Limited research has been carried out on the existence and role of KM enablers in facilitating KM practices in PHE institutions operating in this kind of environment to determine their effectiveness in addressing some of the challenges they are facing. Ensuring the existence of KM enablers in PHE institutions is expected to enhance their operational efficiency and ameliorate hitherto negative perceptions that have tainted their reputation. Research on the role played by KM enablers in facilitating KM practices in PHE institutions is, therefore, necessary to identify possible knowledge gaps, in order to uncover a KM model that is capable of closing the identified gaps. Such a model is expected to result in more effective KM practices of knowledge generation, distribution, sharing, utilisation and retention. Effective KM practices are expected to enhance organisational performance and profitability for PHE institutions in Botswana.

### **1.3.1 Research purpose**

The purpose of this study is to investigate the role of KM enablers in facilitating KM practices in selected PHE institutions in Botswana and develop a model for KM that can be used by these institutions operating in turbulent, volatile, and intensely regulated environment.

### **1.3.2 Research objectives and research questions**

This section outlines the primary research objective and secondary research objectives. The primary research objective of this study is to determine the role of KM enablers in facilitating KM practices in selected PHE institutions in Botswana and develop a model for effective KM in these institutions. The secondary research objectives are as follows:-

- i) To investigate the role of strategic leadership in enhancing KM practices in selected PHE institutions,
- ii) To determine the effect of family management on KM practices in selected PHE institutions,
- iii) To determine whether organisational structures of selected PHE institutions in Botswana promote KM,
- iv) To investigate the extent to which the organisational culture of selected PHE institutions in Botswana facilitate KM practices,
- v) To investigate the extent to which PHE institutions involve internal and external stakeholders in the affairs of their institutions.

Based on the above research objectives, this research therefore seeks to answer the following research questions:

- i) What role does strategic leadership play in facilitating KM practices in selected PHE institutions in Botswana?

- ii) What is the effect of family management on KM practices in selected PHE institutions?
  
- iii) To what extent do organisational structures of selected PHE institutions in Botswana promote KM practices?
  
- iv) To what extent do organisational cultures of selected PHE institutions in Botswana promote KM practices?
  
- v) To what extent do selected PHE institutions involve internal and external stakeholders in the affairs of their institutions?

#### **1.4 Justification for the study**

Even in the developing world research on the relevance and application of KM in education is still relatively new. According to Petrides and Nodine (2003), in December 2002 the first professional conference in the United States to focus on the role of KM in education was held in San Francisco, California. A group of 40 professionals from K-12 schools, colleges, universities, and business attended. As expected in a field so new then, there were spirited agreements and disagreements on the most effective ways of implementing best KM practices in education. There was, however, consensus that KM leads to more effective decision-making about work processes, programme improvement, and, most importantly, student results.

Laal (2011) argues that higher education (HE) institutions in the 21st century need to be ready to embrace KM and that using KM techniques and technologies in HE is as vital as it is in the corporate sector. He further postulates that, if practised effectively, KM can lead to better decision-making capabilities, reduced product development cycle time, improved academic and administrative services, and reduced operational costs. This view is buttressed by Omona, Weide, and Lubega (2010) who argue that many researchers and practitioners have developed various frameworks and other relevant approaches to help the emergence of KM into practice. However, they posit that most of the existing frameworks seem to have been derived from the experiences and considerations of the corporate sector rather than HE institutions.

Commenting on the state of KM in HE in Uganda, Omona, Weide, and Lubega (2012) postulate that there are no common, standardised frameworks, procedures or programmes for KM in HE institutions in Uganda. These authors further argue that the lack of commonality exists despite the fact that there are approximately 28 state and private universities catering for around 84 000 students and 127 non-university tertiary institutions with an enrolment of about 45000 students.

There is tremendous value to PHE institutions in Botswana that develop effective practices to generate, share and apply knowledge to achieve business goals. Not much research is known to have been carried out to determine the extent of KM practices of PHE institutions in Botswana. Such research is critical considering that these institutions operate in a volatile and complex environment where KM is critical to mitigate the negative effects of uncertainty and rapid change. Research is therefore required to establish the role played by KM enablers in facilitating KM practices in PHE institutions. This will identify gaps in KM practices, and develop a model that can be used by PHE institutions to add value to their processes and gain competitive edge over their rivals in a volatile business environment.

Given the importance of KM in business organisations, it was necessary to conduct a study that investigated the role and effectiveness of KM enablers in facilitating KM practices in PHE institutions in Botswana and develop a model for effective KM practices. The model could be used by these institutions to enhance their operational efficiency and the quality of the country's human resources coming out of the HE system. This study was, therefore, an attempt at filling the literature and research gaps concerning KM enablers and their effect on KM practices in PHE institutions in Botswana. The study also contributed to the enrichment of the body of knowledge on KM practices in PHE institutions operating under a highly regulated environment, that is, how these institutions can enhance their business performance and image through KM solutions.

PHE institutions in Botswana operate in a highly regulated, volatile, and uncertain environment where the need for innovativeness and new knowledge, hence effective generation of knowledge, its distribution, application, and retention is of paramount importance. An understanding of KM enablers and how they facilitate KM practices of knowledge generation, distribution, sharing, application and retention greatly assist

organisations' effective management of knowledge. The study therefore developed a KM model that can be used by PHE institutions to help them boost their reputation and business performance, thus making the current strict regulation unnecessary.

#### **1.4.1 Originality of the study**

The word 'originality' emanates from 'original' which means not derived, copied, imitated or translated from anything else. It also means novel, creative, independent in invention, and a contribution to new knowledge (Clarke & Lunt, 2014). According to Phillips and Pugh (2010), originality does not necessarily imply a paradigm shift in one's discipline but involves making a synthesis that has not been made by other researchers. This synthesis is made using already known material thus adding to already existing knowledge. The concept of originality is further emphasised by Cryer (2006) who suggests that "we can understand originality in research through an analogy with a travel expedition: the research student is the explorer and the expedition is the research programme" (p. 145). Cryer (2006) uses this analogy to suggest different forms of original research that include originality in tools, techniques and procedures; originality in exploring the unknown; originality in use of data, and originality in outcomes.

This study is an original contribution to the genre of KM. It makes a synthesis of the role of KM enablers in facilitating KM practices in PHE institutions in Botswana that operate in a highly regulated environment. In such an environment, knowledge discovery, diffusion, sharing, retention, and exploitation are of paramount importance. Not much research is known to have been carried out in this area. While the study extracted relevant information from existing literature, a new interpretation of the same was proffered, and new evidence was brought to bear on already existing KM issues. This study led to the confirmation of the ineffectiveness of KM enablers in facilitating KM practices in PHE institutions in Botswana and culminated in the development of a model for effective KM practices that will result in effective KM and business performance. This has not been done before in this particular sector.

## **1.5 Significance of the study**

The significance of this study was to unravel the role of KM enablers in facilitating KM practices in selected PHE institutions in Botswana given the fact that these PHE institutions are operating in a highly regulated environment and thereby require systematic KM. The study was meant to establish the presence or absence (thus determine the role) of critical KM enablers that lead to effective KM practices. It was intended to establish whether there is evidence of existence or lack of appreciation of KM by organisational employees as well as by management itself.

In addition, the study was meant to establish the effect of family management, especially on issues such as promotion criteria, profit motive and preservation of family wealth against service delivery, as well as employee supervision. It was also aimed at determining how these KM enablers influenced employee innovativeness and KM practices – such as knowledge creation, distribution, sharing, and retention.

This study is important in revealing the extent to which the leadership of PHE institutions have put in place appropriate organisational structures that promote effective KM practices. Such structures include appropriate and user-friendly IT infrastructure, physical infrastructure, and organisational typologies, thus resulting in the availability of effective KM practices (see Chapter 2, section 2.2.2). The study is critical in establishing whether the right organisational culture exists which facilitates knowledge creation, sharing, and utilisation. Elements of organisational culture include trust, organisational reward systems, learning, employee involvement in decision-making and organisational and inter organisational collaboration (see Chapter 2, section 2.2.1).

## **1.6 Definition of key terms**

Several authors have proffered different definitions of terminology like KM and strategic leadership. The tables below outline a number of researchers' definitions of these constructs.

### **1.6.1 Knowledge management**

Many definitions of KM have been proffered by KM authors as shown in Table 1.1.

**Table 1.1:** Definitions of knowledge management

<b>Author</b>	<b>Definition</b>	<b>Discussion</b>
Evans, Dalkir and Bidian (2013: 85)	Knowledge management consists of the systematic processes for acquiring, organizing, sustaining, applying, sharing, and renewing all forms of knowledge, to enhance the organisational performance and create value.	KM is about creating knowledge and then managing that knowledge effectively. It is about managing an environment where employees can effectively create, share, and use knowledge so that organisational performance is enhanced in a way that ultimately leads to customer satisfaction. If the environment does not allow the systematic creation, sharing and use of knowledge, the organisation will not perform well in the market thereby leading to a loss of competitive advantage.
Vanini and Bochert (2014: 221)	Knowledge management comprises of the systematic creation, application, integration, and documentation of organisational knowledge.	KM is about establishing mechanisms that enable people and technology to come together. This may enhance the generation of new knowledge, utilisation of knowledge, diffusion of knowledge, and documentation, storage and retrieval of knowledge in a systematic way. It ensures that employees have the right knowledge in the right place at the right time.

### **1.6.2 Strategic leadership**

Authors of leadership have come up with many and varying definitions of strategic leadership. Some of the definitions are indicated in Table 1.2.

**Table 1.2:** Definitions of strategic leadership

<b>Author</b>	<b>Definition</b>	<b>Discussion</b>
Casey (2010: 13)	Strategic leadership is the ability to guide the achievement of the vision of the organisation within a larger enterprise by directing policy and strategy, building consensus, and allocating resources, influencing culture, and shaping complex and ambiguous external environments.	Strategic leaders should lead by example to build effective organisations, grow the next generation of leaders, energise subordinates, seek opportunities to advance organisational goals, and balance personal and professional demands.
Gerras (2010: 18)	Strategic leadership is the process used by a leader to affect the achievement of a desirable and clearly understood vision by influencing the organisational culture, allocating resources, directing through policy and directives, and building consensus within a volatile, uncertain, complex, and ambiguous global environment which is marked by opportunities and threats.	Strategic leadership needs to pick up a vision for an organisation and make followers clearly understand the vision. The leadership is expected to motivate and influence them to work towards achieving that vision. The leader is also expected to be capable of allocating resources efficiently and effectively in pursuance of organisational goals and objectives. The effectiveness of such an intervention would enable the organisation to take advantage of global opportunities and minimise the risk of threats from the external environment.

### **1.6.3 Organisational structure**

Various definitions of organisational structure have been proffered by different authors. Some of these definitions are indicated in Table 1.3.

**Table1.3:** Definitions of organisational structure

<b>Author</b>	<b>Definition</b>	<b>Discussion</b>
Pugh (2014: 37)	Organisational structure denotes how responsibilities such as allocation of tasks, and coordination and supervision are handled in pursuit of the achievement of organisational goals.	Organisational structures must be designed in a way that it becomes clear as to who is in charge of critical activities such as task allocation, coordination of people and resources, as well as reporting lines.
Cheng and Huang (2007: 76)	Organisational structure denotes an enduring configuration of activities and tasks that comprises three elements namely centralisation, formalisation, and integration.	Organisational structure outlines the extent to which jobs in organisation are standardised and employee behaviour is guided by rules and procedures. It also outlines the extent to which decision- making power in an organisation is concentrated at the top levels.

### 1.6.4 Organisational culture

Organisational culture has been defined in several ways by different authors. Some of these definitions are indicated in Table 1.4.

**Table1.4:** Definitions of organisational culture

<b>Author</b>	<b>Definition</b>	<b>Discussion</b>
Wang, Noe, and Wang (2014: 18)	Organisational culture is a social consciousness that can assist in shaping individual employee behaviour towards innovativeness	Organisational culture shapes employee behaviour in a manner that may support or impede innovation. For example, employees will eventually share and exchange knowledge and ideas with each other if top management of an organisation nurtures and promotes that kind of behaviour resulting in employees regarding that behaviour as a natural phenomenon in the organisation rather than being forced to behave that way.
McKinlay and Williamson (2010:31)	Organisational culture is a social phenomenon that determines the way things are done in the organisation and how people treat one another.	Organisational employees treat each other in a way that determines how social aspects of behaviour are promoted by organisational leadership. These social aspects include employee interaction, attitude towards mistakes, and access to information.

### 1.6.5 Stakeholder engagement (collaboration)

Stakeholder engagement has been defined in different ways by many researchers. Table 1.5 outlines some of these definitions.

**Table1.5:** Definitions of stakeholder engagement

<b>Author</b>	<b>Definition</b>	<b>Discussion</b>
Bharwani (2006: 78)	Stakeholder engagement refers to the mechanisms and processes through which an organisation collaborates with individuals or networks who may be affected by decisions made by that organisation.	In order to enhance KM practices of knowledge creation and sharing, organisational leadership needs to inculcate a culture of collaboration with key stakeholders. Collaboration may enable organisational employees to collectively participate in problem-solving, and share information and insights thereby increasing work efficiency.
Jang and Koi (2014: 76)	Stakeholder engagement refers to the processes of consulting, listening, understanding, communicating and influencing those with a stake or interest in the activities of an organisation such as customers, employees, colleagues, local communities, investors, financiers, regulatory authorities, and the media with the objective of meeting their expectations, gaining approval and support, or minimising their opposition to the organisation's activities.	Organisational leadership can enhance KM practices and business performance by ensuring that the organisation has a robust programme of consulting and influencing its critical internal and external stakeholders so that they have a positive image of the organisation. This will enable these stakeholders to support and participate in the organisation's activities when called upon to do so.

### 1.6.6 Highly regulated environment

The PHE sector in Botswana has been described as a highly regulated environment. Some definitions of this kind of environment are proffered in Table 1.6.

**Table1.6:** Definitions of highly regulated environment

<b>Author</b>	<b>Definition</b>	<b>Discussion</b>
Cebula and Clark (2014: 58)	A highly regulatory environment is simply put, strict laws, rules, and regulations put into place by federal, state, or other government entities and civilian organisations to control the behaviour and actions of business activities.	A highly regulated environment comprises of strict rules, regulations, and requirements that empower a statutory body to force an organisation to conduct its business in a way acceptable to customers, the community, government and/or other stakeholders. The statutory body is empowered by the laws of the country to cause the withdrawal of operating licences of non-complying organisations
Bentham (2013: 23)	A highly regulated environment is an operating environment characterised by stringent compliance requirements, rules, and regulations put in place by a statutory body that enforces compliance of rules and regulations as a cure and preventive measure against some misdeeds and intended to change the way an organisation operates. The sheer quantity of regulations in that environment is hard to grasp.	The intensity of the stringent regulatory environment usually emanate from the misdeeds of the organisations themselves. Such an environment leads to organisational leadership spending more time with regulators than with their own staff. That environment can have new regulations anytime which are expensive in terms of compliance as companies may need to change or acquire new infrastructure, processes, or organisational structures. At the same time, these regulations can restrict revenue growth and profitability, add costs, slow down processes and prohibit expansion.

## 1.7 Literature review

Friesl, Sackmann and Kremser (2011) posit that knowledge in KM is a systematic set of principles, processes, organisational structures, and technologies that assist employees to generate, share and leverage knowledge. Effective management of these critical KM tools facilitates knowledge sharing through formal and informal interactions and collaboration. Knowledge sharing and collaboration enhance business performance.

Previous research has identified organisational culture as one of the KM enablers that is critical in enhancing KM practices of knowledge creation, sharing, utilisation, and retention (Rau, 2011; Schilling, 2011; Saenz & Perez-Bouvier, 2014). Elements of organisational culture that facilitate KM practices include trust (Husted, Michailova, Minbaeva, & Pedersen, 2012; Amayah, 2013) and collaboration (Connell, Kriz, & Thorpe, 2014; Jang & Koi, 2014). There are other components of organisational culture that organisations need to manage to

facilitate KM practices. These elements are reward systems (Iyer & Ravindran, 2009; Wang & Noe, 2010; Sandhu, Jain, & Ahmad, 2011; Fullwood, Rowley, & Delbridge, 2013) and people (Schilling & Kluge, 2009; Neumann & Tome, 2011). These are discussed in detail in Chapter 2 (section 2.2.1).

Jang and Koi (2014) aver that besides organisational culture, another KM enabler that plays a critical role in facilitating KM practices is organisational structure. This KM enabler enhances KM effectiveness by influencing the way knowledge is created and distributed and establishing channels through which knowledge is communicated (Mladkova, 2011; Amayah, 2013). Organisational structures with a bearing on KM effectiveness include top-down structures (Nonaka & Takeuchi, 1995; Robbins, Millet, & Cacioppe, 2009) and bottom-up structures (Bommert, 2010; Cai, 2012). Mladkova (2011) further argues that KM effectiveness in organisations can also be enhanced through the utilisation of combined structures which are a fusion of top-down and bottom-up organisational structures.

Another critical element of organisational structure that facilitates or hinders KM practices is information technology (IT) in as far as it results in faster adoption of KM practices (Lehner & Haas, 2010; Bordoloi & Islam, 2012; Hafeez-Baig & Gururajan, 2012; Pandey & Dutta, 2013). More research alludes to the central role played by IT in facilitating KM practices through enhancement of the quality and speed of knowledge generation, transfer, and application (BenMoussa, 2009; Ajmal, Helo, & Kekale, 2010; Tiago, Tiago, & Conto, 2010; Ozlen, 2013). The role of organisational structure in facilitating KM practices is discussed in more detail in Chapter 2 (section 2.2.2).

According to Jain and Jeppessen (2013), while organisational culture and structure are important KM enablers, strategic leadership is the most critical as it influences both organisational culture and structure. Strategic leadership is crucial in implementing KM by providing direction that guides KM processes through the establishment of the vision statement for the organisation (Yu, Kim, & Kim, 2008). This position is supported by Jain and Jeppessen (2013) who postulate that the vision statement established by strategic leadership enables the organisation to identify opportunities that generate knowledge.

Furthering this line of thoughts, Jain and Jeppesen (2013) further argue that new knowledge generated due to the interventions of strategic leadership has the potential to influence cultural and organisational transformation that leads to effective organisational performance. This view is supported by Chen and Huang (2011) who concur that leadership provides vision, motivation, systems, and structures that facilitate KM initiatives. They suggest that, in order to ensure that the organisation adheres to the vision and direction set by its leadership, a KM officer needs to be appointed. The role of the KM officer would be to set the overall direction for the organisation's KM programme and assuming responsibility for KM-related activities.

However, it must be pointed out that the overall success of KM programmes depends on the ability of top leadership of the organisation to adopt appropriate leadership styles and managerial direction. Previous research has established that right leadership styles facilitate effective coordination across organisational functions (Rego, Pinho, Pedrosa, & Cunha, 2009; Wendling, Oliveira, & Gustaud Macada, 2013). The role played by strategic leadership in facilitating KM practices is discussed in more detail in Chapter 2 (section 2.2.3).

To achieve the research objectives, this study adopted some models and theories that focus on the role of KM enablers in facilitating KM practices. Combining a number of these models results in an integrated view of KM. This leads to the development of an integrated KM model which best enhances KM practices and organisational performance. These models are listed below and discussed in more detail in Chapter 2 (section 2.2). Here, the proposed models are depicted synoptically:

### **Models that address knowledge creation**

These include:

- a) The SECI model: Nonaka and Takeuchi (1995)
- b) Extended SECI model: Salonijs and Kapyla (2013)
- c) SECI, Ba and Leadership: A Unified Model of Dynamic Knowledge Creation: Nonaka, Toyama, and Konno (2006)

### **Models that address knowledge sharing and application**

- a) Holsapple and Joshi's KM framework: Holsapple and Joshi (2004)

## **Models that address knowledge generation, sharing, application and retention**

These include:

- a) An Integrated KM framework: Handzic (2004)
- b) The Knowledge Management Process model: Botha, Kourie, and Snyman (2008)
- c) Model of analysis of practices in organisational KM: Oliva (2014)

### **1.8. Research methodology**

This section looks at the research methodology used in this study by examining the research approach and the design adopted for this study.

#### **1.8.1 Research approach**

This study used the quantitative approach whereby a survey was used to obtain data concerning the role played by KM enablers in facilitating KM practices in selected PHE institutions in Botswana. The questionnaire items (see Appendix 1) in the survey were used to determine the presence or absence of appropriate KM enablers and the role they played in facilitating KM practices in these institutions. This led to the development of a model that could be adopted by PHE institutions to enhance KM. More discussion on the research approach is found in Chapter 4 (section 4.2).

#### **1.8.2 Research design**

McMillan and Schumacher (2003) view research design as the plan and structure of the investigation used to obtain evidence to answer research questions/objectives. This view is supported by Tashakkori and Teddlie (2010) who contend that research design describes the procedures for conducting the study. This procedure includes when, from whom, and under what conditions the data will be obtained. Research design serves the purpose of providing the most valid and accurate answers possible to questions. This study adopted a primary research approach (survey research); in that structured questionnaires were designed to collect the required data for analysis.

According to Isaac and Michael (1997), survey research is useful in answering questions that have been raised on certain phenomena under investigation. It enables the researcher to solve

problems concerning the phenomena that have been posed or observed. The research design is discussed in more detail in Chapter 4 (Section 4.2.2).

### **1.8.3 Population**

The subjects in this study comprised all five family-owned PHE institutions in Botswana which were strictly regulated by the Tertiary Education Council (TEC) and which offered a series of higher education qualifications up to master's and Doctor of Philosophy (PhD). All in all, the total population surveyed (that is, all teaching employees of these institutions, from the level of lecturer to Dean, who had been with these organisations for at least one year) numbered 670.

This particular population was chosen because regulatory requirements are targeted primarily towards the academic and not non-academic activities (Tertiary Education Council, 2008). Hence members of non-academic staff were excluded from the study. Again, the population was chosen on the basis of the time they had spent with the employer because new employees were not likely to have adequate organisational knowledge and experience to add value to the study. Population and sampling frame are discussed in more detail in Chapter 4 (section 4.3).

### **1.8.4 Sample size and sampling procedures**

This section outlines the sample size and sampling procedures adopted for the quantitative research approach adopted in this study.

#### **1.8.4.1 Sample size and sampling technique**

Sample size was determined taking into account non-response, attrition and respondent mortality. That is, some participants failing to return questionnaires, opting out of the research process, returning incomplete or spoiled questionnaires (Cohen, Manion & Morrison, 2011). According to Gorard (2010) it is advisable to overestimate, rather than underestimate, the sample required to build in redundancy.

In determining the sample size, a sample size table developed by Research Advisors (2006) was used as shown in Appendix 3. According to the table, for a population size of 670 using a 95% confidence level and a 3.5% confidence interval for more precision, the sample size lies between 340 and 370 hence the figure 350 was decided upon constituting 52% of the

population. This figure is supported by Leedy and Ormrod (2005) who propose a sample size of 50% of the population as adequate.

The study adopted a form of probability sampling called ‘stratified sampling’. This technique is used to acquire a representative sample when the population to be sampled does not constitute a homogeneous group (Kothari, 2011). The population was stratified into several sub-populations (strata) that were individually more homogenous than the overall population. The different strata comprised of academic staff in middle management (heads of departments) and senior academic management (faculty deans), lower management (module/course leaders and team leaders) and non-managerial teaching staff (lecturers with no leadership position) from the five PHE institutions covered in this study. In the PHE context, due to the need to cut costs, senior academic leaders like deans also teach although their teaching loads are smaller. Units were then selected from each stratum to comprise a sample as shown in Table 1.7. A more detailed description of the sampling procedures is given in Chapter 4 (section 4.3.1).

**Table1.7:** Sample strata

Strata	Limkokwing University	Botho University	Ba Isago University	ABM University College	GIPS	Total (N <sub>i</sub> )	Sample size
Middle and senior management (N <sub>1</sub> )	33	28	13	9	8	N <sub>1</sub> = 91	p <sub>1</sub> = 13.7% ∴ n = 48
Lower management (N <sub>2</sub> )	39	33	15	11	9	N <sub>2</sub> = 107	p <sub>2</sub> = 16% ∴ n = 56
Non-managerial teaching staff (N <sub>3</sub> )	181	142	58	47	44	N <sub>3</sub> = 472	p <sub>3</sub> = 70.3% ∴ n = 246
Total (N)	253	203	86	67	61	N = 670	n = 350

**Key**

pi = stratum proportion

ni = derived sample sizes per stratum; where ni = pi\*n

Ni = Population size per stratum

N = Total population size

n = Total sample size

After determining the sample size, the random sampling technique was adopted by writing the name of each element of a finite population on a slip of paper and putting all the slips in a box. These were mixed up thoroughly and then drawn out while blindfolded without replacement until the required number of slips to constitute a sample was reached. This was done for all strata until the predetermined sample size for each institution was achieved.

### **1.8.5 Data collection methods**

Data was collected on KM enablers in selected PHE institutions in Botswana focussing on Botho University, Limkokwing University, ABM University College, Baisago University College, and Gaborone Institute of Professional Studies (GIPS). Besides an empirical investigation, an extensive literature review was carried out on KM enablers that facilitate KM practices and the PHE environment in Botswana. The literature review laid the conceptual and theoretical bases for the empirical field survey that followed.

Self-administered structured questionnaires were used to collect data because they are suitable for obtaining data beyond the physical reach of the observer (Brewer, 2009). Though they have their own shortcomings, if properly crafted and administered, questionnaires with both open-ended and closed-ended questions can be very effective in gathering the much needed quantitative data. One form (open-ended) is useful to compensate for the shortcomings the other (closed-ended) might have to ensure reliability and validity of the study (Cohen, Manion, & Morrison, 2011). Data was also collected from public documents such as newspapers and company websites. More details on data collection and research instruments are found in Chapter 4 (section 4.4).

### **1.9 Data analysis, discussion and interpretation**

Information gathered from the questionnaires was analysed using the Statistical Package for Social Sciences (SPSS). This was carried out by assigning codes to the responses and entering the codes into the computer and then transferring them into SPSS software. The reason for coding the data was to allow numerical representation and manipulation of the responses in order to address the specific research questions as a way of achieving the research objectives.

The SPSS software was used to run descriptive statistics and cross tabulations to produce frequency tables, charts and graphs for easier and more effective analyses. Data was analysed through the parametric independent t-test or non-parametric Mann Whitney U test. Data was also analysed through the Structural Equation Modelling (SEM), in the form of Analysis of Variance (ANOVA), multiple regression analysis, and Chi-square test. A more detailed discussion of data analysis is found in Chapter 4 (section 4.5), while detailed data analyses and interpretation are presented in Chapter 5.

## **1.10 Research ethics, validity and reliability of the study**

This section discusses how the issues of research ethics as well as validity and reliability of the study were dealt with as presented in the sub-sections that follow.

### **1.10.1 Research ethics**

The study was carried out in conformity with University of South Africa (UNISA)'s research policy on research ethics. Cavan (2007) emphasises that researchers have a responsibility to take into account the effects of the research on participants and to act in a manner that preserves their dignity as human beings. According to this author, such a behavioural pattern is regarded as ethical behaviour. The author further defines ethics as a matter of principled sensitivity to the rights of others, and that, while truth is good, respect for human dignity is better. This means that a study should not seek to extract the truth at the expense of the dignity of the person involved. A more detailed discussion of research ethics is found in Chapter 4 (section 4.6).

### **1.10.2 Validity**

Validity is a requirement for both quantitative and qualitative research. It is the ability of an instrument to measure what it is designed to measure, that is, the degree to which the researcher has measured what he/she has set out to measure (Ary, Jacobs, Sorensen & Razavieh, 2009). The researcher ensured that the study satisfied both internal and external validity (see Chapter 4, section 4.7). Validity was ensured at the design, data gathering, and data analysis stages of the study. This was done through selecting an appropriate methodology for addressing research objectives, ensuring standard procedure for gathering data, and avoiding subjective interpretation of data (Onwuegbuzie & Johnson, 2006).

### **1.10.3 Reliability**

Essentially, this implies dependability, consistency, honesty, predictability, stability, and replicability of research over time, over instruments and over groups of respondents (Kumar, 2011). Cohen, Manion, and Morrison (2011) posit that reliability is the precision and accuracy of research instruments. For a study to satisfy the aspect of reliability, it must prove that if it were to be carried out on a similar group of respondents in a similar context, it would still produce similar results. This study ensured reliability by measuring internal consistence reliability using Cronbach Alpha (Sekaran, 2003). Issues of reliability of the research are discussed further in Chapter 4 (section 4.8).

### **1.11 Scope/delimitation of the study**

The study examined the role of KM enablers in facilitating KM practices in PHE institutions in Botswana. The study was focused on developing an effective KM model for these institutions. It is envisioned that an effective KM model would enhance the performance and viability of the businesses of PHE institutions. Effective KM practices would also enhance the image of these institutions in the eyes of sceptical stakeholders who include government, students, employees, parents, industry, and the general public as discussed in section 1.2. The study was restricted to PHE institutions in Botswana operating in a highly regulated, volatile and unpredictable environment. Public higher education institutions which were not subjected to the strict regulatory environment were therefore excluded from this study.

The study included PHE institutions that had been operating in Botswana for the previous 12 months or more and offered university degrees. All in all, a total of five PHE institutions were chosen to constitute this study. All the institutions were based in the Botswana capital, Gaborone, and for economic reasons their branch campuses stationed outside Gaborone were excluded. The sample included all academic staff from non-managerial to managerial levels who were involved in teaching because these were the staff members most affected by the strict regulatory regime that characterised the PHE environment in Botswana as discussed in section 1.2. Non-academic (support staff) members were excluded because their operations were not strictly monitored by regulatory authorities.

## **1.12 Structure of the thesis**

The following chapters comprise this research:

### **Chapter 1: Introduction and background to the study**

The chapter gives the background to the study. It clearly explains the problem that necessitates the carrying out of the study as well as the research objectives that must be achieved through this study.

### **Chapter 2: Perspectives on knowledge management enablers in organisations**

This chapter is a review of related literature that has already been published by experts that helps to inform this study. The major focus is on literature that explains how KM enablers can facilitate KM practices and the impact of this on the business performance of organisations operating in highly regulated and volatile environments.

### **Chapter 3: The private higher education environment in Botswana and implications for knowledge management**

The chapter outlines the PHE environment in Botswana in order to put the study into context. It also outlines the challenges facing PHE institutions in Botswana so as to understand the importance of KM in such an environment.

### **Chapter 4: Research design and methodology**

The chapter focuses on the methodology that was used to carry out the research and achieve the stated research objectives, namely the quantitative approach. It explains the research instruments that were used and how the researcher ensured validity and reliability of these instruments.

### **Chapter 5: Data analysis, discussion and interpretation**

This chapter presents the findings of the study. It outlines the outcome of the research in quantitative terms through descriptive narratives and quantitative analysis. The chapter also discusses and interprets research findings in the form of a research report.

## **Chapter 6: Summary of findings, recommendations and conclusion**

This chapter gives a summary of the findings for the whole study as well as an evaluation of the outcomes achieved. It also outlines the limitations of the study and makes recommendations for the practical application of the findings and for further research.

### **1.13 Chapter summary**

This chapter introduced the importance of mobilising intellectual capital (knowledge) to establish a sustainable competitive advantage in businesses operating in the 21<sup>st</sup> century knowledge economy. It also introduced the concept of KM enablers and the role they play in ensuring the existence of effective KM practices in an organisation. The chapter gave an outline of the research problem and explained the purpose of the research. The primary and secondary research objectives were also outlined.

Chapter 1 also described the background of the study. It outlined the research methodology and design adopted for this study by denoting the population covered by the study, the sample and sampling techniques used, data collection procedures adopted, and data analysis. The chapter also outlined the means that were adopted for ensuring validity and reliability of the study. It described the limitations and delimitations for the study, and also defined key research constructs. The merit of the research and its proposed contribution to science were explained, as was the theoretical framework upon which the study is premised, and the chapter layout. The next chapter discusses theoretical perspectives on KM enablers in organisations.

## CHAPTER 2

### PERSPECTIVES ON KNOWLEDGE MANAGEMENT ENABLERS IN ORGANISATIONS

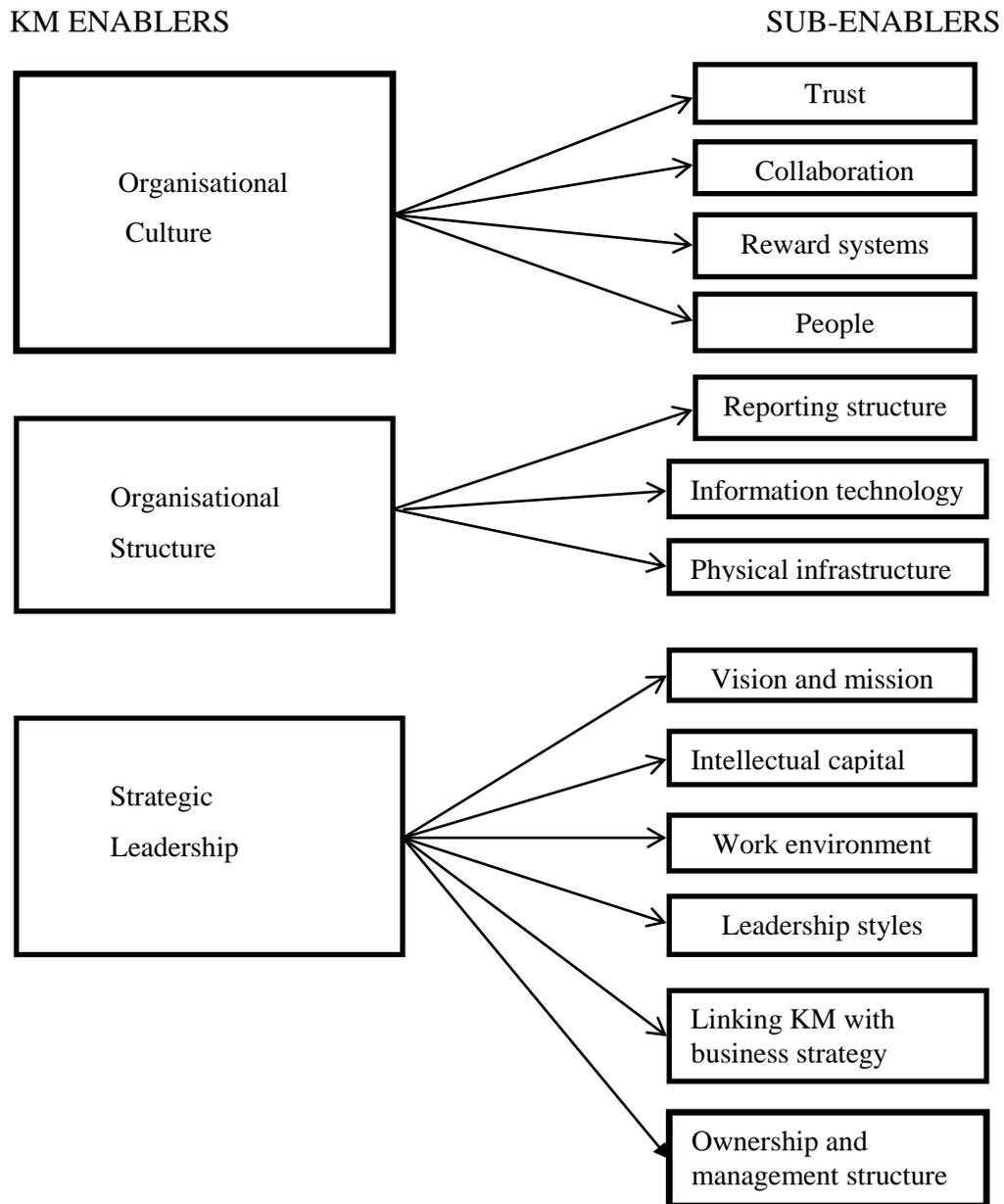
#### 2.1 Introduction

In the 21<sup>st</sup> century knowledge economy, knowledge has become a crucial factor of production in the same manner as land, labour, and capital. In support of the criticality of knowledge as a factor of production, Neumann and Tome (2011) aver that knowledge is widely accepted as a strategic resource and the key to organisational survival, success, and sustainable competitive advantage. Previous researchers have postulated that, because of the role knowledge plays in business success, organisations in the knowledge economy need to establish an enabling environment for knowledge to thrive (Rahimli, 2012; Dehghani & Ramsin, 2015). Such an environment is characterised by the existence of effective KM enablers (Nordin, Daud & Osman, 2012). Appropriate KM enablers in an organisation facilitate the generation, dissemination, and application of knowledge so as to build organisational efficiency and effectiveness (Desouza & Paquette, 2011; Rasoulinezhad, 2011; Teng & Song, 2011; Van der Meer, 2014; Omotayo, 2015).

Further research has revealed that failure by organisations to ensure existence of appropriate KM enablers has resulted in those organisations losing the bank of existing knowledge. The organisation is thereby submitted into the cost of creating previous knowledge, over and above the costs of creating new knowledge (Vallejo-Alonso, Arregui-Ayastuy, Rodriguez-Castellanos, & García-Merino, 2013). Denford (2013) posits that by effectively managing knowledge through the establishment of appropriate KM enablers, organisations are able to establish dynamic capabilities. Such capabilities enable organisations to harness internal and external competences. The ability to harness such competencies enables an organisation to deal with the rapidly changing environments (El Aziz, Wahba, & El Sagheer, 2013). Such KM enablers include organisational culture, organisational structure, and strategic leadership (Ramdhanian, 2012; Scaringella & Malaeb, 2014), and also ownership and management structure. These enablers, together with their sub-elements, constitute the focus of this study, as depicted in Figure 2.1.

Being the literature review chapter, this chapter looks at the role of KM enablers in facilitating effective KM practices of knowledge creation, sharing, application, and retention, and by extension, how knowledge enhances organisational capability. These KM enablers are organisational culture (people, trust, reward systems, collaboration), organisational structure (IT, infrastructure, and reporting structure), and strategic leadership. The chapter explains how these KM enablers facilitate the creation, sharing, retention, and use of intellectual capital (IC) and foster a work environment where KM practices are enhanced. The conceptual framework for the chapter is shown in Figure 2.1.

The conceptual framework that informs this study is based on a number of KM models/frameworks such as an integrated KM framework (Handzig, 2004), Organisational dimensions that hinder/promote knowledge sharing capabilities (Yeh, Lai, & Ho, 2006), and Assimilation of information technology within other KM processes (Gold, Malhotra, & Segars, 2015). Other models and frameworks include Holsapple and Joshi's KM framework (Holsapple and Joshi, 2004), and Model of analysis of practices in organisational KM (Oliva, 2014). These models and frameworks can be integrated into one framework namely - An integrated KM framework (Handzig, 2004). This framework aptly depicts the role that KM enablers play in facilitating KM practices in organisations, and it is from this framework that the dependent and independent variables studied in this thesis were derived. Items in the questionnaire are based on the variables in this framework and others that emanate from it. These frameworks and models and other concepts that constitute KM enablers are discussed in detail in section 2.2.



**Figure 2.1:** Conceptual framework of knowledge management (Author’s own work)

According to Figure 2.1, KM is facilitated by enablers that include organisational culture, organisational structure, and leadership and their sub-elements as indicated in the diagram. These are discussed in section 2.2.

An extensive discussion of relevant literature in this chapter addresses the following hypotheses based on the research objectives and research questions outlined in Chapter 1:

H1: Strategic leadership is significantly and positively related to KM practices in selected PHE institutions.

H2: Family management influence is significantly and negatively related to KM practices in selected PHE institutions.

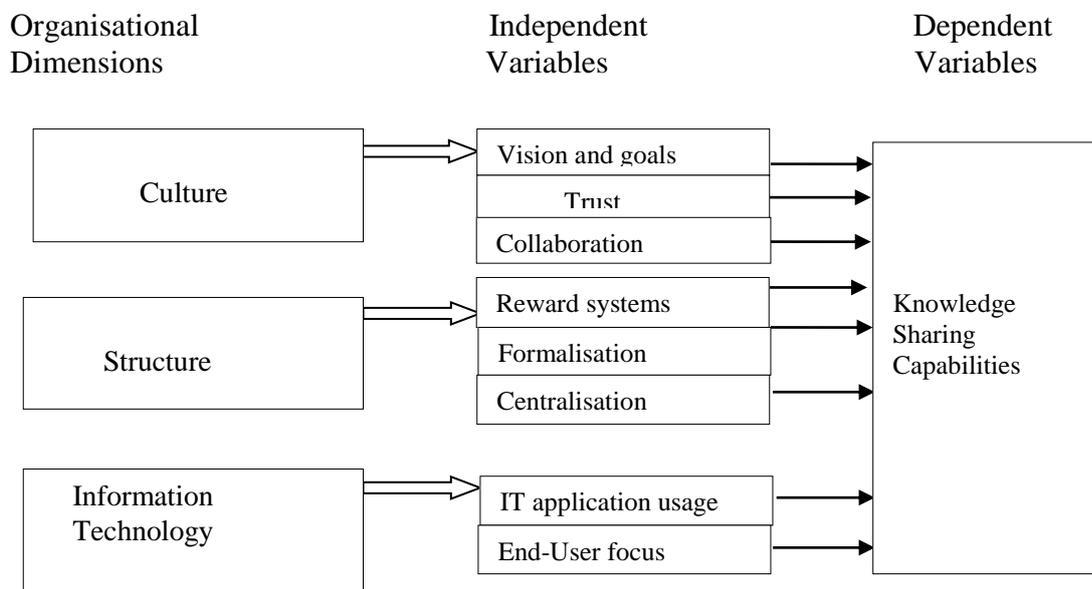
H3: Organisational structure is significantly and positively related to KM practices.

H4: Organisational culture is significantly and positively related to KM practices.

H5: Stakeholder involvement metric is significantly and positively related to KM practices

## 2.2 Knowledge management enablers in organisations

Researchers have identified organisational structure, organisational culture, information technology (IT), people, and strategies as the critical KM enablers in an organisation (Yeh, Lai, & Ho, 2006; Soon & Zainol, 2011; Hislop, 2013). Ensuring that these enablers exist in an organisation is the primary role of the organisation’s top leadership (Neto & Vieira, 2011; Pawlowski & Bick, 2012). These KM enablers are the mechanisms adopted by organisations to develop knowledge, as well as to stimulate the creation of new knowledge within the organisation, and sharing it. The enablers (organisational dimensions) are shown in Figure 2.2 and accompanying explanation follows immediately after the figure.



**Figure 2.2:** Organisational dimensions that promote knowledge sharing (Yeh, Lai, & Ho, 2006:101)

### **2.2.1 Organisational culture**

Organisational culture is a critical KM enabler in organisations as it may support or impede innovation (Kao, Wu, & Su, 2011; Kamhawi, 2012). Several researchers argue that innovation in organisations emanate from the way employees behave and how they interact with one another (Ozlen, 2013; Islam, Jasimuddin, & Hasan, 2015; Margilaj & Bello, 2015; Ncoyini & Cilliers, 2016).

According to Smith and Lumba (2008), in order to ensure positive social behaviour of employees that is characterised by effective interaction as indicated above, it is critical that organisations ensure the existence of appropriate organisational culture. Such a culture promotes employee interaction which forms the basis of knowledge creation and sharing in the following ways:

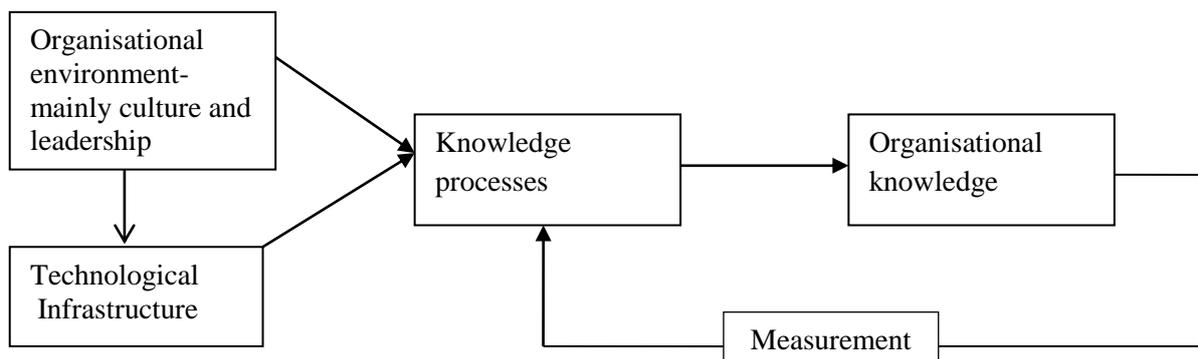
- Not stigmatising failure but rather looking at it as an opportunity to learn (attitude towards mistakes, which determines how leadership responds to employees who commit such mistakes) (Tseng & Kuo, 2010);
- Considering knowledge sharing to be a strength and knowledge hoarding a weakness;
- Allowing time for creative thinking;
- Ensuring that there are no restrictions on access to information; and
- Ensuring the existence of a common language for exchanging and clarifying information for people from different backgrounds.

Isfahani, Nilipour, Aghababapour, and Tanhaei (2013) contend that despite the importance of positive employee behaviour in enhancing knowledge creation and sharing, many employees are still suspicious of workmates with whom they are expected to share knowledge. These authors argue that such suspicion is more prevalent in a competitive environment where knowledge is considered to be power. Other researchers have revealed that employees are also reluctant to share knowledge in an environment where the few who own knowledge view themselves as privileged hence deserving higher rewards and recognition (Niosi, 2010; Chen, 2012; Rosell & Lakemond, 2012; Gu & Wang, 2013).

To counter the negative perception of regarding knowledge as a privilege, Mercier-Laurent (2011) suggests that organisations need to seriously foster the establishment of a culture

where employees voluntarily share knowledge. This view is supported by Nakano, Muniz, and Batista (2013) who aver that the existence of such a culture means that a favourable environment exists that facilitates effective knowledge sharing.

Advancing further support for the role played by organisational culture in enhancing KM practices in organisations, Handzic (2004) proposed an integrated model of KM that indicates the essential components of KM and their inter-relationships as shown in Figure 2.3.



**Figure 2.3:** An integrated KM framework (Handzic, 2004:38)

According to Figure 2.3, the overall organisational environment, mainly comprising culture and leadership, influences the choice of technological infrastructure to support knowledge processes. These knowledge processes are facilitated by a conducive organisational environment which is demonstrated in terms of strong leadership support and a collaborative organisational culture (Lee & Hong, 2014; Mohamed, 2014).

Ncoyini and Cilliers (2016) buttress the importance of the creation of a conducive environment in the form of appropriate organisational culture that ensures effective management of particular cultural elements in an organisation. Such elements include collaboration (social networks), trust, people, and reward systems (Carneiro, 2010; Turner & Minonne, 2010; Leal-Rodriguez, Leal-Millan, Roldan-Salgueiro, & Ortega-Cutierrez, 2013; Crnjar & Dlacic, 2014). These are discussed below.

### **2.2.1.1 Collaboration**

According to Connell, Kriz and Thorpe (2014), organisational leadership needs to establish a culture of collaboration whereby people work in groups (communities of practice - CoPs). Such CoPs assist each other in accomplishing their job tasks (Growth & Bowers, 2010; Khalifa & Liu, 2010; Rayton & Yalabik, 2014; Saenz & Perez-Bouvier, 2014). This view is reinforced by Jang & Koi (2014) who concur that CoPs enable members to collectively participate in problem-solving, and share information, insights, and comments, thereby increasing work efficiency. Enhanced work efficiency improves the work performance of the individuals and the organisation at large and these serve as a springboard for knowledge exchange.

In further support for collaboration in organisations as enunciated above, Saenz and Perez-Bouvier (2014) observe that the success of a business entity depends largely on the quality of its relations and collaboration with other organisations (stakeholder engagement/involvement). Other researchers concur that interaction and collaboration with other entities enables an organisation to acquire resources that include physical assets as well as knowledge (Bommert, 2010; Niosi, 2010; Cai, 2012).

The importance of collaboration is further emphasised by Chen (2012) who notes that individual organisations reap obvious benefits from collaborating with other organisations and these benefits include acquiring more resources in an environment which is characterised by shortage. Over and above the acquisition of more resources through collaboration, an organisation also gains better recognition that enhances its image and competitiveness (Cai, 2012). Such a positive image is a critical attribute for organisations that are operating in an environment endowed with stiff competition and strict regulatory requirements. This is the environment that characterises PHE institutions covered in this study.

The concept of collaboration is reinforced by Cui (2011) who suggests that this phenomenon assists an organisation in gaining competitive advantage over other organisations. The organisation acquires competitive advantage by eliminating common barriers to knowledge sharing such as lack of trust and fear. Other researchers concur that cultivation of trust and eradication of fear in an organisation increases openness and team spirit which are critical

ingredients in knowledge exchange (Gan, 2006; Husted, Michailova, Minbaeva, & Pedersen, 2012).

In further support for collaboration as a critical KM enabler in organisations, Schilling (2011) argues that working together particularly facilitates the sharing of tacit knowledge which is more beneficial to organisations as it is complex and difficult to imitate. This form of knowledge benefits from employee collaboration because it requires more frequent interaction in order to develop a more effective common understanding among employees. This thesis sought to establish the existence or absence of collaboration (stakeholder engagement/involvement) in selected PHE institutions in Botswana through a questionnaire.

### **2.2.1.2 Trust**

According to Lee and Hong (2014), in the context of knowledge-sharing, the missing link that exists in organisational culture is trust which leads to the concentration of knowledge among a privileged few. In order to ensure that knowledge spreads to many employees in the organisation, top management needs to create an environment where trust exists and where an employee believes that his/her knowledge will not be misused. The existence of such an environment will ensure that effective knowledge sharing occurs naturally without employees being compelled to do so (Quigley, Tesluk, Locke, & Bartol, 2007; Tan, Lim, & Ng; 2009; Rau, 2011; Alhalhouli, Hassan & Der, 2014). This study therefore sought to determine whether trust existed between employees and management in the selected PHE institutions through the use of a questionnaire (see Chapter 5).

Rau (2011) alludes to a form of trust that is crucial in enhancing knowledge sharing in organisations. This form of trust is competence-based trust which is the belief that an individual is knowledgeable or competent in a given subject area. This view is supported by Okyere-Kwakye and Nor (2011) who argue that an employee who needs assistance with a job task will look for it from those he/she trusts to have the competence to provide that assistance. As such, trust is decreased if the trustor believes that the trustee lacks competence in a given area. To the contrary, if the trustor believes that the trustee possesses expertise in a particular area, then trust increases. This project, therefore, established whether employees of selected PHE institutions believed that fellow employees and those in leadership were competent enough to be trusted as sources of knowledge or not.

Emphasising further on the importance of trust in facilitating KM practices of knowledge creation and sharing, Husted, et al (2012) observe that trust among employees is considered to be the key component of effective team decision-making. This view is supported by Amayah (2013) who concurs that trust is crucial in an organisation as it promotes proactive behaviours at work such as cooperation, reduced monitoring, and enhanced group performance. These elements enhance knowledge generation and sharing hence improved organisational performance.

Some researchers suggest that trust has been a critical factor in high performance teams (Robbins, Millet, & Cacioppe, 2009; Schilling, 2011; Saenz & Perez-Bouvier, 2014). They argue that such high performances occur in those teams as the existence of trust in the organisations facilitates open, substantive, and influential knowledge diffusion as a result of confidence in one another which leads to more interaction hence knowledge diffusion.

This study established, through the questionnaire, the extent to which trust existed among employees of PHE institutions covered in this study and between employees and top management as trust would enhance effective decision-making. Enhanced decision-making has the potential to influence organisational employees to take the initiative at work. Existence of trust can also lead to the elimination of excessive employee monitoring if it existed.

### **2.2.1.3 People**

Neumann and Tome (2011) contend that the effective flow of knowledge in an organisation is only sustainable through people yet most studies on facilitation of knowledge sharing have focused either on social or on technological dimensions. They argue that very little attention has been paid to people issues or an integration of social, technological dimensions, and people. People are important in facilitating KM practices because they help design technology that enhances KM processes. Existence of effective KM practices in turn enhances organisational efficiency and effectiveness. It is therefore improper to emphasise the importance of technology ahead of people in enhancing KM practices (Neumann & Tome, 2011).

The role of people in facilitating KM practices is further highlighted by Wei (2014) who posits that individuals (organisation's employees) are the prime source of knowledge. This is supported by Nonaka (1994) who contends that people are crucial for the creation, capture, and sharing of knowledge within the organisation. Through their experience in the organisation's key processes, people create, find and accumulate knowledge through the process of combination and exchange of existing knowledge. This position is further supported by Gavrilova and Andreeva (2012) who postulate that knowledge and experience in an organisation belong not to the organisation per se, but to the individual employees. The embedding of knowledge and experience in employees makes organisations dependent on the benevolence and capabilities of employees in applying that knowledge for the benefit of the organisation. Organisations benefit from that knowledge only if it is shared as is required by organisational processes and business strategies.

In support of the importance of the role played by people in facilitating KM practices, Bessick and Naicker (2013) aver that the knowledge-based view of the firm regards people as pivotal to knowledge sharing and the sustenance of an organisation's competitive advantage. This view is supported by various other researchers who concur that knowledge is anchored in the minds of individual employees and it can get lost if employees choose to leave the organisation or not share it (Rasula, Vuksic & Stemberger, 2012; Gharanjik & Azma, 2014; Mothamaha & Govender, 2014).

As further confirmation of the importance of people in facilitating KM practices, research has revealed a direct relationship between some demographic characteristics and certain KM practices. For instance, Dube and Ngulube (2012) argue that differences in demographic characteristics especially in clearly visible traits such as age, gender, race, tenure, education, and language create fault lines that could function as barriers to interaction. These authors contend that ineffective interaction decreases social attachment which in turn hinders knowledge sharing. This view is supported by other researchers who concur that due to inherent dissimilarities among an organisation's employees, interaction becomes ineffective which decreases social attachment (Amin & Shahid, 2013; Nagamani & Katyayani, 2013). Some of the demographic variables that have an effect on KM practices are discussed below.

- **Employee educational qualifications and work experience**

Riege (2005) asserts that organisational employees who possess different levels of education with different levels of work experience tend to exhibit different levels of knowledge sharing capabilities. Wang and Noe (2010) concur that a person with a level of education that is different from the rest of a team is highly unlikely to participate in knowledge sharing practices but would rather withdraw from team participation in knowledge exchange.

The above view is supported by other researchers who postulate that educational background is a useful predictor of an employee's ability to absorb and use the knowledge he/she receives from fellow employees. These researchers further contend that high educational qualifications enhance the productivity of knowledge sharing in an organisation since a better educated employee is more likely to generate new ideas and technology and share them with peers (Ojha, 2005; Hveem & Lapadre, 2011).

According to Nonaka (1994), another critical demographic characteristic closely linked to education that facilitates KM practices is work experience. He argues that work experience is particularly important in enhancing KM practice due to the division of knowledge into tacit and explicit. Nonaka (1994) refers to tacit knowledge as experience-based knowledge that cannot be expressed in words, sentences, numbers or formulas, often because it is context-specific/organisation-specific. This view is supported by Bratianu and Orzea (2010) who postulate that except for the procedures, documents, and repositories (explicit knowledge), most of an organisation's knowledge resides in people's heads (tacit knowledge). This knowledge is not easily accessible to other employees. It is this limited accessibility that makes tacit knowledge accumulated by employees over the years (work experience) critical to the organisation as it forms invaluable organisational capital. This study established the amount of work experience employees (people) of selected PHE institutions possessed hence the role of people as a critical KM enabler.

As further support for the role of work experience as an important KM enabler, Polanyi (1998) reasons that it is critical also to establish not only general employee work experience but how much of the work experience is organisation-specific. This view is supported by Riege (2005) who posits that employees with a wealth of experience in their area of expertise not gained in the organisation will possess general know-how in their field. But employees

with a wealth of organisational experience will possess both general and organisation-specific know-how. Such employees will be able to deal more effectively with both general and organisation-specific problems than less experienced employees. The implication is that, as employees leave the organisation, they leave with both general and organisation-specific know-how hence depletion of tacit knowledge reservoirs.

- **Employee age**

On the importance of age as a critical demographic variable in facilitating KM practices, Nonaka (1994) argues that the foundation for the creation of new knowledge is the concept of 'ba' which represents a shared space for emerging relationships. Such space can be physical (e.g. office space), mental (e.g. shared experiences, ideas and ideals) or any combination of them (Nonaka & Konno, 1998). This view is supported by Guthrie (2009) who asserts that the concept of 'ba' is the pooling context in which knowledge is created, shared, and used through mental interaction and in terms of space. Nonaka and Konno (1998) concur that age plays a very important role in enhancing or inhibiting this interaction since it is natural that those of the same generation find it easier to interact among themselves.

#### **2.2.1.4 Reward systems**

Previous researches have revealed that incentives (rewards) that encourage KM activities among an organisation's employees play a critical role as KM enablers (Yu, Kim, & Kim 2008; Gibbons, 2009; Iyer & Ravindran, 2009; Perik, 2014). Given the critical role incentives play in facilitating KM practices, the organisational leadership needs to ensure that employees who support and promote the organisation's KM effort are adequately rewarded. This view is supported by Davenport and Prusak (1998) who concur that employees tend to give their maximum output when they realise that their efforts are recognised and appreciated by the organisation's top management. They further reiterate that incentives should be utilised to encourage employees to repeat their good performance of KM activities and aim to achieve even better results next time.

In further support for the role of incentives as KM enablers, Davenport and Prusak (1998) suggest that top management should stimulate positive KM behaviour of employees through the following means (incentives):

- Ensuring that good KM behaviour such as knowledge sharing and reusing is effectively encouraged and promoted on a daily basis and proponents of such behaviour are rewarded.
- Ensuring that bad KM behaviour, such as hoarding of knowledge, not using best practices and so on, is effectively discouraged and penalised.
- Making sure that good KM behaviour, such as promoting sharing and use of knowledge, is monitored and fused into the organisation's performance appraisal system.
- Seeing to it that individual employees are effectively rewarded for team work, sharing and reusing knowledge in the interests of the organisation.
- Ensuring that training and development programmes in KM behaviour and procedure are encouraged and promoted from the stage of recruitment to remuneration, and so on.

The importance of incentives in enhancing KM is also buttressed by Iyer and Ravindran (2009) who concur that the organisation's leadership needs to ensure the establishment of a knowledge repository in which workers deposit and retrieve knowledge. Other researchers, however, observe that effective application of that knowledge can be ensured only through the introduction of employee incentives (Wang & Noe, 2010; Sandhu, Jain, & Ahmad, 2011; Fullwood, Rowley, & Delbridge, 2013). Such incentives are thought to encourage employees to use those knowledge objects in the repository and to deposit more knowledge. With reference to HE institutions, top management needs to recognise leadership attributes that give prominence to knowledge, professional recognition, and expertise in specific disciplines, and team acceptance for purposes of appointment.

The importance of employee rewards in enhancing KM practices in organisations is also supported by Whittom and Roy (2009) who assert that poor remuneration of employees constitutes a mismatch between employee positions and their skills. Such a mismatch prompts professional staff members to leave the organisation resulting in discontinuity and disruption of the organisational memory (Schilling & Kluge, 2009; Olatokun & Nwafor, 2012). According to Shaari, Rahman and Rajab (2014), disruption of organisational memory

due to loss of professional staff constitutes a critical barrier to the implementation of new ideas and generation of knowledge.

This study established whether PHE institutions covered in this study recognised and rewarded employees who promoted KM practices. Recognising and rewarding employees who generate and share knowledge enables the institutions to avert staff turnover which results in the loss of expensive and revered tacit knowledge. It also motivates staff to generate and share knowledge.

### **2.2.2 Organisational structure**

Organisational structure is a critical factor in KM and the management of knowledge workers. This view is supported by Lee and Choi (2007) who note that organisational structure plays a crucial role by encouraging or inhibiting practices of KM. KM practices are encouraged or discouraged by influencing how an organisation conducts its business in terms of how knowledge is generated and shared among employees of the organisation. Various researchers argue that organisational structure is important in facilitating KM practices as it influences knowledge and communication channels and trust (Mladkova, 2011; Lee & Hong, 2014; Mohamed, 2014). The role of organisational structure as a KM enabler is supported by Shanshan (2013) who argues that organisational structure influences permeability of borders between departments and other issues. Elements of organisational structure include the reporting structure, IT, and physical infrastructure. These are discussed in more detail below.

#### **2.2.2.1 Reporting structure**

Nonaka and Takeuchi (1995) classify organisational structures into three categories:

- Top-down structures;
- Bottom-up structures; or
- Combined structures (the middle-up-down model).

According to Amayah (2013), most organisations in the developing world comprise of a hierarchical top-down structure with a centralised and bureaucratic make-up that inhibits generation of new knowledge. The negative effect of hierarchical structures on KM is supported by Nonaka and Takeuchi (1995) who contend that the top-down structure is the

least effective since it is based on a strict division of labour and limits cooperation and knowledge sharing. In top-down organisational structures, the power and decision-making responsibilities and competencies are concentrated in the hands of top managers. These managers create basic concepts, objectives and ideas and then distribute them as tasks to their subordinates in the organisation thus severely limiting the role of low level employees (Robbins, Millet, & Cacioppe, 2009).

Further confirmation of how top-down structures inhibit KM is given by Mladkova (2011) who observes that knowledge channels open only in the top-down direction and only simple explicit knowledge passes through them. Subordinates do not communicate on the horizontal level and the cooperation of individual hierarchical levels is severely curtailed. This view is supported by Amayah (2013) who argues that the bottom-up flow of knowledge in hierarchical structures is a serious challenge as hierarchical borders damage knowledge which then loses its context. In hierarchical structures, it is the flow of tacit knowledge that is more curtailed as it exists only in the heads of individuals and is owned and shaped only in specialised parts of departments (Mladkova, 2011).

To mitigate the negative effects of hierarchical structures on KM practices, Mladkova (2011) suggests the adoption of combined structures which provide a much more suitable, effective and convenient environment for KM and management of knowledge workers. Combined structures are considered more flexible and flat where decision making is related to knowledge, and where knowledge is concentrated and localised in the middle or bottom level of the organisation. Decentralisation of knowledge in an organisation stimulates creativity.

The criticality of reporting structure as a KM enabler is highlighted by Smith and Lumba (2008) who posit that the availability of knowledge in an organisation depends on the appropriateness of the reporting structure. Such a structure should be a matrix or network type where information flows both vertically and horizontally thus ensuring the following (Smith & Lumba, 2008):

- Formal networks exist to facilitate dissemination of knowledge effectively
- A well-structured, flexible, up-to-date knowledge map exists to lead staff in the direction of the knowledge they require

- The organisational structure caters for the position of Chief Knowledge Officer (CKO) and he/she is effective with adequate power and authority to facilitate knowledge creation and sharing.

This study established the role played by the reporting structure as a critical KM enabler by determining whether a hierarchical organisational structure did not dominate in PHE institutions covered in this study. It also determined whether formal networks, up-to-date knowledge maps, and the position of CKO existed to facilitate KM practices.

### **2.2.2.2 Technology**

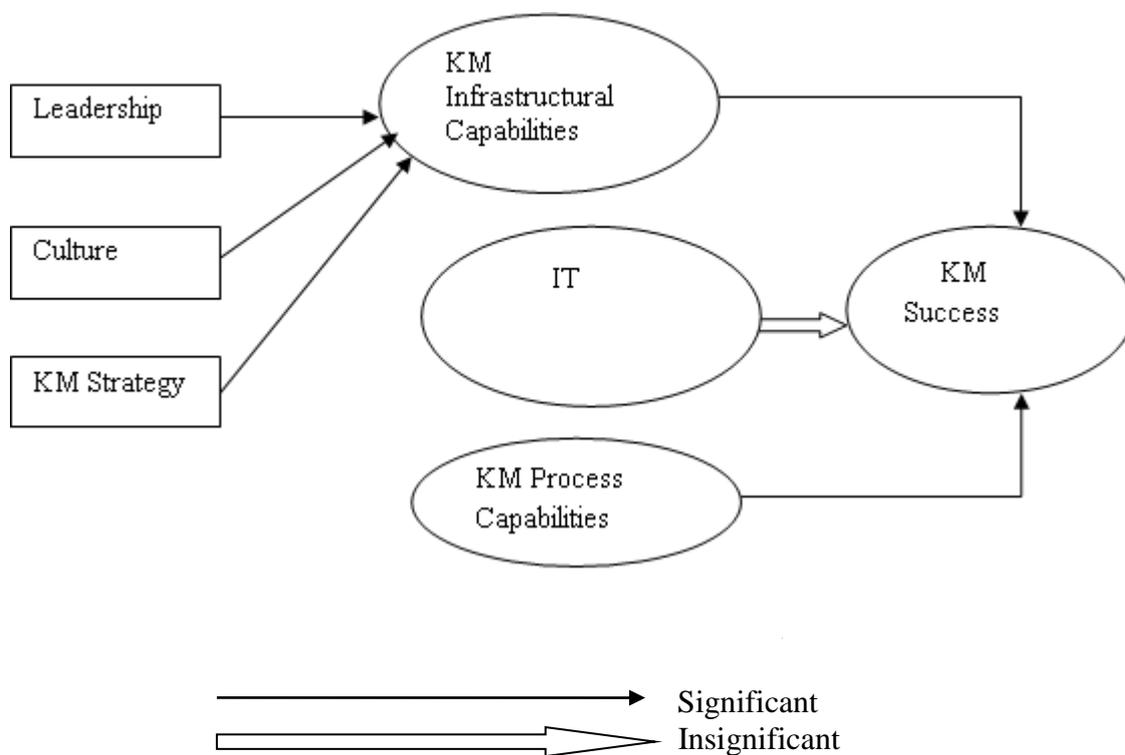
Researchers have identified information technology (IT) as the groundwork for implementation of KM practices and tools since it leads to easier and faster adoption of KM practices (Lehner & Haas, 2010; Bordoloi & Islam, 2012; Hafeez-Baig & Gururajan, 2012; Leung, 2015; Micheni, 2015). Information technology is regularly cited in KM literature as a vital KM infrastructural capability, enabling core KM activities such as knowledge creation, knowledge flow and knowledge application (Gold, Malhotra & Segars, 2005; Pandey & Dutta, 2013). Other researchers concur that IT plays a critical role in the SECI model by facilitating KM processes of socialisation, externalisation, combination, and internalisation (Lopez-Nicholas & Soto-Acosta, 2010; Jarrahi & Sawyer, 2013; Panahi, Watson & Patridge, 2013).

Further support for IT as a critical KM enabler is proffered by several other writers who observe that IT is a major determinant of KM success (Gordeyeva, 2010; Sedighi & Zand, 2012; Zhang, Vogel & Zhou, 2012; Margilaj & Bello, 2015). For instance, the quality and speed of knowledge generation, transfer, and application are improved considerably with the support of IT using technologies such as intranets (Averweg, 2012; Canzano & Grimaldi, 2012; Kokemuller, 2013; Chigada, 2014). Some researchers suggest that knowledge repositories and group decision support systems are other IT tools that stimulate knowledge generation, transfer, and application (BenMoussa, 2009; Ajmal, Helo, & Kekale, 2010).

The role of IT in enhancing KM practices is also reinforced by Tiago, Tiago, and Conto (2010) who contend that the expansion of internet and e-commerce technology have allowed

organisations to establish new forms of knowledge creation. This view is supported by Huang and Pan (2010) who concur that IT provided such organisations with opportunities to enhance their capability to manage and apply knowledge.

Further support for the role of IT in facilitating KM practices is provided by Gold, Malhotra, and Segars (2005) who posit that successful use of IT requires that it be fused with other KM process capabilities and KM infrastructural capabilities. Such a fusion of IT and other organisational capabilities is a direct determinant of organisational effectiveness as indicated in Figure 2.4.



**Figure 2.4:** Assimilation of IT within other KM processes (Gold, Malhotra, and Segars, 2005: 112)

According to Figure 2.4, IT assimilation within KM process capabilities is critical to the achievement of KM success. It shows IT as a component of other elements of KM practice that include:

- i) KM strategy

Chen and Huang (2011) view KM strategy as the balancing act between the internal capabilities of the firm (strengths and weaknesses) and the external environment

(opportunities and threats). It is the organisation's business strategy that takes into consideration its intellectual resources and capabilities. This involves the identification of knowledge gaps and surpluses through knowledge strategy so as to enhance organisational performance (Hansen, 2009).

#### ii) Culture

Another element of KM practice that works with IT to enhance organisational effectiveness is organisational culture. According to Tong and Mitra (2009), a supportive culture is vital for the successful implementation of KM initiatives. This has been discussed in section 2.2.1.

#### iii) Leadership

Leadership is another important element that enhances KM effectiveness in organisations. To achieve KM effectiveness through the leadership process, Yu, Kim, and Kim (2008) propose the appointment of a KM officer or manager to oversee KM activities in an organisation. The importance of the KM officer is strengthened by Wendling, Oliveira, and Gustaud-Macada (2013) who concur that the KM officer sets the overall direction for the organisation's KM programme and assumes responsibility and accountability for KM-related activities. Leadership as a KM enabler is discussed in detail in section 2.2.3.

This study established, through the questionnaire (see appendix 1), whether IT-based knowledge management systems (KMS) (KM enabler) existed in selected PHE institutions covered in this study and their role in facilitating KM practices.

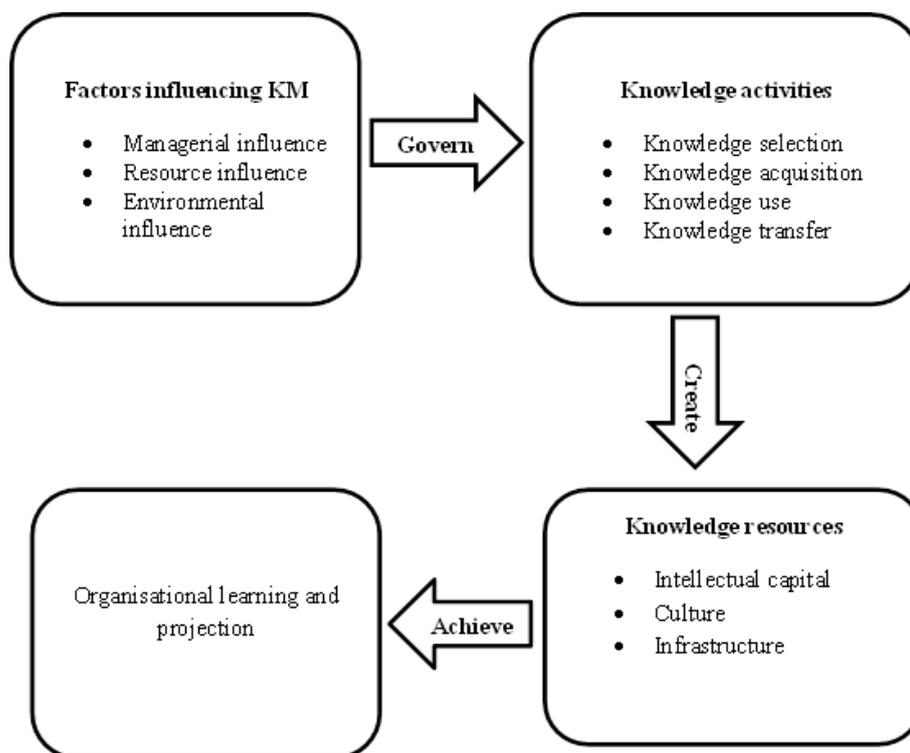
### **2.2.3 Strategic leadership**

A number of researchers suggest that strategic leadership plays a critical role in implementing KM for three reasons (Jones & Mahon, 2012; Woodman & Zade, 2012; Jain & Jeppesen, 2013; Pirkkalainen & Pawloski, 2013):

- a. Establishment of vision for the organisation as well as developing an action plan for the implementation of that vision.
- b. Identification of opportunities that generate knowledge.
- c. Championing and influencing cultural and organisational transformation since KM involves modifying processes, practices, and organisational structures.

This study determined the role played by strategic leadership in championing KM policies and processes at selected PHE institutions in Botswana.

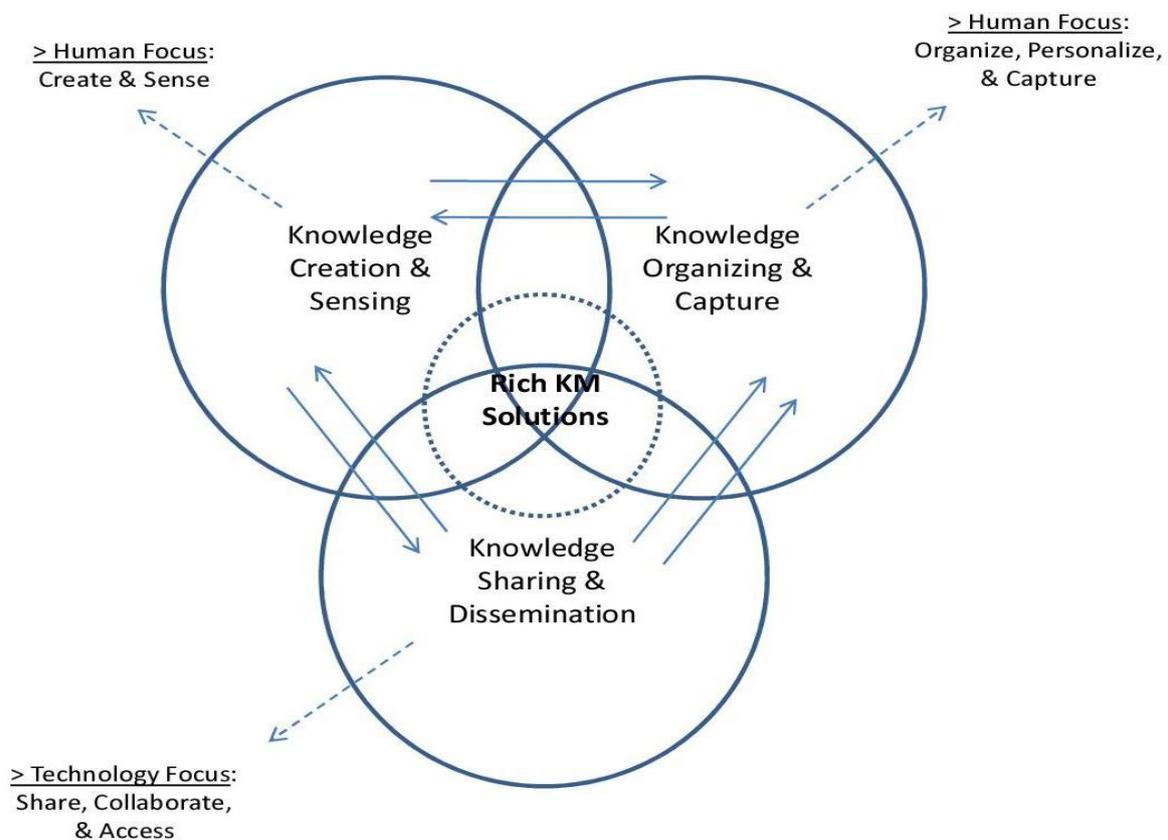
Donnelly (2006) emphasises the role of strategic leadership in KM by suggesting that senior management support is vital in changing the behaviour of people and for introducing perspectives in KM. This view is supported by Rowe and Nejad (2009) who concur that leadership is one of the most critical factors in the successful implementation of KM initiatives. Other factors such as culture and IT infrastructure come second but they also require the strategic leader's initiative. The importance of the top leadership of an organisation in enhancing KM practices is also emphasised by Holsapple and Joshi (2004) through their KM framework. This framework presents a cyclical three-fold approach to KM in organisations. The foundation of this approach is managerial influences and how they establish resources and influence the environment which has a huge bearing on the organisation's KM practices as indicated in Figure 2.5.



**Figure 2.5:** Holsapple and Joshi's KM framework (Holsapple and Joshi, 2004: 29)

According to Figure 2.5, KM factors such as managerial influence, resource influence, and environmental influence, which are the responsibility of institutional leadership, govern knowledge activities which create knowledge resources. Creation of knowledge resources leads to the achievement of organisational learning and projection of organisational performance.

The importance of leadership as a KM enabler is further emphasised by Botha, Kourie, and Snyman (2008) who advocate an integrated approach to KM with organisational leadership taking a leading role in establishing a conducive environment for KM as shown in Figure 2.6.

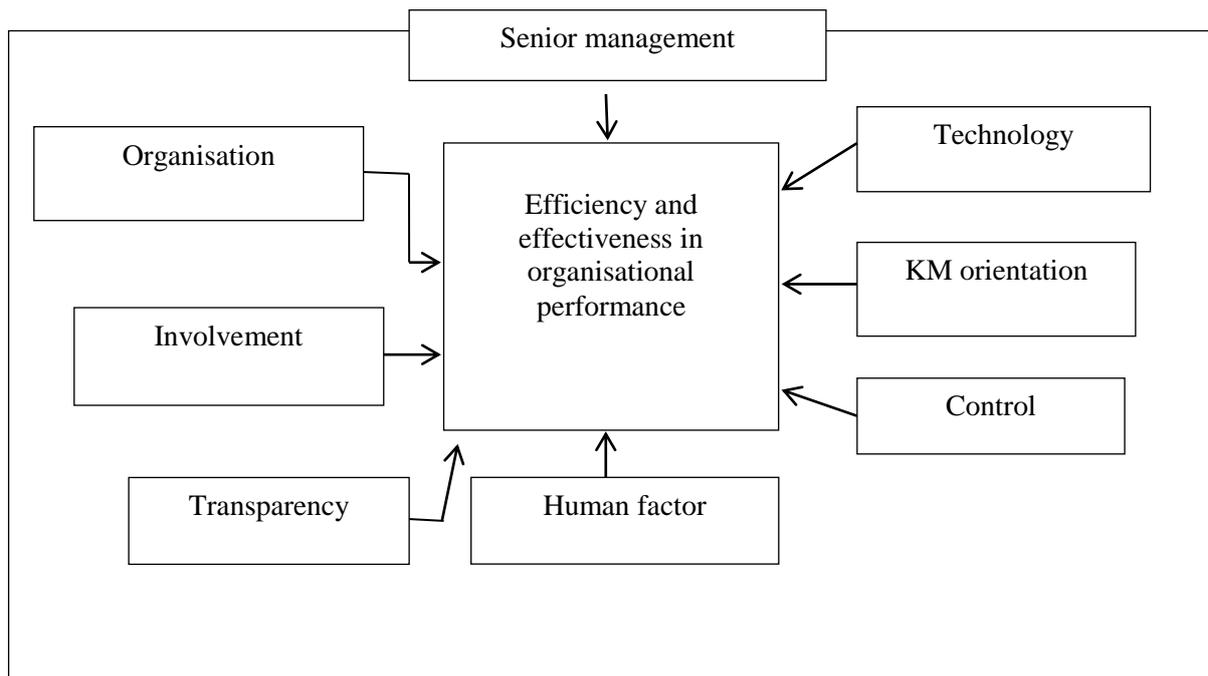


**Figure 2.6:** The Knowledge Management Process Model (Botha, Kourie, and Snyman, 2008: 109)

The model in Figure 2.6 offers a more realistic overview of the KM process in an organisation. The three broad categories overlap and interact with one another leading to more effective KM practices with the focus being managerial initiatives. The model shows

which of the three categories are more people focused and which are more technology oriented.

The model above is based on the classification of best practices in KM which are believed to be the centrality of senior management, technology, organisation, KM orientation, control, the human factor, transparency, and the involvement of stakeholders as shown in Figure 2.7.



**Figure 2.7:** Model of analysis of practices in organizational KM (Oliva, 2014:1059)

According to Figure 2.7, efficiency and effectiveness in organisational performance is a culmination of the interplay among several variables such as the role of senior management (organisational leadership) and organisational culture (stakeholder engagement, transparency). Other important factors that enhance organisational efficiency and effectiveness also include the effective harnessing of employees (human factor), technology, organisational design, and KM orientation. Successful integration of all these variables depends on the effectiveness of strategic leadership.

Further research on the role of leadership in facilitating KM practices indicates that for KM initiatives in an organisation to be effective, top leadership should offer good support at the

highest level which will ensure the following (Smith & Lumba, 2008; Ansari, Youshanlouei, & Mood, 2012):

- At all levels of the organisation, there is a general comprehension of KM in terms of its application to the organisation's business;
- All business functions such as HR, learning and training, customer service and so on are linked to KM;
- KM is accorded adequate representation at the board level by having a board member responsible for KM among the Board of Directors in the same way that there are board members for finance, administration and so on;
- Top leadership demonstrates unequivocal commitment and overt action with regard to KM policy, guidelines and activities;
- Top leadership supports and rewards knowledge sharing, learning and other activities and behaviours that stimulate KM initiatives;
- There is an ongoing review of KM effectiveness at senior level and in the whole organisation; and
- Top management has a strong understanding and appreciation of the skills of their staff.

Over and above the measures that should be adopted by organisational leadership to enhance KM that are outlined above, further research on the role of leadership suggests that leadership's strategic intent is a critical KM enabler. Leadership strategic intent fosters a context in which creativity and knowledge creation are promoted. Leadership provides vision, motivation, systems, and structures which facilitate KM initiatives (Seidler-de Alvis & Hartmann, 2008; Rosendaal, 2009; Khalifa & Liu, 2010; Chen & Huang, 2011; Jain & Jeppessen, 2013; Nakano, Muniz & Batista, 2013). There is a need for top leadership of organisations to provide a context that is conducive to enabling effective KM practices. Such a context creates a conducive environment where knowledge workers can create, share and use both tacit and explicit knowledge in order to realise breakthrough solutions (Weiss, Donagan & Hughs, 2010; Chen, Pollard & Puriveth, 2011; Edwards, 2011; Heavin & Adam, 2012).

This study therefore established if the leadership of selected PHE institutions recognised the importance of KM by rewarding employees who generated, shared, and used knowledge. It

also established the extent to which the leadership of these institutions created an environment that promoted collaboration, openness, trust, flexibility and opportunity for innovation. This would mean that the leadership would be playing a role in facilitating KM practices in these institutions.

### **2.2.3.1 Leadership and the creation and retention of intellectual capital**

One important role of organisational leadership in facilitating KM practices is the creation and retention of intellectual capital (IC). Bhatti and Zaheer (2014) view IC as the non-financial and non-physical resources used by a business organisation. It is knowledge which can be converted into profit. The above authors argue that the real value of knowledge-oriented firms cannot be determined by the traditional accounting procedures only since the worth of a retail shop does not lie in bricks or even inventory alone. They posit that real value in knowledge-intensive organisations also lies in an intangible asset called IC which represents the main output of all efforts and steps taken within knowledge as a central figure. Chan and Lee (2011) suggest that this intellectual material – knowledge, information, intellectual property, and experience – that can be used to create wealth and value for the organisation is the collective brainpower of an organisation.

The main dimensions of organisational IC are the sum of three fundamental categories of organisational knowledge assets namely, human capital (HC), structural capital, and relational capital (Schiuma & Carlucci, 2011; Bhatti & Zaheer, 2014). These are outlined below.

- Human capital

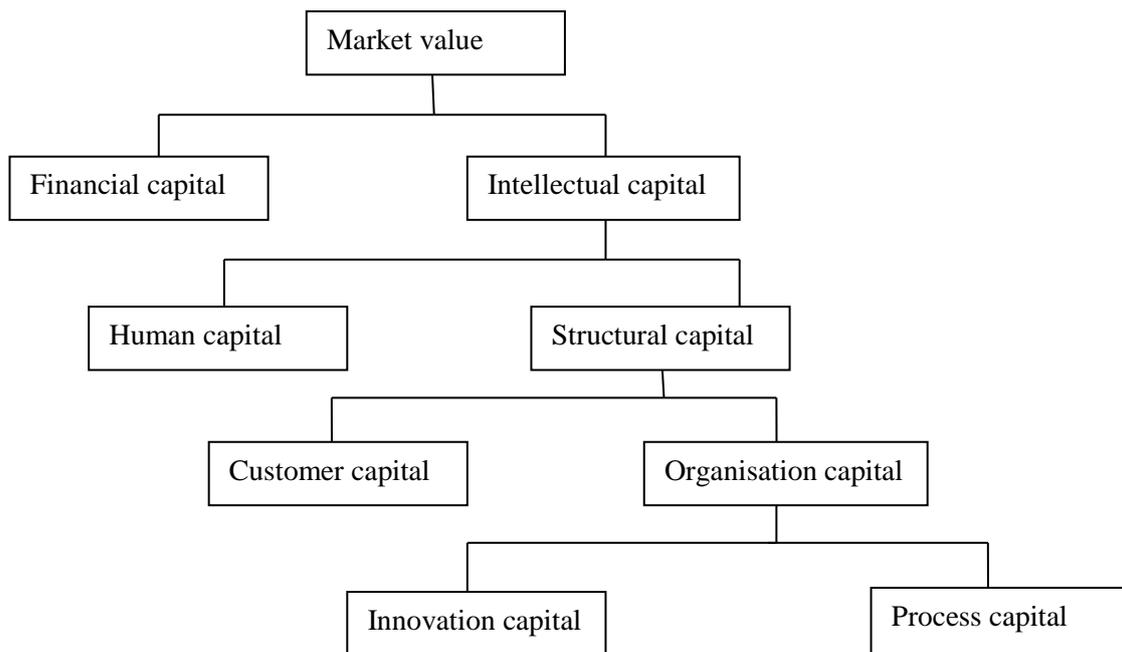
This is the combined knowledge, skills, innovativeness and ability of the firm's individual employees to meet the task at hand. It also includes the organisation's values, culture, and philosophy and, due to its tight connection to the individual, it cannot be owned by the firm. In family businesses under which PHE institutions fall, there are challenges of attracting competent HC due to reserving jobs for family members irrespective of their qualifications and level of competence (Dawson, 2012).

- Structural capital

This can be owned by the firm and can even be traded. It includes the hardware, software, organisation structures, patents, trademarks, and so on – all of which remain at the office when the employees go home. It also includes customer capital, that is, the relationship developed with key customers. Figure 2.8 illustrates these different forms of capital.

- Relational capital

This includes knowledge assets related to a company’s relationships with its stakeholders such as partnership agreements with suppliers, experts, research centres, and government. Relational capital also includes relationships with regulators, commercial power, negotiating capacity, distribution channels, and environmental activities. It also includes the perceptions that stakeholders hold about the organisation, that is, the image, customer loyalty, and so on (Muller & Raich, 2005; Schiuma & Carlucci, 2011). These are illustrated in Figure 2.8.



**Figure 2.8:** Skandia market value (Muller and Raich, 2005:78)

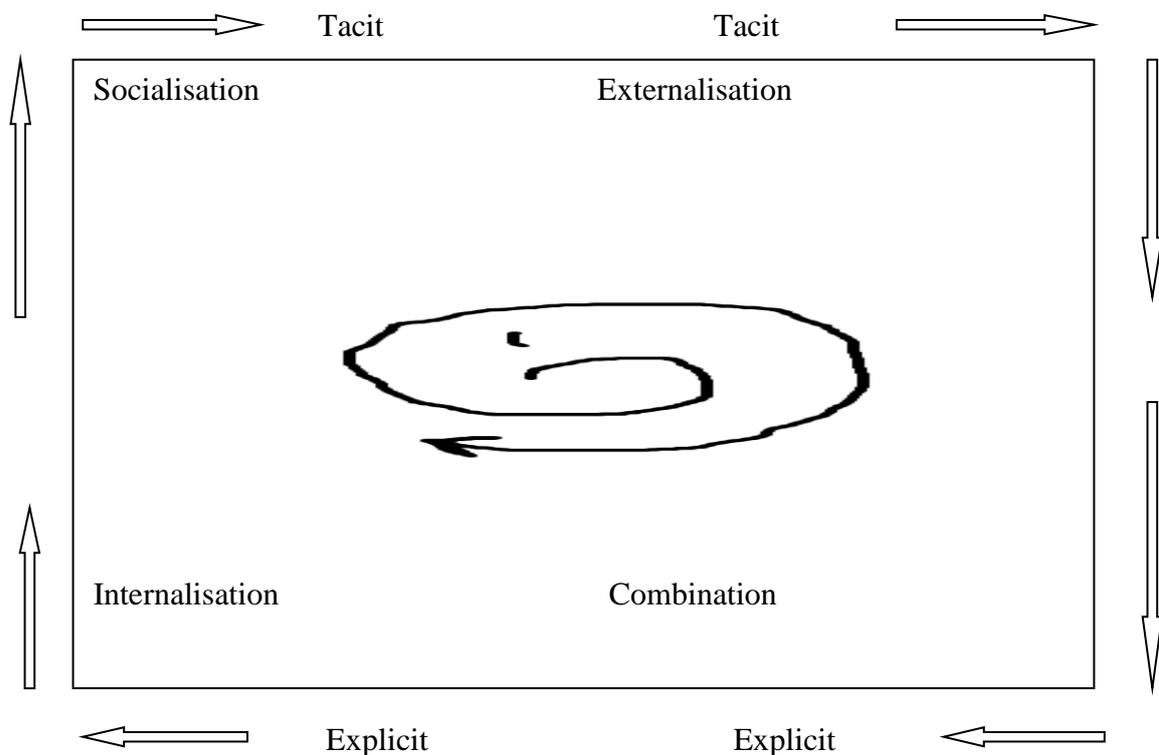
The development of IC is a major consequence of successful KM. People bring in their input and services to create value for the organisation and leadership becomes crucial here in as far as it nurtures and develops this personal HC. This is done through influencing the way processes are carried out in the organisation. Leadership also influences the working

atmosphere, the level of cooperation, the exchange of knowledge, and the delegation of responsibility and competencies (Muller & Raich, 2005).

### 2.2.3.2 Leadership and knowledge creation

Krogh, Nonaka and Rechsteiner (2012) contend that several theoretical and empirical contributions have concluded that leadership plays a significant role in knowledge processes such as the sharing, creation, capture and the successful implementation of KM efforts. For instance, (Yang, 2007) suggests that leadership plays such pivotal roles in organisations as ‘innovator’, ‘mentor’, or ‘facilitator’ and that all these roles are positively related to knowledge sharing. This study explored whether leaders in PHE institutions in Botswana fulfilled such crucial roles and whether organisational policies and procedures were flexible enough to enhance knowledge sharing.

Further research has revealed that leadership has a positive effect on SECI (socialisation, externalisation, combination, and internalisation as shown in Figure 2.9).



**Figure 2.9:** The SECI Model (Nonaka and Takeuchi, 1995:113)

The four modes of knowledge conversion (SECI) that interact in the spiral of knowledge creation resulting in the continuous creation of new knowledge (as depicted in Figure 2.9) are discussed below.

### **Socialisation**

According to Davenport and Prusak (1998), socialisation is the sharing of tacit knowledge through face-to-face communication or shared experience, for example, apprenticeship. It is the synthesis of tacit knowledge across individuals usually through joint activities instead of written or verbal instructions (Nonaka and Takeuchi, 1995). In PHE institutions, leadership should establish an environment that allows employees to meet regularly both formally and informally in order to share knowledge through shared experiences.

### **Combination**

Nonaka and Takeuchi (1995) argue that combination entails synthesising of multiple bodies of explicit knowledge to create new, more complex sets of explicit knowledge through communication, integration and systemisation of multiple streams of explicit knowledge. It also implies reconfiguration, re-categorisation, re-examination, and re-contextualisation of existing explicit knowledge, data, and information to produce new explicit knowledge.

Leadership of PHE institutions should create an environment that allows staff an opportunity to use their past experiences (learning) to re-configure and re-contextualise current explicit knowledge. This facilitates the creation of new explicit knowledge that will make organisational processes such as administration of assessments, classroom delivery, and curriculum development more effective and efficient. This study determined to what extent this was happening in PHE institutions through the questionnaire.

### **Externalisation**

According to Bratianu and Orzea (2010), externalisation involves the process of converting tacit knowledge into explicit knowledge in the form of words, pictures, concepts, and figurative language such as analogies, metaphors, narratives, and so on. It assists in translating the tacit knowledge held by individuals into explicit knowledge that can be more easily understood by other members of the organisation. Leadership of PHE institutions

needs to create an operating environment where experienced staff members are motivated to compile documents that describe how seemingly difficult situations were effectively handled to prevent catastrophe. These will constitute lessons learned for those institutions, for example, how they handled potentially explosive student protests (codification).

### **Internalisation**

Chua and Lam (2005) observe that internalisation implies the conversion of explicit knowledge into tacit (learning by doing) thus making the explicit knowledge part and parcel of the knowledge base of the individual. If this happens, then the knowledge becomes an organisation's asset. This view is supported by Nonaka, Toyama, and Konno (2006) who assert that the explicit knowledge may be embodied in action and practice, so that the individual acquiring the knowledge can re-experience what others have gone through. They suggest that an organisation's employees can acquire tacit knowledge in virtual situations by reading manuals, experiential learning through doing, and trial and error. Tacit knowledge can also be acquired by reading stories written by experienced members including those who may have left the organisation.

Past researches have emphasised the importance of the environment in enhancing knowledge creation and sharing. According to Nonaka, Toyama, and Konno (2006), the context for knowledge creation is 'ba', and the central purpose of organisational knowledge creating theory is to identify conditions which enable knowledge creation (in the ba). This enhances knowledge availability and organisational performance.

Through the questionnaire, this study established the extent to which leadership of PHE institutions created conditions which enabled knowledge creation, sharing, use, and retention. The study determined the presence or absence of enabling conditions (KM enablers) that promote or hinder knowledge creation. It also established the role that leadership was playing in facilitating or hindering knowledge generation, sharing and use.

#### **2.2.3.3 Ownership, management structure and KM implications**

According to Kotecha, Wilson-Strydom, and Fongwa (2012), virtually all private tertiary education institutions that emerged in Botswana between 2007 and 2010 were family-owned

and owner-managed businesses. The concept of family ownership and management is discussed in Chapter 3 (section 3.3). It is thus important to understand some theoretical perspectives on the effect of family ownership and management on KM practices of organisations.

According to Palma (2005), the influence of the family may either foster or inhibit the exploitation of knowledge. Therefore, there is a need to establish what effect family control has on KM practices in PHE institutions in Botswana, especially on the relationship between social capital and product innovation. This means the active connections among people in the organisation - trust, mutual understanding, and shared values and so on - that bind the members of PHE institutions as human networks and communities. This in turn enables cooperation and collaboration thus making innovation much easier.

The effect of family management on KM is further highlighted by Carrasco-Hernandez and Jimenez-Jimenez (2013) who suggest that family firms can be more innovative and aggressive than large firms due to their smaller size, greater local market knowledge, and financial independence. These authors, however, note that the problem of family firms is that they are often introverted, burdened by old traditions, inflexible and resistant to change. This view is supported by Segaro, Larino, and Jones (2014) who concur that family businesses make choices based on the reference point of the organisation's dominant principals. These principals make decisions in a way that preserves the socio-emotional wealth of the family business. This wealth consists of the effective endowment of family owners, including the family's desire to exercise authority and enjoy family influence.

The wealth referred to above also includes the maintenance of clan membership within the business, and the appointment of trusted family members to critical positions in the organisation. Some researchers contend that the wealth also includes retaining a strong family identity, and continuing the family legacy and dynasty (Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson, & Moyano-Fuentes, 2007; Berrone, Cruz, & Gómez-Mejía, 2012). As a result, family firms, unlike non-family firms, are perceived as risk-averse, conservative, and resistant to change (Welsh, Memili, Rosplock, Roue, & Segurado, 2013; Segaro, Larino, & Jones, 2014).

Family influence on KM is further reinforced by Sanchez-Famoso, Maseda, and Iturralde (2013) who contend that the development of sustainable competitive advantage in the family business is determined by the family's involvement in the organisation ('familiness'). This view is supported by Carrasco-Hernandez and Jimenez-Jimenez (2013) who concur that sustainable competitive advantage in family firms also involves the development of important resources. Such resources include the innovative capacity or social capital which in turn, is influenced by the family power, experience, and culture. In family firms the power to control is exerted both directly through family members being chief executive officers (CEO) and Board chairpersons, and subtly through the appointment of family members to the senior management team (Carney, 2005). This study explored to what extent this was happening in the highly regulated and dynamic environment in which PHE institutions were operating which then informed the development of a model that makes the aforementioned possible.

On the effect of the relationship between family influence and social capital, Beck, Janssens, Debruyne and Lommelen (2011) assert that family power negatively moderates the relationship between social capital and innovation. This is because the family experience, taken to be the information, knowledge, judgment and intuition that come through successive generations, affects the organisation's innovative capacity. This view is supported by Berrone, Cruz, and Gómez-Mejía (2012) who concur that the perpetuation of family culture and values through the business and the intention to pass the business to subsequent generations can foster a generational investment strategy. This strategy creates capabilities, thus preserving the socio-emotional wealth and promoting learning or family experience.

However, the extent to which generational investment strategy creates organisational capabilities depends on whether non-family managers and employees share the same family culture and values (Beck, et al, 2011). Should this not happen, the antagonism between the two sides would impair social capital development with disastrous effects on organisational performance and perpetuity (Berrone, Cruz, & Gómez-Mejía, 2012). This study examined the extent to which this was happening in PHE institutions in Botswana.

Since family businesses need to survive and pass their businesses to the next generations, the organisations should adapt to organisational changes and innovate. Beck, et al (2011) suggest that this process of knowledge generation requires the participation of employees who have a

good relationship with their partners. Since individual learning is not sufficient to guarantee success in new product development, employees must share resources and knowledge with other employees in the organisation. This study therefore established the role KM enablers were playing in promoting or hindering effective generation, sharing, utilisation, and retention of knowledge in selected PHE institutions (family businesses).

### **Family business characteristics that may have negative KM implications**

Researchers have indicated that family businesses exhibit certain characteristics which have a negative effect on KM and innovation (Beck, et al, 2011; Miladi, 2014). These characteristics include a strong inter-relationship between the family and the business, and dominance of management from within the family. These are discussed below.

#### **a) Interrelationship between the family and the business**

The family is, formally and informally, at the centre of the organisation. This results in two structures, namely the family and the business, increasing the potential for conflict which affects both the family and the business sphere. This view is supported by Zody, Sprenkle, MacDermid, and Schrank (2009) who argue that the interrelationship between family and business leads to the creation of parallel decision-making lines. These parallel decision-making lines raise the complexity of doing business and reduce the clarity of the business process. The intermingling between the family and the business has the following negative effects (Zody et al, 2009):

i) The organisation has to cope with different life situations and family developments which have an impact on the organisation's human resources (HR) and financial endowment. Examples of such developments include family events such as marriage, divorce, child birth, wedding, retirement, death, and religious practices. These have an impact on the whole organisation instead of being confined to the family.

ii) The complexity of relationships, particularly if multiple persons are involved in various roles that are not fully concordant with each other, may lead to conflict and a negative impact on both the business and the family. Such conflicts include future business plans, choice of managers, unilateral decision-making by family members, remuneration of

family members as employees and managers, distribution of profits and reinvestment decisions (Lievens & Lambrecht, 2008).

The negative effect of the intermingling between the family and the business is bolstered by Lievens and Lambrecht (2008) who postulate that, within the family business, governance is not only necessary for the organisation but also for the family sphere. These authors add that governance favours the unity of the organisation standing behind the enterprise and regulating the relationship between the family members and the organisation. Thus governance of the firm has to take into account the developments within both the organisation and the family. Such a link between the family and business creates friction between family and non-family managers with the latter feeling that there is lack of professionalism in the organisation.

#### **b) Dominance of management from within the family**

According to Kostia (2008), domination of management structures by family members results in the prevalence of paternalism and nepotism as is the existence of emotional and informal decision-making. All these have negative implications on KM practices. Paternalism and nepotism manifest themselves through allocating positions based more on family relations and networks than on performance, experience or qualifications. For example, one PHE institution has a Pro-Chancellor, Vice-Chancellor, two Deputy-Vice Chancellors, and one Deputy Pro-Vice Chancellor being members of the same family (Botho University, 2016). The emphasis is more on who you are rather than what you are capable of doing in the organisation, while decisions can be made at home over family dinner or while watching a movie (Lievens & Lambrecht, 2008).

Focussing on the negative effect of paternalism on KM practices, Kostia (2008) concurs that the paternalistic management style characteristic of family businesses is responsible for the well-established resistance to share information and knowledge with non-family members. This leads to the creation of knowledge barriers. Again, the paternalistic management style leads to an authoritarian management style, a low level of delegation, and little information/knowledge transfer. These are some of the issues that this study sought to establish through a self-administered questionnaire.

## **Knowledge management process in family businesses**

Baranska (2011) argues that due to the strong entrepreneurial spirit of their members, family businesses have a higher chance of survival than non-family businesses. Again, due to their family character, family businesses have a longer horizon to their existence as there is a willingness to pass the business on to future generations. In such organisations, KM is of vital importance due to the danger of losing core competencies in the succession process, particularly the tacit dimension.

The family business is an organisational challenge that combines two types of social structures: the family and the business (Baranska, 2011). These two entities have different sets of rules and goals that influence their behaviours. As such, Safin (2007) posits that for the family business to survive in the competitive environment it has to successfully manage the delicate and complex relations between family and business. This view is supported by Baranska (2011) who concurs that in non-family owned organisations the only criteria for hiring is the knowledge and capabilities possessed by the individual. However, in family-owned businesses, the position is usually passed along the blood line and then the organisation trains and develops the individual (paternalism).

According to Safin (2007), paternalism demoralises those who are in the organisation through merit resulting in their departure. Such human capital flight creates challenges with the application of tacit knowledge through generations as this main source of strategic capabilities (tacit knowledge) is difficult to transfer and easy to lose. This is especially so with the generational change among managers which characterises family organisations.

The negative effect of family influence on KM is further highlighted by Cruz, Firfiray, and Gomez-Mejia (2011) who reason that close relations among family members may crowd out non-family members. These authors further contend that many opportunities for family members to interact in both private and professional life are a natural background to creating mentoring relationships among family managers. However, this emotional closeness can lead to family conflicts that cascade down to the business thus endangering the whole learning process (a critical KM practice) of the organisation.

### **2.3 Applying KM in higher education**

According to Laal (2011), using KM techniques and technologies in higher education (HE) is as vital as it is in the corporate sector. He further postulates that if practised effectively, KM can lead to better decision-making capabilities, reduced product development cycle time, (for example, curriculum development and research), improved academic and administrative services, and reduced operational costs.

The importance of KM in HE is further supported by Pinto (2012) who concurs that HE institutions can deeply derive benefits from KM solutions through the creation and maintenance of relevant knowledge repositories and improving access to knowledge. He further postulates that leadership can ensure KM benefits by enhancing the knowledge environment and through valuing knowledge. Some researchers argue that given the importance of knowledge in the current knowledge economy that has been discussed, it is prudent, therefore, that HE institutions in the 21<sup>st</sup> century are ready to embrace KM (Mathew, 2010; Laal, 2011).

Further application of KM in HE is through research. Vessuri (2010) argues that research is a critical element in HE in the global knowledge economy. This recognition comes after decades of lack of appreciation of the crucial role of both research and HE in the economic development of developing countries. Research in HE is crucial as it assists in the production of new knowledge and the reproduction of existing knowledge as well as improving the critical reasoning capabilities and specific skills of individual academics (Singh & Manuh, 2007; Vessuri, 2010). Thus the traditional role of HE institutions is universally agreed to be the preservation and transmission of knowledge, culture, and social values through education and research.

Vessuri (2010) further observes that research and scholarship are critical in HE because of their inherent value and their usefulness in the production of a critical stock of useful knowledge. He further argues that, if properly applied, research immensely benefits the institutions and society as a whole. This enables institutions to generate new knowledge that assists them to solve their own problems as well as community, national, regional, and international problems. This view is reinforced by Singh and Manuh (2007) who argue that,

for it to be effective, HE should perform well in all three core functional areas of teaching, research, and community engagement in order to address new knowledge needs.

## **2.4 Chapter summary**

The purpose of the literature review presented in this chapter was to establish a theoretical framework in the area of KM enablers in organisations, driven by organisational leadership at the strategic level. The review helped to establish the extent of the research already done in this area by many KM experts. It outlined the importance of knowledge in enhancing organisational capability by emphasising the role played by the knowledge workforce and knowledge work.

The chapter identified important KM enablers in organisations and examined the role they play in facilitating KM practices in organisations which enhances organisational performance. These enablers include organisational culture, trust, structure, reward systems, technology and innovation (IT), and strategic leadership.

The literature review also assisted the writer to address the research problem and research objectives through studies and models proposed by many other authors on the subject. It also helped to show how this study fits into the current body of knowledge on the role played by leadership in creating an environment conducive to KM activities and its impact on organisational performance. In a nutshell, the literature review served as an indicator of how widely the author has examined the subject, by showing awareness of the main theories, structures, debates, models, and propositions in the topic area. It provided a conceptual framework which enables the reader to have a better understanding of research objectives and methodology.

The next chapter gives an outline of the HE environment in Botswana focussing on the regulatory regime and also provides evidence of family ownership and management and the role it plays in enhancing or inhibiting KM practices. The chapter also outlines challenges facing PHE institutions in Botswana which have a bearing on KM.

## **CHAPTER 3**

### **THE PRIVATE HIGHER EDUCATION ENVIRONMENT IN BOTSWANA AND IMPLICATIONS FOR KNOWLEDGE MANAGEMENT**

#### **3.1 Introduction**

In the previous chapter, material on the conceptual framework of this study was presented. In that chapter, we reviewed relevant literature on the concepts of KM and the related models as well. As a follow-on to chapter two, this chapter seeks to provide the context of PHE in Botswana focusing on the institutional regulatory framework under which PHE institutions are operating and its implications on KM practices.

The chapter describes the highly regulated PHE environment, which necessitates the need for effective KM practices. In order to give the reader a clearer perspective on the development of the PHE sector in Botswana, the chapter starts with an overview of the PHE environment in Botswana. As part of the context of the PHE environment, Chapter 3 also discusses the challenges facing PHE institutions in Botswana that can be addressed through KM solutions. It is important to note that all the five PHE institutions covered in this study are family-owned and owner-managed. This chapter thus provides evidence of family ownership and management (as part of the contextual framework of PHE institutions) and its implications on KM.

#### **3.2 The PHE environment in Botswana**

According to Kotecha, Wilson-Strydom, and Fongwa (2012), there has been a sharp increase in demand for higher education (HE) in Botswana from 2007. It is against this background that Botswana attempted to expand HE by encouraging investment in the PHE sector. The call for private participation in the PHE sector led to a dramatic rise of private colleges and universities. These institutions include Baisago University College, Limkokwing University of Creative Technology, Botho University, Gaborone Institute of Professional Studies (GIPS), ABM University College, and others. These PHE institutions constitute the sample of this study.

According to the Tertiary Education Council (2013), while these institutions are not directly funded by the government, they receive specified quotas of government-sponsored students based on their capacity and infrastructure. The reason why PHE institutions receive government-sponsored students is that the government wants these institutions to complement the efforts of public tertiary institutions in providing HE to Botswana. This is due to the realisation that public institutions could not cope with the teeming number of potential university students in the country (Tertiary Education Council, 2013). Table 3.1 shows the overview of the HE sector in Botswana and the contribution of PHE institutions.

**Table 3.1:** Distribution of higher education institutions in Botswana by type

Type of HE institution	Number of institutions
Publicly funded universities	2
Publicly funded HE institutions	23
Privately funded HE institutions	7
<b>TOTAL</b>	<b>32</b>

Adapted from Kotecha, Wilson-Strydom, and Fongwa (2012: 18)

Tracing the development of HE in Botswana, Bailey, Cloete and Pillay (2006) categorise the rise of the HE sector into two distinct historical phases. These phases are outlined below.

### **Phase 1 (up to 2001)**

This phase was when government sponsored most of the students to study at the University of Botswana (UB) and other public tertiary education institutions such as Botswana College of Agriculture (BCA), health institutions, and colleges of education. A small number of students were sent to study abroad each year (Mokgwathi, 1992), mostly in South Africa, the United Kingdom (UK), and Malaysia, particularly in disciplines such as engineering, medicine, and hard sciences that were not common at the UB (Mabizela, 2007).

## **Phase 2 (from 2001 to 2007)**

This phase saw the Botswana government extending student sponsorship to local PHE institutions registered with the TEC after the realisation that public institutions alone were failing to meet the demand for HE. Extension of government sponsorship to students in PHE institutions led to a proliferation of such institutions in Botswana (Thobega, 2010) as it became lucrative business to own a college/university (Makgosa & Molefhi, 2012). However, there was suspicion on the part of key stakeholders that, if left alone, these institutions could maximise profit at the expense of quality education. This mistrust led to the Botswana government establishing the TEC to play accreditation, regulatory, supervisory and policing roles (Thobega, 2010), primarily focusing on PHE institutions. This regulatory intervention was considered necessary to ensure that these institutions adhered to expected quality and standards.

The mistrust between the TEC and PHE institutions covered in this study can be addressed through KM solutions. Collaboration with internal stakeholders (such as staff and students) whereby people work in groups (communities of practice - CoPs) is a critical KM enabler. Such collaboration provides an effective KM solution as it enables collaborators to assist each other accomplish seemingly difficult job responsibilities (Rayton & Yalabik, 2014; Saenz & Perez-Bouvier, 2014). External collaboration instead of competition is also critical for PHE institutions as it enables staff members of different institutions to share vital information, and insights, and collectively participate in problem-solving (Khalifa & Liu, 2010; Jang & Koi, 2014).

The importance of collaboration as a KM enabler is further highlighted by Growth and Bowers (2010), who contend that collaboration enables organisations to benefit from comments and criticism from colleagues. Private higher education institutions may benefit immensely from collaboration if they are open to ideas from stakeholders since they can access information and knowledge reservoirs possessed by these stakeholders. Such stakeholders include regulatory authorities, government officials, industry experts, students and senior academic staff. Lack of collaboration between PHE institutions and the outside bodies mean that there is little knowledge flowing into these organisations from external knowledge reservoirs. Collaboration between PHE institutions and the TEC, the BOTA, and

government means that these institutions will be well-versed with the needs and expectations of these stakeholders which will make it easy for the institutions to meet those expectations.

Between 2007 and 2010, the government was responsible for determining how many government-sponsored students each PHE institution received. However from 2012, the Botswana government decided how many students would be sponsored in PHE institutions and then left the choice of institution to the students (Tertiary Education Council, 2013). This policy shift meant that PHE institutions were more challenged than before to operate as attractive business more competitive than others. Institutions that are more competitive than others are able to attract higher numbers of better quality students. The need for competitiveness makes it imperative for top management to put in place a KM environment with effective KM practices. The general understanding was that such an environment may make an institution capable of managing its knowledge assets better than its competitors so as to become more competitive. Table 3.2 shows the scenario of distribution of students to selected PHE institutions after the policy shift.

**Table 3.2:** Distribution of students in selected PHE institutions in Botswana – 2010 and 2012

Institution	First year enrolment 2010	First year enrolment 2012
Botho University	850	3400
ABM University College	450	650
Baisago University College	350	550
GIPS	450	650
Limkokwing University	1100	2200

Adapted from Tertiary Education Council (2012)

Table 3.2 shows that two institutions namely Botho University and Limkokwing University of Creative Technology (LUCT) experienced sharp increases in student enrolment numbers when the government allowed students to choose institutions they preferred instead of applying the quota system. Such increased enrolment for LUCT and Botho University may have been caused by better infrastructure such as classroom space, internet, and computers. Better infrastructure creates an impression of higher quality teaching and learning hence more effective knowledge creation, dissemination, utilisation, and retention.

### **3.2.1 The regulatory framework**

The second phase of the development of the HE sector that is described above saw the proliferation of PHE institutions in Botswana. According to the Tertiary Education Council (2013), some of these institutions became opportunistic as a result of a weak regulatory environment, coupled with the enormous demand for post-secondary education. The problem culminated in poor quality programmes offerings at exorbitant cost to the student. This view is reinforced by Kotecha, Wilson-Strydom and Fongwa (2012) who concur that, repeatedly, from the students enrolled in these institutions as well as members of civil society was a plea for the TEC to completely overhaul the PHE component of the tertiary education system. The main challenge was that these key stakeholders had lost trust in PHE institutions and they believed that these institutions lacked the will to offer quality education without close supervision from the TEC.

The continued pressure from the students and members of the civil society resulted in the TEC establishing a strict regulatory environment for the PHE institutions. From the perspective of students and other stakeholders, close supervision becomes critical given that, unlike public HE institutions, PHE institutions need to operate viable business models that position profit-making as the utmost priority. Some key stakeholders such as students, parents, government, and industry view PHE institutions as profit-maximising organisations, which can compromise academic quality if left unchecked (Tertiary Education Council, 2008). Mistrust between PHE institutions and students have often resulted in student strikes, class boycotts, court actions and solidarity meetings.

Due to the mistrust alluded to above, the PHE institutions covered in this study have been subjected to close public scrutiny by regulatory authorities over the past few years (Setume, 2013). As an example, the institutions are required to apply for permission to change a prescribed text, to change their teaching strategy, to change their assessment structure, and to modify a course outline and so on (Tertiary Education Council, 2010). Setume (2013) posits that such close scrutiny puts PHE institutions in a situation where, generally, they are required to outperform their public counterparts in order to gain acceptance by stakeholders. Such an environment makes KM enablers that facilitate KM practices in these institutions critical. These KM enablers have been explained in detail in Chapter 2 (section 2.2).

The lack of trust between PHE institutions and the regulatory authorities alluded to above can be addressed with KM solutions. Adoption of the right organisational culture that enables effective KM practices of knowledge creation, exchange and utilisation is a critical KM enabler (Kao, Wu, & Su, 2011; Kamhawi, 2012). That organisational culture should be one that facilitates interaction between academic staff of PHE institutions and the outside world so that the institutions benefit from experts outside their boundaries. An effective operating environment that fosters interaction and knowledge sharing would do much to build trust and diminish the role of regulatory authorities. Interaction between academic staff of PHE institutions and other HE institutions will provide academic staff of PHE institutions with the much needed exposure leading to knowledge flow from peers.

Effective interaction between staff of the selected PHE institutions and external stakeholders like other universities such as the UB, which are endowed with large amounts of quality resources, can benefit the PHE institutions. These institutions can achieve effective innovation by establishing relations and synergies with external organisations such as universities and research bodies. Such relations and synergies facilitate KM practices of knowledge generation, sharing and utilisation which will enhance the performance of PHE institutions. Enhanced performance will improve the public image of these institutions leading to the establishment of trust. Once trust is gained, the need for strict regulation will diminish.

Due to the need to closely monitor the activities of PHE institutions arising out of mistrust from key stakeholders, and in recognition of the role played by tertiary education in national development, the Botswana government passed the Tertiary Education Policy, Paper No 37 of 2008 (Tertiary Education Council, 2010). Noteworthy in this policy is the reference made to quality and the relevance of tertiary education as one of the critical factors in ensuring this transformational agenda.

As part of the close supervision of the operations of PHE institutions emanating from the lack of trust by key stakeholders, and in line with the tertiary education policy of 2008 alluded to above, the government introduced regulatory measures outlined below (Tertiary Education Council, 2010).

### **3.2.1.1 Quality assurance**

According to the Tertiary Education Council (2010), the Tertiary Education Act of 1999 stated that the quality of HE could only be assured through a deliberate attempt of seeing to it that quality assurance procedures are in place in all tertiary institutions. Anderson, Johnson and Milligan (2000) argue that for government to obtain value for money, it is imperative to put in place quality assurance mechanisms to ensure high academic standards in learning institutions. In order to facilitate the process of quality assurance in HE institutions, the TEC developed the External Quality Assurance (EQA) and Internal Quality Assurance (IQA) frameworks. These frameworks encompass agreed standards and criteria to be used as touchstones to enable the evaluation of the effectiveness of institutional policies, processes, and practices to ensure quality HE in Botswana (Thobega, 2010). It should be noted that while in theory the TEC Act should also affect public tertiary institutions, in practice it targets only private tertiary institutions since public institutions have been left alone to do their work without interference (Setume, 2013; Samboma, 2017).

Quality concerns in PHE institutions arise from the general perception among stakeholders that PHE institutions, unlike public HE institutions that exist and are fully funded by government to provide education as a social service and not for profit, operate as purely profit-oriented organisations (Siphambe, 2012; Setume, 2013). Their primary objective is to generate revenue to satisfy shareholders and hence quality may be compromised in a bid to reduce cost and maximise profit. Due to fear of compromising quality in pursuit of maximum profit, only PHE institutions have thus become prime targets for strict regulation (Setume, 2013). This means that these institutions continually need to justify what they do, which makes the application of KM an invaluable necessity.

According to the Tertiary Education Council (2010), to dispel fears of quality compromise by PHE institutions, a rigorous quality assurance regime was put in place, which was essential to gain stakeholder confidence. The rigorous quality assurance regime is an all-embracing phenomenon referring to the on-going, continuous process of evaluating (that is, assessing, monitoring, guaranteeing, maintaining, and improving) the quality of PHE systems, institutions, or programmes. In pursuance of this quality agenda, the TEC established two audit portfolios for the effective monitoring and regulation of quality in PHE institutions, namely internal and external auditing as outlined below (Tertiary Education Council, 2010).

- Internal auditing

This happens when an institution makes arrangements to do its own audit using its own staff members, peers or external auditors identified and appointed by the institution itself, but the audit adopts the TEC audit criteria. This is a self-evaluation exercise done in readiness for the external TEC audit. The internal audit criteria include assessing:

- Governance and management system of the institution
- Teaching, learning, and research
- Community engagement

- External auditing

This is when the TEC arranges to come and assess the processes of an institution and determine whether it should be allowed to start offering HE or be allowed to continue if it was already doing so. The TEC therefore appoints a team of auditors with expertise in particular programme areas offered by an institution and the audit is organised around the following good practice principles (Tertiary Education Council, 2010):

- Effectiveness of governance of the institution
- Effectiveness of the staffing of the institution
- Effectiveness of the process of programme design, implementation, management and review
- Effectiveness of the assessment systems and methodologies
- Provision of student support services
- Availability of the right physical infrastructure and other resources
- Existence of research infrastructure and innovation
- Availability of adequate financial resources
- Availability of evidence of the institutional staff's community engagement

After auditing the institution according to the above criteria, the audit team has to arrive at an independent judgment on the institution's internal quality arrangements. Based on that assessment and findings, the TEC will prepare a report for the institution outlining areas of strength and good practice and those that require improvement. Commendations and recommendations will also be provided to guide the institution on its quality improvement programme. The TEC will continue to carry out quality assessments at regular intervals,

including unannounced visits, to ensure that recommendations are effectively acted upon; otherwise the institution can be de-registered.

In order to pass the TEC quality assurance test outlined above, PHE institutions can be assisted by KM solutions. These institutions must be seen by the public and regulatory authorities to be offering quality education. In this case, organisational structure becomes a critical KM enabler that facilitates KM practices which will in turn enhance the quality of teaching and learning. Elements of organisational structure that facilitate KM practices that PHE institutions can pay attention to include information technology (IT) and physical infrastructure namely office space, library facilities, class rooms, school buses, computers, tea room facilities and so on. For instance, PHE institutions can use IT to enhance the quality and speed of knowledge generation, transfer, and application using technologies such as intranets and internet. Access to internet facilities enhances knowledge transfer among both staff and students. These stakeholders can also access educational videos that enhance the quality of teaching and learning.

For PHE institutions to ensure quality of teaching and learning, they have to provide adequate critical resources that include qualified, experienced and competent teaching staff, durable, efficient and effective processes, and suitable infrastructure (Obasi, 2010). Such infrastructure constitutes a critical KM enabler and also provides physical evidence to regulatory authorities that effective teaching and learning may be taking place in the PHE institutions. Availability of such evidence will make these institutions gain the trust of regulatory authorities making strict regulation unnecessary.

### **3.2.1.2 Registering institutions**

Registration falls under the Directorate of Quality Assurance and Regulation, and it is a thorough and lengthy process which involves the following steps (Tertiary Education Council, 2012):

- 1) Initial screening

This is a desk evaluation of an application from a private stakeholder who wants to start an HE institution. The evaluation is meant to determine if the application satisfies the rigorous registration requirements as set out in the regulations and criteria for registration according to Statutory Instrument (SI) Number 56 of 2005.

## 2) Assessors' evaluation

This is an assessment of the application by a team of experts known as assessors. This team of assessors are specially appointed by senior management of the TEC reviews. Their main responsibility is to assess any application received in accordance with the TEC's stringent registration requirements, and produces an evaluation report.

## 3) Verification by the Inspections Committee

The recommendations of the assessors embodied in the evaluation report are verified by this committee to ascertain correctness of information submitted for registration. The Inspections Committee also seeks to determine the relevance of the application with regard to information on the economic, administrative and student support services. The physical location of the institutions is also verified.

## 4) Academic Planning and Development Committee (APDC)

The APDC processes reports from the TEC management, the assessors and the Inspections Committee and then advises on the long-term plans and overall development of tertiary education in Botswana.

## 5) Approval or non-approval by the TEC

Based on the recommendations of the APDC, the Inspections Committee, and any other relevant authorities such as the TEC management, the council (TEC) evaluates the document before it and decides on either to approve or disapprove the application in accordance with the registration requirements, but within the ambit of the enabling laws.

Private higher education institutions in Botswana can use KM solutions to convince assessors and the inspections committee that they deserve to be registered as HE institutions. The KM solution that can be adopted to convince the assessors and inspectors is physical infrastructure. Having in place satisfactory infrastructure that facilitates knowledge creation and dissemination may have a positive influence on the decision of the regulatory authorities whether to accredit the institution or not. Such infrastructure include state-of-the-art learning facilities that include modern classrooms fitted with modern over-head projectors, and video-conferencing facilities that allow remote teaching and meetings especially for those PHE

institutions that have multiple campuses. Actually, all the five PHE institutions covered in this study have at least three campuses each.

The institutions also need infrastructure such as IT and social networks so as to facilitate interaction of both teachers and learners to make teaching and learning (hence knowledge creation and sharing) more effective. If inspectors and assessors visit a PHE institution to evaluate and determine its readiness for registration as an HE institution, their decision to recommend registration will easily be influenced by the infrastructure that they see.

### **3.2.1.3 Accreditation process**

After exhausting the process of registering a PHE institution outlined in section 3.2.1.2 above, the process of accreditation of the institution and programmes then follows. Institutional and programme accreditation is vested in the hands of the Ministry of Education and Skills Development (MESD). Accreditation is conducted according to the requirements of the Tertiary Education Accreditation of Private Tertiary Institutions Regulations, SI Number 100 (Tertiary Education Council, 2008; Mabizela, 2007). Only tertiary institutions that hold registration certificates that are at least three years old are eligible to apply for accreditation.

The accreditation process follows the following steps (Tertiary Education Council, 2010):

#### 1) Preparation of self-study portfolios

In accordance with the standards and criteria contained in SI Number 100 of 2008, institutions that are eligible for accreditation are required to prepare and conduct a self-study over a stipulated period of time. In the self-study portfolio, the institutions are expected to assemble requisite documentation that portrays their accomplishments and challenges and put in place actions that address the challenges.

#### 2) Peer review

The TEC secretariat appoints reputable academics, mostly from the UB and other professional bodies to go through the self-study reports submitted by the PHE institutions applying for accreditation. The purpose of going through self-study reports is to have a clear understanding of what the institution is offering and what it is doing to ensure quality of programmes, quality of delivery, and infrastructure development (Obasi, 2010).

### 3) Site visits

Peer review teams are required to ascertain the validity of the information contained in the self-study documents by visiting the institutions. The visits last for three to five days depending on the size of the institution. The visit is expected to acquaint the team with correct information on the institution's preparedness and disposition to deliver a good quality educational experience to the learners. During the visit, the team is supposed to check learning facilities such as classrooms, computer laboratories, practice rooms, library and available reading materials, toilet facilities, fire prevention and protection systems and emergency exits. The team also checks other resources and accumulates as much information as possible. On the last day of the visit the team is required to de-brief management of the institution on their findings through commendations and recommendations.

### 4) Reviewer reports

After peer reviews and site visits, the reviewers are required to submit reports containing their findings on the institution's readiness for accreditation to the TEC secretariat, which in turn scrutinises them for any errors of omission and commission. A summary report is then drafted and sent to the institution for their review and feedback on the whole accreditation process. This report allows the institution applying for accreditation to raise any issues they do not agree with emanating from the report.

### 5) Institution's response

After carefully studying the reports, the institution is supposed to respond within two weeks. If there are any areas the institution feels were not properly handled, reviewers can be asked to revisit them and meet with the institution's management for clarification. The institution may also be required to supply further evidence so as to close gaps or misunderstandings arising from the summary report (Thobega, 2010).

### 6) Post APDC review and decision

The APDC then sits to recommend to the TEC whether an institution and/or programme should be accredited or otherwise. After deliberating on the recommendations of the APDC and satisfying itself that the process was done properly and effectively, the TEC then renders a decision. Such a decision will be a recommendation to the MESD to accredit the

institution/programme or not depending on whether the council feels the institution has complied with the requirements or not.

#### 7) Gazetting of accredited programmes

Following accreditation, the Minister of Education and Skills Development will advise the TEC to publish a notice in the Government Gazette indicating a list of all accredited programmes and the institutions offering those programmes. For a programme that has been denied accreditation, reapplication can only be made after two years.

The information and processes documented above reflect the laborious and bureaucratic process that PHE institutions in Botswana are supposed to go through from registration of the institution to accreditation of programmes. Mabizela (2007) posits that public tertiary institutions do not go through the same rigorous process. The process can take anything up to four years to be completed (Thobega, 2010). Any private institution not registered or offering programmes that have not been accredited by the TEC is heavily fined if caught and is immediately closed down. The TEC announces in the private and public print and electronic media any institutions found violating the registration and accreditation requirements so that students do not enrol with them and parents do not send their children there.

This rigorous regulatory regime and penalties that emanate from failure to comply create a volatile and uncertain environment for PHE institutions in Botswana. In such an environment, KM is critical so as to gather information and knowledge as fast as possible and share it with others inside and outside the organisation before such information becomes obsolete. Knowledge management solutions that can be utilised by PHE institutions to influence the decision to accredit the institutions include enhancement of internal KM processes and establishing the right infrastructure as outlined in section 3.2.1 above. It should be noted that the decision to accept a PHE application for accreditation is influenced by what the reviewers see as evidence of quality of teaching and learning and the institution's infrastructure is critical in proffering such evidence.

In assessing the institution's preparedness for accreditation, reviewers also interview academic staff as key stakeholders to determine whether they are in the right frame of mind to deliver quality education. The reviewers would want to ascertain if the institution has a

salary structure to ensure fair remuneration of employees based on qualifications and experience. The reviewers would also want to know if the academic staff feels their welfare is taken care of because of the belief that unhappy lecturers produce unhappy students. In this regard, a KM solution that can be used to influence reviewers to recommend accreditation of the institution is people (employees). Selected PHE institutions need to ensure that their employees are satisfied because the organisation's employees are the prime source of knowledge. It is this knowledge that reviewers would be coming to verify that it exists and that it is being effectively disseminated to those in need of it (the students).

In order to satisfy reviewers so that they recommend accreditation of the institutions and their programmes, PHE institutions need to ensure that they hire well-qualified, competent employees who are adequately remunerated. The institutions need to put in place an appropriate reward structure and a creative work environment that will enable employees to effectively create, disseminate, and retain knowledge that will enhance the performance of the institutions. Such KM enablers will influence reviewers to recommend these institutions for accreditation. The importance of people (employees) and employee rewards in facilitating KM practices was discussed in more detail in Chapter 2 (section 2.2.1).

### **3.3 Private higher education and the family business concept**

All the PHE institutions covered in this study operated as family-owned businesses managed by the owners. For instance, the Botho University's (2016) Board of Directors comprise the father as Board Chairman, the mother as Vice Chancellor and Managing Director (MD), and two sons as Directors. The sons also serve as Pro-Vice Chancellors, one in charge of education and quality and the other in charge of campus infrastructure. Only two board members are not family members though they are thought to be close relatives.

BAISAGO University College (2016) shows the board membership list as comprising the wife as Board Chairperson, and the husband as MD. There are two more family members, one believed to be a son and one a brother (this was confirmed by some senior members of the management team). Though there are four other members on the Board to make a total of eight, some senior members of management alleged that these were mere place holders as real power rested with the four family members.

According to ABM University College (2016), the institution is owned by Mrs Daisy Molefhi who is also the Executive Director (ED). The son is the Finance Director. Limkokwing University of Creative Technology (2016) states that the founder and President (owner) of the university is ‘Tan Sri Dato’ Sri Paduka Dr Lim Kok Wing (from whom the university derives its name). He is also the chief executive officer (CEO). He is said to work closely with his son and both are based in Malaysia but run the Botswana campus through their close associates. Such kind of family ownership and management warrants a real need to establish the effect of family management on KM practices. The effect of family management on KM practices was discussed in Chapter 2 (section 2.2.3.4).

Evidence of challenges created by family/owner management and control is highlighted by the case of **“THAPISA v LIMKOKWING UNIVERSITY OF CREATIVE TECHNOLOGY 2009 1 BLR 177 HC”**, Case No: Misca 367 of 2008 in the High Court of Botswana. In this case Professor Thapisa, who thought he was LUCT Botswana Vice Chancellor, was forced to resign after failing to work with Gail Phung (Botswana Government, 2009). Mrs Phung was the university’s Senior Vice President and confidante of the owner of the university. The differences between Professor Thapisa and Mrs Phung emanated from the fact that the latter continued to run the Botswana campus giving instructions to the former’s subordinates on a daily basis. This made Professor Thapisa redundant resulting in a case of constructive dismissal.

Family ownership and management have negative KM implications which can be addressed by KM solutions. Leadership of PHE institutions covered in this study needs to develop HC outside the family and avoid the current scenario where the power to control is exerted both directly through family members being CEOs and Board chairpersons, and subtly through the appointment of family members to senior management positions. There is need for the PHE institutions to put emphasis on the effective harnessing and management of HC from outside the family to ensure that a knowledge-imbibed workforce creates the right value for the organisations (Palma, 2005; Carrasco-Hernandez & Jimenez-Jimenez, 2013).

The need for emphasis on harnessing HC from outside the family’s sphere is reinforced by Segaro, Larino, and Jones (2014), who concur that effective harnessing of HC ensures the availability of a combination of knowledge, skills, innovativeness and ability among the

institutions' individual employees. Such HC enables the institutions to meet specific tasks at hand (Carrasco-Hernandez & Jimenez-Jimenez, 2013) thus enhancing their performance as academic institutions, which will endear them well with the regulatory authorities. Gaining the confidence and trust of regulatory authorities will render strict regulation unnecessary. In family businesses under which PHE institutions fall, there are challenges of attracting competent HC due to reserving jobs for family members irrespective of their qualifications and level of competence.

If the leadership of PHE institutions develops and promotes HC from outside the family, it will culminate in major consequences for successful KM. Such HC brings in their input and services to create value for the selected PHE institutions that is currently lacking due to all senior academic leadership positions being in the hands of under-qualified family members. Bringing in professional HC enhances KM and organisational performance through influencing the way processes are carried out in the institutions. The importance of effective harnessing of HC as a KM enabler has been discussed in Chapter 2 (section 2.2.3.1).

### **3.4 Challenges facing PHE institutions in Botswana**

Private higher education institutions in Botswana face challenges that are not experienced by their public counterparts and these may be mitigated by KM solutions. This view is reinforced by the Tertiary Education Council (2010) which concurs that PHE in Botswana is confronted by a number of challenges. These include fragmentation, quality and relevance of programmes, and funding of operational costs. The challenges, and KM implications, are explained in detail below.

#### **3.4.1 Fragmentation**

Setume (2013) and Samboma (2017) observe that the PHE environment in Botswana is characterised by the prevalence of many small institutions with multiple accountabilities, ambiguously defined, and lacking coherence and strategic direction. A good example of multiple accountability was the overlap between the Botswana Training Authority (BOTA) and the TEC. Private HE institutions were accountable to the BOTA for the first year of their programmes (certificate level) and to the TEC for the second year and beyond (diploma and degree levels). Such an arrangement requires institutions to be well versed with the regulatory

requirements of both the BOTA and the TEC. It also means that the institutions need to have a thorough understanding of the operations and expectations of these two regulatory authorities, which is a challenge.

Knowledge management can help reduce the negative effect of fragmentation by fostering the creation of collaborative clusters among PHE institutions. Such collaborative clusters can assist in generating, sharing and applying new and existing information, knowledge, and ideas among organisational members.

### **3.4.2 Quality and relevance of education provided by PHE institutions**

Some stakeholders have raised concern about the quality and relevance of education that is provided by PHE institutions in Botswana (see Chapter1, section 1.2). Major concerns have been raised about the challenges being experienced by new graduates of PHE institutions in obtaining employment. Commenting on the difficulty experienced by graduates of the PHE institutions in securing employment, Siphambe (2012) reiterates that the reality of unemployment in Botswana is that it co-exists with vacant posts that, in the end, are filled mostly by non-citizen personnel. Such a situation is caused by the conviction that local graduates still lack the required skills and competence levels. As a result, most of the graduates of PHE institutions have failed to find employment many years after graduation with some being forced to enrol with the UB to start new and different programmes of study.

Public concern on the lack of relevance of the education provided by PHE institutions is reinforced by the fact that many IT graduates from these institutions are found working in retail organisations. These graduates will be selling car parts, groceries, meat, or fuel, after failing to get jobs in their areas of training.

Lack of relevance of training provided by PHE institutions is also confirmed by the Botswana Training Authority (2010) which concurs that 50% of the graduate respondents were unemployed or economically inactive. This position emanated from a tracer study conducted by the Department of Vocational Education and Training in 2007. The reason for this unemployment was that there was a mismatch between job supply and demand. This mismatch meant that the skills required by industry were not matched by the skills the graduates possessed resulting in structural unemployment.

Employers were also concerned about the poor quality of graduates coming from PHE institutions and their immediate usefulness (Siphambe, 2012). The employers emphasised the need for these graduates to be provided with further on-the-job training to prepare them for work (Botswana Training Authority, 2010). To this effect, the Tertiary Education Council (2013) suggests that there is need for a national HR development strategy as well as a comprehensive system level review to realign the current programme offerings with the needs of the nation.

Public concerns on the quality and relevance of education provided by PHE institutions can be addressed by KM solutions. For instance, the issue of mismatch between the skills possessed by graduates of PHE institutions and the available jobs requires the adoption of collaboration as a KM enabler. Collaboration between the PHE institutions and industry creates inter-organisational networks that facilitate the effective flow of information on skills required by industry against educational programmes offered by PHE institutions. Such collaborative networks increase the capacity for innovation, productivity and customer satisfaction.

The poor quality of the programmes offered by some of the PHE institutions is an issue that has been widely publicised in the media in Botswana and Lesotho. For instance, Kagiso (2013) provides a damning report on the quality of programmes offered by LUCT, one of the PHE institutions covered in this study. The report, discussed in cabinet, outlined the major areas of concern which included a poor quality curriculum and curriculum overlap, dearth of HR, lack of realisation of work-readiness focus, and a governance crisis. These concerns, and how they can be addressed with KM solutions, are explained below.

#### **3.4.2.1 Quality of curriculum and curriculum overlap**

The 150-page report produced by Kagiso (2013) notes that there is not much difference between honours degrees and associate degrees at LUCT. This is because most of the courses overlap to the extent that there is not much distinction between the two qualifications. The report therefore recommends the suspension of all honours degrees at LUCT until the content of the programmes has been deepened and overlaps have been significantly reduced. The report, more significantly, challenges the real value of the university's degrees. It notes that

the theoretical level of associate degrees at LUCT is seriously compromised by the lack of depth in content and by weak assessment.

Knowledge management can be useful in the scenario enunciated above by establishing linkages with fellow universities (collaboration) to share information, knowledge, ideas on industry needs, curriculum development, and assessment development and evaluation. Interaction between PHE institutions and other more established universities in and outside Botswana will enable PHE institutions to acquire resources that include knowledge on industry requirements. Such interaction is a key element in the process of gaining access to existing knowledge on issues such as curriculum design, assessment development and administration, and so on. The role of collaboration in enhancing knowledge creation and sharing has been discussed in Chapter 2 (section 2.2.1.1).

#### **3.4.2.2 Dearth of human resources**

The report cited above recommended that LUCT suspends the intake of new students into four of the eight associate degrees because of lack of sufficiently qualified staff. The degrees that were to be suspended included Tourism Management, Hotel Management, International Tourism, and Architectural Technology. According to the report, some of the lecturers teaching these courses did not possess the required qualifications and had no teaching experience in HE (Kagiso, 2013).

The university (LUCT) only had one staff member with a Doctor of Philosophy (PhD) out of a staff complement of 226 lecturers then. Of this number, 57 lecturers held first degrees while one had an advanced diploma (Kagiso, 2013). The report alleged that the university had not established policies and structures for supporting the professional development of lecturers. The university was also struggling to attract highly qualified lecturers. A high staff turnover being experienced was mostly the result of short-term contracts that the university offered which led to well qualified and experienced staff leaving the university to seek more stable employment conditions elsewhere.

The high staff turnover alluded to above can be mitigated by an adoption of an appropriate organisational culture that includes an effective employee reward system, collaboration, and stakeholder engagement (Turner & Minonne, 2010; Leal-Rodriguez, Leal-Millan, Roldan-

Salgueiro, & Ortega-Cutierrez, 2013; Crnjar & Dlacic, 2014). Given the importance of academic staff in enhancing the quality of teaching and learning in HE institutions, the leadership of PHE institutions needs to ensure that these people are adequately rewarded to reduce staff turnover. Employees are critical in organisations because from a knowledge-based view of the firm, individuals (organisation's employees) are the prime source of knowledge. Employees are crucial for the creation, capture, and sharing of knowledge within their organisations. It is the employees who create, find and accumulate knowledge through the process of combination and exchange of existing knowledge through their experience in the organisation's key processes. The embedding of knowledge and experience in employees makes organisations dependent on the benevolence and capabilities of employees in applying that knowledge for the benefit of the organisation.

The organisation's employees are the prime source of knowledge, particularly tacit knowledge, which is difficult to imitate (Nonaka, 1994; Gavrilova & Andreeva, 2012; Wei, 2014). This means that when employees leave the organisation, they go with their tacit knowledge (organisational know-how) thus depleting the organisation's tacit knowledge reservoirs. The leadership of selected PHE institutions therefore needs to put in place the right organisational culture that includes employee engagement and an effective reward structure to avert staff turnover. The role of employees (people) in facilitating KM practices has been discussed in Chapter 2 (section 2.2.1.3), while the role played by employee rewards in staff retention has been discussed in section 2.2.1.4 of the same chapter.

While HR solutions are required to deal with high staff turn-over that is indicated above, there is little doubt that the KM practice of collaboration can also help (Connell, Kriz & Thorpe, 2014), for example, by holding staff development workshops and seminars involving better-qualified staff from sister institutions. Research conferences where sister institutions are invited can also help to generate and disseminate new knowledge, as well as building research capacity among junior faculties from PHE institutions which enhances their knowledge. Staff exchanges with other universities and accepting senior academics on sabbatical leave may also offer a temporary remedy with long term effects.

### **3.4.2.3 Governance crisis**

Kagiso (2013) noted that LUCT had serious governance problems. It noted that most members of management had very little experience in HE outside of LUCT. The university is a limited company that is owned and run by two members of the Lim Kok Wing family in Malaysia with seven directors who are not Botswana citizens. Two key academic governance bodies, the University Council and Senate, were all based in Malaysia as was the Vice Chancellor and other key officials of the university. The review team could not find any statutes giving powers and mandates to the local management team. This means that key managerial decisions were made in Malaysia by the owner and his close family members. Thus senior management based in Botswana merely executed decisions and policies developed centrally making them toothless bulldogs. This led to a lack of motivation and accountability.

Bailey and Chirwa (2014) posit that concentration of power in the hands of non-professional management brought about conflict between non-academic management (who wielded immense power) and academic management who had no power. The effect of family ownership and management on KM practices was discussed in Chapter 2 (section 2.2.3.4).

The report further noted that LUCT provides for the establishment of committees which seemed to exist only on paper. These include the Board of Studies, Board of Examinations, Students Selection Committee, and Staff Appointment Committee. There was no evidence of the existence or effectiveness of these committees if they did even exist. In general, the governance structure of the university did not enable timely and effective decision-making for the running of the university's programmes (Kagiso, 2013). This was due to delays and lack of clarity about the structural organisation of the institution. The report further noted that there was need for the recruitment of high calibre lecturers with doctoral qualifications who can be appointed or promoted to professorial levels in order to provide genuine academic leadership. This study sought to establish if the situation obtaining at LUCT was not common to other PHE institutions covered in this study. This is with regards to employee involvement in decision-making, the reporting structure, staff qualifications, family ownership and management, and quality of programmes.

The governance crisis that bedevilled all the five PHE institutions covered in this study can be addressed through KM solutions. Abandonment of the family management system by recruiting well-qualified and experienced professional managers who are seasoned academics may facilitate KM practices. Such seasoned academics are usually reputable Professors with many years of teaching, research, and academic leadership experience. If such academics are adequately recognised (Gharanjik & Azma, 2014; Mothamaha & Govender, 2014) and rewarded (Iyer & Ravindran, 2009; Perik, 2014) and are involved in decision-making (Lee & Hong, 2014; Mohamed, 2014), it means the presence of critical KM enablers that enhance organisational capabilities and growth.

Failure to involve employees in decision-making means that the employees cannot be expected to take the initiative and come up with new ideas that promote organisational effectiveness and capabilities leading to enhanced organisational performance. Thus a critical KM enabler was missing and playing a little role in facilitating KM practices in the selected PHE institutions.

Involving employees in decision-making (rather than only family managers making all important decisions) is a critical KM enabler which enhances KM practices. What makes employee involvement in decision-making critical is the fact that if organisational employees are not part of top management, they lack formal authority and implementation of corporate decisions/strategies may be difficult or improbable (Ncoyini and Cilliers, 2016). This means that they cannot therefore initiate new ideas and cannot apply knowledge. Such employees may be originators of innovation but this innovation is lost because the innovators have no decision-making power to put into practice their innovation (knowledge application). As a result of failure to put their ideas into practice, such employees are discouraged from being innovative in the future as their well-thought out ideas and expended efforts are wasted.

### **3.4.3 Private higher education institutions and funding of operational costs**

Some challenges facing PHE institutions in Botswana which have led to the perception that these institutions seek to maximise profit at the expense of quality arise from the funding of operational costs. Setume (2013) argues that up until 2005, PHE institutions in Botswana were self-financing. The then President announced during the 2005 State of the Nation Address that government would start sponsoring tertiary education students in TEC-

registered local PHE institutions. Obasi (2010) argues that the decision to place students in local tertiary education institutions was meant to replace the unsustainable practice of sending students to study overseas and abroad in countries like South Africa, the United States of America (USA), Malaysia, and others.

When the practice of sponsoring students in PHE institutions started, allegations levelled against these institutions that they profiteer and offer inferior quality became common. These institutions have been accused of offering poor quality programmes and employing poorly qualified (hence poorly remunerated and demotivated) staff in order to maximise shareholder earnings (Thobega, 2010; Samboma, 2017). The assertion of profiteering at the expense of quality education is further reinforced by Setume (2013). This author postulates that there is repeated argument that these institutions charge exorbitant fees; yet they do not maintain the expected standards in terms of curriculum, staffing, quality delivery, infrastructure and student support services. Such allegations lead to a loss of stakeholder confidence and loss of customer satisfaction hence declining student numbers. This may eventually lead to lack of business sustainability and eventual closure of the institutions involved. Such a situation requires an effective KM model that will enhance KM-oriented organisational culture, structure, governance, staff motivation, and mechanisms for stakeholder involvement and support. These critical KM enablers were discussed in Chapter 2 (section 2.2).

The fact that PHE institutions derive virtually all their operating income from tuition fees paid by students (though through grants and loans from the government) created another challenge for these institutions (Samboma, 2017). Siphambe (2012) and Setume (2013) argue that total reliance on student fees means that PHE institutions need to focus on programmes that are in high demand from the customer (student) point of view and not necessarily those that the nation regards as critical. Also, such programmes should be less costly to start and run. This explains why the programmes offered by PHE institutions in Botswana are in most cases business administration, Association of Accounting Technicians (AAT), computer science, Chartered Institute of Management Accounting (CIMA), marketing and so on. These are programmes in high demand by students and the retail sector, thus easily attracting students and guaranteeing an income stream, but they are not sustainable (Siphambe, 2012; Samboma, 2017).

The above view is supported by Varghese (2009) who concurs that the “supermarket model” approach (of focusing on programmes demanded by industry which are easy to run and cheap) only works when there are sufficient numbers of qualified students for a particular programme. He further argues that, while such programmes may be profitable in the short-term, they are very vulnerable to shifts in market demands.

Setume (2013) supports the position of PHE institutions of focusing on programmes that are cheaper to run contending that such a decision makes sense since tuition fees fund all aspects of PHE institutions, both developmental and recurrent. Such programmes seem easier to complete with a high retention rate. Considering that PHE institutions are companies owned by entrepreneurs who expect a minimum return for their investment, it only makes sense to focus on such programmes. This explains why none of the five PHE institutions covered in this study offers programmes generally perceived to be difficult or expensive in Botswana such as engineering, medicine, actuarial science, agricultural science, and sports science. These are the preserve of public HE institutions such as the UB, BCA, and Botswana International University of Science and Technology (BIUST). These programmes are more important and strategic for industrial and national development.

The challenge caused by the PHE institutions’ reliance on student fees to cover all their costs is further highlighted by Siphambe (2012) who observes that the irony is that PHE institutions endeavour to ensure that they are competitive in terms of tuition fees. They should charge reasonable fees so as not to be viewed as profiteering yet, on the other hand, they have to grapple with the continually rising costs of running their institutions. In such situations, KM initiatives will help these institutions minimise costs and enhance revenue inflows through effective customer service and offering customer value. Collaborative research and consultancy with other institutions can also help PHE institutions discover alternative sources of income so as not to rely solely on students’ fees.

The need for long-term sustainability of PHE institutions is supported by Setume (2013) who concurs that education is viewed by recipients as “social” business like healthcare and as such the institutions need to be able to build their reputations. They can do this by ensuring long term sustainable quality. Knowledge management solutions can help PHE institutions enhance quality of teaching and learning. Such solutions include the provision of all the

critical resources such as qualified, experienced and competent staff, durable, efficient and effective processes, and suitable infrastructure. Such infrastructure includes classrooms, office space (Shanshan, 2013; Lee & Hong, 2014; Mohamed, 2014), information technology (Leung, 2015; Micheni, 2015), and meeting rooms which are all components of KM enablers. The role of infrastructure (KM enabler) in facilitating KM practices has been discussed in detail in Chapter 2 (section 2.2.2).

The PHE environment in Botswana is volatile and complex due to the stringent regulatory regime and also due to challenges facing PHE institutions as family-owned and family managed businesses. Such an environment calls for appropriate KM enablers that facilitate effective KM practices. Effective KM enablers that facilitate knowledge generation, sharing, exploitation, and retention enhance the performance of PHE institutions as business models. Collaboration and stakeholder involvement help keep these institutions abreast of current trends in the HE environment, which will boost their performance and reputation. Collaboration (stakeholder engagement) was discussed in detail in Chapter 2 (section 2.2.1.1). This study sought to establish if such KM enablers for knowledge creation, sharing and application existed in these institutions and suggest a model for effective KM practices.

### **3.5 Chapter summary**

Chapter 3 outlined the PHE environment in Botswana. It explained the emergency of PHE institutions that receive government-sponsored students. The chapter went on to elaborate on the concept of the highly regulated environment by focusing on the quality assurance process, the registration process of PHE institutions, and the accreditation process. Chapter 3 also described the ownership and management structures of selected PHE institutions, which operate as family businesses. The chapter outlined the challenges faced by PHE institutions in Botswana, which include fragmentation, the lack of quality and relevance of the education these institutions provide, and poor quality of curriculum and curriculum overlap. Other challenges faced by PHE institutions in Botswana that are described in Chapter 3 include the dearth of human resources, governance crisis, and funding of operational costs. The chapter went on to explain how the challenges faced by selected PHE institutions can be addressed through KM solutions. The next chapter focuses on the research methodology used in this study that enabled the achievement of the research objectives.

## **CHAPTER 4**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **4.1 Introduction**

The previous chapter explained the contextual setting of the study focusing on the highly regulated PHE environment in Botswana. In that chapter, a literature review of the regulatory framework governing the operations of PHE institutions in Botswana was given, as well as challenges facing these institutions. This chapter focuses on the research design and methodology that were used in this study to statistically determine the role of KM enablers in facilitating KM practices in five selected PHE institutions in Botswana. The chapter looks at the dominant of research paradigm – positivism - which is the underlying philosophy that determines how research is carried out. The chapter also highlights the quantitative methodology used to gather and analyse data that was collected using a structured questionnaire. The research design adopted for this study is discussed as well as the sampling procedures. The chapter examines the data collection technique used in the study (through the use of the structured questionnaires). It also discusses the data analysis tools that are used in this study.

#### **4.2 Research design and methodology**

This section identifies and explains the research paradigms, design, and methodology adopted for this study. A map showing these critical components of a research process given by Ngulube (2015a) was adapted to the study (see Figure 4.1).

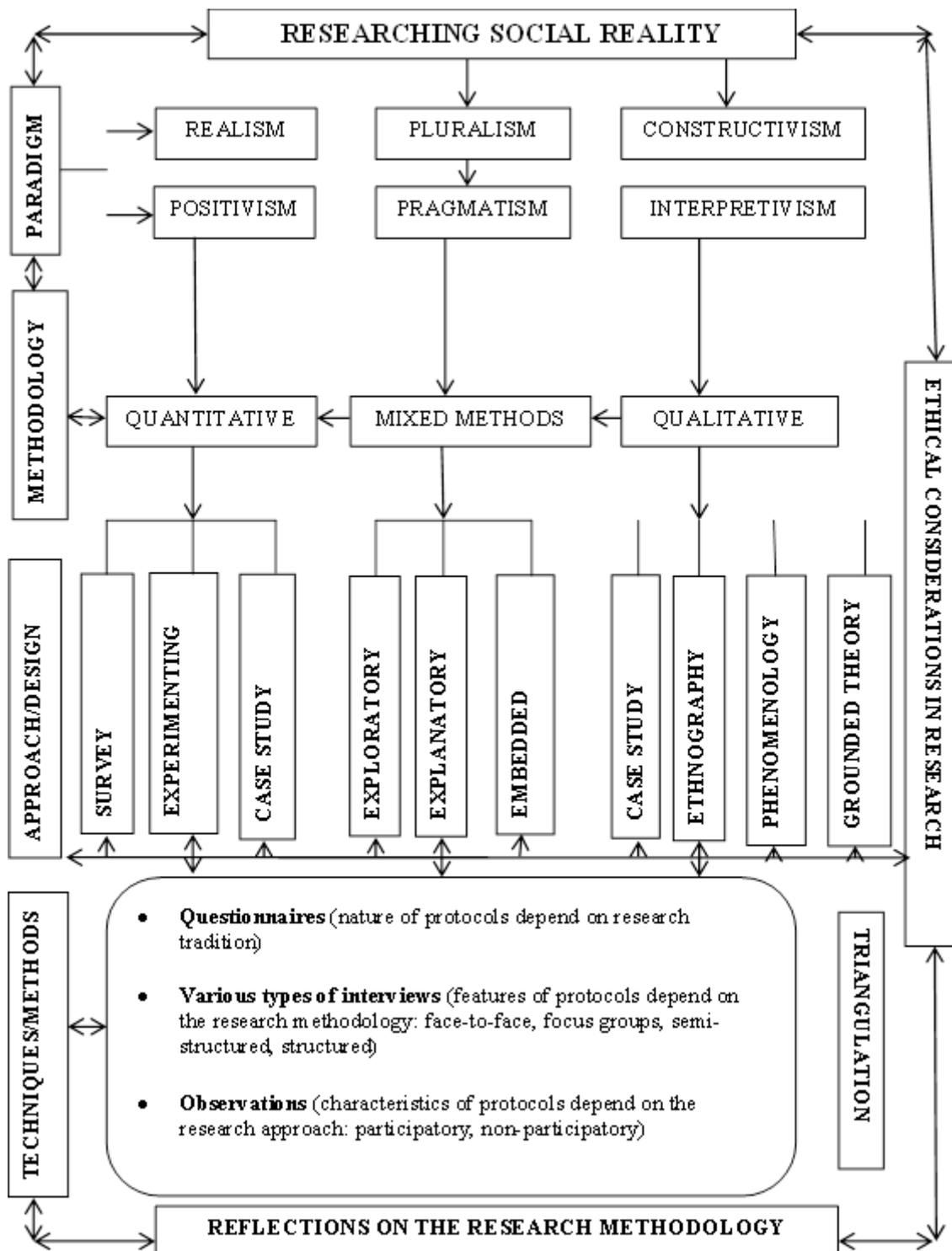


Figure 4.1: Mapping the research methodology discourse (Ngulube, 2015a: 5)

### **4.2.1 Research paradigms**

Cameron (2011) defines a paradigm as a way of looking at the world, that is composed of certain philosophical assumptions that guide and direct thinking and action. Neuman (2011) who views a paradigm as a general organising framework for theory and research, which guides the research process, supports this view. This framework includes basic assumptions, key issues, models of research, and methods of inquiry to seek answers to research questions. It is the net that comprises the researcher's epistemological, ontological, and methodological premises. Since all research is interpretive, how it should be understood and studied is guided by the researcher's set of beliefs and feelings about the world (Denzin & Lincoln, 2008). Other researchers describe paradigms in terms of assumptions related to ethics, reality (or ontology), and epistemology (knowledge) (Guba & Lincoln, 2005; Mertens, 2012; Mertens & Wilson, 2012). These paradigms lead to different assumptions about the nature of systemic enquiry – methodology.

Focusing on the importance of paradigms in research, Ngulube (2015a) contends that every research is premised on some underlying philosophical assumptions about what makes valid research and which method is suitable for the development of knowledge in a given study. He further posits that in order to carry out research that is valid and useful to a discipline, it is critical to understand what these philosophical assumptions are. Ngulube further postulates that these assumptions are about the nature of knowledge, or the nature and existence of social reality (ontology) and what makes up that knowledge and ways of knowing (epistemology).

The philosophical assumptions noted above form the foundations upon which social research is framed. The assumptions also help researchers to choose which problems to study, the questions to ask, as well as the theories to use in the production of knowledge that passes the validity test (Ngulube, 2015a). These are shown in Figure 4.1. These classical philosophical assumptions are positivism, pragmatism, and interpretivism (Ngulube, 2015a). This study adopted a positivist philosophical assumption, which is discussed in more detail below.

## **Positivism**

According to Molina-Azorin and Cameron (2010), hard positivism ontology asserts that an objective reality exists to be discovered. This can be done epistemologically with knowable degrees of certainty using objectively correct scientific methods. The outcome of this is that certain knowledge and concepts such as validity, reliability and statistical significance are used carefully in a good hard positivist approach with the purpose of describing some part of reality with certainty. Some researchers suggest that the positivist paradigm is more closely related to quantitative methods (Howe, 2008; Ngulube, 2015b).

The above position is supported by Cecez-Kecmanovic and Kennan (2013) who concur that the positivist research paradigm follows the ideal of the unity of science. They argue that this paradigm is premised on the notion that social science research should be carried out following the same sets of principles and logic as research in the natural sciences. Positivist research is based on objectivist or realist ontology – the assumptions that social reality exists out there irrespective of the views of the observer. Cecez-Kecmanovic and Kennan (2013) further aver that positivist researchers generally seek to answer questions concerning relationships among well-defined concepts. Such relationships are expressed as measurable variables, with the purpose of explaining, predicting and controlling phenomena.

This study adopted the positivist paradigm which is one of the most popular broad frameworks in which research is generally conducted (Ngulube, 2015b). Some researchers contend that the positivist paradigm is influenced by the realist/objectivist ontology (Cohen, Manion, & Morrison, 2011; Sarantakos, 2013; Fraser, 2014). The positivist ontology in this study is evidenced by the adoption of a quantitative methodology through gathering data using a questionnaire and analysing it using statistical measures. Data collection and analysis are explained further in this Chapter (sections 4.4 and 4.5).

### **4.2.2 Research design**

This study adopted a survey research design. Isaac and Michael (1997: 136) posit that survey research is used “to answer questions that have been raised, to solve problems that have been posed or observed, to assess needs and set goals, to determine whether or not specific objectives have been met, to establish baselines against which future comparisons can be

made, to analyse trends across time, and generally, to describe what exists, in what amount, and in what context.”.

Glasow (2005) puts forward that three distinguishing features that characterise a survey research. First, it is used to describe specific aspects of a given population in quantitative terms. Such aspects often involve examining relationships among variables. In this particular study, relationships examined were between KM enablers and KM practices in selected PHE institutions in Botswana. Second, survey research collects required data from people and the data are, therefore, subjective. Finally, survey research uses a selected portion of the population from which the findings can later be generalised back to the population. In this study, survey research used a sample of academic staff from five PHE institutions operating in a highly regulated environment in Botswana to determine the role played by identified KM enablers in facilitating KM practices in these institutions. The results were then generalised to other HE institutions elsewhere operating in similar environments.

In a survey research design, a survey instrument is used to gather data. Pinsonneault and Kraemer (1993: 77) defines a survey as a “means for gathering information about the characteristics, actions, or opinions of a large group of people”. In this study, the survey instrument used to collect data on the role of KM enablers in facilitating KM practices in selected PHE institutions in Botswana is a semi-structured questionnaire.

The survey research design was adopted for this study because surveys are capable of collecting data from large samples of the population and are also well suited to gathering demographic data that describe the composition of the sample (Glasow, 2005). The strength of survey research is reinforced by Bell (1996) who concur that surveys are inclusive in the types and number of variables that can be studied, require minimal investment to develop and administer, and are relatively easy for making generalisations across wider populations. This view is further buttressed by McIntyre (1999) who contends that surveys can also elicit information about attitudes that are otherwise difficult to measure using observational techniques. However, it should also be noted that survey research has its own weaknesses. Bell (1996) observes that biases may occur either through lack of response from intended participants or in the nature and accuracy of the responses that are received. Other sources of

error include intentional misreporting of behaviours by respondents to confound the survey results or to hide inappropriate behaviour. The response rate in this study was 74% meaning that bias from lack of response is largely tamed. Other statistical measures were used to test responses to ensure validity of the study. These are explained in Chapter 5.

### **4.2.3 Research methodology**

This study adopted the quantitative methodology (see Figure 4.1), with the design being survey research (see section 4.2.2). The quantitative methodology was applied with the researcher identifying literature which supports the underlying theories on which this study is based. These theories focus on the role of KM enablers in facilitating KM practices of knowledge generation, sharing, application, and retention. Relevant literature was discussed in Chapters 2 and 3. The researcher went on to identify specific variables that formed hypotheses that were tested. Some of the hypotheses that were tested in this study are shown in Appendix 2.

In support of the use of hypotheses in research, Cohen, Manion, and Morrison (2011) argue that inferential statistics hinge on testing relationships between variables using two forms of hypotheses – the null and alternative hypotheses. The null hypothesis is a statement which indicates that no relationship exists between two or more variables of interest, while the alternative hypothesis suggests that a relationship does exist. This view is supported by Creswell and Plano-Clark (2011) who concur that a null hypothesis presupposes the outcome of an inferential test to be insignificant. This means that the result is the outcome of chance and random variation.

The alternative hypothesis, on the contrary, means that the outcome is not a result of chance. The decision rule for inferential statistics is always to reject the null hypothesis if the p-value of the inferential test statistic is less than a pre-determined level of significance. The generally acceptable figure is 0.05; hence if  $p \leq .05$  then the results are interpreted as statistically significant. On the other hand, if  $p > .05$  the results are interpreted as not statistically significant (Cohen, Manion, & Morrison, 2011). In this study, a significance level of 0.05 was applied to test the null hypotheses.

The testing of the null hypothesis is supported by Creswell and Plano-Clark (2011) who suggest that the testing of the null hypotheses remains a widely acceptable and well used approach. This is so despite that some researchers may view the testing of a null hypothesis as confusing, unnecessary and laborious (Merriam, 2009; Yin, 2012). As a result, the null hypotheses were formulated for the purposes of this study, and appropriate statistical methods were chosen to test them as shown in Appendix 2.

Data was collected using a structured questionnaire dominated by closed-ended questions although each section of the questionnaire ended with an open-ended question (see Appendix 1 and section 4.4). Data was collected at five research sites, with a total sample size of 350 participants. Gathered data was then analysed through numerical statistical analysis as shown in Chapter 5.

### **4.3 Population and sampling frame**

According to Kothari (2011), all items in a field of study constitute a population or universe, and a total enumeration of all items in the population is referred to as a census (hence the term ‘population census’ to refer to the counting of all the people in a country). Kothari (2011) further argues that in such an inquiry in which all items are included, no element is left to chance and the highest accuracy is obtained. This is what any researcher would prefer, that is, every item in the population is included. However, this type of inquiry is virtually impossible due to constraints of time and cost, especially when the population is large.

Due to the difficulty of including a whole population in a study, the issue of sampling frame becomes critical in research. Turner (2003) posits that the sampling frame poses significant implications for the cost and quality of a survey as faulty sampling frames are a popular source of non-sampling error, especially the under-coverage of critical population sub-groups. It is therefore crucial to adopt elaborate and best practices in frame construction and usage, taking into account different stages of sampling.

According to Kothari (2011), sampling frame is the source-list from which a sample is to be drawn and it contains the names of all items of a universe (in the case of a universe which is finite). The sample should be comprehensive, correct, reliable, and appropriate and it is vitally important that the frame be as representative of the population as possible. According

to Turner (2003), a sample frame is a set of source materials from which a sample is selected. This provides a means for choosing the particular members of the target population who are to be included in the survey.

This study's target population was all teaching staff of PHE institutions in Botswana offering degree programmes ranging from the lower level to top management (Deans). The sample frame thus comprised, firstly, the list of all the five family owned PHE institutions in Botswana that offered bachelors' and masters' degrees. It included only institutions which were strictly regulated by the TEC and the BOTA and had been operating for the previous twelve months or more. Secondly, the sample frame also comprised the list of all teaching staff members who had worked for the institutions for at least 12 months. The units of selection, therefore, were the education institutions in the first instance and teaching staff in the second instance. The total population surveyed (that is, all teaching staff of these institutions including senior management) came to 670.

In a study, it is important that an appropriate sampling frame is chosen. This view is supported by the United Nations Children's Fund (2015) which contends that an appropriate sampling frame is the ultimate decider of the validity of research results. It goes on to suggest that a critical consideration in deciding on the appropriate frames to utilise for a study is the relationship between the target population and the unit of selection. The target population determines the frame as well as the probability of selection of the unit at the last stage.

The sampling frame chosen for this study effectively captured the target population in a statistical sense. Besides, it had the following properties that are ideal for a survey research – completeness, accuracy, and currency (Turner, 2003). These are discussed below:

- Completeness

The frame selected was complete with regards to the target population. This was because all of its members (the universe) were covered by the frame which is an essential feature in judging the frame's suitability for survey research and determining whether it can be repaired or further developed to make it suitable if it is not.

- Accuracy

A frame is deemed accurate if each member of the target population is included once and only once. In this study, the researcher ensured that errors were avoided by seeing to it that only academic staff members of PHE institutions were included in the sample frame and that no member of the target population was included more than once. The researcher also ensured that all members of the population within an area unit had an equal chance of being selected for the sample thus making sure that the conditions for a true probability sample were not violated (Turner, 2003).

- Currency

A sample frame should be up-to-date in order to fulfil the aforementioned properties of accuracy and completeness. An obsolete frame will contain inaccuracies and is likely to be incomplete. This study included PHE institutions (and their employees) that were operating in Botswana at the time of the study and excluded those that had closed and/or were in the process of being established.

#### **4.3.1 Sampling techniques**

According to Kothari (2011), there are different forms of sampling designs based on the representation basis and selection technique. In terms of the latter, the sample design may be probability sampling (which is random selection) or non-probability sampling (non-random selection). In terms of the former, the sample may either be unrestricted (each sample element is drawn individually from the population at large) or restricted (covering all other forms of sampling). These aspects are depicted in Figure 4.2.

↓		
Element selection Technique	Probability sampling	Non-probability sampling
Unrestricted sampling	Simple random sampling	Haphazard sampling or convenience sampling
Restricted sampling	Complex random sampling (such as cluster sampling, systematic sampling, stratified sampling, etc).	Purposive sampling (such as quota sampling, judgment sampling)

**Figure 4.2:** Chart showing basic sampling designs (Kothari, 2011: 59).

Merriam (2009) also argues that there are basically two types of sampling techniques, also called ‘sampling designs’, commonly used in research, namely probability and non-probability sampling. This study used the probability sampling technique which is discussed below.

#### **4.3.1.1 Probability sampling**

Simple random sampling (also called ‘chance sampling’) is the most common example of this type of sampling. In this sampling procedure Kothari (2011) contends that every item in the universe has an equal probability of being included in the sample. Hence in this sampling technique it is blind chance alone that determines whether an item is selected or not, such as a lottery number picked by some mechanical process. Kothari (2011) further postulates that results obtained from this sampling procedure are reliable as all items in the sample are assured of the probability of being selected through the measure of errors of estimation or significance. This reliability aspect explains the superiority of the probability sampling technique over non-probability sampling. This sampling design also ensures the law of Statistical Regularity which stipulates that if, on average, the sample chosen is a random one, the sample will have the same composition and characteristics as the population.

Kothari (2011) suggests that adherence to the law of Statistical Regularity is the reason why probability sampling is considered the best technique of selecting a truly representative sample. Gorard (2010), who propose that random sampling implies that each element of the universe is afforded an equal chance of inclusion in the sample, supports this view. Random sampling also ensures that all choices are independent of each other and it gives each possible sample combination an equal chance of being selected.

Merriam (2009) who concurs that probability sampling allows the researcher to generalise findings of the study from the sample to the population from which it is drawn further supports the superiority of probability sampling over non-probability sampling. Since generalisation in a statistical sense is the goal of quantitative research, probability sampling is therefore suitable and justified for this form of research. For the questionnaire, probability sampling was used in this particular study to select the units of investigation.

- **Stratified sampling**

According to Kothari (2011), this technique is used when the population to be sampled does not constitute a homogeneous group. Therefore, it is done in order to acquire a representative sample. This technique was used in this study by segmenting the population under study into several sub-populations (strata) that were individually more homogenous than the overall population. The researcher formed strata on the basis of common characteristics of the items to be placed in each stratum, thus ensuring that the elements were most homogeneous within each stratum.

Formation of strata ensured that elements were most homogenous between the different strata implying that strata were purposively established based on the past experience and personal judgment of the researcher. Different strata comprised teaching staff in top and middle management (Deans and HODs), lower management and non-managerial teaching staff. Units were then selected from each stratum to comprise a sample as shown in Chapter 1 (Table 1.7). This is stratified random sampling using proportional allocation.

Because each stratum was more homogeneous than the total universe, the result is a more precise estimate for each stratum and, through a more accurate estimation of each of the component parts, it led to a better estimate of the whole (Kothari, 2011).

- **Simple random sampling**

After the establishment of strata, simple random sampling was then used to select items for the sample from each stratum. The number of items chosen from each stratum (sample size) was based on proportional representation whereby the sizes of the samples from the different strata were kept proportional to the sizes of the strata. This meant that the non-managerial staff stratum was obviously much larger than the other strata.

#### **4.3.2 Sample**

Merriam (2009) defines a sample as a unit of analysis, that is, choosing what, where, and who to observe, interview or survey. The researcher determined the size of the sample taking into account non-response, attrition and respondent mortality. This means some participants failing to return questionnaires, leaving the research, returning incomplete or spoiled questionnaires (Cohen, Manion & Morrison, 2011). According to Gorard (2010), it is advisable to overestimate, rather than underestimate, the sample required to build in redundancy. Further, with very small subgroups of the population, it may be necessary to operate a weighted sample – an oversampling – in order to gain any responses at all or to ensure sample representativeness. The population of academic staff in the five PHE institutions covered in this study stood at 670 at the time the study was conducted.

In terms of sample size, the researcher was guided by the views of Ngulube (2005) who argues that social science researchers have a misconception that if the population to be studied is large, it then follows that the sample has to be proportionally large. This view is supported by O'Sullivan, Rassel and Berner (2008) who concur that what matters most is that the sample is representative enough of the population. Ngulube (2005) postulates that the main determinants of sample size are the desired degree of accuracy and the confidence level. He further argues that a common rule of thumb is a 95% confidence level so that the results are accurate to within +/-3%. The implication of this is that a sampling error of 3% and a

confidence level of 95% (adopted for this study) mean that the researcher can be 95% confident that the population would resemble the sample at +/-3% margin of error.

The researcher also based the sample size on the sample size table (The Research Advisors, 2006). According to this model, for a population that is between 600 and 700, using a 3.5% margin of error and a 95% confidence level, the sample size lies somewhere between 340 and 370 thus the sample size adopted is 350. This amounts to 52% of the population, a figure which resonates well with the view of Leedy and Ormrod (2005) who propose a sample size of 50% of the population as representative enough for a valid study. The Research Advisors' sample size table is shown in Appendix 3, while Table 1.7 (Chapter 1, section 1.8.4.1) shows the population of academic staff in the PHE institutions in this study and the sample size from the different strata. The simple random sampling technique was used to determine sample sizes for different strata. After determining the sample size the random sampling technique was adopted using a random number generator in MS Excel.

#### **4.4 Data collection**

Data was collected on KM enablers and the role they play in facilitating KM practices at Botho University, LUCT, ABM University College, Baisago University College, and GIPS. Data was also gathered on the role of strategic leadership in enhancing KM practices in the selected PHE institutions and the influence of family management on KM practices. Data was also collected on whether organisational structures of these institutions promoted KM practices, and the extent to which their organisational culture facilitated KM. Data collection was done through a structured self-administered questionnaire and literature review.

##### **4.4.1 Questionnaire**

According to Dawson (2012), the questionnaire is one of the most widely used and effective instruments for gathering survey data. The author further reiterates that a questionnaire can be administered in the absence of the researcher and is straight-forward to analyse. The same author goes further to suggest that the challenge with using the questionnaire to elicit information lies in the fact that it is viewed as an intrusion into the personal life and privacy of the respondent. This intrusion is in terms of the time taken to complete the questionnaire and the sensitivity of the questions in the questionnaire.

Dawson (2012) further suggests that respondents cannot be forced to complete a questionnaire since they are subjects and not objects of research, and their propensity to cooperate is a result of the following factors:

- Their informed consent (that is the right to freedom and self-determination to decide whether to participate in the survey or not);
- Their right to withdraw at any stage of the questionnaire or not to complete sections or items of the questionnaire they deem inappropriate;
- Whether they feel the research has potential to improve their situation (the issue of beneficence);
- The guarantee that the research poses no harm to them or their families (non-maleficence);
- Guarantees of confidentiality, anonymity, and non-traceability (respondents not being able to be linked to a completed questionnaire);
- The degree of threat or sensitivity of the questions (this may lead to over-reporting or under-reporting on the part of the respondent); and
- Avoidance of bias and the assurance of validity and reliability in the questionnaire (methodological rigour and fairness). It is the right of the respondent to expect reliability and validity of the questionnaire.

Since the factors enunciated above affect the success of gathering data through the questionnaire, attention should therefore be given to the questionnaire itself, the approaches that are made to the respondents, the explanation given to the respondents, and the way data is analysed. Attention should also be given to how data is reported. These issues were effectively dealt with by the researcher in this study.

Further support for use of the questionnaire is proffered by Leedy (2010) who concurs that a structured questionnaire is an effective research instrument for collecting quantitative data because questionnaires are suitable for observing data beyond the physical reach of the observer. The questionnaire was administered to members of staff who were in senior, middle, and junior academic leadership positions and to those not in academic leadership positions. In order to ensure that data collection through the structured self-administered questionnaire was effective, both open-ended and closed-ended questions were used to compensate for the shortcomings that the other might have. The use of open-ended and

closed-ended questionnaires was therefore important in attempting to ensure reliability and validity of the study.

As further support for the use of open-ended and closed-ended questionnaires in collecting quantitative data, Fowler (2009) avers that closed-ended questions are restrictive in their nature so the use of open-ended questions compensates for this limitation. The combination of open-ended and closed-ended questions may therefore ensure that the findings of the study are as reliable as possible. The questionnaire with open-ended and closed-ended questions that was used in this study is shown in Appendix 1.

To ensure the effectiveness of the questionnaire as a data collection instrument, care was exercised in the wording of the questions and jargon was avoided as much as possible, and so were technical terms. Ambiguous words were also avoided as well as questions which may be annoying, frustrating, offensive, and embarrassing. For example, questions about marital status, number of children, remuneration and so on were avoided as they have the potential to make the respondent feel uncomfortable. Again, questions were kept short and simple and they were not double-barrelled, that is, two questions in one (Dawson, 2012). Questions that contain prestige-bias were also avoided, that is, those that force the respondents to give a false answer either because they do not want to look bad before the researcher or because it is expected behaviour.

Before the questionnaire was adopted, it was pre-tested and pilot-tested to check whether it would obtain the desired results or not. Pre-testing was done by seeking responses from 12 people from the population under study. Four respondents were chosen from each of the population strata shown in Table 1.7 (Chapter 1, section 1.8.4.1) who were not going to be part of the actual study sample. These respondents went through the questionnaires and checked if there were any ambiguities. Removal of identified ambiguities led to the further refining of the questionnaire.

After the refining of the questionnaire until it was found to be satisfactory, a number of questionnaires were dispatched to the type of people who were to be involved in the survey to pilot-test with full knowledge that it was a pilot test. The comments proffered by the respondents during the pilot-testing were used to further improve the questionnaire. Another

12 respondents were selected from the actual sample under study for this purpose. The number (12) used for both pre-testing and pilot-testing was adopted from Powell and Connaway (2004) who suggest that it is important to pre-test the questionnaire with 10-12 colleagues who represent a population to be studied.

In order to obtain as high a response rate as possible, the researcher used a predominantly closed-ended questionnaire with fixed responses with a single choice (see question items 14, 22, 28, 38 in the questionnaire, Appendix 1). The closed-ended questionnaire also contained fixed responses with multiple choice (see question items 1, 2, 3, 5, 6, 7 and so on) and rating scale (see question items 9, 10, 11, 12, 13 and so on). The use of a questionnaire with fixed responses is supported by Dillman, Smyth, and Christian (2009) who contend that such questionnaires are concise and easy to complete.

More support for the use of a closed-ended questionnaire is proffered by Fowler (2009) who concurs that completing a closed-ended questionnaire requires less effort than completing an open-ended questionnaire. The author further contends that expending little effort in completing a questionnaire leaves little room for non-response which leads to a higher response rate.

Another advantage of using a closed-ended questionnaire in collecting data is provided by Kumar (2005) who argues that the question items in a closed-ended questionnaire allow pre-coding because the responses are stated. Stating of responses is thought to make SPSS analysis suitable thus facilitating the analysis of data and producing quantitative results. In the closed-ended questions, single choice questions required a 'yes' or 'no' answer, while multiple choice questions required respondents to choose from more than two responses. The rating scale questions used the Likert Scale which is important in the measurement of respondents' attitudes (Powell & Connaway, 2004; Kumar, 2005) towards the state of KM in the PHE institutions covered in the study.

The questionnaire also measured respondents' attitudes towards the role of KM enablers in facilitating KM practices in selected PHE institutions. These KM enablers included the role of strategic leadership, family management, organisational culture, and organisational structure. The responses sought to establish how these useful KM enablers influenced KM

practices in the PHE institutions covered in this study. The values were stated on a five-point scale ranging from ‘strongly disagree’, ‘disagree’, ‘neutral’, ‘agree’ and ‘strongly agree’ and alternated with ‘not at all’, ‘neutral’, ‘to a little extent’, ‘to a large extent’ and ‘absolutely’ (see, for example, question items 19, 20, 21, 22, 23, 26 – Appendix 1). Alternating the responses was meant to ensure variety and to avoid too much repetition which is monotonous.

In order to encourage respondents to answer the questionnaire and to enhance the response rate, the following measures were taken:

- The questionnaire was relevant to the lives, attitudes, beliefs, and experiences of the respondents, for example their work;
- There were no language issues, that is, the questionnaire did not use a language the respondents did not understand. The questionnaire was in English which all respondents understood and not Setswana since some respondents were from India, Malaysia, Zimbabwe, Kenya, Nigeria, Zambia, Malawi and other countries;
- The questionnaire was well-constructed and well laid out;
- The questionnaire was clear, straight-forward and not cluttered;
- Instructions were straight-forward and realistic about the time required to complete the questionnaire;
- The purpose of the research and how the respondent will benefit from it were clearly explained to the respondent; and
- The respondent was assured of confidentiality.

In terms of the actual questions from which responses were being sought, the questionnaire was divided into themes based on the KM enablers being investigated. For example, Part I is biographical data namely gender, age, work experience (in the organisation and outside the organisation), and type of employment. The purpose of these questions was to determine the people element and its contribution to KM practices in selected PHE institutions in Botswana. Part II questions sought data on the existing state of KM in the selected PHE institutions. The questions were meant to determine if employees were familiar with the term ‘KM’, whether top management regularly talked about KM, and whether employees appreciated the importance of knowledge and the need to share it.

Part III was about the effect of family management on the ability of the organisation to generate and share knowledge. This part of the questionnaire sought to find out if the selected institutions were owned and managed by family members or not and whether the institutions' family managers closely monitored the activities of employees. Questions in Part III also sought to determine the extent to which family managers prevented or facilitated the exploitation of knowledge. Finally, questions in Part III were also meant to establish whether family managers contributed to employee turnover, and whether the institutions were in business partnerships with other organisations or individuals.

Questions in Part IV sought to determine the role of strategic leadership in facilitating KM practices. The questions were meant to obtain employee responses on whether there was a well-coordinated KM programme in the organisations and whether there was a position of knowledge officer (KO) in these organisations. Part IV also sought to determine whether there was a link between overall business strategy of selected PHE institutions and KM strategy, and whether leadership rewarded employees who shared knowledge.

Part V was meant to determine whether the PHE institutions' organisational structure facilitated KM. It solicited responses on the institutions' organisational (reporting) structures, the flow of information in the institutions, and existence of formal and informal networks. Part V also sought to establish the existence of a knowledge map and availability of physical infrastructure in the selected PHE institutions.

The last two sections of the questionnaire (Part VI and VII) were on organisational culture and KM. Part VI sought to establish if information was concentrated in the hands of top management, if trust existed between employees and top management, the extent of employee involvement in decision-making, and so on. Finally, Part VII was meant to determine the extent of stakeholder engagement, that is, how the institutions interacted with stakeholders such as regulatory authorities, staff associations, students' representatives, industry, and research bodies (collaboration).

Briefly and in terms of methodological discourse, the research design and methodology used in this study was based on Ngulube (2015a) but was adapted to make it suitable for this study. The research paradigm adopted for this study is situated within the positivism research

paradigm and the methodology is quantitative. The research approach/design is survey research while the research technique is a semi-structured questionnaire.

#### **4.5 Data analysis**

According to Yin (2012), data analysis implies what is done to information that emanates from a research process to enable readers to make sense of it. The author further argues that in a study it is necessary to determine how data will be analysed before the data collection process is begun. Hence effective data analysis strategies should be in place well before data collection.

Further synthesis of data analysis is provided by Leedy and Ormrod (2005) who opine that the data analysis process includes steps such as logical organisation of the details of the case under investigation. The same authors further argue that data analysis also involves data categorisation and examination of pieces of data to determine their relevance towards the case. Data analysis also includes the analysis of data for underlying themes and patterns, and synthesis and generalisation of the findings. Other researches observe that at the end of data analysis the researcher needs to look for convergence of research results, that is, whether the many different pieces of findings point to the same conclusions (Leedy & Ormrod, 2005; Creswell, 2009).

In this study, data was analysed through literature review, measures of central tendency such as the mean and standard deviation (SD), multiple linear regression analyses, and use of Structural Equation Modelling (SEM). Other statistical measures such as the parametric independent sample t-test or the nonparametric Mann U test, the Analysis of Variance (ANOVA), and the Chi-square test were also used to analyse data. Some of the data analysis tools used in this study namely measures of central tendency and SEM are further discussed below.

##### **4.5.1 Measures of central tendency**

The mean and SD were the main measures of central tendency used to analyse data in this study. These measures were used to analyse data on the state of KM in the selected PHE institutions, the effect of family management on KM activities of these institutions, and the

role of strategic leadership in KM practices of the institutions. The mean and SD were also used to analyse data on the role of organisational structure, organisational culture, and strategic leadership and family ownership and management in facilitating KM practices of the selected PHE institutions.

In support for the use of the mean in data analysis, Utts and Heckard (2007) contend that the mean is important in determining the overall trend of a data set and also providing a quick snapshot of data. However, these authors also argue that used alone, the mean is a dangerous tool in data analysis especially in the case of data with outliers or a skewed distribution. The authors argue that in such scenarios, the mean simply does not provide the accuracy that is need for a nuanced decision.

In support of the weakness of the mean as a data analysis tool, Vogt (2007) posits that in cases where outliers exist or data distribution is skewed, the SD, which is the measure of a spread of data around the mean, should be used together with the mean to analyse data. A high SD signifies that data is spread more widely from the mean, whereas a low SD signals that data align with the mean. The lower the deviation of data from the mean, the more the reliability of the data. Thus the distribution of responses is important to consider and the SD provides a valuable descriptive measure of this distribution.

#### **4.5.2 Data analysis using the SEM and other statistical tools**

In this study, data was analysed using the SEM. The essence of using same in data analysis in this study is that it enabled an easier analysis of complex relationships between the state of KM practices (dependent variable) and the role of strategic leadership, organisational structure, and organisational culture (independent variables) in facilitating KM practices in the selected PHE institutions. Use of SEM in data analysis is supported by Christopher (2015) who concurs that SEM statistical methods allow complex relationships between one or more independent variables and one or more dependent variables.

In this study the SEM was used to analyse data through multiple linear regression analysis, the ANOVA, correlation analysis, Chi-square test, and testing of several hypotheses. The analyses, through the SEM, verified the effects of the identified independent variables on the dependent variable. The effects of the independent variables listed above on the dependent

variable (state of KM practices of selected PHE institutions) are presented in Chapter 5 (section 5.5).

The importance of using the SEM in data analysis is further emphasised by Hancock (2015) who notes that the use of SEM is justified in the social sciences for its ability to impute relationships between constructs. In order to determine the strengths of such relationships, several hypotheses were tested in this study. Hypotheses tested in this study are shown in Chapter 5 (section 5.1) and Appendix 2.

In this study, the SEM was used to analyse data through multiple linear regression analysis. The use of regression analysis is reinforced by Christopher (2015) who avers that regression analysis enables the estimation of the relationships among variables when the focus is on the relationship between a dependent variable and one or more independent variables or predictors. Further support for the use of regression analysis is proffered by Hancock (2015) who concurs that regression analysis assists one to understand how the typical value of the dependent variable changes while the independent variables are held constant. In this study, regression analysis was used to show how the value of KM practices changed when the dependent variables (strategic leadership, family management, organisational structure, and organisational culture) were altered.

After estimating the model for KM practices in selected PHE institutions in Botswana, it was necessary to examine the fit of the estimated model to determine how well it models the data. This view is reinforced by Hancock (2015) posits that assessing model fit is a basic task in SEM modelling, which implies forming the basis for accepting or rejecting the model. In assessing model fit, different fit measures such as Chi-square and hypothesis testing were used. For example, a Chi-square analysis of the strength of the relationship between employee awareness of KM and activities that supported KM practices in the selected PHE institutions was done. Several hypotheses were also tested on gender effects on KM practices as well as on the relationship between KM enablers and the state of KM practices in the selected PHE institutions (see Appendix 2).

Information gathered from the questionnaires was analysed using statistical software known as SPSS. The analysis of data was done by assigning codes to the responses and entering the

codes into the computer and then entering it into the SPSS. The reason for coding the data was to allow numerical representation and manipulation of the responses in order to address the specific research objectives. The software was used to run descriptive statistics and cross tabulations to produce frequency tables, charts and graphs for easier and more effective analyses like histograms, pie charts, and so on.

#### **4.6 Research ethics**

Researchers have a responsibility to research participants to take into account the effects of the research on participants and to act in a manner that preserves their dignity as human beings. Further emphasis on the importance of observing ethics when carrying out research is proffered by Howe and Moses (2006) who aver that ethical issues also become paramount in the ownership of data and when the ownership passes from participants to the researcher. These authors also contend that issues of ethics are critical when it comes to the constraints, requirements, conditions and powers over the use and dissemination of the findings placed upon the data by the participants.

Furthering this line of thought, Howe and Moses (2006) postulate that, right from the start, the researcher and the participants need to have a firm agreement about the ownership and control of data once it has been given. The same authors also suggest that the researcher and the participants need to understand how the data is going to be used, and any dangers that may accrue to the participants as a result of their involvement in the research, if any. These issues were, therefore, clearly spelt out to the participants, and they were advised that the data would be treated with strictest confidentiality and used solely for academic purposes. In conformity with the views of Oliver et al (2003), participants were informed that raw data is their property, but once the data has been analysed and interpreted, it becomes the property of the researcher. The researcher obtained the consent and cooperation of participants (subjects) who took part in this study.

Emphasising the need for consent of research participants before the commencement of research, Frankfort-Nachmias and Nachmias (2012) argue that informed consent is critical in carrying out research due to a variety of reasons. These authors further posit that informed consent is particularly important if participants are going to be exposed to any stress, pain, invasion of privacy, or if they are going to lose control over what happens. The researcher

therefore ensured that participants freely chose to take part in the research (or not) and guaranteed that exposure to risks was undertaken knowingly and voluntarily.

In order to adhere to issues of ethics, the researcher conducted this study in accordance with the UNISA's policy governing research ethics. This policy stipulates how research activities involving human objects should be carried out in terms of data collection, interpretation, processing, dissemination, and reporting of research results (University of South Africa, 2007). This policy informs UNISA researchers, students, research participants, peer reviewers, consultants, clients, funders and sponsors of the expectations of UNISA in terms of how research should be carried out to ensure ethical standards. This is meant to prevent negative legal consequences emanating from conducting research in an unethical manner.

The UNISA policy governing research ethics makes it mandatory for all UNISA researchers (including students) who are conducting research that involves human participants, animals, or other living organisms to first inform the Ethics Review Committee of the university. This is done by completing a UNISA questionnaire which determines the extent to which the intended research involves human participants and institutions so as to get the necessary clearance. In accordance with this policy, the researcher had to wait for this clearance before embarking on data collection. The ethical clearance is shown in Appendix 6.

#### **4.7 Validity of the study**

According to Onwuegbuzie and Leech (2006), it is critical to ensure validity for both a quantitative and a qualitative study. Validity in research is defined by Ary, Jacobs, Sorensen and Razavieh (2009) as the ability of a research instrument to measure what it is intended to measure. Validity implies the extent to which the investigator has measured what he/she has set out to measure based on the research questions and/or objectives. For this particular study, the researcher ensured that this study satisfied the following forms of validity:

##### **4.7.1 Internal validity**

Cohen, Manion, and Morrison (2011) opine that internal validity seeks to demonstrate that the explanation of a particular event, issue or set of data which a piece of research provides can actually be sustained by the data. These authors further argue that internal validity

concerns accuracy of research findings. This view is reinforced by Onwuegbuzie and Leech (2006) who concur that internal validity is the truth value of interpretations and conclusions within the underlying setting or group with a negligible margin of error.

In this study, internal validity was ensured through the following means as suggested by Briggs (2008):

- Standardisation of the conditions under which the research was carried out. This ensured that what was being measured was the same throughout the research;
- Obtaining as much information as possible on the subjects. This helped to prevent internal invalidity resulting from mortality and selection;
- Ensuring the use of an appropriate research design. This enabled the collection of appropriate data; and
- Ensuring that the research took place at the appropriate place and time. Where and when the study occurs reduces internal invalidity emanating from history and instrumentation (changes in the measuring instrument over time) (Cohen, Manion, & Morrison, 2011).

#### **4.7.2 External validity**

Schneider (2007) suggests that external validity refers to the degree to which the results can be generalised to the wider population, cases, settings, times or situations, that is, the transferability of the findings. Further emphasis on external validity is provided by Briggs (2008) who asserts that to have a strong external validity, one should obtain as big as possible a sample from the targeted population using chance methods. For the purpose of this study, all PHE institutions offering degrees formed the subjects and systematic random sampling was used to select respondents who were a true representation of the population under study.

The researcher used the following means to further ensure validity of this study at different stages as suggested by Onwuegbuzie and Johnson (2006):

At the design stage:

- Choosing an appropriate time scale;

- Ensuring the availability of adequate resources to carry out the research timeously and continuously (The researcher applied for, and was awarded, a bursary to fund the research);
- Selecting an appropriate methodology for answering research questions; and
- Devising and using appropriate instruments.

At the data gathering stage:

- Minimising reactivity effects;
- Reducing drop-out rates amongst respondents;
- Ensuring standard procedure for gathering data;
- Motivating respondents to remain interested in the research by emphasising how the study would benefit their institution; and
- Ensuring that data gathering instruments matched the concentration span of respondents, that is, instruments were not too long.

At the data analysis stage:

- Avoiding subjective interpretation of data;
- Avoiding being influenced by knowledge of respondents or other data about the respondents or other situations (the halo effect);
- Using appropriate statistical treatments for the level of data (Lave & Kvale, 2005); and
- Avoiding making inferences and generalisations beyond the capability of the data to support such statements (Kumar, 2011).

At the data reporting stage:

- Avoiding selective and unrepresentative use of data, for example, highlighting the positive and ignoring the negative (Cohen, Manion, & Morrison, 2011);
- Indicating the context and parameters of the research in the data collection and treatment, the degree of confidence which could be placed on the findings, and the level of generalisability of the results;
- Avoiding making claims which are not sustainable by the data; and

- Ensuring that research objectives are answered effectively and that results are not released too early or too late.

#### **4.8 Reliability of the study**

According to Kumar (2011), reliability of the study is synonymous with dependability, consistency, honesty, predictability, stability, and replicability of research over time, over instruments, and over groups of respondents. The same author goes on to suggest that reliability of the study describes the extent to which research findings are consistent over time and are an accurate representation of the total population under study. This view is further supported by Golafshani (2011) who concurs that reliability of the study means that the same results of the study can be reproduced under a similar methodology. If this happens, it means the research instrument is considered to be reliable. The following are some of the means that were used to ensure reliability of research instruments as suggested by Kumar (2011):

##### **4.8.1 External consistency procedures**

These procedures compare findings from two independent processes of data collection with each other as a means of verifying the reliability of the measure. The following procedure can be applied for this purpose:

Test/re-test – The instrument is administered once and then repeated under the same/similar conditions. The difference in measurements of the two tests determine reliability (or lack of it) of the instrument.

##### **4.8.2 Internal consistency procedures**

According to Kumar (2011), internal consistency implies that items measuring the same phenomena should produce similar results. In this study, the researcher used the internal consistency reliability test to ensure internal consistency of the study. Internal consistency was determined using Cronbach Alpha. When expressing internal consistency in terms of the Cronbach Alpha, Sekaran (2003) suggests that the following need to be taken into consideration:

- 1) The Cronbach Alpha can be interpreted as the correlation of the observed scale with all possible other scales measuring the same thing using the same number of items.
- 2) Cronbach Alpha can also be interpreted to mean the percentage of variance on the

observed scale that would have explanatory value on the hypothetical true scale composed of all possible items being measured.

To retain an item on an adequate scale of reliability, Cronbach Alpha should be at least 0.7 as indicated in Table 4.1.

**Table 4.1:** Internal consistency reliability analysis

Themes	No. of questions	Cronbach Alpha Coefficient
Existing state of KM	5	.856
Family management and KM constructs	11	.836
Strategic leadership and KM constructs	11	.731
Organisational structure and KM	6	.807
Organisation culture and KM constructs	8	.932
Stakeholder involvement and KM constructs	7	.825

According to Table 4.1, the Cronbach Alpha reliability coefficient ranges from 0.731 to 0.932 which means that the research instrument of the current study can be described as having internal consistency reliability.

#### **4.9 Evaluation of research methodology**

Ngulube (2015b) contends that there is need for researchers to reflect on the procedures they employ since no single methodology is perfect. This involves critiquing the methodology used and its appropriateness and adequacy against other available options. The same author goes further to posit that evaluation of research methodology also involves highlighting the limitations of the methodology used. Although quantitative studies are important in supporting the testing and enrichment of existing theories from a deductive perspective, they are ineffective in the development of theory and explaining why there may be differences between the variables influencing an aspect that is under study. Other researchers observe that quantitative researches also have a limited ability to produce surprising research findings and new insights (Lukka, 2010; Ngulube, 2015b).

There are, therefore, calls for the need to strengthen the use of quantitative methodologies in research to mitigate their shortcomings (Ngulube, 2015b) which is what this study managed to do. Qualitative research enables gaining a rich and complex understanding of a specific social context or phenomenon (in this case the role of KM enablers in facilitating KM practices). However, the need for the presence of the researcher to carry it out (in the case of interviews) makes it time consuming. For that reason, qualitative research was not used in this study.

Positive evaluation of the methodology used in this study is also premised on the fact that the process of data collection went well. The researcher was able to get back three-quarters of the questionnaires distributed and all of them were usable because they were adequately completed. However, given a second chance, the population of this study would be expanded to include government representatives, current and former students, former employees, representatives of regulatory authorities, industry, and other important stakeholders. However, under the prevailing circumstances of limitations of time and sensitivity of the study, the methodology used was the most appropriate.

#### **4.10 Chapter summary**

Chapter 4 presented the research methodology used in this study. It outlined the research paradigm adopted in the study which is positivism. It also examined the research approach adopted, which is quantitative method, and the research design, which is survey research. The chapter outlined the target population covered by this study, and the sampling frame and how it captured the target population. The sampling technique used in this study, namely probability sampling, was explained. Chapter 4 also discussed the sample covered by this study and provided justification for the sample size adopted. The chapter also discussed the questionnaire as a data collection instrument and justified its use in quantitative research. The chapter also discussed how data was analysed through SPSS and SEM through multiple linear regression analysis, correlation analysis, the ANOVA, and hypotheses testing. Issues of ethics, validity, and reliability of the study were also discussed in this chapter. Finally, Chapter 4 evaluated the methodology that was adopted for this study to determine its appropriateness and adequacy. In the next chapter, the results of the study are analysed and interpreted.

## CHAPTER 5

### DATA ANALYSIS, DISCUSSION AND INTERPRETATION

#### 5.1 Introduction

The previous chapter outlined the research design and methodology used in this study. This chapter now presents research findings from the self-administered questionnaire responses. This study sought to determine the role KM enablers were playing in facilitating KM practices in selected PHE institutions in Botswana as its primary objective. The study also sought to achieve the following secondary objectives:

- To investigate the role of strategic leadership in enhancing KM practices in selected PHE institutions.
- To examine the influence of family management on KM practices in selected PHE institutions.
- To determine whether organisational structures of selected PHE institutions in Botswana promote KM practices.
- To investigate the extent to which organisational culture of selected PHE institutions in Botswana facilitates KM practices.
- To investigate the extent to which PHE institutions involve internal and external stakeholders in the affairs of their institutions.

After extensive meta-analytical review of extant literature in this empirical study, the researcher managed to generate the following hypotheses based on the above research objectives:

H1: Strategic leadership is significantly and positively related to KM practices in selected PHE institutions.

H2: Family management influence is significantly and negatively related to KM practices in selected PHE institutions.

H3: Organisational structure is significantly and positively related to KM practices.

H4: Organisational culture is significantly and positively related to KM practices.

H5: Stakeholder involvement metric is significantly and positively related to KM practices

In this study, data was obtained through the self-administered questionnaire and literature review. The presentation of findings is, therefore, a consolidation of data from these sources. Findings from the literature review were presented in Chapters 2 and 3. In line with the research objectives stated above, research findings are analysed and presented under various themes.

The Statistical Software for Social Science Research (SPSS) was used to process quantitative data from the 261 respondents who returned the questionnaires. This data is presented in the form of tables and figures in order to vary the presentation.

The results are presented in two tiers based on the research objectives. Firstly, hypothesis testing was done to test relationships between the variables under study. Over and above the hypotheses stated above, other hypotheses that were tested in this study are shown in Appendix 2. Data is analysed using the Structural Equation Modelling (SEM), the Chi-square test, and multiple linear regression analysis. Secondly, descriptive statistics which includes frequency distributions, frequency tables, and histograms are used to present data in order to make it as clear as possible based on the variables (themes) under study.

A total of 350 questionnaires were distributed of which 261 were returned resulting in a response rate of 74.6%. This is a good response rate based on the views of Sivo, Saunders, Chang, and Jiang (2006) who suggest that a response rate of 60% is good, while that of 70% is very good. This view is reinforced by Dillman, Smyth, and Christian (2009) who aver that best practice stipulates that a response rate under 70% should be a warning hence that which is 70% and above is desirable to ensure representativeness of results thus enabling generalisation of the findings.

## **5.2 Demographic analysis of respondents and KM implications**

This section outlines findings on the demographic characteristics of the respondents that have a bearing on KM practices. It looks at respondents' gender, age, level of education, work experience (with the current organisation and previous) and type of employment which are components of organisational culture (the 'people' element) as explained in Chapter 2 (section 2.2.1.3). The research also measured how these variables influenced the state of KM

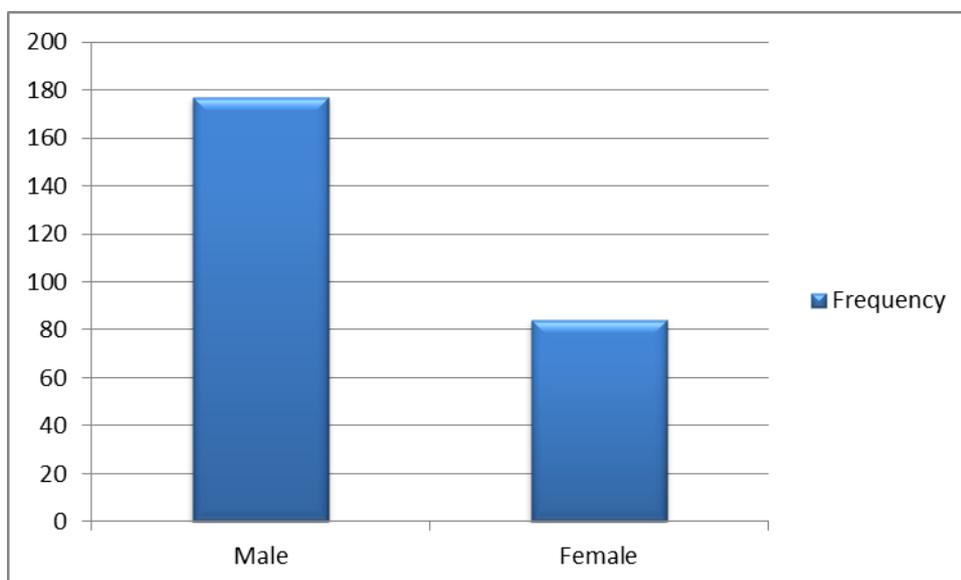
in the selected PHE institutions in Botswana. Responses to these aspects will determine whether the biographical (demographic) characteristics of employees of PHE institutions surveyed through a self-administered questionnaire enabled effective KM practices or not. Analysis of responses to questions in this section addresses the following empirical research objective:

To investigate the extent to which the organisational culture of selected PHE institutions in Botswana facilitates KM practices.

The demographic aspects, and their KM implications, that were investigated in this study as elements of ‘people’ (organisational culture) are gender, age, educational qualifications, work experience, and employment type. The results of these demographic aspects are analysed below.

### 5.2.1 Gender and KM

Figure 5.1 indicates the results of the gender of the respondents to the questionnaire.



**Figure 5.1:** Respondents’ gender

Figure 5.1 shows that of the selected 261 respondents who returned questionnaires, 177 (68%) were male, while 84 (32%) were female.

Hypotheses on gender and KM were tested using the ANOVA to determine the significance of the difference, if any, among the means of the considered groups and were presented after the descriptive analysis. The following hypotheses were meant to determine if there was a significant difference between males and females in terms of KM awareness and practice:

H<sub>0</sub>: There is no significant difference between the means of males and females on the awareness and practice of KM

H<sub>a</sub>: There is a significant difference between the means of males and females on the awareness and practice of KM.

H<sub>0</sub>: There is no significant difference between the means of males and females in appreciation of the need to share knowledge.

H<sub>a</sub>: There is a significant difference between the means of males and females on appreciation of the need to share knowledge.

Prior to testing the independent t- test, the assumption of normality was tested using the Shapiro-Wilk analysis. The hypothesis tested is that:

H<sub>0</sub>: The sample distribution of the two groups is normal.

H<sub>a</sub>: The sample distribution of the two groups is non-normal.

The results of the normality test are shown in Table 5.1.

**Table 5.1:** Analysis of normality test of gender, employee awareness, employee appreciation of KM, and the need to effectively share knowledge

Tests of normality	Gender	Shapiro-Wilk		
		Statistic	df	Sig.
Q9 Employees are familiar with knowledge management	Male	.318	119	.000
	Female	.445	142	.000
Q11 My organisation's employees have an appreciation of the need to effectively share knowledge	Male	.341	119	.000
	Female	.473	142	.000

Table 5.1 shows that the basic test of normality of distribution was violated, p - value 0.00 ( $p < 0.005$ ) which is statistically significant; therefore the null hypothesis was rejected

indicating that the data from both females and males were not normally distributed. Based on this analysis the independent t-test cannot be performed on this data.

To overcome the non-normality, the Mann Whitney U test was used (Table 5.2). The Mann Whitney test is a non-parametric test which overcomes the underlying assumption of normality in parametric tests. The hypothesis was re-formulated as follows:

H<sub>01</sub>: There is no significant difference between the medians of males and females on the awareness of KM and appreciation of the need to share knowledge (H<sub>0</sub>: M<sub>1</sub> = M<sub>2</sub>).

H<sub>a</sub>: There is a significant difference between the medians of males and females in the awareness of KM and appreciation of the need to share knowledge (H<sub>0</sub>: M<sub>1</sub> ≠ M<sub>2</sub>).

H<sub>0</sub>: There is no significant difference between the medians of males and female in appreciation of KM and the need to share knowledge (H<sub>0</sub>: M<sub>1</sub> = M<sub>2</sub>).

H<sub>a</sub>: There is a significant difference between the medians of males and females in the awareness of KM and the need to share knowledge (H<sub>0</sub>: M<sub>1</sub> ≠ M<sub>2</sub>).

M<sub>1</sub> represents the median for males and M<sub>2</sub> represents the median for females. Table 5.2 shows that p-values are 0.268 and 0.238 respectively which are greater than the level of significance of 5%. This means that the results are not statistically tenable, thus the null hypothesis is retained. It is concluded then that the median of the males is equal to the median of the females on the awareness of KM and appreciation of the need to share knowledge respectively.

**Table 5.2:** The Mann Whitney test of difference between gender, employee awareness of KM, and appreciation of the need to share knowledge

Item	Q9 Employees are aware of knowledge management	Q11 My organisation's employees have an appreciation of the need to share knowledge
Mann-Whitney U	1245.000	1232.500
Wilcoxon W	1911.000	1898.500
Z	-1.109	-1.181
Asymp. Sig. (2-tailed)	.268	.238

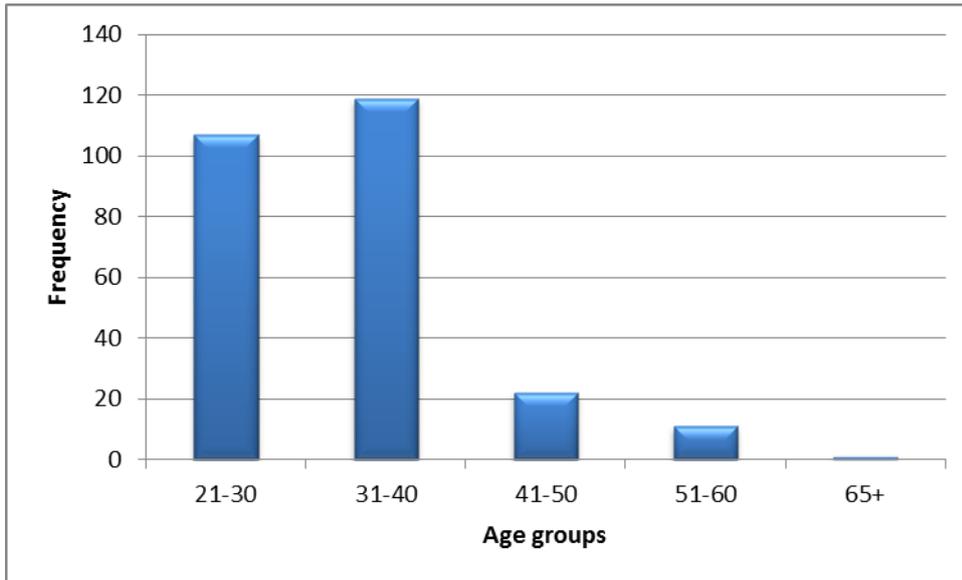
The results of the structured questionnaire survey indicate that the majority of employees of selected PHE institutions in Botswana were males (Figure 5.1). Such a situation may have negative connotations with regard to knowledge-sharing effectiveness based on which gender is more willing to share knowledge. Previous research as indicated in Chapter 3 (section 2.2.1) has revealed gender differences in beliefs, attitude, and behaviour in the formation and maintenance of relationships. The research indicates that, in general, men are perceived to be less well-suited to social life than females owing to the former's tendency toward independence and fear of social contact and relatedness, and the latter's tendency toward interdependency and close relationships (Miller and Karakowsky, 2005; Ma and Yuen, 2011). These authors further argue that men are generally believed to construct and maintain an 'independent self-construal' while women construct and maintain an 'interdependent self-construal'. Independent self-construal refers to representations of others who are separate from the self, while 'interdependent self-construal' refers to others who are regarded as part of the self.

In further support of the negative effect of having more male employees than females on knowledge sharing, Ma and Yuen (2011) posit that men's behaviour is believed to be directed toward the formation of relationships with others. These authors, however, argue that in a broader social perspective women's sociality is believed to be focused on learning from others through the formation of close relationships. As a result, since females exhibit greater social interdependency than males, it follows then that they express themselves more often and more effectively than men. Such kind of behaviour leads to higher levels of perceived deep learning, and sharing of information and ideas (Miller & Karakowsky, 2005; Lin, 2006).

The existence of more male employees compared to females in the selected PHE institutions might then mean that the institutions are losing out on deep learning and more effective sharing of information and ideas which are associated with the women folk.

### **5.2.2 Respondents' age and KM implications**

The study sought to establish the age distribution of respondents. The results are shown in Figure 5.2.



**Figure 5.2:** Distribution of respondents according to age groups

The results in Figure 5.2 show that a good number of employees of PHE institutions included in this study were below 40 years old. The figure indicates that out of the 261 respondents, 107 (41%) were aged between 21 and 30 years, while 119 respondents (46%) were aged between 31 and 40 years. This means that 87% of the respondents were aged 40 years and below. Twenty-two respondents (8%) were in the 41-50 age-group. Only 11 respondents (4.2%) were aged 51 and above.

In order to establish if there was a significant difference in employee age and perception of KM in the organisations covered in this study, the following hypothesis was tested:

$H_0$ : There is no significant difference in age and perception of KM in PHE institutions. ( $H_0$ : All the age groups have the same perception of KM in their organisation on average or  $\mu_1 = \mu_2 = \mu_3$ )

$H_a$ : There is a significant difference in age and perception of KM in PHE institutions. ( $H_a$ : All the age groups have the same perception of KM in their organisation on average or  $\mu_1 \neq \mu_2 \neq \mu_3$ , where  $\mu_1, \mu_2, \mu_3$  are the means of current perception of KM in the organisation of the three age groups).

The relationship between respondents' age and perception of KM is further illustrated in Table 5.3.

**Table 5.3:** Respondents age and KM perception

ANOVA					
Items	Sum of Squares	df	Mean Square	F	Sig.
Between groups	1356.307	4	339.077	32.740	.000
Within groups	2630.596	254	10.357		
Total	3986.903	258			

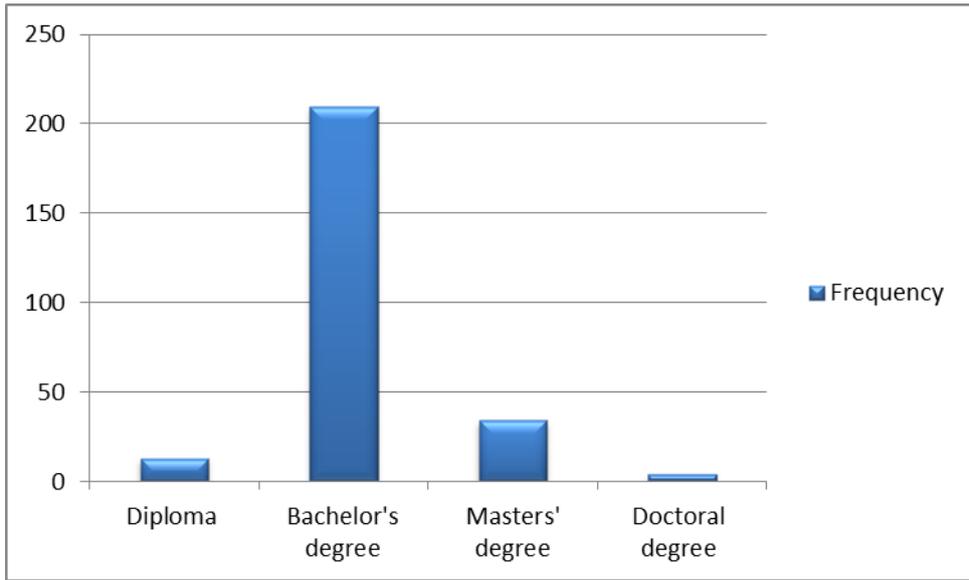
As shown in Table 5.3, employees' perception of KM differs significantly among the six age groups,  $F(4,254) = 32.74$ ,  $p < .000$ . The null hypothesis is rejected. This implies that all the groups had different perceptions of KM.

The results of the study revealed that employees of selected PHE institutions were fairly young (at the time the study was conducted) as shown in Figure 5.2. These employees were 'freshers' who possessed little professional and life experience. Miller and Karakowsky (2005) observe that such young employees possess limited knowledge of both work and life. This may have negatively impacted on the availability of knowledge in selected PHE institutions.

In support of age as an important KM enabler, Dube and Ngulube (2012) argue that age is one of the demographic characteristics which affect KM practices of knowledge creation and sharing. These authors further postulate that age impacts on knowledge creation and sharing by creating fault lines that may constitute barriers to interaction and hence decrease social attachment and interaction due to inherent dissimilarities. The prevalence of generally young employees in selected PHE institutions may therefore mean a shortcoming in the practice of knowledge sharing.

### **5.2.3 Respondents' level of education and KM implications**

The levels of education of the respondents of the questionnaire are shown in Figure 5.3.



**Figure 5.3:** Respondents' level of education

According to Figure 5.3, the majority of respondents (210 or 80.5%) held bachelors' degrees. Only 34 of the respondents (13%) were holders of a master's degree, while an insignificant figure of 1.5% (4 respondents) were PhD holders.

In order to establish whether employees with different levels of education differ in their perception of KM, the following hypothesis was tested:

H<sub>0</sub>: Employees of different education levels do not differ in their perception of KM in their organisations based on the averages ( $\mu_1 = \mu_2 = \mu_3 = \mu_4$ )

H<sub>a</sub>: Employees of different education levels differ in their perception of KM in their organisations based on the averages ( $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$ ), where  $\mu_1$ ,  $\mu_2$ ,  $\mu_3$  and  $\mu_4$  are mean scores of the four education levels (diploma, bachelor's, master's and doctoral). The ANOVA was carried out to test the differences on KM perception of varying groups in the organisations based on the level of education. The results of the test are shown in Table 5.4.

**Table 5.4:** Respondents' level of education and KM implications

ANOVA					
Items	Sum of Squares	df	Mean square	F	Sig.
Between groups	950.719	3	316.906	26.705	.000
Within groups	3037.881	256	11.867		
Total	3988.600	259			

The results in Table 5.4 show that the tests were statistically significant hence the null hypothesis was rejected, thus indicating that employees' perception of KM differed significantly with the level of education ( $F(3,256) = 26.705, p < .05$ ).

The results of the study shown in Figure 5.3 and Table 5.4 reveal shortcomings in the level of education of employees and members of management of the PHE institutions under study. Possessing low levels of education may have negative connotations for knowledge creation, sharing, and application as poorly educated employees do not generate much knowledge let alone share and use it. This resonates with the findings of Scaringella and Malaeb (2014) who contend that 21<sup>st</sup> century organisations need well educated and talented employees. These authors further postulate that such employees constitute an innate ability, aptitude, or faculty, or an above average ability, or the sum total of intrinsic gifts, abilities, knowledge, skills, intelligence, attitude, character, and drive (see Chapter 2, section 2.2.1). The authors further posit that such abilities mentioned above are developed by the most effective leaders at all levels of the organisation to drive its performance (see Chapter 2, section 2.2.3).

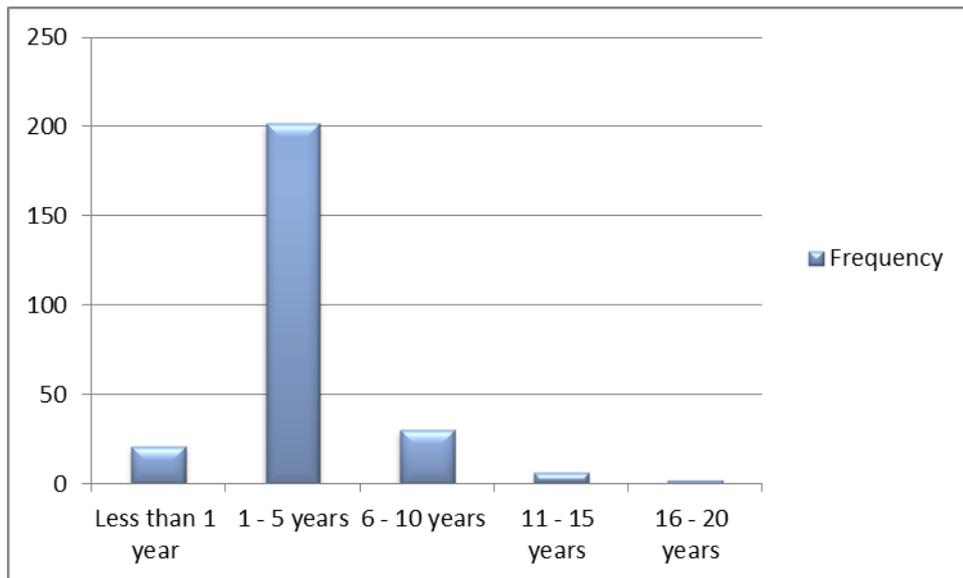
The importance of higher levels of education and possession of more or less the same level of education among employees in facilitating KM practices is further emphasised by Ojha (2005) who argues that employee educational level and differences in levels of education among employees have an effect on organisational employees' willingness to share knowledge. This view is reinforced by Wang and Noe (2010) who concur that possessing different levels of education is likely to reduce the sharing of common experiences which is critical in knowledge creation, sharing, and application. This was the situation in the selected PHE institutions where employees' levels of education varied from bachelor's to doctoral degrees.

Other researchers support the importance of higher educational qualifications in facilitating KM practices by suggesting that employees' ability to absorb and use the knowledge they receive from colleagues is, to a large extent, determined by their educational background. These researchers concur that a strong educational background enhances the productivity of knowledge sharing in an organisation (Daghfous, 2003; Hveem & Lapadre, 2011). This view is further reinforced by Daghfous (2003) who asserts that a strong educational background enhances employees' absorptive capacity and enhances their knowledge sharing capabilities and hence their productivity and organisational performance.

The fact that 87% of academic staff of PHE institutions covered in this study possessed undergraduate degrees in institutions offering undergraduate and postgraduate qualifications was indicative of a dearth in educational qualifications of critical staff. These employees with limited capacity, holding only bachelor's degrees yet teaching bachelor degree students, were likely to have little experiences to share and were also likely to face challenges in absorbing and exploiting knowledge they received from the few colleagues with higher qualifications. These findings confirm the literature findings indicated in Chapter 3 (section 3.4.2.2 - dearth in HR).

#### **5.2.4 Employees' work experience and KM implications**

In response to the question which sought to establish years of work experience with the current employer, the results are indicated in Figure 5.4.



**Figure 5.4:** Work experience with current employer

Figure 5.4 shows that 21 respondents (8%) had work experience with their current employer of less than one year; 202 (77.5%) of the respondents had work experience with their current employer of 1 – 5 years; 30 (11.5 %) respondents had work experience with the current employer of 6 – 10 years; 6 (2.3%) had work experience with their current employer of 11 – 15 years, while 2 (0.8%) respondents had work experience with the current employer ranging from 16 to 20 years.

In an attempt to establish the strength of the relationship between the state of KM in PHE institutions covered in this study and work experience within the organisations, the following hypothesis was tested:

H<sub>0</sub>: The state of KM does not differ with the number of years of work experience within the organisation.

H<sub>a</sub>: The state of KM differs with the number of years of work experience within the organisation.

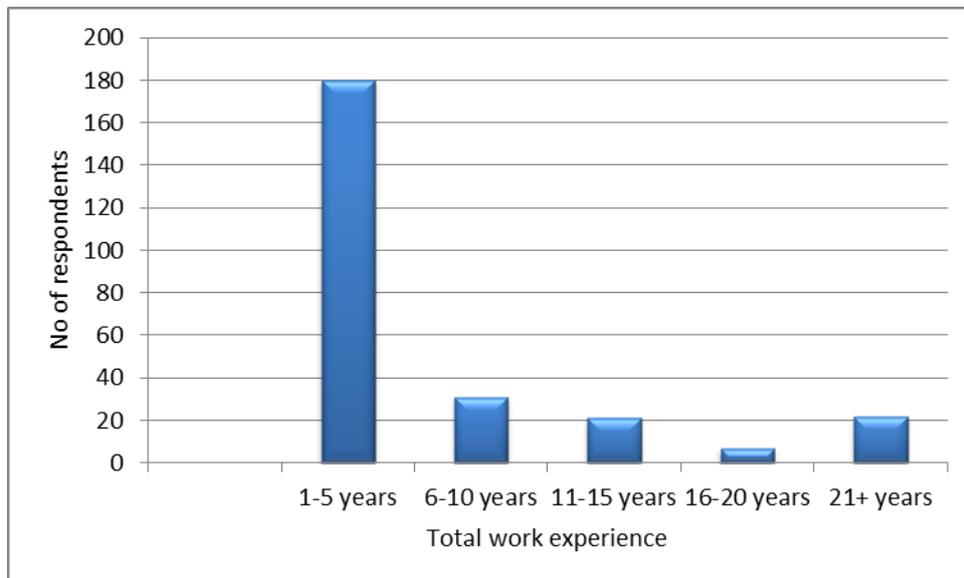
The results of the test of the strength of the relationship between KM and work experience within the organisations are shown in Table 5.5.

**Table 5.5:** Years of work experience in the organisation

ANOVA					
Items	Sum of	df	Mean square	F	Sig.
Between groups	719.314	4	179.829	14.026	.000
Within groups	3269.286	255	12.821		
Total	3988.600	259			

Table 5.5 shows that in the hypothesis tested there was no difference between the state of KM in the organisation that was statistically significant ( $F(5,109) = 6.707, p < 0.05$ ). Since  $p < 0.05$ , the results are statistically significant hence this leads to the rejection of the null hypothesis and the acceptance of the alternative hypothesis. This leads to the conclusion that the state of KM differed significantly with the number of years of work experience ( $F(4,255) = 14.026, p < 0.05$ ).

The study also sought to establish respondents' total work experience including with previous employers. The results are shown in Figure 5.5 and Table 5.6.



**Figure 5.5:** Total work experience

Figure 5.5 indicates that 180 respondents (69%) had total work experience ranging from 1 to 5 years; 31 respondents (12%) had total work experience ranging from 6 to 10 years, while those with total work experience ranging from 11 to 15 years stood at 21 (8%). Respondents whose total work experience ranged from 16 to 20 years and over 20 years were 7 (3%) and 22 (8%) respectively. This means that a combined total of 81% of the respondents representing employees of PHE institutions covered in this study had total work experience of 10 years or less.

The strength of the relationship between total work experience and the state of KM in selected PHE institutions was tested by the following hypothesis:

H<sub>0</sub>: The existing state of KM does not differ with total number of years of work experience.

H<sub>a</sub>: The existing state of KM differs with the total number of years of work experience.

The results of the test are shown in Table 5.6.

**Table 5.6:** Years of work experience (including with other organisations)

ANOVA					
	Sum of squares	Df	Mean square	F	Sig.
Between groups	1398.814	5	279.763	27.438	.000
Within groups	2589.786	254	10.196		
Total	3988.600	259			

The results in Table 5.6 are statistically significant (the p – value is less than the level of significance ( $F(5,254) = 27.438, p = 000$ )). This means that the state of KM in the selected PHE institutions covered in this study differs significantly with the total number of years one has worked as shown in Table 5.6.

According to the results shown in Figure 5.5 and reinforced by the ANOVA indicated in Table 5.6, the majority of the respondents had overall work experience (including from other organisations) of five years or less. This means that there was a significant dearth of experienced personnel in terms of both organisational knowledge and general knowledge in these institutions. This situation differed significantly with other institutions such as the University of Botswana (UB) where one will find very senior academic and professional staff. Over and above that, only 3.1% of the employees in the sample had been with the

current employer for over ten years. This implies that quite a significant number of employees in PHE institutions covered in this study were quite new.

A situation where a significant number of organisational employees are inexperienced does not augur well for the generation, sharing and utilisation of organisational knowledge. Effective knowledge creation, sharing, and use require the existence of well experienced personnel, well-versed in their job responsibilities and highly familiar with organisational processes. Such employees will have found time to build team spirit and create communities of practice (CoPs) that come together in unison to share knowledge so this phenomenon was lacking in the PHE institutions covered in this study, which amounted to an absence of a crucial KM enabler.

The absence of experienced personnel in PHE institutions covered in this study contrasts with the views of several researchers who concur that individual employees in an organisation are the prime source of knowledge (Nonaka, 1994; Nonaka & Takeuchi, 1995; Bratianu & Orzea, 2010; Gavrilova & Andreeva, 2012). These authors contend that employees play a critical role in the creation, capture, and sharing of knowledge within the organisation. In further support for the important role of employee work experience in organisations, Nonaka and Takeuchi (1995) concur that most of an organisation's knowledge is tacit knowledge which is experience-based.

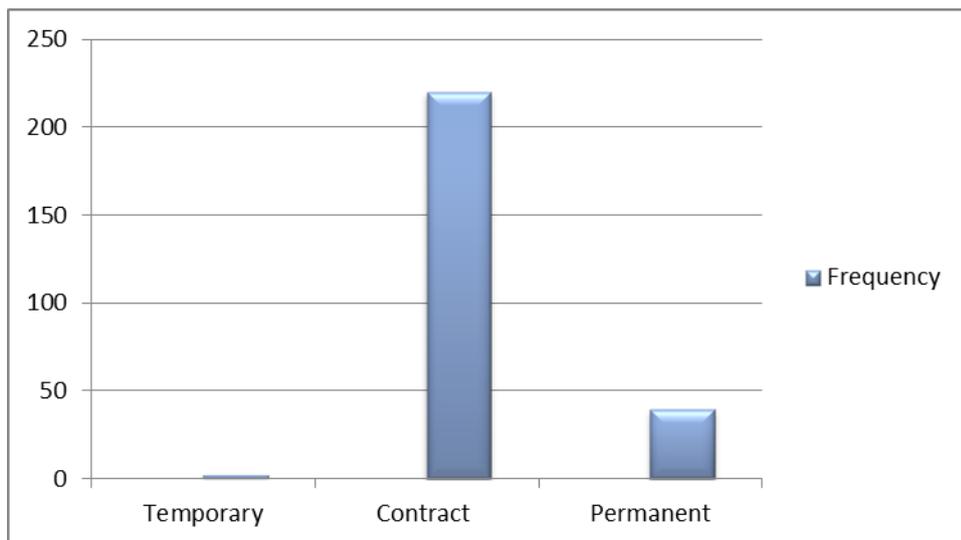
The authors further argue that the fact that most of an organisation's knowledge is tacit knowledge requires employees to possess many years of general and organisational work experience which forms very valuable organisational capital. The results of the study indicate that the majority of employees of the selected PHE institutions were inexperienced, hence organisational capital was lacking in these organisations.

The fact that the majority of the employees covered in this study had work experience with their current employer ranging from one to five years meant that such employees were not rich in terms of organisational knowledge and experiences so did not have much to share with employees joining the institutions.

Emphasising further on the importance of varied work experience, Nonaka and Takeuchi (1995) argue that sharing of tacit knowledge among organisational employees with different backgrounds, perspectives and motivations is a critical step in the creation of organisational knowledge. Therefore, the finding that employees of PHE institutions covered in this study possessed little organisational and general work experience meant that there was little tacit knowledge to share among employees leading to ineffective KM practice. The lack of organisation-specific tacit knowledge which was revealed by the study may have had negative KM implications since it meant little knowledge of organisational values and processes hence reduced performance (Polanyi, 1998; Riege, 2005).

### 5.2.5 Type of employment and KM implications

Figure 5.6 shows the different types of employment contracts of selected employees of PHE institutions represented in this study.



**Figure 5.6:** Type of employment

Figure 5.6 shows that the majority of the employees covered in this study (220 or 84.3%) were on fixed term contracts while only 2 (0.8%) were on temporary contracts. Only 39 respondents (15%) were employed on a permanent basis. Those on fixed term and temporary contracts were non-citizens while those on permanent contracts were citizens. After the contracts of non-citizen employees have expired, they will have to be renewed depending on whether both parties are willing to do so. On the other hand, re-engagement will depend on

whether government, through the Ministry of Labour and Home Affairs, is willing to renew the work and residence permits of the specific employee.

The possibility of renewal of permits of many expatriates in Botswana was slim at the time the study was conducted given the localisation thrust the government was pursuing. The Botswana Government had forced employment of citizen HR managers in PHE institutions to see to it that all vacancies that arose in these institutions were given to citizens first and foreigners would be considered only after all efforts to engage a citizen had failed. This meant that the PHE institutions covered in this study were heavily relying on expatriate staff whose future and continued engagement were not certain. The uncertainty was caused by Botswana's labour requirements that expatriate staff could start work only after acquiring work and residents permits. The uncertainty created frequent staff movements as contracts and work and resident permits of expatriate staff expired, thus negatively affecting KM practices of knowledge creation, sharing, and retention.

The uncertainty of relying on expatriate staff was exacerbated by the fact that HR managers could only submit applications for new work permits provided the applicant held superior qualifications (like Master's and PhDs from reputable universities) and extensive relevant work experience. The HR managers needed to refer first to the database of unemployed citizens kept by the Ministry of Labour and Home Affairs to ascertain that there were no qualified citizens who met the selection criteria established by the institution that was recruiting personnel. Again, where applications for permits were accepted, it could take up to six months for the permits to be ready and, meanwhile, one would remain in one's country until informed that the permits were available.

Private higher education institutions seemed more comfortable with expatriate staff, partly because of the low remuneration which many well-qualified local staff did not accept, and partly because of the poor work ethics and quality of local human resources (Schwab, 2014). The laborious process of acquiring work permits for expatriates and the uncertainty that the permits would be approved therefore created a turbulent environment in the institutions. Such an environment is not conducive to the implementation of effective KM initiatives.

The negative effect of a turbulent environment on KM practices is highlighted by Jones and Mahon (2012) who posit that turbulent/high velocity environments are those environments where there is rapid and discontinuous change in demand, technology, or regulation. They opine that in such environments information is often not accurate, is not available, or is obsolete, and that in this kind of environment, players adopt the wait and see decision strategies. Such strategies may result in failure as the window of opportunity is lost or rules change. These authors further postulate that organisations find themselves in a strategic decision-making quandary in that it is easy to make a mistake by acting too early, but equally not effective to delay decision-making. The authors suggest that in high velocity/turbulent environments, the pace of change, the magnitude of change, and the degree of uncertainty all make the acquisition, storage, and transfer of knowledge much more critical than in a stable environment. This is a true reflection of the environment PHE institutions were operating in at the time this study was conducted.

### **5.3 State of KM in selected PHE institutions**

Section 5.2 presented data on the demographic characteristics of the respondents and how selected demographic variables influenced KM practices of the PHE institutions covered in this study. This section presents findings on the existing state of KM in the selected PHE institutions at the time the study was conducted. The state of KM in the selected PHE institutions is determined from the perception of the selected employees who constituted the sample of this study. Factor analysis was carried out to establish instrument reliability. The scores of items in the questionnaire ranged from 1 (low) to 5 (high). Mean scores were used to describe the average scores of the data and the SD was used to determine the extent of the spread of the data around the mean. The state of KM practices based on the responses of selected employees of PHE institutions covered in this study is analysed using factor loading, Eigen value, average variance extracted using varimax rotation (AVE), and Keiser-Meyer Olkin (KMO). The results are indicated in Table 5.7.

**Table 5.7:** State of KM in the selected PHE institutions

Item	Factor loading	Eigen value	AVE	KMO	Bartlett's test	Mean	SD
Cronbach Alpha= 0.71							
q11 In general, my organisation's employees believe that knowledge management plays an important role in the growth of the business in the future	.656	2.98	59.74	.569	202.738	4.81	.566
q10 My organisation's employees are aware of the crucial role of KM in business strategy	.897					4.75	.755
Q9 My organisation's employees have an appreciation of the need to share knowledge	.566					4.02	.391
Q8 Top management of my organisation regularly talks about the need to manage knowledge	.526					2.41	.554
Q7 My organisation's employees are familiar with the term 'KM'	.638					3.94	.545

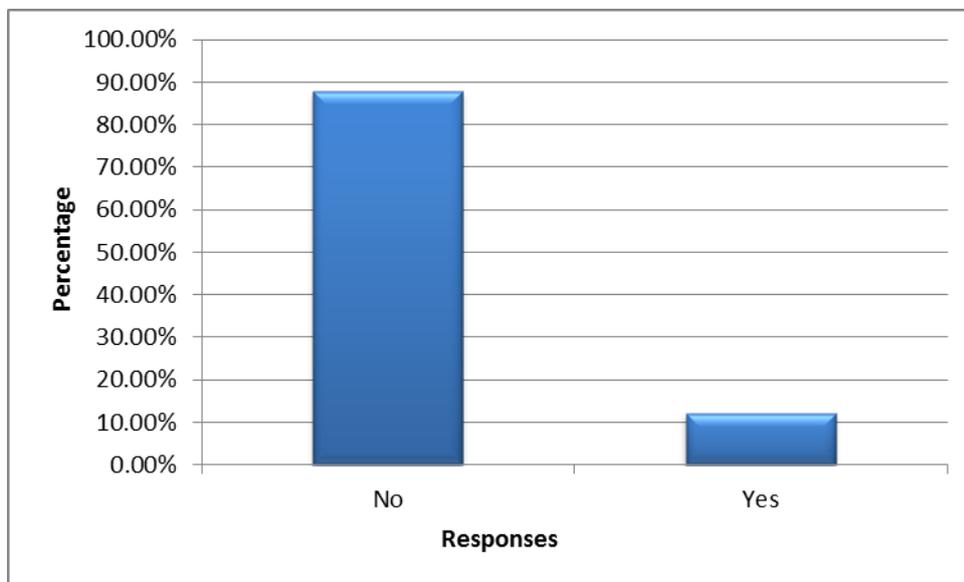
Table 5.7 shows that the Cronbach Alpha for KM in the selected PHE institutions is 0.71, while the estimated standard loadings of scale items are above 0.50. This provides support to discriminant validity and it also demonstrates the fact that the scale items are reliable. The Eigen value of the scale items is also greater than 1; KMO measure of sampling adequacy is greater than 0.5; and Bartlett's test of sphericity is also significant, which indicates that the scale items are appropriate for the empirical study factor structure. The mean values of the scale items also explain the KM metrics adequately.

The scale items of KM metrics indicate that the employees recognise the critical role of KM practices in service-oriented firms. The results of the findings in Table 5.7 provide parallel support with respect to the internal consistency and discriminant validity of the scale items with respect to KMO, Eigen value, and Bartlett's test of sphericity using varimax rotation. However, scale item with respect to top management emphasis on KM practices is not satisfactory as indicated by the mean value that is below average.

The results shown in Table 5.7 are an indication of a lack of a clear and conscious attempt by top management of the selected PHE institutions to professionalise KM in these institutions

and make it a deliberate business practice. This means that if there was any practice of KM, it was by coincidence but not a conscious and systematic practice. If top management of an organisation does not regularly talk about the need to adopt a systematic approach to create, share, use, and retain knowledge, then there is no way employees will come to know and appreciate the importance of KM in enhancing organisational performance, growth, and profitability.

In a further attempt to determine the state of KM in selected PHE institutions, respondents to the self-administered questionnaire were asked to indicate their views on whether PHE institutions covered in this study had instituted any activities that supported KM (Question 14 on the questionnaire). The responses to this question are shown in Figure 5.7.



**Figure 5.7:** Respondents' views on organisations having instituted any KM activities

Figure 5.7 shows that most of the selected employees (87.9%) were of the view that their organisations had not instituted any activities that supported KM, such as knowledge creation and sharing, while only 12.1% were of the opinion that their organisations had instituted activities that facilitated KM practices.

Furthering the issue of the state of KM in selected PHE institutions, the study sought to establish the strength of the relationship between employee awareness of KM and the organisational activities that support KM practices. To determine and measure the strength of

the association of the two variables, a proportional reduction of error (PRE), known as Lambda or Goodman Kruskal Lambda, was calculated as shown in Table 5.8.

**Table 5.8:** Cross tabulation and Chi-square analysis of KM and supporting activities

q14 * q9 Cross tabulation							
q9 Employee awareness of KM							Total
Question		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
Has your organisation instituted any activities that support knowledge creation and sharing in the past year? (q 12)	Yes	0	7	13	10	1	31
	No	27	173	15	11	0	226
Statistical Measure	Value	df	Asymp. Sig. (2-				
Pearson Chi-Square	22.349 <sup>a</sup>	4	.000				
Likelihood Ratio	27.690	4	.000				
Linear-by-Linear Association	19.982	1	.000				
N of Valid Cases	257						
Total	27	180	28	21	1	257	

Table 5.8 represents cross-tabulation of employee awareness of KM and selected PHE institutions having instituted activities that facilitate KM practices in the previous year. The null hypothesis (Ho) is that there is no relationship between the employee awareness of KM and the organisation having instituted activities that promote KM practices.

Two cells (20.0%) have an expected count less than 5. The minimum expected count is 0.28.

A Lambda value of 0.67 with an approximate significance level of 0.123 was calculated as shown in Table 5.9.

**Table 5.9:** Relationship between employee awareness of KM and KM activities

Directional Measures		Value	Asymp. Std. Error <sup>a</sup>	Approx. T <sup>b</sup>	Approx. Sig.
Nominal	Symmetric	.067	.042	1.544	.123
by					
Nominal	q14 Has your organisation instituted any activities that support knowledge creation and sharing in the past year? Dependent	.032	.032	1.004	.315
	q9 Employee are aware of KM Dependent	.082	.059	1.353	.176
Goodman and Kruskal tau	q14 Has your organisation instituted any activities that support knowledge creation and sharing in the past year? Dependent	.200	.055		.000 <sup>c</sup>
	q9 Employee awareness of KM Dependent	.054	.020		.000 <sup>c</sup>

As depicted in Table 5.9, when looking at the 5% significance level, the probability is thus the p-value which is less than 0.05 ( $P < 0.000$ ) is statistically significant, hence the  $H_0$  is rejected. Owing to the retention of the  $H_1$ , there is a significant association between the employee awareness of KM and the organisations having instituted activities that support KM practices. Thus there is a relationship between KM activities initiated by the organisation and employee awareness of KM.

### 5.3.1 Activities instituted by the organisations to promote knowledge creation and sharing

This section is based on Question 13 on the questionnaire which an open-ended question was meant to find out if leadership of selected PHE institutions had instituted any activities that promote KM practices of knowledge creation and sharing. Two hundred and twenty-six (226) respondents (88%) indicated that there were no activities that management of their institutions had instituted that supported knowledge creation and sharing, while 31 respondents (12%) stated a few activities that management had instituted to support

knowledge creation and sharing. The two most commonly mentioned activities were a research conference and staff training. On the other hand, respondents were asked to list activities instituted by the leadership of their institutions that impeded KM practices. The common activities listed by the respondents are shown below.

### **Activities mentioned as impeding knowledge creation and sharing**

- Heavy workload leaving no room for informal interaction;
- Hiring and firing of staff leading to staff living in constant fear hence no initiative;
- Not providing lunch and tea facilities where staff could meet informally and share knowledge;
- Failure to provide space for staff meetings;
- Tight monitoring of staff activities including access to internet whereby staff members had to log in to the institutional domain which was heavily monitored by management when they wanted to access the internet;
- Practising favouritism, with staff members of one nationality enjoying access to information that others did not have;
- Not consulting staff when making key decisions that affect them/arbitrary decision-making;
- Lack of team work;
- Lack of general staff meetings;
- Lack of clear criteria for promotion of staff;
- Preventing formation of staff associations; and
- Lack of a clear salary structure with clandestine salary negotiations and increments.

The scenario enunciated above, as a depiction of the state of KM in PHE institutions covered in this study, contrasts with the research of Chang and Chuang (2009) which revealed that knowledge has risen into a dominant economic resource more critical than land, labour, and capital. These authors further posit that knowledge has, perhaps, become the only source of sustainable competitive advantage (see Chapter 2, section 2.1). The authors further postulate that the 21<sup>st</sup> century is an era of the knowledge economy in which firms need to possess knowledge that stimulates organisational value and boosts internal organisational performance as well as external competitiveness. The same authors aver that stimulation of

organisational value and internal performance is achieved through the creation of effective KM processes and systems.

The importance of effective KM processes in organisations is reinforced by Denford (2013) who posits that effective KM creates dynamic capabilities for an organisation, which is the organisation's ability to integrate, construct, and reconfigure internal and external competences to address rapidly changing environments. Selected PHE institutions in Botswana operate in a volatile and complex environment owing to the uncertainty created by a strict regulatory regime. The absence of effective KM practices in these institutions therefore threatens the survival, viability and sustainability of PHE institutions as successful business models.

#### **5.4 The role of knowledge management enablers in selected PHE institutions**

This section presents research findings on the role of KM enablers in selected PHE institutions in Botswana. It focuses on the role of strategic leadership on KM practices of selected PHE institutions, the effect of family ownership and management, the role of organisational structure, organisational culture, and stakeholder involvement as KM enablers. This is in line with the primary objective of this study which was to determine the role of the stated KM enablers in facilitating KM practices in selected PHE institutions in Botswana.

##### **5.4.1 Strategic leadership and KM**

This section outlines responses to Questions 26-37 in the questionnaire (Appendix 1) which were meant to establish the role played by the top leadership of selected PHE institutions in promoting or stifling KM practices in their organisations. These responses led to the achievement of the following research objective:

To investigate the role of strategic leadership in enhancing KM practices in selected PHE institutions.

Results on the role of strategic leadership in facilitating KM practices are shown in Table 5.10.

**Table 5.10:** Psychometric properties of strategic leadership metrics in the selected PHE institutions

Item	Factor loading	Eigen value	AVE	KMO	Bartlett's test	Mean	SD
Cronbach Alpha= 0.78							
Q36 To what extent does your organisation's top leadership have a strong appreciation of the skills of its staff?	.660	2.99	54.74	.590	273.973	2.86	0.86
Q35 To what extent does the leadership of your organisation ensure that all functions are linked to share information thus enabling the organisation to tap into the knowledge of its employees?	.609					2.25	1.03
Q29 To what extent does your organisation's overall business strategy include knowledge management strategy?	.687					2.39	1.02
Q32 To what extent does the leadership of your organisation ensure that good knowledge management behaviour (creating, sharing, and using knowledge) is fused into the organisation's performance appraisal system?	.568					1.99	0.98
Q26 There is a well-coordinated knowledge management programme in my organisation.	.664					1.98	1.01
Q33 To what extent does your organisation's leadership see to it that individual employees are rewarded for team work in the interest of the organisation?	.657					1.91	1.04
Q34 To what extent does your organisation's leadership ensure that training programmes in knowledge management behaviour are promoted?	.645					1.90	1.06
Q30 To what extent does your organisation's leadership reward employees who share knowledge?	.634					1.89	0.94
Q31 To what extent does your organisation's leadership penalise employees who do not share knowledge?	.554					1.72	0.99

Table 5.10 shows that the Cronbach Alpha for strategic leadership scale items in selected PHE institutions is 0.78, while the estimated standard loadings of scale items are above 0.50. This provides support to discriminant validity and it also demonstrates the fact that the scale items are reliable. The Eigen value of the scale items is also greater than 1; KMO measure of sampling adequacy is greater than 0.5; and Bartlett's test of sphericity is also significant, which indicates that the scale items are appropriate for the empirical study factor structure. The strength of the mean values also provides support to the strategic leadership orientation in this study.

According to Table 5.10 the leadership of PHE institutions covered in this study did little to initiate, manage and support KM activities and had little appreciation of the skills of its staff.

The results also show that leadership of these institutions did not adequately ensure that overall business strategy included KM strategy. Respondents also strongly felt that top leadership of their institutions did not promote behaviour that facilitates KM or ensure that KM behaviour was fused into the institutions' performance appraisal system. The results also indicate that the leadership of selected PHE institutions did not ensure that a clear and well-coordinated KM programme existed in the institutions. The leadership did not ensure that individual employees were rewarded for team work and sharing and reusing knowledge in the interest of the organisation. The leadership of selected PHE institutions did not discourage and penalise employees who did not share knowledge, meaning that failure by employees to share knowledge was not an issue.

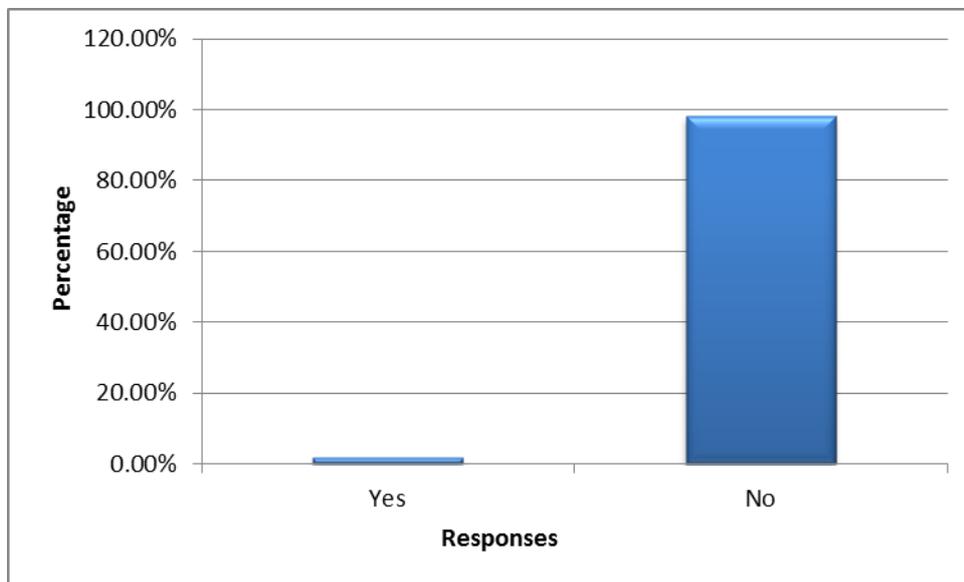
Failure by leadership of the selected PHE institutions to reward employees who share knowledge and penalise those who did not share knowledge indicated that the leadership was not playing a positive role in facilitating KM practices. This means that the leadership of these institutions was not taking responsibility to implement management systems, strategies, structures, teams, and other systems that promote effective KM behaviours and activities. This runs in sharp contrast to the views of Jain and Jeppesen (2013) who argue that leaders provide vision, motivation, systems, and structures that facilitate KM practices. These authors further contend that such elements facilitate the conversion of knowledge into competitive advantage at all levels of the organisation. They do so by implementing management systems with regards to the definition and establishment of vision and mission, strategy, business policies, organisational structure, and teams (see Chapter 2, section 2.2.3).

The results of this study revealed lack of commitment to KM by leadership of selected PHE institutions as evidenced by inability to motivate staff towards KM activities, failure to reward employees who took part in the promotion of KM practices, and inability to allocate resources for KM activities. Such a scenario implies the absence of a critical KM enabler (strategic leadership) for effective KM practices that in turn may have led PHE institutions to face challenges in effectively dealing with the high velocity, turbulent and highly regulated business environment.

Results in Table 5.10 therefore reveal that strategic leadership did not demonstrate an effective role in facilitating KM practices by not establishing clear and well-coordinated KM

programmes in their organisations. The leadership groups did not also establish KM programmes that link with the organisations' overall business strategy, which resonates with a reward structure that took cognisance of one's role in the generation and sharing of knowledge, by ensuring the existence of good KM behaviours in their institutions.

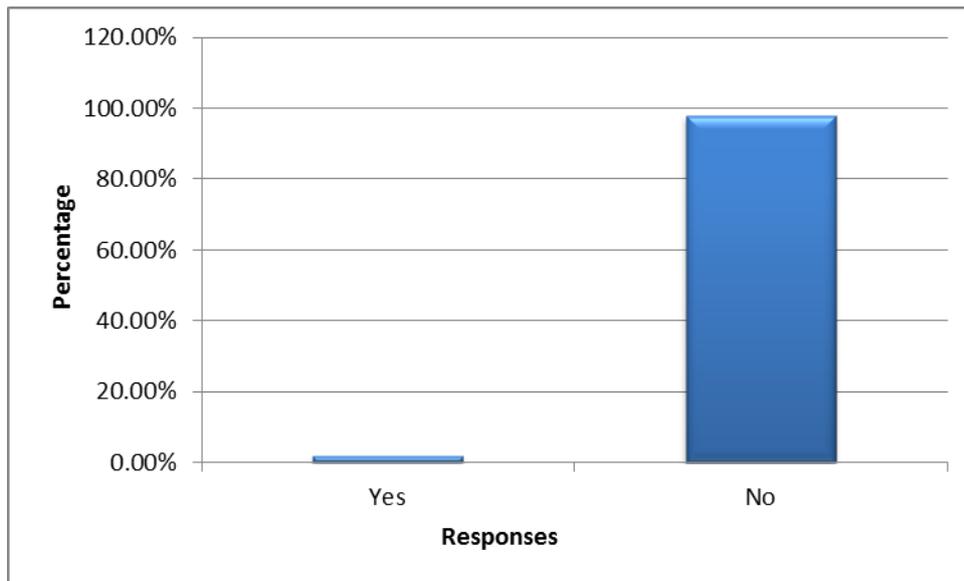
As further investigation of the role strategic leadership played in enhancing KM practices in PHE institutions covered in this study, respondents were also asked whether there was a position of knowledge officer/manager/director in the selected PHE institutions to champion KM at the strategic level (Question 27). Responses are shown in Figure 5.8.



**Figure 5.8:** Presence of position of KM officer in my organisation

According to Figure 5.8, 98.1% of the respondents indicated that there was no position of KM officer in their organisations while only 1.9% indicated that there was such a position.

Respondents were also asked if there was a board member in the institution championing KM in the same manner there were board members in charge of finance, marketing, operations, quality, and research and so on (Question 28). The results are shown in Figure 5.9.



**Figure 5.9:** Presence of a board member championing KM

Figure 5.9 shows that 98% of the respondents indicated an absence of a board member to champion KM, while only 2% indicated the presence of such a member.

The absence of a KM officer and/or a board member to champion KM in the selected PHE institutions means that there was no one in these institutions to provide direction to KM and ensure systematic KM in these organisations. Such a situation is in contrast with the views of Yu, Kim, and Kim (2008) who argue that, in order to achieve KM effectiveness in an organisation, a KM officer/manager should be appointed to oversee KM activities. The need for a KM officer/manager is reinforced by Wendling, Oliveira, and Gustaud-Macada (2013) who aver that such an officer is critical because he/she sets the overall direction for the organisation's KM programme and assumes responsibility and accountability for KM-related activities.

In an attempt to establish whether the leadership of the selected PHE institutions were carrying out any activities that facilitated knowledge-sharing in their organisations (Question 37 in the questionnaire), respondents were asked to state any such activities. If respondents felt there were no such activities, they were requested to leave the space blank. Two hundred and forty-six respondents (94.3%) left the space blank to indicate that their organisations' leadership was not carrying out any activities that promoted knowledge-sharing. Only 15

respondents (5.7%) listed some activities, but the only three that were commonly mentioned were:

- Research conference in 2013;
- Staff training; and
- Staff meetings.

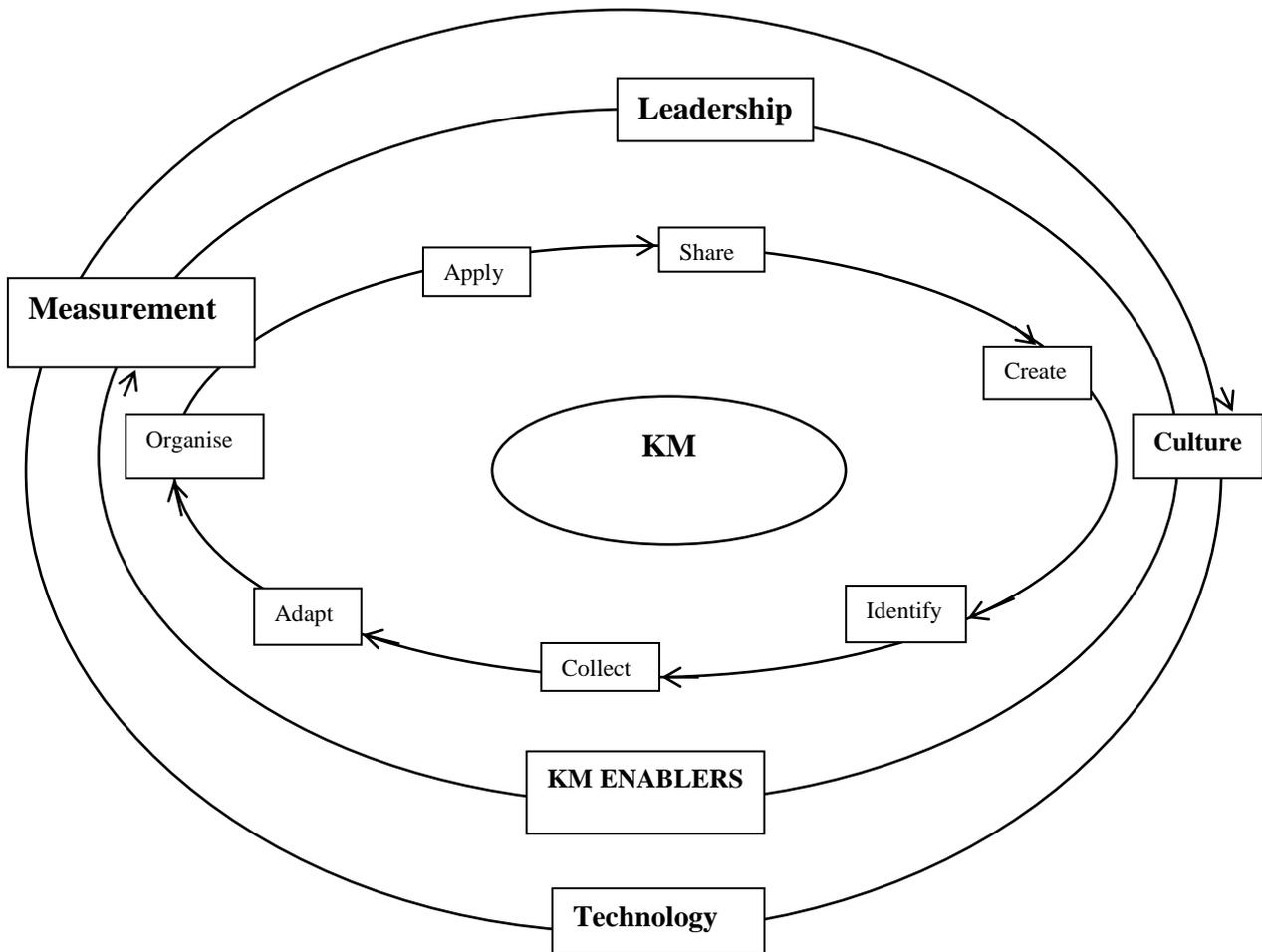
The above results indicate that effective strategic leadership as a KM enabler in PHE institutions in Botswana was not facilitating effective KM practices.

The results of this study mean that the top leadership of the selected PHE institutions did not do much to ensure that effective KM programmes were developed in these institutions to ensure that employees accessed the knowledge they needed at the time they needed it. They did not also ensure that their business strategies adopted KM strategy as expected of 21<sup>st</sup> century business organisations.

The above scenario runs in sharp contrast to the views of several researchers who identified leaders' strategic intent as a critical enabler which they believe fosters a context in which creativity and knowledge creation are promoted (Nonaka, Toyama, & Konno, 2006; Nakano, Muniz, & Batista, 2013). These authors further postulate that strategic intent is shown in the level of emphasis that senior management of an organisation devotes to knowledge generation, acquisition, and sharing in the organisation's strategic planning. Yet the results of this study revealed that the leadership of PHE institutions made no mention of a desire to promote knowledge creation, acquisition, sharing, and application in their strategic plans. This makes it difficult for these institutions to effectively deal with the volatility and uncertainty created by the highly regulated environment.

This study revealed that effective leadership oriented towards exerting influence over employees to focus on knowledge generation and creation was lacking in all the five PHE institutions covered in this study. The leadership had not established a KM direction which employees could follow and did not encourage and promote effective KM behaviour among employees.

The selected PHE institutions had not integrated KM into their daily operations as shown by the results of this study which denoted an environment where KM was ineffective or entirely absent. This is in contrast to the views of Chen and Huang (2011) who postulate that top leadership of organisations must integrate KM into the organisation as shown in Figure 5.10.



**Figure 5.10:** Organisational KM Model (Chen and Huang, 2011: 390)

Chen and Huang (2011) argue that an integration of KM into the organisation is done by selecting and implementing a number of processes that assist the organisation to improve its capability to create, discover, acquire, organise, share, and utilise knowledge needed by the organisation in order to meet its goals. As shown in Figure 5.10, it is the responsibility of institutional leadership to mobilise and integrate KM enablers such as culture and technology. The integration is meant to ensure that it is easy for employees to create, identify, collect, adapt, organise, apply, and share new and existing knowledge. Such integration is also meant to put in place effective measurement mechanisms for KM practice.

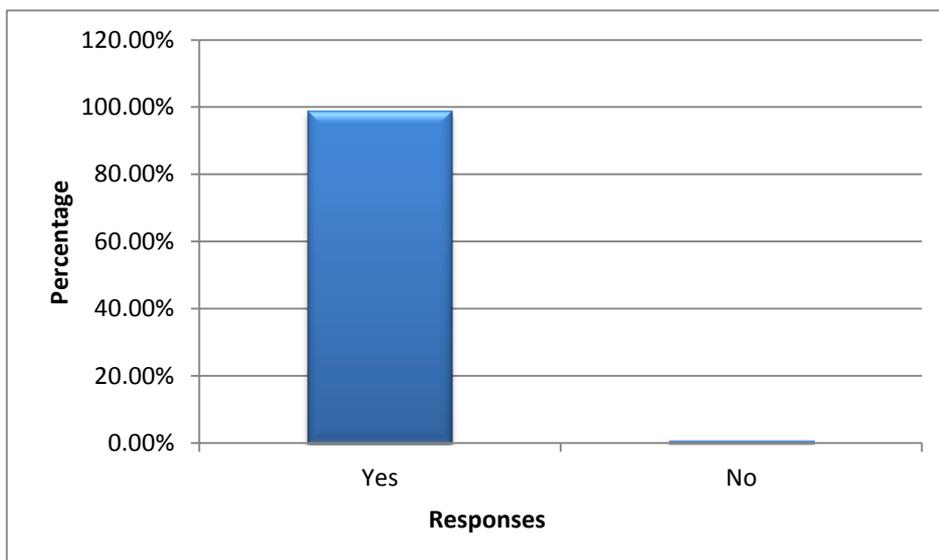
#### 5.4.2 Effect of family management on KM in PHE institutions

This section is based on responses to questions 14 – 25 on the questionnaire (Appendix 1).

These were meant to address the following objective:

To examine the influence of family management on KM practices in selected PHE institutions

In order to determine the prevalence of family ownership and management in the selected PHE institutions, respondents to the questionnaire were asked to indicate whether their organisations were managed by family members or not (Question 14). The results are indicated in Figure 5.11.



**Figure 5.11:** Organisation managed by family members

According to Figure 5.11, 99% of the respondents indicated that their institutions were managed by family members who owned them while only 1% stated that they were not. This is an indication of a corporate governance crisis whereby there is no separation between ownership and management. The results in Figure 5.11 are indicative of a domination of family management in the PHE institutions covered in this study which has negative implications for KM practices. This view is supported by Kostia (2008) who contends that the domination of management structures by family members leads to paternalism, nepotism and emotional and informal decision-making, which impact negatively on KM practices. Such impact on KM practices includes resistance by family members to share knowledge with non-family members which constitutes a barrier to effective KM practices.

Another important negative effect of dominance of management of an organisation by family members resulting in nepotism and paternalism is the allocation of senior managerial positions to family members at the expense of deserving non-family members. When senior positions are allocated to family members who do not deserve them, non-family members become frustrated and stop performing to their full potential. Such employees eventually leave the organisation resulting in HC flight. The negative effects of family ownership and management on KM practices were discussed in detail in Chapter 2 (section 2.2.3) and Chapter 3 (section 3.3). The results of the effect of family management on KM practices of selected PHE institutions are also shown in Table 5.11 through descriptive statistics.

**Table 5.11:** The Psychometric Properties of family management metrics in PHE institutions

Item	Factor loading	Eigen value	AVE	KMO	Bartlett's test	Mean	SD
Cronbach Alpha= 0.69							
Q15 My organisation's family managers always keep a watchful eye on employee activities.	.689	2.96	60.74	.686	199.758	3.75	2.03
Q18 To what extent do you think the performance of your organisation could be enhanced by being managed by professional employees instead of members of the family?	.797					4.87	.418
Q21 To what extent are members of the family who manage your organisation concerned with wealth preservation?	.576					3.97	.321
Q19 To what extent does management of your organisation by family members negatively impact on employee trust of colleagues?	.856					4.02	.316
Q17 To what extent does the influence of the family in your organisation prevent full exploitation of knowledge?	.658					3.86	.617
Q16 My organisation's family managers tend to compete with other employees for influence	.648					3.89	.386
Q20 To what extent does the management of family members in your organisation contribute to staff turnover?	.721					3.73	1.03
Q24 To what extent does the management of your organisation appoint employees to positions of responsibility through merit?	.689					2.59	1.01
23 Members of the family who manage my organisation possess appropriate academic qualifications	.694					2.41	1.15

Table 5.11 shows that the Cronbach Alpha for KM in the selected PHE institutions is 0.69, while the estimated standard loadings of scale items are above 0.50. This provides support to discriminant validity and it also demonstrates the fact that the scale items are reliable. The

Eigen value of the scale items is also greater than 1; KMO measure of sampling adequacy is greater than 0.5; and Bartlett's test of sphericity is also significant, which indicates that the scale items are appropriate for the empirical study factor structure.

The results in Table 5.11 also indicate that selected employees of PHE institutions covered in this study believed that indeed family managers played a role in stifling KM practices in their institutions. These respondents believed that employee activities were closely monitored by top management of PHE institutions and that performance of the selected PHE institutions could be enhanced by being managed by professional employees instead of members of the family. These responses are an indication of the negative effect of owner-management on KM practices of these institutions.

Table 5.11 also shows that respondents felt that family managers of selected PHE institutions were overly concerned with wealth preservation. While generating revenue from business is quite acceptable since viability (profitability) is the focus of any organisation operating as a business model (like PHE institutions in Botswana), this should not be done at the expense of service quality. This is especially critical in the case of organisations operating in a highly regulated environment like PHE institutions that are always under the watchful eye of regulatory authorities such as the TEC and the BOTA. When service quality suffers because the organisation is obsessed with making and saving money, service recipients (in this case students and staff who are internal and external customers) become disillusioned. Such disillusionment may lead to conflict between the service provider and the service recipients which may degenerate into bad relations leading to strikes, boycotts, and tarnishing of the image of the service provider as has been reported by the media (see Chapters 1 and 3).

Further evidence on the negative role family ownership and management had on KM practices of the selected PHE institutions is indicated through breeding mistrust among employees and possession of inappropriate academic qualifications by family members. Another way by which family managers negatively impacted on KM practices of selected PHE institutions were failure to appoint employees to positions of responsibility through merit (no clearly defined criteria for employee promotion) thus promoting undeserving employees to positions of responsibility.

Confirmation of lack of a well-defined criterion for employee promotion is provided by the responses to the open-ended question on the major criteria used by family managers when appointing employees to managerial positions (Question 25 on the questionnaire). The majority of the respondents listed the following as what they perceived to be the major criteria used by family managers when promoting employees:

- Closeness to family managers/relationship with the family;
- Loyalty to family members;
- Closeness to influential people like those in government;
- Country of origin, that is, those from the same country as the family/ethnic origin;
- Easiness of manipulation by the family managers/those who did not challenge the family/timidity/blue-eyed boy mentality;
- Gossiping about others to the family, and
- Race (those who belonged to the same race as the family got promoted ahead of other races).

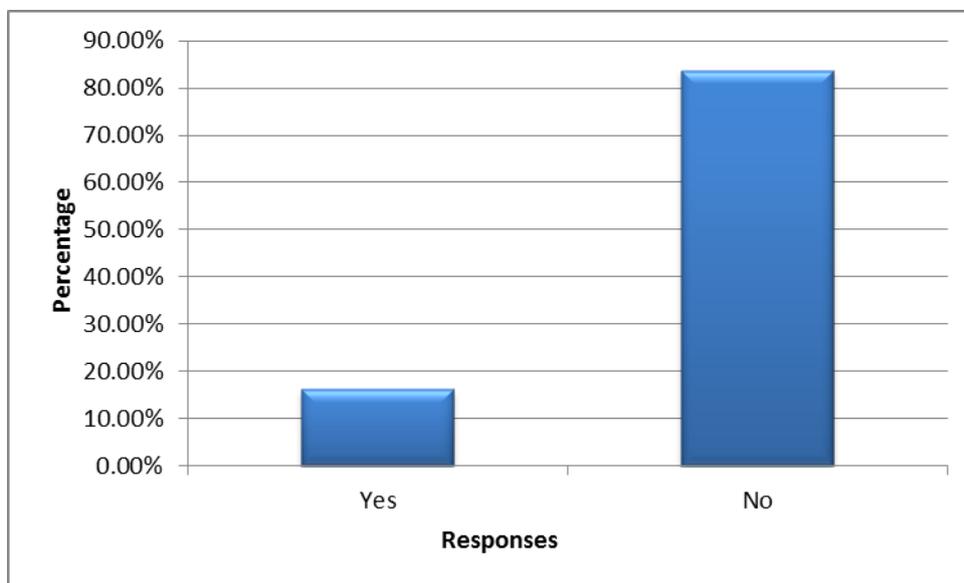
The above responses indicate that the respondents felt that there was no well-defined criteria in virtually all the selected PHE institutions for promoting employees and that everything was left to the discretion of family managers. These managers promoted employees on the basis of unprofessional behaviours such as back-biting and agreeing with everything top management said or did. This might mean that there was no debate, employee creativity, initiative, and divergence of opinions due to fear of not being promoted. There may not have been room for employees with knowledge to express their own opinions that differed with those of the authorities because they would not be promoted. Such fear results in lack of employee creativity, trial and error, and initiative which has a negative effect on KM practices especially knowledge creation, sharing, and application.

The results in Table 5.11 indicate that respondents believed that family managers competed with their own employees for influence. This means that the managers would not be comfortable with employees who are good at their work for fear that their incompetency would be exposed since they too were employees. If managers compete with their employees for influence, there is a danger that such managers can end up victimising those employees they viewed as threats to their power to influence. Such employees could be targeted by the powerful family managers who could frustrate them into leaving the organisation. Because

knowledgeable non-family employees are largely regarded as a threat to family employees and viewed with suspicion by family managers, they may have tended to withdraw from participating in important professional activities. Such activities include not contributing in staff meetings and claiming not to know things that they know because of fear of showing their knowledge which could result in them being hated even more. Most of them may have ended up leaving these organisations to work where they think their contributions would be accepted.

According to the results shown in Table 5.11, the majority of respondents to the questionnaire believed that the presence of family managers in selected PHE institutions covered in this study prevented full exploitation of knowledge. Prevention of full exploitation of knowledge in family firms usually manifests itself through close employee monitoring and penalising employees who commit mistakes while trying out new ideas.

Respondents were asked to indicate if their organisations were in partnership with other business investors to determine if they were family owned or not (Question 22 in the questionnaire). Responses to this question are shown in Figure 5.12.



**Figure 5.12:** Business partnerships with other business investors

Figure 5.12 shows that the majority of the respondents (83.8%) were of the view that their organisations were not in business partnership with other business investors while only

16.2% believed that their organisations were in that kind of partnership. This means that the majority of selected PHE institutions were family-owned businesses at the time this study was conducted. The challenge of family-owned business arises when it comes to raising of capital for expansion and funding of operational costs. An organisation which is not able to raise funds from its investors would want to obtain all its funds from its customers to meet its financial obligations. This may come in the form of exorbitant prices which would result in the organisation being accused of profiteering. A profiteering label has the effect of tarnishing the image of the organisation in the eyes of stakeholders. Again, due to the fact that the selected PHE institutions derived all their income from their customers (students' fees), the same institutions may have focused on programmes that are cheaper to run yet they do not stimulate economic development and promote national interest. The challenges faced by the selected PHE institutions in funding their operational costs were discussed in detail in Chapter 3 (section 3.4.3).

The results shown in Figure 5.12 and Table 5.11 indicate that selected PHE institutions were family-owned and owner-managed which has negative KM implications. In support of the negative effect family ownership and management have on KM practices, several researchers argue that family firms, unlike non-family firms, are perceived as risk-averse, conservative, and resistant to change (Welsh, Memili, Rosplock, Roure, and Segurado, 2013; Segaro, Larino, and Jones, 2014). These authors argue that such conservatism is a result of an attempt to preserve family wealth – a phenomenon that makes family firms ineffective in terms of KM practices. The negative effect of family ownership and management on KM practices of organisations was discussed in detail in Chapter 2 (section 2.2.3.4).

Supporting the conservatism of family businesses, resistance to change, and nepotism in promoting employees which have negative implications on KM, Dawson (2012) reckons that family firms, often labelled 'lifestyle firms', frequently resist change. He further avers that such firms are not prepared to hire non-family managers no matter how qualified and competent, and become cautious in their business strategy, thereby inhibiting their potential for organisational performance and future growth and profitability. The PHE institutions covered in this study fell into this category as family managers tended to compete with non-family employees for influence. The family managers also kept a watchful eye on non-family employees they competed with, prevented full exploitation of knowledge, and negatively

impacted on trust and employee motivation. Such behaviours may have led to high staff turnover.

Confirming the prevalence of high staff turnover in family firms, Dawson (2012) posits that non-family managers can come in handy to help family businesses with expertise and resources that a family business might lack. The author further avers that even when family enterprises decide to open up managerial positions to non-family members, they may struggle to hire and retain top quality non-family employees as they are not included in succession. Segaro, Larino and Jones (2014) concur that non-family managers may not stay long in family firms because they have limited career progression opportunities since these are restricted to family members. This is especially so at the top echelons of the organisation. Non-family managers also become frustrated because they are remunerated and monitored differently compared to family members, and have perceptions of unfair treatment due to bias and favouritism towards family members.

Excessive employee monitoring does not augur well for KM practices. It has a negative effect on employee creativity, morale, and productivity. This view is reinforced by Yerby (2013) who concurs that it is prudent to monitor employees to some extent to protect both the organisation and the employees. However, the same author argues that diligent attention should be given to the effect of such monitoring on knowledge creation and sharing and organisational performance. The author further notes that many organisations believe that, by monitoring employee activities, they can manage the organisation more effectively yet such a strategy will not allow the firm to derive maximum benefits from its HC.

Welsh, Memili, Rosplock, Roure, and Segurado (2013) argue that close monitoring of employees does not create an environment of accountability and transparency that allows such employees to express themselves freely, showcase their talent, and operate freely. This view is supported by Yerby (2013), who contends that among the most notable effects of excessive employee monitoring are increased levels of stress and lower levels of customer service. Excessive monitoring could also lead to decrease in job satisfaction, decreased work life quality, low levels of morale, and a hostile workplace environment. All these have negative connotations on KM practices and were prevalent in the PHE institutions covered in this study.

Respondents to the questionnaire felt that family managers of the PHE institutions covered in this study did not possess appropriate academic qualifications to deserve the positions they held. This situation sharply contrasts with the views of Gottschalg and Zollo (2007) who argue that organisations can yield a competitive edge only if they develop an HC pool that has higher levels of knowledge, skills and capabilities starting from the top. These authors further note that such an HC pool is critical because the organisation does not own the HC, but rather the individuals do. Individuals, therefore, have discretionary behaviour which implies that within their organisational responsibilities, they can choose how much they want to contribute. These individuals also use their discretion on whether they should engage in behaviour that can benefit the organisation to a lesser or greater extent. Such behaviour includes deciding how much knowledge to generate, who to share knowledge with, and how they should use the knowledge they have.

The absence of an HC pool alluded to above implies that a critical KM enabler was missing in the PHE institutions covered in this study. This means that these institutions were not enjoying a competitive edge over public institutions because they did not develop an HC pool with higher levels of knowledge, skills, and capabilities. This was so because the majority of the sampled academic staff members were first degree holders while most of the staff were inexperienced. Employees were not motivated by rewards to pursue organisational goals because of lack of a promotional policy, favouritism, close monitoring, and so on. All these may have made any meaningful knowledge creation, exchange, and utilisation difficult, while some of the tacit knowledge got lost as employees left these institutions.

The results of this study revealed that family ownership and management of PHE institutions covered in this study hampered effective KM practices by not possessing appropriate academic qualifications, not recognising well-qualified and experienced academics, close monitoring of employees, not promoting employees on merit and not providing a conducive environment for KM practices to prosper. This means that the following objective was achieved: To examine the influence of family management on KM practices in selected PHE institutions.

### 5.4.3 Organisational structure and KM

This section outlines the results from the questionnaire on the role of organisational structure in facilitating KM practices in selected PHE institutions. It addresses the following objective: To determine whether organisational structures of selected PHE institutions in Botswana promote KM practices

The constructs of organisational structure and their influence on KM were measured with the scale ranging from 1 to 5 (1 = not at all and 5 = absolutely). The results are shown in Table 5.12.

**Table 5.12:** Psychometric properties of organisational structure metrics in PHE organisations.

Item	Factor loading	Eigen value	AVE	KMO	Bartlett's test	Mean	SD
Cronbach Alpha= 0.76							
Q40 To what extent does information flow vertically most of the time in your organisation (top-down and down-top)?	.756	3.98	69.74	.769	205.767	3.81	.466
Q39 To what extent is there cooperation among employees in the organisation which fosters knowledge management practices?	.797					2.87	.710
Q44 To what extent do employees in your organisation have easy access to social networks (Face-book, Twitter, Linked-In etc) that facilitate interaction hence knowledge-sharing within the organisation and outside?	.866					2.84	.810
Q41 To what extent does top leadership of your organisation ensures the existence of formal networks in order to facilitate effective dissemination of knowledge?	.626					2.75	1.020
q43 There is adequate infrastructure (office space, meeting rooms, tea rooms, internet, intranets) to create space which facilitates knowledge management practices in my organisation	.738					2.43	1.130
Q42 To what extent has your organisation's top leadership established a well-structured knowledge map to lead staff in the direction of the knowledge they require?	.701					1.96	1.14

Table 5.12 shows that the Cronbach Alpha for KM in selected PHE institutions is 0.76, while the estimated standard loadings of scale items are above 0.50. This provides support to discriminant validity and it also demonstrates the fact that the scale items are reliable. The Eigen value of the scale items is also greater than 1; KMO measure of sampling adequacy is greater than 0.5; and Bartlett's test of sphericity is also significant which indicates that the scale items are appropriate for the empirical study factor structure.

Table 5.12 also shows that respondents were of the view that information flowed vertically most of the time in their organisation (top-down and down-top) meaning that the organisational structures of selected PHE institutions were hierarchical. Vertical flow of information in an organisation is an indication of centralisation of information which stifles the generation of new knowledge as employees just wait to be told what to do and only give feedback on what they would have done. Employees do not have much interest in sharing what they know with their colleagues because the organisational climate where information is centralised does not allow them to do so. This leads to hoarding of knowledge which is not productive for organisations since it negatively affects their operational efficiency.

The above views are supported by the research of Amayah (2013) who argues that organisations with a centralised, bureaucratic management structure stifle the generation of new knowledge. The author avers that, on the other hand, organisations with a decentralised structure promote the creation and sharing of knowledge, especially the more critical tacit knowledge. The author further contends that centralisation can reduce individuals' interest in sharing knowledge with other units or departments within the organisation while diffusion of knowledge will increase among organisational units where formalisation is less. PHE institutions' hierarchical structure with centralised decision-making may have hampered KM practices and hence a critical KM enabler would be missing. The concept of organisational structure and its KM implications is discussed in detail in Chapter 2 (section 2.2.2).

Results in Table 5.12 also indicate that top leadership of PHE institutions did not establish a well-structured, flexible, up-to-date knowledge map to lead staff in the direction of the knowledge they required. The absence of a knowledge map means that employees were finding it difficult to identify sources of knowledge that they needed in order to perform their work tasks. The absence of a knowledge map also means that employees would not know where critical knowledge resides in the organisation and hence would not know where to go for important knowledge. The fact that there was no knowledge map in the selected PHE institutions to guide staff in the direction of knowledge meant that a critical organisational asset was heavily underutilised and this constituted a lack of a KM enabler.

Implications of the absence of a knowledge map on KM practices are highlighted by Paramasivan (2003) who postulates that a knowledge map denotes a visual representation of

an organisation's knowledge. The author further contends that the absence of a knowledge map means that employees would not know what knowledge exists in the organisation, where it is located, and the directions of knowledge movements within the organisation from its repositories to where it is needed. The author further argues that an effectively presented knowledge map will make it clear which knowledge is available within the organisation, where it is needed, how it flows around the organisation and what the impediments to its smooth diffusion are. A knowledge map is thus an important enabler for an organisation to easily identify the knowledge it requires. The absence of a knowledge map in all the PHE institutions included in this study, therefore, denoted the absence of a critical KM enabler which had a negative effect on KM practices.

The results also indicate the existence of inadequate formal networks which may not have facilitated effective dissemination of knowledge, while infrastructure (office space, meeting rooms, tea rooms,) to create space which facilitates employee interaction and formal and informal networking was also inadequate. An absence of adequate infrastructure implies that there may be no room for effective employee interaction and this hinders KM practices of knowledge generation, dissemination, sharing, utilisation, and storage.

The absence of adequate infrastructure in the selected PHE institutions such as office space and tea room facilities that facilitate informal interaction is an indication of an absence of a critical KM enabler. This view is supported by Khalifa and Liu (2010) who aver that sharing of tacit knowledge is more effective in informal settings than the formal ones. These authors further postulate that top leadership should therefore provide infrastructure, space, and time to allow organisational members to interact informally to share knowledge.

The importance of informal employee interaction promoted by adequate infrastructure is reinforced by Seidler-de Alvis and Hartmann (2008) who concur that such an interaction should take place in an environment characterised by openness and trust among organisational members. Openness and trust enable organisational members to express their opinions freely without fear which could lead to more effective sharing of knowledge and ideas.

The importance of infrastructure as a KM enabler is further emphasised by Hafeez-Baig and Gururajan (2012) who aver that the physical environment in which the organisation operates is a crucial foundation on which KM rests. The authors suggest that key aspects of this environment which have a bearing on KM are the design of buildings and the separation between them, the location, size and type of offices, and the number and nature of meeting rooms, among others. Details on the concept of physical infrastructure and its impact on KM practices were discussed in Chapter 2 (section 2.2.2). The physical environment can foster KM by providing opportunities for employees to meet and share ideas through venues like tearooms, cafeterias, water coolers, and meeting rooms where employees mingle and learn from, and share ideas with, each other. Such facilities were lacking in PHE institutions covered in this study hence a critical KM enabler was absent. The role played by physical infrastructure in determining whether a PHE institution and its degree programmes should be accredited or not was discussed in Chapter 3 (section 3.2.1.1).

Table 5.12 also shows inadequate access to technology and innovation in the form of internet, intranet, and social networks (Face-book, Twitter, Linked-In, etc) by employees, yet these elements facilitate interaction and hence knowledge-sharing within the organisation and outside. Such limited access to technology and innovation indicates that another critical KM enabler was missing.

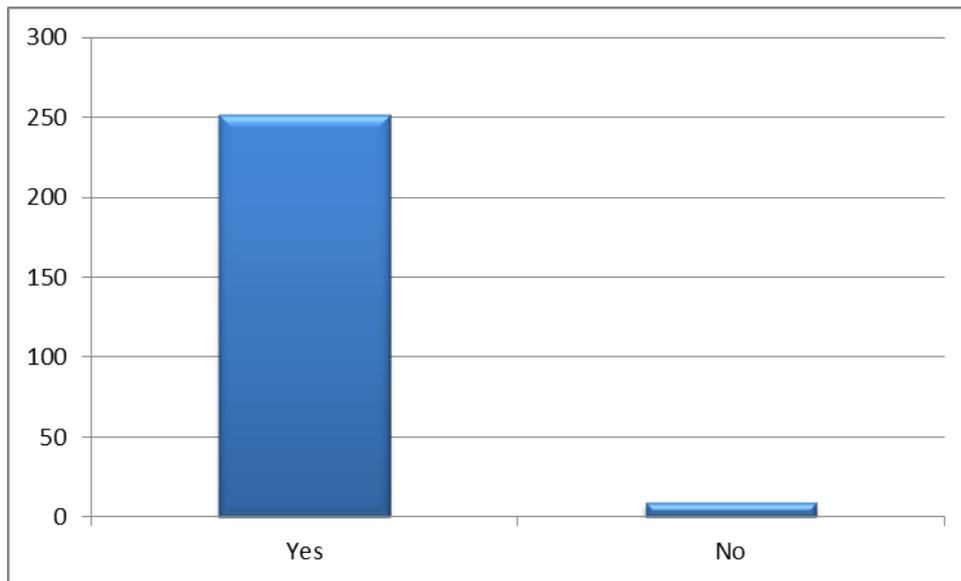
Limited employee access to technology and social networks alluded to above mean that a critical KM enabler was playing a limited role in facilitating KM practices in the PHE institutions covered in this study. This contrasts with the view of Yoshida (2007) who emphasises the importance of social networks in facilitating knowledge sharing, citing examples from Japan. The author contends that in Japan trends such as blogs and social networking services such as Facebook, LinkedIn, Twitter, Mixi, and Friendster are critical knowledge sharing platforms. The author further posits that through these social networks, individual employees transmit information and share it on the internet by posting diaries, sending messages, and creating communities. The same author also notes that employees can visit user pages of colleagues sharing information and ideas that can lead to enhanced efficiency in performing work processes.

With the majority of selected PHE institutions low on intranet, it meant that employees could be finding it difficult to share expert knowledge and skills and job-related experiences with fellow employees within their organisations. The employees could also be having difficulty exchanging personal experiences/ideas with other employees. Interaction with new employees and establishment of networks and contacts could have been restricted. Employees of selected PHE institutions may also have had difficulty sharing information on customer behaviour and preferences with fellow employees.

The limited availability of social networking sites meant that collaboration between employees within individual PHE institutions and between employees of different subsidiaries as well as between employees of different organisations may have been difficult. Thus it may have been difficult for employees to share job-related knowledge, awareness on customers, and anecdotes of their careers, expectations, experiences, successes and failures, which brings about innovation. The implication is that technology was playing an ineffective role in facilitating KM practices in selected PHE institutions.

### **Reporting structure**

In an attempt to determine whether the reporting structure of selected PHE institutions facilitated or hindered KM practices, respondents were asked to state whether their organisational structure (reporting structure) was hierarchical or not (Question 38), that is, whether it was top-down and bottom-up. The responses are shown in Figure 5.13.



**Figure 5.13:** Whether organisational structures of PHE institutions are hierarchical or not

Responses shown in Figure 5.13 indicate that 252 (96.4%) of the respondents' organisational structures were hierarchical while only 9 (3.6%) indicated that they were not. The fact that virtually all the selected PHE institutions' organisational structures were hierarchical meant that employees of these institutions lacked the autonomy to express their views to top management which hampers knowledge creation, sharing, and application. Lack of employee autonomy to express their views contrasts with the research of Nakano, Muniz, and Batista (2013) who identified autonomy as an important factor in fostering a context in which creativity and knowledge creation are promoted. The authors state that individual autonomy is derived from an institution's organisational structure and practices and results in self-motivation and readiness to take the initiative. They further add that autonomy refers to the extent to which the organisation's structure and practices allow freedom to individual employees to do things the way they see fit without fear of punishment. All the PHE institutions covered in this study were characterised by a hierarchical organisational structure with centralised decision-making and organisational practices that did not afford employees the opportunity to take the initiative.

As a follow-on to establish what the respondents felt about elements of organisational structures in their organisations, the respondents were asked what their organisation should do in order to ensure that there was adequate infrastructure to facilitate knowledge sharing (Question 45). The most commonly listed elements were:

- Increasing internet availability;
- Provision of adequate office space;
- Involving staff in decision-making/introducing professionalism;
- Appointing staff to positions of responsibility through merit/recruiting qualified personnel;
- Appointing a knowledge manager/director to champion KM activities;
- Rewarding staff members who share knowledge;
- Facilitating social interaction/promotion of social events;
- Conducting workshops on knowledge sharing;
- Promoting departmental and interdepartmental meetings/committees; and
- Facilitating formation of staff associations to represent employee interests.

The above responses sum up the views of respondents on the existence/absence of critical aspects of organisational structure that facilitate KM practices. Such elements include the position of knowledge officer, provision of adequate infrastructure, facilitating formal and informal interaction, facilitating formation of staff associations, and so on.

#### **5.4.4 Organisational culture and KM**

This section outlines the results of the study on the role organisational culture played in facilitating KM practices of PHE institutions covered in this study. These results addressed the following objective:

To investigate the extent to which organisational culture of selected PHE institutions in Botswana facilitates KM practices

The results on the extent to which organisational culture of selected PHE institutions facilitate KM practices are shown in Table 5.13.

**Table 5.13:** Psychometric properties of organisational culture metrics in PHE institutions.

Item	Factor loading	Eigen Value	AVE	KMO	Bartlett's test	Mean	SD
Cronbach Alpha= 0.65							
Q46 In your organisation, to what extent is crucial information concentrated in the hands of a privileged few?	.676	3.18	61.74	.669	200.138	4.07	.801
Q50 To what extent do employees in your organisation possess the required competencies such that you can rely on them to obtain knowledge that you need but do not have?	.697					3.24	.702
Q51 To what extent do you depend on other employees to get the job done (interdependency) to meet organisational goals?	.576					3.02	.740
Q53 To what extent are employees of your organisation involved in decision-making?	.626					2.38	1.020
Q49 To what extent does the top management of your organisation publicly acknowledge the source of knowledge even if it is a junior employee?	.658					2.32	1.010
Q52 Top leadership of my organisation does not penalise employees who make mistakes while trying out new ideas	.647					2.08	1.092
Q47 To what extent has top management of your organisation created an environment where trust exists between employees and senior management?	.701					2.03	1.041
Q48 In my organisation, there are obvious benefits to the employee who engages in knowledge management practices (e.g. promotion, salary increase)	.689					1.88	1.382

Table 5.13 shows that the Cronbach Alpha for KM in selected PHE institutions is 0.65, while the estimated standard loadings of scale items are above 0.50. This provides support to discriminant validity and it also demonstrates the fact that the scale items are reliable. The Eigen value of the scale items is also greater than 1; KMO measure of sampling adequacy is greater than 0.5, while Bartlett's test of sphericity is also significant, which indicates that the scale items are appropriate for the empirical study factor structure.

Table 5.13 also shows that particular aspects of organisational culture were playing a negative role in facilitating KM practices as outlined below.

### **Concentration of information in the hands of a privileged few**

Table 5.13 shows that crucial information was concentrated in the hands of a privileged few. Existence of information among a few individuals is an indication of a lack of effective communication. Lack of effective communication of information means employees could have been deprived of crucial information and knowledge and those who held it could feel more privileged, powerful and important. Employees who are privileged to possess crucial information may not want to release information to fellow employees who do not have it so as to maintain their privileged position. Employees who are deprived of information can feel powerless and unwanted in the organisation, thus negatively impacting on knowledge-sharing.

The critical role of effective information dissemination (communication) as a KM enabler is supported by the findings of Nakano, Muniz and Batista (2013) who postulate that knowledge sharing occurs within a favourable environment, the 'Ba'. These authors further postulate that such a kind of environment is established through the use of a combination of organisational practices and communication tools and is supported by communication, social networks, trust and empathy.

The absence of effective communication in the 21<sup>st</sup> century knowledge economy meant that the sampled employees of the PHE institutions covered in this study may not have had an opportunity to express their thoughts. Thus they could not effectively tell stories to their peers that could inspire collective action assisting colleagues to solve problems in these institutions. This contrasts with the findings of previous researchers who aver that effective communication enables employees to effectively express their thoughts and information (Riege, 2005; Yih-Tong Sun & Scott, 2005). These researchers further contend that such freedom of expression facilitates effective telling and re-telling of stories in ways that capture the imagination of fellow employees. Such behaviours lead to the affirmation and re-affirmation of employee identities and inspire collective action from the organisation's members.

The study revealed the absence of the two KM enablers, namely requisite variety and redundancy, as information circulation and access were restricted to the top echelons and a privileged few. Coupled with lack of individual autonomy, it meant that employee internal

information diversity (requisite variety) did not match the complexity of their environment which was characterised by strict regulations and uncertainty due to inconsistent policy on government funding (see Chapter 1, section 1.2 and Chapter 3, section 3.2.1). The study therefore achieved the critical objective of determining whether the organisational culture of PHE institutions in Botswana promoted effective KM practices.

### **Employee involvement in decision-making**

The results in Table 5.13 reveal that there was not much employee involvement in decision-making. Failure to involve employees in decision-making meant that the employees could not be expected to take the initiative and come up with new ideas that promoted organisational effectiveness and capabilities leading to enhanced organisational performance. Thus a critical KM enabler was missing and playing no part in facilitating KM practices in the selected PHE institutions.

The positive contribution of employee involvement in decision-making was highlighted in the research done by Schilling and Kluge (2009) which revealed that not involving employees in decision-making is bad for both the employees and the organisation. These authors aver that, because organisational employees who are not part of top management lack formal authority and cannot make important decisions, they cannot therefore initiate new ideas and cannot apply knowledge. The authors further argue that such employees may be originators of innovation but the innovation is lost because the innovators have no decision-making power to put it into practice (knowledge application). They add that such employees are discouraged from being innovative in the future as their well-thought out ideas and expended efforts are wasted.

The above positive contribution of involvement of employees in decision-making may have been lacking in the selected PHE institutions due to the fact that decision-making power and formal authority were centralised in the hands of owner-managers who made all the crucial decisions. Such a situation may have led staff members not to play a critical role on institutional matters and not share what they knew with those who needed knowledge.

### **Penalising employees who make mistakes while trying out new ideas**

The results in Table 5.13 indicate a strong perception among respondents that top leadership of PHE institutions penalised employees who made mistakes while trying out new ideas. This means that respondents did not agree with the statement “Top leadership of my organisation does not penalise employees who make mistakes while trying out new ideas”.

Penalising employees who make mistakes while trying out new ideas instils fear in employees hence such employees are not expected to adopt trial and error practices again. Fear has negative effects on KM practices as it destroys employee innovativeness and initiative. The effect of fear on effective KM practices is confirmed by several researchers who argue that in an environment characterised by fear of penalties employees are apprehensive about knowledge-sharing (Riege, 2005; Schilling & Kluge, 2009). These authors further concur that the cause of fear is that failure may jeopardise the job security of concerned employees leading to the stigmatisation of employees as failures or incompetent (if the new idea fails) thus leading to loss of rewards. An environment where employees are penalised for committing mistakes leads to practices such as colleagues covering up the mistakes of others, blaming them on other factors, explaining them away, or ignoring them instead of identifying and correcting the mistakes.

The prevalence of fear among employees of selected PHE institutions due to punishment for trial and error meant that the process of internalisation where explicit knowledge is converted into the more complex tacit knowledge may have been retarded. Internalisation and other knowledge conversion processes were discussed in detail in Chapter 2 (section 2.2.3.2).

### **Creation of an environment where trust exists between employees and senior management**

The results in Table 5.13 show that respondents to the structured questionnaire strongly believed that top management of PHE institutions had not created an environment where trust existed between employees and senior management (Question 47). This means that there was little trust between senior management and lower level employees. In an environment where trust between management and employees is lacking, knowledge does not spread to many

employees in the organisation. This means that in the PHE institutions covered in this study, knowledge was stagnant due to lack of trust.

The absence of trust between employees and management of the selected PHE institutions is an indication that this critical KM enabler was not playing a significant role in facilitating KM practices. It was instead hindering KM practices. The importance of trust in facilitating KM practices is emphasised by Lee and Hong (2014) who argue that, in the context of knowledge-sharing, the missing link that exists in organisational culture is trust. These authors further postulate that lack of trust leads to the concentration of knowledge among a privileged few. Other researchers concur that in order to ensure that knowledge spreads to many employees in the organisation, top management needs to create an environment where trust exists and where an employee believes that his/her knowledge will not be misused (Tan, Lim, & Ng, 2009; Rau, 2011; Alhalhouli, Hassan, & Der, 2014). The role of trust in facilitating KM practices was discussed in detail in Chapter 2 (section 2.2.1.2).

### **Benefits to employees who created and shared knowledge**

Quantitative results in Table 5.13 indicate that there were no obvious benefits to the employees who shared knowledge (Question 48). The results proved that there was no relationship between the reward structures of selected PHE institutions and KM practices. In the absence of such rewards, employees may have found no reason to expend energy in creating and sharing knowledge with those in need of it. This means that the employees may have been hoarding knowledge which makes it redundant and therefore useless.

The absence of rewards for employees who created and shared knowledge meant that a critical KM enabler was not playing a significant role in facilitating KM practices. This is in contrast to previous research that reveals that incentives and rewards that encourage KM activities among an organisation's employees play a critical role as KM enablers (Gibbons, 2009; Iyer & Ravindran, 2009; Perik, 2014). The importance of rewards as a KM enabler is further emphasised by Davenport and Prusak (1998) who concur that employees tend to give their maximum output when they realise that their efforts are recognised and appreciated by the organisation's top management. The fact that there were no rewards for employees who created and shared knowledge in the selected PHE institutions meant that the role this important KM enabler was playing in facilitating KM practices was negative. The role of

rewards in facilitating KM practices was discussed in more detail in Chapter 2 (section 2.2.1.4).

### **Examples of lack of trust between employees and management**

As confirmation of lack of trust between employees of selected PHE institutions and management, respondents were asked to list examples of such lack of trust (Question 54 in the questionnaire). The most commonly cited examples were:

- Denying employees free access to internet and social networking sites like Facebook;
- Requiring staff to clock in and out when coming to work and knocking off;
- Restricting access to information for staff who are not of the same nationality as the owners of the institution;
- Staff selling each other out to family managers;
- Staff members just disappearing to join other organisations without giving notice;
- Staff members interacting along racial/nationality lines;
- Filling all top management positions with family members or their close associates;
- Use of closed circuit television (CCTV) cameras in all the rooms except toilets;
- Not recognising well-qualified and experienced academics;
- Staff not contributing in staff meetings for fear of victimisation; and
- Employees avoiding social gatherings/functions which featured top management.

The list of examples of lack of trust cited above is a good measure of the respondents' firm belief that lack of trust between management of selected PHE institutions and lower level employees was real.

### **5.4.5 Stakeholder engagement and KM**

Questions 55 – 63 in the questionnaire were meant to determine the extent to which selected PHE institutions involved important internal and external stakeholders in the running of their affairs so as to facilitate knowledge exchange and utilisation. These addressed the following research objective:

To investigate the extent to which PHE institutions involve internal and external stakeholders in the affairs of their institutions.

**i) Descriptive statistics**

Table 5.14 shows the results of the various items of stakeholder involvement.

**Table 5.14:** Psychometric properties of stakeholder involvement in KM activities of selected PHE institutions

Item	Factor loading	Eigen value	AVE	KMO	Bartlett's test	Mean	SD
Cronbach Alpha= 0.79							
Q55 My organisation operates in an environment which is highly regulated by the Tertiary Education Council (TEC)	.756	4.520	57.71	.669	276.181	4.40	1.170
Q56 To what extent does the government believe your organisation is there to swindle learners of their money by offering education that does not justify the fees it charges?	.697					3.52	1.321
Q57 To what extent is there interaction between TEC and academic staff of your institution to exchange information?	.562					3.30	.862
Q58 To what extent is your institution open to ideas coming from external stakeholders (e.g regulatory authorities, government, industry, learners)?	.726					3.07	.900
Q60 To what extent has your institution's top management ensured building of research capacity to enable staff members to effectively carry out research in order to generate new knowledge?	.738					3.11	.921
Q59 To what extent does your institution work with industry to ensure the production of graduates that meet industry needs?	.635					2.49	1.340
Q61 To what extent is your institution's Student Representative Council (SRC) free to carry out its mandate without victimisation from top management?	.645					2.25	1.021
Q62 In my organisation, staff members can freely form staff associations that operate freely without fear of victimisation	.636					1.52	.941

Table 5.14 shows that the Cronbach Alpha for KM in selected PHE institutions is 0.79, while the estimated standard loadings of scale items are above 0.50. This provides support to discriminant validity and it also demonstrates the fact that the scale items are reliable. The Eigen value of the scale items is also greater than 1; KMO measure of sampling adequacy is greater than 0.5; and Bartlett's test of sphericity is also significant, which indicates that the scale items are appropriate for the empirical study factor structure.

Table 5.14 indicates the failure of selected PHE institutions to effectively involve stakeholders in facilitating effective KM practices as outlined below.

### **Organisations operating in a highly regulated environment**

This study sought to establish the extent to which respondents believed that their institution operated in a highly regulated environment (Question 55). According to the results shown in Table 5.14, the respondents to the questionnaire strongly agreed with the statement that their organisations operated in an environment that was highly regulated by regulatory authorities such as the TEC and the BOTA. This result clearly indicates the intensity of the regulatory environment in which the selected PHE institutions were operating. The operations of PHE institutions in Botswana were subjected to a three-pronged scrutiny by the Ministry of Education and Skills Development (MESD), the TEC and the BOTA. The extent of regulation was so deep that even changing a prescribed textbook required a written approval by the regulatory bodies mentioned. More details of the highly regulated environment under which the selected PHE institutions operated were discussed in Chapter 3 (section 3.2.1).

The selected PHE institutions were operating in a highly regulated, highly competitive, and highly volatile environment. Operating in a highly regulated environment therefore creates a business environment characterised by high velocity and uncertainty which makes effective KM practices critical for the organisation to survive. PHE institutions thus need to establish an effective KM environment that promotes knowledge processes of creation, discovery, sharing, application, and retention of knowledge in order to achieve business goals. Such a KM environment entails cultivating the enablers of knowledge processes that include people's attitudes and abilities, people's roles, leadership, culture, and technology in order to effectively generate and share knowledge to deal with the consequences of uncertainty and the velocity of the environment.

### **Image of selected PHE institutions**

Question 56 on the questionnaire sought to determine the extent to which the image of selected PHE institutions was positive or negative in the eyes of regulatory authorities as key stakeholders. The results in Table 5.14 show that respondents to the questionnaire believed that the regulatory authorities and other stakeholders felt that, to a reasonable extent, PHE institutions were there to swindle learners of their money by offering education that did not justify the fees they charged. This result implied that regulatory authorities had a negative perception of the selected PHE institutions which was a result of mistrust of these

institutions. A clear confirmation of mistrust is provided by Regonamanye (2015) who stated in a newspaper article referring to PHE institutions that there was need to save the UB against emerging bogus campuses. The negative image portrayed by the selected PHE institutions in the eyes of key stakeholders such as regulatory authorities imply that the institutions lacked relational capital which is a critical knowledge asset in organisations (see Chapter 2, section 2.2.3.1).

**ii) What the organisation is not doing and should do in order to enhance its reputation in the eyes of its stakeholders**

As follow-on to the issue of image of selected PHE institutions in the eyes of stakeholders, respondents were asked what PHE institutions should do, which they were not doing, to enhance their reputation in the minds of their stakeholders (Question 63). The most commonly listed aspects were:

- Should allow formation of staff associations;
- Appointing well-qualified staff to senior academic management rather than family members only or their close associates or bootlickers;
- Introducing a reward structure that recognises seniority and knowledge creation and sharing;
- Allowing staff freedom of expression and association without being closely monitored;
- Allowing students to freely elect representatives of their choice and also to allow those elected space to operate without undue influence of management of institutions;
- Offering quality educational programmes;
- Charging reasonable tuition fees/not too high tuition fees;
- Providing adequate infrastructure for teaching and learning and social networking;
- Establishing institutional governance and academic management committees comprising academic staff and representatives of government and industry;
- Vetting lecturers' qualifications and weeding out those with fake and/or bogus qualifications;
- Allowing professionalism to guide the operations of institutions;
- Promoting inter-institutional collaboration instead of competition; and
- Improving employee working conditions and remuneration.

The above list indicates that respondents included in this study had a strong feeling that the image of the institutions covered in this study was negative. The selected PHE institutions covered in this study suffered from a battered image. Such an image has a negative effect on the ability of the institution to attract customers and compete effectively in a highly competitive business environment. This view is reinforced by Cai (2012) who concurs that a positive image and enhanced competitiveness are critical attributes for organisations that are operating in an environment endowed with stiff competition and strict regulatory requirements. Such is the environment that the PHE institutions covered in this study were operating in at the time of this study.

### **Extent of internal and external stakeholder interaction and knowledge exchange**

The study sought to determine the extent of interaction between PHE institutions and regulatory authorities like the TEC and the BOTA to exchange information and expectations. The results are shown in Table 5.14. The results reveal that there was limited interaction between selected PHE institutions and regulatory bodies to facilitate exchange of information and expectations. The respondents also believed that selected PHE institutions were open to ideas from external stakeholders to a limited extent.

The results also indicate that there was little collaboration between the institutions and industry. Lack of industry involvement meant that there was little room for PHE institutions covered in this study to obtain industry input that could inform curriculum development and revision. This could mean that the institutions could be producing graduates who were not needed by industry resulting in high graduate unemployment. The problem of graduate unemployment in Botswana is confirmed by Siphambe (2012) who reiterates that graduate unemployment co-exists with vacant posts that cannot be filled by the graduates because employers are convinced these graduates still lack the required skills and competence levels. The issue of quality and relevance of education provided by PHE institutions in Botswana was discussed in detail in Chapter 3 (Section 3.4.2).

As continuation of an investigation into the extent to which the selected PHE institutions involved (or engaged) stakeholders in their affairs, respondents were asked whether the Student Representative Councils (SRC) had freedom to carry out their mandate without victimisation from top management. The results in Table 5.14 show that the SRCs of these

institutions enjoyed little freedom to carry out their mandate. On whether academic staff of these institutions could establish staff associations that operated freely without fear of victimisation, the results show that this was not happening. The results show that academic staff were not able to establish staff associations that could operate freely without interference from management. Denying staff from establishing associations meant that opportunities for such staffs to share knowledge among themselves and with management were limited.

The results in Table 5.14 indicate an absence or limited interaction between selected PHE institutions in Botswana and their internal and external stakeholders. Lack of inter-organisational collaboration between academic staff of these institutions means that these academics lacked exposure to the outside world. Academic staff in HE should be exposed to the outside world to make them think outside the box and expand their knowledge horizons. This has the effect of internationalising their experience and their institutions. Lack of collaboration meant there was little knowledge flow into the institutions from external knowledge reservoirs. PHE institutions were therefore not benefitting much from experts outside their boundaries, which is not proper for institutions of higher learning operating in the 21<sup>st</sup> century knowledge economy. An effective operating environment would do much to diminish the role of regulatory authorities. However, the PHE environment at the time this study was conducted was not an enabling environment for effective KM practice.

Lack of exposure of academic staff of selected PHE institutions to the outside world meant that there was no flow of knowledge from peers of other institutions in and outside Botswana. This contradicts the views of Sorge and Waner (2007) who argue that the success of a business entity largely depends on the quality of its relations with other organisations and that interaction with such entities enables an organisation to acquire resources that include knowledge. These authors further posit that interaction is a key element in the process of gaining access to existing knowledge as well as acquiring and establishing new knowledge for the effectiveness of managerial decision-making. The authors further argue that interaction with external organisations also enables firms to absorb knowledge from external parties in a more effective way and they can use that knowledge to create new knowledge, products and/or services.

The importance of effective interaction with the outside world as a mechanism for knowledge exchange is further emphasised by Ding and Peters (2005) who posit that, to achieve effective innovation, business firms need to establish relations and synergies with external organisations. These authors further postulate that such relations are crucial because the resultant collaborative inter-organisational networks facilitate the effective flow of knowledge from one organisation to another thus increasing the capacity for innovation, productivity and customer satisfaction. Given the views gathered from the respondents on the effectiveness of external interaction and collaboration and published research by experts on the issue, there was evidence that such activities were missing in PHE institutions in Botswana covered in this study. Therefore, a critical KM enabler which could enhance the performance of these institutions, help spruce up their image and save them from excessive monitoring by regulatory authorities was absent.

### **Building research capacity**

Respondents were asked the extent to which their institutions' top management ensured building of research capacity to enable staff members to effectively carry out research in order to generate new knowledge (Question 60). The results shown in Table 5.14 indicate that the institutions covered in this study were lagging behind in terms of ensuring building of research capacity and funding of research to enable staff members to effectively carry out research.

Without research capabilities, hence no research output, it means the capacity of the PHE institutions to generate new knowledge was severely curtailed so there was little knowledge to share. Also, it is difficult for an institution of higher learning to be well-recognised and respected without research because research output is the most important determinant of a university's ranking and hence its reputation. It is the role of institutional leadership to make strategic decisions on long-term promotion and funding of research and to ensure the establishment of research capacity among the institution's academic staff.

The importance of research in HE is emphasised by Vessuri (2010) who posits that research and HE have finally been accepted as critical elements in the global knowledge economy. This acceptance comes after decades of lack of appreciation of the crucial role of the two elements in the economic development of developing countries. The author further postulates

that research in HE is crucial as it assists in the production of new knowledge and the reproduction of existing knowledge as well as improving the critical reasoning capabilities and specific skills of individual academics.

In order to be effective in the generation, dissemination and responsiveness to new knowledge, the selected PHE institutions should excel in all three core functional areas of teaching, research, and community engagement. New partnerships and joint ventures need to be established with industry, government departments, community organisations and other important stakeholders. The fact that this was not happening in the selected PHE institutions implies that a critical KM enabler was missing.

### **5.5 KM enablers, state of KM in PHE institutions and the KM model**

This section outlines the correlation between KM enablers and the state of KM in PHE institutions during the time the study was undertaken in order to determine the role played by these enablers in facilitating KM practices. It also outlines the resultant KM model, emanating from SEM, which could be adopted by the top management of these institutions to enhance KM practices. The model tested the strength of the criterion variable (state of KM in selected PHE institutions) and predictor variables, namely strategic leadership, family management, organisational structure, organisational culture and stakeholder involvement.

#### **5.5.1 Correlations between the constructs**

The relationship between the constructs KM enablers and the existing state of KM in PHE institutions is shown in Table 5.15. The relationship was tested at 0.05 and 0.01 levels of significance. Using correlation analysis, the results for four out of the five constructs show that there was a significant positive relationship between the state of KM and KM enablers in PHE institutions covered in this study with exception of family management orientation. This shows that family management had a negative influence on the state of KM in the organisations. The results of the inter-item correlation show the existence of the relationship between the variables but do not identify the most crucial variables for this relationship. To achieve this objective, the multiple regressions were conducted between KM enablers scale items and the existing state of KM in the organisations and these are shown in Table 5.15.

**Table 5.15:** Cross tabulation of coefficient of correlation of relationship between the state of KM and the constructs

Correlations							
		q117	q118	q119	q120	q121	q122
Q117	Pearson Correlation	1	-.209*	.636**	.476**	.350**	.450**
	Sig. (2-tailed)		0.028	0	0	0	0
	N	115	110	111	112	111	109
Q118	Pearson Correlation	-.209*	1	-.237*	-.294**	-.297**	-0.033
	Sig. (2-tailed)	0.028		0.014	0.002	0.002	0.739
	N	110	111	108	108	109	106
Q119	Pearson Correlation	.636**	-.237*	1	.627**	.591**	.377**
	Sig. (2-tailed)	0	0.014		0	0	0
	N	111	108	112	110	109	106
Q120	Pearson Correlation	.476**	-.294**	.627**	1	.489**	.353**
	Sig. (2-tailed)	0	0.002	0		0	0
	N	112	108	110	113	109	108
Q121	Pearson Correlation	.350**	-.297**	.591**	.489**	1	.348**
	Sig. (2-tailed)	0	0.002	0	0		0
	N	111	109	109	109	112	107
Q122	Pearson Correlation	.450**	-0.033	.377**	.353**	.348**	1
	Sig. (2-tailed)	0	0.739	0	0	0	
	N	109	106	106	108	107	110

\* Correlation is significant at the 0.05 level (2-tailed)

\*\* Correlation is significant at the 0.01 level (2-tailed)

**Key**

Q 117 - State of KM in the organisation      Q119 - Strategic leadership      Q 121- Organisational culture  
 Q118 - Family management                      Q120 - Organisational structure      Q122 - Stakeholder involvement

Results in Table 5.15 show that most of the inter-item correlations are weak because elements of multi-collinearity assumptions are present in this association hence the values are acceptable. Thus multiple regression was used to establish the contribution of the independent variables to the model. The output SPSS was concerned with three tables, namely the summary model, ANOVA, and the coefficient tables. The main hypotheses proposed to address the research objectives were tested using the multiple regressions as they sought to determine the relationship between the state of KM in PHE institutions and KM

enablers. The main hypothesis is: There is a significant relationship between KM enablers' constructs and the state of KM in the organisations.

The correlation or association between antecedents or enablers and the KM practices in selected PHE institutions is shown in Table 5.16 using Pearson correlation matrix.

**Table 5.16:** Correlations matrix showing association between KM enablers and KM practices

		KMT1	FMT1	SLD1	OSTR1	OCL1	STK1
KMT1	Pearson Correlation	1	-.135*	.136*	.355**	.451**	.406**
	Sig. (2-tailed)						
	N		261	261	261	261	261
FMT1	Pearson Correlation		1	-.043	-.150*	-.155*	.191**
	Sig. (2-tailed)						
	N			261	261	261	261
SLD1	Pearson Correlation			1	.332**	.418**	.160**
	Sig. (2-tailed)						
	N				261	261	261
OSTR1	Pearson correlation				1	.467**	-.092
	Sig. (2-tailed)						
	N					261	261
OCL1	Pearson Correlation					1	-.075
	Sig. (2-tailed)						
	N						261
STK1	Pearson correlation						1
	Sig. (2-tailed)						
	N						

\*Correlation is significant at the 0.05 level (2-tailed).

\*\*Correlation is significant at the 0.01 level (2-tailed).

**Key**

KMT1 - Knowledge management

FMT1 - Family management

SLD1 - Strategic leadership

OSTR1- Organisational structure

OCL1 - Organisational culture

STK1 - Stakeholder involvement

According to Table 5.16, ‘KM practices’ was found to be significantly and negatively associated with family management orientation (FMT1:r = -0.135,p<0.05). However, strategic leadership (SLD1:r =0.136, p<0.05), organizational structure (OSTR 1: r=0.355, p<0.01), organizational culture (OCL1: r=0.451, p<0.01) and stakeholder involvement (STK1:r=0.406, p<0.01) metrics were found to be significantly and positively associated with ‘KM practices’. Strategic leadership was also found to be significantly and positively associated with organisational structure (OSTR1: r= 0.332,p<0.01), organisational culture (OCL1:r=.418,p<0.01) and stakeholder involvement (STK1: r=0.160,p<0.01).

After the association of the KM enablers and KM practices as shown in Table 5.16, the nexus of inter-item relationship between the antecedents and KM practices is shown in Table 5.17. The regression model was applied to test how far the KM enablers in the organisation had an effect on the state of KM in the organisations. The results are shown in Table 5.17 in the form of inter-item model summary.

**Table 5.17:** Inter-item Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.714 <sup>a</sup>	.510	.484	3.934	.510	19.569	5	94	.000

$P < 0.0005$ , which is less than 0.05, and indicates that, overall, the model applied can statistically significantly predict the outcome variable.

As shown in Table 5.17, the coefficient of determination -  $R^2$  is the measure of proportion of the variance of the dependent variable about its mean that is explained by the independent or predictor variables. Higher value of  $R^2$  represents greater explanatory power of the regression equation. The adjusted  $R^2$  is 0.51 which means that the study variables’ contribution to the state of KM in the organisations is 51% and the remaining 49% can be attributed to other extraneous factors not covered in this study.

The ANOVA analysis was carried out to determine how much of the variance in the dependent variables is accounted for by the manipulation of independent variables and assesses the level of significance of the model. The results are shown in Table 5.18.

**Table 5.18:** The ANOVA Results

**ANOVA<sup>b</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1513.990	5	302.798	19.569	.000 <sup>a</sup>
Residual	1454.520	254	15.474		
Total	2968.510	261			

- a. Predictors: (Constant), Q122 Stakeholders involvement, Q118 Family management and KM, Q121 Organisational culture and KM, Q120 Organisational structure and KM, Q119 Strategic leadership and KM.

The results in Table 5.18 show that the model is significant ( $F(5, 49) = 19.569, p < 0.05$ ). This implies that the variables under study, namely stakeholder involvement, family management, organisational culture, organisational structure, and strategic leadership had an impact on the state of KM in the PHE institutions covered in this study.

In order to test the strength of the influence of the predictor variables on the criterion variable, the beta co-efficient was used. The variance inflation factor (VIF) is also shown. The results are shown in Table 5.19. As shown in the table, for cross-sectional studies, the collinearity statistics show that the tolerance and VIF levels explicate fulfilment of the multicollinearity assumptions between the predictors and the dependent variable in this hypothesised relationship. These findings resonate with Hair, Black, Babin, Anderson and Tatham (2006) and Tabachnick and Fidell (2013) recommendations in extant literature.

**Table 5.19:** Analysis of coefficients for KM enablers sub constructs

Coefficients<sup>a</sup>

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	Collinearity statistics	
	B	Std. Error	Beta			Tolerance	VIF
Q117 State of KM in the organisation	-.278	4.746		-.058	.953		
Q118 Family management and KM	-.116	.085	-.105	1.375	.172	.890	1.123
Q119 Strategic leadership and KM	.456	.089	.535	5.144	.000	.482	2.075
Q120 Organisational structure and KM	.196	.175	.111	1.122	.265	.530	1.887
Q121 Organisational culture and KM	-.149	.139	-.098	1.074	.285	.625	1.601
Q122 Stakeholder involvement	.349	.115	.241	3.028	.003	.822	1.216

Table 5.19 shows the Beta value of each variable. The tolerance value measures the correlation between the predictor variable and can vary between 0 and 1, (the closer to zero the tolerance value, the stronger the relationship between this and other predictor variables) which is undesirable. Table 5.19 shows that the tolerance values are reasonably high and the VIF is low.

The Beta value is a measure of how strong each of the predictor variables influences the criterion variable. The Beta regression coefficient allows for a comparison of the independent variables and assesses the strength of the relationship between the predictor variables and the criterion variables. The Beta is measured in the units of SD. The higher the Beta value, the greater the influence of the predictor variable on the criterion variable. In this study, the existing state of KM in the organisation was regressed against the independent variables as shown in the equation of the model that can be formulated as follows:

$Y = \beta_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5$  and the Beta values in Table 5.19 where:

Y - State of KM in the organisation

x<sub>1</sub> - Family management and KM,

x<sub>2</sub> - Strategic leadership

x<sub>3</sub> - Organisational structure

x<sub>4</sub> - Organisational culture

x<sub>5</sub> - Stakeholder involvement

$$Y = -.278 + -0.116x_1 + 0.456x_2 + 0.196x_3 + -.149x_4 + 0.3495x_5$$

The inter-item model presents a predictive solution on the values of Y (state of KM in PHE institutions) as affected by causal reactions from the plotted values of family management ( $x_1$ ), strategic leadership ( $x_2$ ), organisational structure ( $x_3$ ), organisational culture ( $x_4$ ), and stakeholder engagement ( $x_5$ ). The relationship indicated in the equation above resonates with the fulfilment of linearity assumptions as contended by Hair et al (2006) in extant literature.

According to Table 5.19, the co-efficient of strategic leadership of 0.535 shows that a 1% change of trust will contribute 53.5% to the state of KM in the organisations with the 0.000 level of significance. Stakeholder involvement also has a coefficient of 0.241 which indicates that a change of 1% in engagement would contribute to a 24% change in the state of KM with a  $P < 0.05$ . The other three factors' contributions are not significant, namely organisational structure (Beta = 0.111, sig = .265), organisational culture (Beta = -.098, sig = .25) and lastly family management (Beta = -.105, sig = .172) and a small t-value (-1.375). As revealed in the descriptive statistics that family management in the organisation was high, this finding clearly indicates that it has a negative influence on knowledge creation and sharing among employees, thus a 1% increase on this variable will contribute to a 10.5% decrease in the state of KM in the organisations.

Furthermore, the nomological web between KM enablers and KM practices is explicated in Table 5.20.

**Table 5.20:** Regression coefficients explicating the nomological web between KM enablers and KM Practices

Model	Unstandardized Coefficients		Standardised Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	23.857	2.636		9.051	.000	18.667	29.048					
FMT1	-.007	.027	-.013	-.251	.802	-.060	.046	.135	-.016	-.012	.938	1.066
SLD1	.194	.077	.143	2.519	.012	.042	.345	.032	.156	.124	.760	1.315
OSTR1	.227	.070	.186	3.249	.001	.089	.365	.355	.199	.161	.746	1.340
OCL1	.409	.061	.401	6.737	.000	.290	.529	.451	.389	.333	.690	1.449
STK1	.274	.042	.338	6.533	.000	.191	.357	.406	.379	.323	.912	1.097

a. Dependent Variable: KMT1

As shown in Table 5.20, stepwise regression was used to determine the significance of the antecedents or enablers of KM practices in selected PHE institutions in Botswana. The results displayed suggest that strategic leadership (SLD1:β = 0.143, t = 2.519), organisational structure (OSTR1:β= 0.186, t=3.249), organizational culture (OCL1:β=0.401, t=6.767) and stakeholder involvement (STK1:β=0.338, t= 6.533) are significantly and positively related to KM practices among selected PHE institutions. It was also discovered that the family management orientation (FMT1:β=-0.13,t=-0.251) is not significantly and positively related to KM(KMT1) practices in the selected PHE institutions. Furthermore, the adjusted root mean square error of approximation (RMSEA) explicates the variation of KM practices as demonstrated by the predictors (enablers). The Tolerance levels and VIF as shown in Table 5.20 also indicate that the multicollinearity assumptions are fulfilled in this study. The nexus of the relationship between KM enablers or predictors and KM practices is shown in Table 5.21.

**Table 5.21:** Model summary for the nexus of the relationship between KM enablers and KM practices

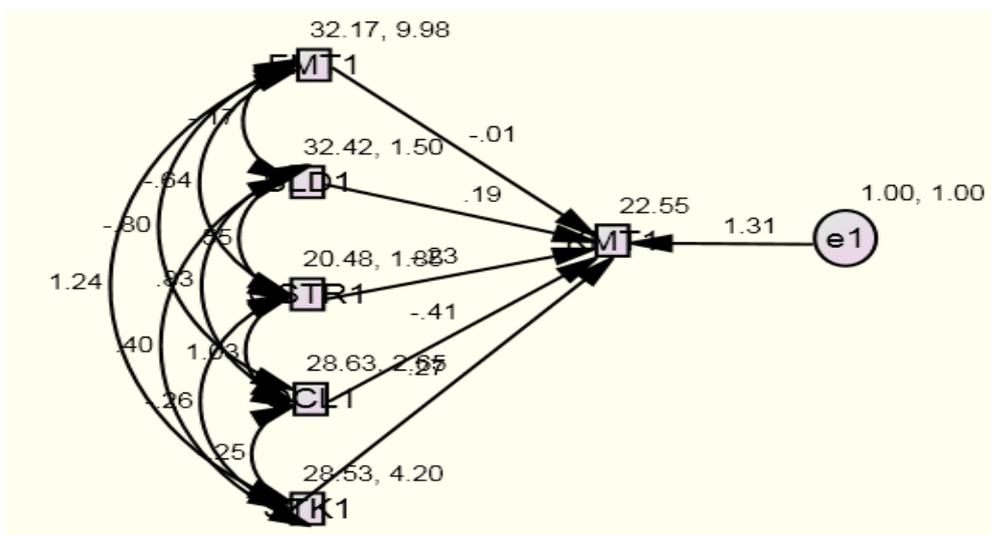
Model	R	R square	Adjusted R square	Std. Error of the estimate	Change Statistics					Durbin-Watson
					R square change	F change	df1	df2	Sig. F change	
1	.614 <sup>a</sup>	.377	.365	1.32664	.377	30.928	5	255	.000	1.360

a. Predictors: (Constant), STK1, OCL1, FMT1, SLD1, OSTR1

b. Dependent variable: KMT1

Table 5.21 thus establishes that the enablers account for 36.5% variation in the KM practices of PHE institutions in Botswana as indicated in the RMSEA. Thus Hypotheses H1, H3, H4 and H5 are supported in this empirical study while hypothesis H2 is rejected. The Durbin-Watson value of 1.36 also corroborates the hypothesised relationship assertion established in this study as indicated in Table 5.21. The calculation of Durbin Watson is well documented in cross sectional studies and it is used to support the value of the Adjusted R Square in extant literature as postulated by Hair et al (2006) and Tabachnick and Fidell (2013).

Finally, the SEM and path analysis in Figure 5.14 and Tables 5.23 and 5.24 explicate the hypothesised relationship among the various sub constructs in the model of this empirical study.



**Figure 5.14:** Structural equation model showing the nexus of the relationship between KM enablers and KM practices among selected PHE institutions

The assessment of normality in Table 5.22 is to show that the skewness and kurtosis fulfil multicollinearity assumption in this study.

**Table 5.22:** Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
STK1	17.000	34.000	-1.866	-12.307	6.530	21.536
OCL1	26.000	37.000	2.660	17.546	7.248	23.901
OSTR1	17.000	28.000	2.586	17.059	7.658	25.253
SLD1	29.000	40.000	2.083	13.738	8.203	27.052
FMT1	23.000	66.000	4.428	29.207	49.184	162.196
KMT1	13.000	24.000	-3.110	-20.510	10.760	35.483
Multivariate					146.557	120.827

As shown in Table 5.22, the sub constructs in the hypothesised relationship also fulfils the assumption of normality as established in the Skewness and Kurtosis values as contended by Hair, et al (2006). The SEM model as shown in Figure 5.14 also demonstrates convergence as espoused in earlier regression results in this study, which indicates that strategic leadership, stakeholder involvement, organisational structure, and organisational culture are significantly and positively related to KM practices. It was also indicated that the family management orientation is not significantly and positively related to KM practices.

Following Steenkamp's protocol, the researcher evaluated the RMSEA statistics (0.089), normed fit index (NFI) statistics (0.96), and chi-square fit index divided by the degree of freedom (CMIN/Df) (4.732). Each of these indicators suggests that a model which fits into the data has been identified in this empirical study. The path analysis in Table 5.23 also shows that KM practices (KMT1) is not significantly and positively related to family management orientation (FMT1). However, KMT1 is significantly and positively related to strategic leadership (SLD1:  $\beta=0.194, p<0.11$ ), organisational structure (OSTR1:  $\beta=0.227, p<0.001$ ), organisational culture (OCL1:  $\beta=0.409, p<0.000$ ) and stakeholder involvement (STK1:  $\beta=0.274, p<0.000$ ). However KMT1 (KM practices) is not significantly and positively related to family management orientation (FMT1:  $\beta= -0.007, p<0.800$ ). Hence hypotheses H1, H3, H4 and H5 are supported in this study, while hypothesis H2 is not supported, which corroborates the stepwise regression findings stated above.

Tables 5.23 and 5.24 show the path analysis of the hypothesised relationship in this empirical study.

**Table 5.23:** Regression weights: (Group number 1 - Default model)

Path Analysis			Estimate	S.E.	C.R.	P	Label
KMT1	<---	FMT1	-.007	.027	-.254	.800	par_1
KMT1	<---	SLD1	.194	.076	2.544	.011	par_2
KMT1	<---	OSTR1	.227	.069	3.280	.001	par_3
KMT1	<---	OCL1	.409	.060	6.802	***	par_4
KMT1	<---	STK1	.274	.042	6.597	***	par_5
KMT1	<---	e1	1.311	.058	22.804	***	par_6

According to Table 5.23, strategic leadership is significantly and positively related to KM practices hence H1 is supported. Organisational structure is significantly and positively related to KM practices. Therefore H3 is supported in this study. Organisational culture and stakeholder involvement are strongly significant and positively related to KM practices. Therefore H4 and H5 are fully supported.

**Table 5.24:** Standardized regression weights: (Group number 1 - Default model)

			Estimate
KMT1	<---	FMT1	-.013
KMT1	<---	SLD1	.143
KMT1	<---	OSTR1	.186
KMT1	<---	OCL1	.401
KMT1	<---	STK1	.338
KMT1	<---	e1	.789

Table 5.24 shows the regression weights for the hypothesised relationship. Strategic leadership, organisational structure, organisational culture and stakeholder involvement account for 14.3%, 18.6%, 40.1% and 33.8% variation respectively, while family management orientation does not account for significant variation in the KM practices among PHE institutions in Botswana.

Table 5.25 also explicates the covariance or association among the various sub-constructs in the hypothesised model.

**Table 5.25:** Covariances: (Group number 1 - Default model)

Path Analysis			Estimate	S.E.	C.R.	P	Label
OCL1	<-->	STK1	-.250	.207	-1.205	.228	par_7
OSTR1	<-->	OCL1	1.034	.152	6.827	***	par_8
SLD1	<-->	OSTR1	.553	.109	5.078	***	par_9
FMT1	<-->	SLD1	-.167	.240	-.695	.487	par_10
OSTR1	<-->	STK1	-.257	.174	-1.480	.139	par_11
SLD1	<-->	STK1	.402	.158	2.547	.011	par_12
FMT1	<-->	STK1	1.237	.409	3.024	.002	par_13
SLD1	<-->	OCL1	.833	.134	6.220	***	par_14
FMT1	<-->	OCL1	-.796	.323	-2.469	.014	par_15
FMT1	<-->	OSTR1	-.644	.270	-2.389	.017	par_16

As shown in Table 5.25, organisational structure and organisational culture are strongly associated. Strategic leadership is strongly associated with organisational structure, stakeholder involvement and family management orientation. Family management orientation is also significantly associated with organisational structure and organisational culture.

In summary, the SEM and the path analysis establish that strategic leadership, organisational structure, organisational culture, and stakeholder involvement are significantly and positively related to KM practices in the selected PHE institutions. However, family management is not significantly and positively related to KM practices in this empirical study. These findings thus corroborate the findings earlier espoused in the correlation and multiple regression analysis in this study. The findings have theoretical and managerial implication for policy makers, academics, and researchers in Botswana.

## 5.6 Summary of findings

The following are the major findings of this study based on the research objectives.

### 5.6.1 Role of strategic leadership in facilitating KM practices of PHE institutions

- Top leadership of PHE institutions did not ensure that all business functions were linked to share information, thus enabling the institutions to tap into the knowledge of their employees.

- The overall business strategies of PHE institutions did not indicate the criticality of KM strategy.
- Leadership of PHE institutions did not ensure that KM practices were fused into the institutions' performance appraisal systems.
- There were no well-coordinated KM programmes in selected PHE institutions.
- Top leadership of PHE institutions did not ensure that individual employees were rewarded for team work in the interest of the organisations.
- There were no KM training programmes in the selected PHE institutions yet such programmes are vital in enhancing KM practices hence organisational performance.

### **5.6.2 Effect of family ownership and management on KM practices of PHE institutions**

- Virtually all PHE institutions covered in this study were family-owned and owner-managed businesses.
- Selected PHE institutions were managed by family members and not by professional managers.
- Family members who managed PHE institutions were, to a large extent, concerned with preservation of family wealth.
- The presence of family managers largely contributed to lack of trust in the selected PHE institutions.
- The presence of family members at PHE institutions prevented full exploitation of knowledge.
- Family managers competed with ordinary employees for influence, contributing to frustration of professional employees leading to high staff turnover.
- Owners of PHE institutions did not appoint employees to positions of responsibility through merit.
- Members of the family who managed PHE institutions did not possess appropriate academic qualifications commensurate with the positions they held.

### **5.6.3 Role of organisational structure in facilitating KM practices in PHE institutions**

- Information flow in PHE institutions was vertical most of the time.

- Employees of PHE institutions did not have easy access to social networks such as Face-book, Twitter, Linked-In, etc that facilitated interaction and hence knowledge-sharing.
- Top leadership of PHE institutions did not ensure the existence of formal and informal networks in order to facilitate effective dissemination and responsiveness to knowledge.
- Physical infrastructure such as office space, meeting rooms, tea rooms, internet, and intranet that created space to facilitate KM practices in PHE institutions was inadequate.
- Technology, which facilitates KM practices hence innovation, was inadequate.
- Top leadership of PHE institutions did not establish well-structured knowledge maps to lead staff in the direction of the knowledge they required.

#### **5.6.4 Role of organisational culture in facilitating KM practices in PHE institutions**

- A large number of employees of PHE institutions covered in this study were below the age of 40.
- The majority of employees of PHE institutions held undergraduate degrees.
- The majority of PHE employees lacked both organisational and general work experience.
- Most employees of PHE institutions were employed on fixed term contracts.
- Crucial information was concentrated in the hands of a privileged few.
- There was little involvement of employees of PHE institutions in decision-making.
- To a large extent, top management of PHE institutions did not publicly acknowledge the source of knowledge if it was a junior employee.
- To a large extent, top leadership of PHE institutions penalised employees who made mistakes while trying out new ideas.
- There was high level of mistrust between employees of PHE institutions and top management and among employees themselves.
- There were no satisfactory employee rewards linked to KM practices.

#### **5.6.5 Extent of stakeholder involvement in activities of PHE institutions**

- PHE institutions operated in a highly regulated environment.

- The stakeholders such as the TEC and the BOTA believed that PHE institutions were there to swindle learners of their money by offering substandard education that did not justify the tuition fees they charged.
- There was little interaction between regulatory authorities and academic staff of PHE institutions to exchange information and knowledge.
- PHE institutions were not open to ideas coming from external stakeholders such as regulatory authorities, government, industry, and learners.
- Top leadership of PHE institutions did not ensure building of research capacity to enable their staff members to effectively carry out research in order to generate and disseminate new knowledge.
- There was little interaction between PHE institutions and industry to ensure the production of graduates that meet industry needs.
- SRCs of PHE institutions were not free to carry out their mandate of representing students without victimisation from top management.
- Staff members of PHE institutions were not free to form staff associations that operated freely without fear of victimisation from management.

## **5.7 Chapter summary**

Chapter 5 analysed and interpreted the results of the study. It analysed and presented the demographic findings of the research, namely gender, age, level of education, work experience, and type of employment. This was done through tables, bar graphs, and narratives. The chapter outlined findings on the state of KM in PHE institutions covered in this study and the role of KM enablers in facilitating KM practices. It outlined findings on the role of strategic leadership in promoting KM practices of selected PHE institutions, the effect of family management on KM practices of these institutions, the impact of organisational structure and organisational culture on KM practices, and the extent of stakeholder involvement and how it affected these institutions from a KM perspective. The analysis was done using SEM through statistical tools such as regression analysis, correlation, the ANOVA, chi-square, and other statistical tools such as analysis of normality test and the Mann Whitney test. The next chapter provides the final summary, conclusion, and recommendations.

## CHAPTER 6

### SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

#### 6.1 Introduction

The previous chapter (Chapter 5) constituted an analysis and interpretation of research results, relating them to the research objectives and previous research undertaken in the same or related fields. This chapter revisits the purpose of the study and the research objectives. It then provides the final summary of the research findings focusing on the model proposed for adoption by the PHE institutions covered in this study and other similar institutions. It also focuses on the conclusion reached based on the research findings. The chapter provides some recommendations for practical application of the findings as well as limitations and recommendations for further study.

#### 6.2. Purpose of the study

This study assumed the existence of gaps in KM practices of PHE institutions in Botswana owing to poor overall performance, bad reputation, staff turnover and so on. The purpose of this study was, therefore, to investigate the role of KM enablers in facilitating KM practices of knowledge generation, sharing, application, and retention in selected PHE institutions in Botswana. The study also sought to propose a KM model that could be adopted by the PHE institutions to enhance their performance considering that these institutions operate in a highly regulated environment that is volatile and uncertain. The study was guided by the following research objectives:

- To investigate the role of strategic leadership in enhancing KM practices in selected PHE institutions
- To determine the effect of family management on KM practices in selected PHE institutions
- To determine whether organisational structures of selected PHE institutions in Botswana promote KM
- To investigate the extent to which organisational culture of selected PHE institutions in Botswana facilitate KM practices

- To investigate the extent to which PHE institutions involve internal and external stakeholders in the affairs of their institutions

### **6.3 Summary of findings**

The study established that biographical characteristics of selected employees of PHE institutions covered in this study did not facilitate KM practices. For example, the majority of the employees were males who do not share knowledge as much as women do; the employees were young; their level of education was low; the majority of them possessed low levels of general and organisational work experience, and most of the employees were employed on a contract rather than on a permanent basis.

The state of KM in the selected PHE institutions was found to be unsound as there was little top management emphasis on KM. The PHE institutions covered in this study lacked deliberate, conscious, and systematic KM programmes meant to facilitate KM practices of knowledge creation, sharing, application, and retention.

The study also established that in general, KM enablers in the selected PHE institutions covered in this study were not playing a significant role in facilitating KM practices in these institutions. For instance, top leadership of these institutions was found not to be playing a significant part in enhancing KM practices as there were no clear and well-coordinated KM programmes in the institutions. The top leadership comprised family members who did not promote KM practices by heavy monitoring of employees and frustrating non-family employees.

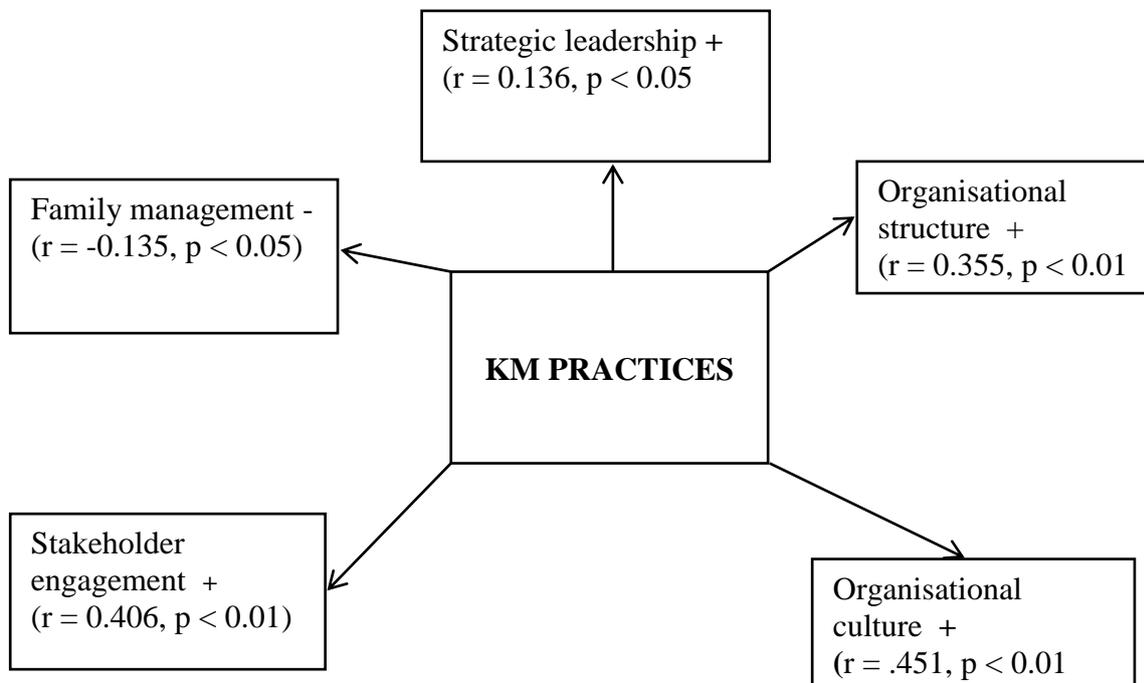
Organisational culture of these institutions did not facilitate KM practices as information was concentrated in the hands of top management hence not easily accessible by all. Sources of knowledge were not acknowledged if they were junior employees; employees were penalised for trying out new ideas, and were not involved much in decision-making. There was also no link between employee rewards and KM practices meaning that there was no motivation for employees who created and shared knowledge. Also, the work environment established by top management showed little trust between employees and senior management and among employees themselves. There was less frequent interaction between PHE institutions covered

in this study and internal and external stakeholders such as regulatory bodies, government, industry, student leadership, and staff representatives.

The study revealed that organisational structures of PHE institutions covered in this study did not facilitate KM practices since they were hierarchical, and that physical infrastructure and technology were generally inadequate. There was not much research going on in the selected PHE institutions hence little generation and dissemination of new knowledge.

### Summary of the model for KM practices for PHE institutions in Botswana

One of the outcomes of this study was to propose a model for KM practices for the selected PHE institutions given that they were operating in an extremely regulated environment where self-regulation and self-policing were of paramount importance (see Chapter 1, section 1.2 and Chapter 3, section 3.2.1). Institutions operating in similar environments elsewhere can also adopt this model to enhance their business operations, thus leading to less need for extreme regulation, and to possibly enhance long-term sustainability of their businesses. Figure 6.1 summarises the proposed model.



**Figure 6.1:** Summary of the proposed KM Model for PHE institutions (Author’s own work)

Figure 6.1 shows that 'KM practices' is significantly and positively associated with the KM enablers discussed in this study namely strategic leadership, organisational structure, organisational culture, and stakeholder engagement. However, 'KM practices' is shown to be significantly and negatively associated with family management orientation. These findings mean that removal of family management from the PHE matrix while increasing the other four variables significantly and positively enhances KM practices in these institutions. The model was discussed in more detail in Chapter 5 (section 5.5), while KM enablers which are the components of the model were discussed in Chapter 2 (section 2.2).

The leadership of the selected PHE institutions should ensure existence of the model variables shown in Figure 6.1 because of the importance of these variables in KM practice for business organisations, especially those operating in a highly regulated environment. Figure 6.1 shows that variables such as strategic leadership, organisational structure, organisational culture, and stakeholder engagement have a positive sign (+) which means that their presence in PHE institutions has a positive effect on KM practices. The variable family management has a negative sign (-) which means that the presence of the family has a negative effect on KM practices of PHE institutions. A conceptualisation of the model and integration of literature, existing models presented in Chapter 2, and the presented research findings are briefly described below.

### **6.3.1 Strategic leadership**

The results presented in Chapter 5 (section 5.5.1) revealed a positive correlation between strategic leadership and the state of KM in the selected PHE institutions in Botswana. A small amount of variation of the elements of leadership such as trust can significantly enhance KM practices in the selected PHE institutions. For example, according to Table 5.19, the coefficient of strategic leadership of 0.535 shows that a 1% change of trust will contribute 53.5% to the state of KM in the selected PHE institutions with a 0.000 level of significance. Strategic leadership therefore plays a crucial role in enhancing KM practices as reinforced by the models of Holsapple and Joshi (2004), Botha, Kourie, and Snyman (2008) and Oliva (2014). Other models that highlight the critical role of strategic leadership in facilitating KM practices were proposed by Muller and Raich (2005), Nonaka and Takeuchi (1995), and Nonaka, Toyama, and Konno (2006). These models were discussed in Chapter 2 (section 2.2.3).

### **6.3.2 Organisational culture**

The results of this study revealed that organisational culture is strongly significantly and positively related to KM practices of selected PHE institutions (see Chapter 5, Table 5.23 and also Tables 5.19, 5.20 and 5.21). These results mean that various elements of organisational culture play a critical role in facilitating KM practices in organisations. Such elements include people (Neumann & Tome, 2011; Gavrilova & Andreeva, 2012; Wei, 2014), reward systems (Yu, Kim, & Kim 2008; Gibbons, 2009; Iyer & Ravindran, 2009; Perik, 2014), and trust (Rau, 2011; Alhalhouli, Hassan & Der, 2014; Lee & Hong, 2014). How these elements can be integrated with other KM enablers to enhance KM practices is reinforced by Handzic (2004) through his integrated KM framework as shown by Figure 2.3 (Chapter 2). These elements of organisational culture that facilitate KM practices were discussed in Chapter 2 (section 2.2.1).

### **6.3.3 Organisational structure**

The results shown in Tables 5.19, 5.20, 5.21, 5.22, and 5.23 indicate that organisational structure is significantly and positively related to KM practices. These results mean that a change in some aspects of organisational structure can facilitate KM practices in organisations. Aspects of organisational structure that facilitate KM practices include reporting structure (Robbins, Millet, & Cacioppe, 2009; Mladkova, 2011; Amayah, 2013), information technology (IT) (Hafeez-Baig & Gururajan, 2012; Leung, 2015; Micheni, 2015), and physical infrastructure (Shanshan, 2013; Lee & Hong, 2014; Mohamed, 2014). To further enhance KM practices in organisations, Gold, Malhotra, and Segars (2005) proposed a model that fuses IT with other KM practices as shown in Figure 2.4 (Chapter 2). Elements of organisational structure that facilitate KM practices were discussed in Chapter 2 (section 2.2.2).

### **6.3.4 Stakeholder engagement**

According to Table 5.20 (Chapter 5), stakeholder engagement ( $STK1:\beta=0.338$ ,  $t= 6.533$ ) is significantly and positively related to KM practices of selected PHE institutions. This is supported by Table 5.19 which shows that stakeholder involvement has a coefficient of 0.241 which indicates that a change of 1% in engagement would contribute to a 24% change in the state of KM. These statistics indicate the critical role played by stakeholder involvement in

facilitating KM practices in the selected PHE institutions. The importance of stakeholder involvement (collaboration) in facilitating KM practices is reinforced by the research of Growth and Bowers (2010), Khalifa and Liu (2010), Cai (2012), Chen (2012), Rayton and Yalabik (2014), and Saenz and Perez-Bouvier (2014). The views of these authors on the importance of collaboration in facilitating KM practices were discussed in Chapter 2, section 2.2.1.1.

### **6.3.5 Family management**

The research findings revealed that family management had a negative influence on KM practices such as knowledge creation and sharing among employees and that a 1% increase on family management will contribute to a 10.5% decrease in the state of KM in the selected PHE institutions (see Table 5.19, and also Tables 5.20 – 5.23). The effect of family management on KM is highlighted by several authors who aver that the problem of family firms is that they are introverted, burdened by old traditions, inflexible and resistant to change (Carrasco-Hernandez and Jimenez-Jimenez, 2013; Memili, Rosplock, Roure, & Segurado, 2013; Segaro, Larino, and Jones, 2014). The results of the study revealed that all the five PHE institutions covered in this study were family-owned and family-managed businesses. Family business characteristics that may have negative KM implications include a strong inter-relationship between the family and the business and dominance of management from within the family. These characteristics were discussed in Chapter 2 (section 2.2.3.4).

### **6.4 Recommendations**

The findings of this study have important implications for KM research and business viability of organisations operating in highly competitive, highly regulated, and volatile environments. This is especially so for family businesses which this research has shown to be resistant to ideas from non-family members and unwilling to integrate such ideas into critical structures of the organisations. The highly regulatory regime in which Botswana PHE institutions operated (see Chapter 1, section 1.2.2 and Chapter 3, section 3.2) emanated from a strong perception among HE authorities that, if left alone, these institutions would not offer quality education to recipients in an attempt to maximise their earnings. KM could be of assistance to these organisations in helping them to identify knowledge gaps that they need to fill in order to make their operations effective. Given the significant role KM enablers play in facilitating

KM practices in organisations, this study proposes practical recommendations for PHE institutions based on the usefulness of the proposed model. The study also outlines limitations of the study and proposes methodological and other recommendations for future research.

#### **6.4.1 Practical recommendations for PHE institutions**

The study proposes the following recommendations which leadership of PHE institutions can adopt to enhance KM practices in their organisations:

##### **6.4.1.1 Adoption of a systematic approach to KM**

Research findings unearthed shortcomings in the way leadership of selected PHE institutions employed KM practices. The absence of any deliberate and systematic KM programme was revealed. There was no conscious attempt to identify knowledge reservoirs, employees who needed knowledge, how knowledge flowed in the organisations, gaps in knowledge, and barriers to knowledge exchange so as to come up with effective mechanisms to enhance knowledge creation, sharing, application, and retention. In a highly regulated environment where activities of institutions are being closely monitored, leadership needs to adopt a systems approach to KM that will ensure the development of an effective KM initiative.

The PHE institutions covered in this study should adopt a knowledge-based view of the firm approach relevant to the 21<sup>st</sup> century knowledge economy as opposed to the traditional resource-based view which was the approach the institutions were taking at the time the study was conducted. Leadership should take cognisance of the reality that in the current economic dispensation, knowledge is a critical resource which needs even more effective coordination and management than land, labour, and capital - the traditional factors of production (Smith and Lumba, 2008). It is critical for institutional leadership of PHE institutions to develop the capability to identify the appropriate knowledge their employees require, assess the suitability of available knowledge assets, and identify the means through which knowledge flows both within and outside the organisation. The leadership also needs to identify the factors that facilitate or inhibit the effective movement of that knowledge. Such an action plan enables leadership to develop an effective KM system that recognises and utilises knowledge as a strategic tool for the enhancement of organisational performance. The plan also enhances the performance and competitiveness of PHE institutions as business models.

#### **6.4.1.2 Establishment of a well-articulated KM vision, mission, and strategy**

The results revealed a lack of a clear vision and mission for KM. There was no documentation outlining where the institutions wanted to be in terms of KM and how they intended to get there. Their strategic plans made no mention of KM strategic intent. The institutions should therefore include, in their strategic plans, their KM objectives and strategies and ensure that all organisational employees at all levels of the hierarchy are 'conscientised' on the existence and relevance of the plans through effective, well-funded and designed promotional programmes. There is need to avoid the common practice of developing strategic plans and quietly depositing them in the library and/or onto the organisations' websites without effectively promoting them to staff members.

Research revealed that organisational employees with little or no knowledge of the vision and goals of the organisation in a particular sphere such as KM will not effectively work towards fulfillment of such vision and mission since they lack understanding and appreciation of them. In contrast, they may even be found working against the vision and goals of the organisation consciously or unconsciously as they will not have agreed with them or may not be aware of them or their importance. It is critical that organisations operating in highly competitive and regulated environments increase employee awareness of their KM vision and mission by enhancing their visibility through inscribing them on the organisations' souvenirs and artifacts such as calendars, diaries, badges, bags, pens, staff identity cards and on notice boards, electronic bill boards and the organisation's vehicles.

It is also recommended that, together with a well-articulated KM vision and mission, leadership of PHE institutions should develop an effective knowledge strategy for employees that will assist them in being more effective in their operations. This knowledge strategy should be the organisation's business strategy that takes into consideration the intellectual resources and capabilities of the organisation. The knowledge strategy also involves the identification of knowledge gaps as well as the effective management of those gaps. KM initiatives will aim to close those gaps and thus enhance organisational performance. Leadership needs to adopt an appropriate knowledge strategy placing great emphasis on aligning KM initiatives with the business requirements of the organisation and identifying knowledge assets valuable to the organisation. It should also implement business initiatives that leverage and develop the identified knowledge assets so as to enhance the performance

and viability of the organisation as a business model. If this happens, there will be no need for close monitoring to check compliance since there will be self-regulation.

A highly regulated environment, coupled with the complexity, diversity, and pace of regulatory change, makes an effective KM model imperative. The need for organisations operating in such an environment to constantly ensure that their businesses are compliant makes it essential for leadership to devise an effective KM initiative. It should do this by focusing on how knowledge enhances organisational capacity and identifying useful KM enablers in that environment. Such enablers include culture, IT, organisational structure, people, trust, reward systems, the knowledge market, and strategic leadership and how they facilitate creation, retention, and use of IC and fostering a work environment where knowledge creation, sharing and application are enhanced.

#### **6.4.1.3 Establishing an organisational culture that promotes KM practices**

Not having the right organisational culture to facilitate KM leads to ineffective KM practices which reduce organisational effectiveness. This is dangerous for organisations, especially those operating in highly regulated, complex business environments. There is therefore an urgent need to establish a culture that promotes knowledge generation, exchange, utilisation, and retention so as to enhance organisational performance. The strict regulatory regime characterising the PHE environment in Botswana emanated from lack of stakeholder trust in PHE institutions' ability to offer quality higher education without close supervision (see Chapter 1, section 1.2.2).

Leadership of organisations operating in a highly regulated environment needs to seriously look into the following elements of organisational culture that constitute critical KM enablers that can enhance KM practices:

##### **➤ Learning**

Research findings reveal the absence of a learning culture. There was evidence of employees being penalised for trying out new systems and ideas which prevents them from learning from their mistakes as well as from others. Leadership should establish and nurture a culture that encourages staff to learn through experimentation, exploration, and trial and error. The

leadership must see to it that it holds meetings with employees to commit themselves to a new era of a learning culture at their institutions. They must then write emails and notices to all levels of staff informing them of the new learning culture and how those who effectively adopt it will be rewarded. The absence of a learning culture means that mistakes are repeated and the regulatory authorities are there to impose penalties. For example, some institutions have been found wanting on the same issues raised by regulatory authorities before such as having poorly qualified administrative and teaching personnel, not having enough library resources, inadequate student recreational facilities and so on.

➤ **Enhancing trust within PHE institutions**

The leadership of PHE institutions covered in this study should accurately establish the real causes of the high levels of mistrust among employees and between employees and management. The leadership needs to develop robust and effective nationality integration mechanisms that will influence employees to interact as members of one large family at the institutional level and curb the tendency to always relate and share knowledge along nationality lines.

In order to promote total nationality and racial integration, all racial and nationality privileges and prejudices, whether real or perceived, must be probed, and if found to exist, they should be brought to an end. Positions of responsibility need to be given on the basis of academic qualifications, relevant work experience, and competence rather than nationality or family connection. This will motivate staff and reduce staff turnover leading to knowledge retention, generation, and sharing. Team building events that effectively cut across nationality and racial lines and cultures must be promoted regularly such as staff sports, seminars and workshops, end of year parties, and breakfast and lunch meetings. At these meetings, interaction and conversations that permeate nationalities should be encouraged and promoted to ensure sharing of knowledge and ideas across racial and nationality divides.

➤ **Reorientation of reward systems**

The leadership of PHE institutions covered in this study needs to reorient employee rewards and ensure that they are performance-based thus acknowledging employee contribution to the achievement of the organisation's KM objectives. Thus promotion to positions of

responsibility, salary increments, and bonuses, and any other rewards should be awarded in a transparent manner based on an employee's performance in the organisation's KM practices and not in a haphazard manner. Part of the performance evaluation should encompass knowledge creation, exchange, and application capabilities so as to motivate employees to generate, share, and use knowledge for the benefit of the entire organisation. A balanced package of incentives combining individual, team, and inter-team should be provided to reward individuals who promote KM activities in their individual capacity, employees who share knowledge in their teams, and employees who promote KM practices across teams respectively.

To enhance KM practice, leadership of organisations operating in a highly regulated, competitive environment should establish a KM repository into which employees will be encouraged to deposit and retrieve knowledge objects. In order to ensure effective utilisation of such a facility, the institutions should introduce an incentive scheme whereby individual employees who supply and utilise knowledge from the repository receive complementary rewards. The system should make it possible to track the identity of individual employees who deposit knowledge objects to the repository and those who retrieve knowledge from the repository so as to reward the right employees. This view is supported by Iyer and Ravindran (2009) who argue that, since contribution to an organisation's knowledge reservoir requires effort and time, leadership should ensure the existence of effective rewards to compensate knowledge suppliers and customers for the effort expended in generating and supplying knowledge to the repository.

There is need for leadership of PHE institutions to understand why employees who have left the organisations have done so and devise reward strategies to retain them so as not to continue losing the much revered tacit knowledge. This is part of lessons learned and KM practice.

➤ **Establishment of social networks and external communication and linkages**

Previous research has revealed that social networks are a very effective tool in facilitating knowledge exchange capabilities. Social networks become even more critical in a highly regulated environment where accurate information and fast communication systems are important components of business strategy. To ensure effectiveness of social networks in

facilitating information dissemination, leadership of selected PHE institutions should ensure that their employees have easy access to social networking sites which enhance social interaction. Easy access to social networks is critical since these networks serve as a foundation for CoPs and the existence of these networks will serve as a springboard for knowledge exchange (Growth and Bowers, 2010). Social networks allow staff to connect informally amongst themselves and with the outside world which will broaden employee knowledge horizons and in turn, enhance organisational performance. Such networks should be formalised and a database of them maintained by the PHE institutions in order to make it easy for the institutions to identify and keep in touch with their external knowledge reservoirs.

PHE leadership should establish inter-organisational networks and relationships which are critical in the current complex, technology-savvy, innovation-driven, and dynamic organisations that are operating in a highly regulated environment. Such inter-organisational CoPs should bring together professionals from different HE institutions thus representing a powerful monitoring and innovation force for the organisation that makes both knowledge production and distribution much easier.

A highly regulated environment makes inter-organisational cooperation and effective external communication critical. In such an environment, management and the institution must be kept informed of relevant regulatory requirements and change, and be advised on, and implement, required action as a result of that change. Institutional leadership must ensure that the level of communication and teamwork between the interested groups has ensured that effective arrangements are in place ahead of external regulatory checks which is not always easy. Effective communication and teamwork would enhance knowledge creation and sharing and boost technological learning and enhance commercial exploitation of new innovations, thus stimulating organisational performance and profitability.

PHE institutions should establish clusters to support the enhancement of knowledge exchange through the following means:

- Holding monthly meetings for purposes of networking which should be held at the

premises of the concerned institutions on a rotational basis. Such meetings provide other players with an opportunity to view cluster organisations' workplaces, experience their products and services first-hand, and get a feel for their work processes.

- Introduction of a mentoring scheme where cluster members with special expertise mentor employees of a cluster member lacking in such skills. Academic institutions, for example, can employ a few professors in designated areas and they can then mentor staff of cluster members in research to build research capacity and impart skills in teaching and learning in HE.

- Conducting cluster staff sporting events on a regular basis where staff from cluster members participate to enhance informal interaction and sharing of experiences, knowledge, and lessons learned.

- Identifying KM experts to run workshops for cluster members on KM activities, emphasising the importance of effective KM in the 21<sup>st</sup> century knowledge economy.

- Holding breakfast meetings attended by cluster members at departmental or faculty level (if the numbers are too big) where cluster employees interact and exchange knowledge informally.

➤ **Enhancing employee involvement in decision-making**

Research findings revealed little employee involvement in decision-making thus expecting employees to work hard to fulfil a decision they have not been part of. Leadership of PHE institutions, therefore, needs to establish a culture of involving their employees in the process of making decisions especially on issues that affect them while doing their work. A scenario where decision-making is highly centralised (including even the smallest decisions such as coming up with a prescribed text, rescheduling a class and so on) discourages employee initiative, while disempowering employees, leaving them with responsibility but no authority. Disempowering employees leads to demotivation and demoralisation which hinders knowledge discovery and exchange.

Through organisational culture, leadership should establish an organisational climate that promotes knowledge sharing, that is, the right beliefs, values, and work systems that promote learning and knowledge sharing. Amayah (2013) posits that in an organisational climate that is not conducive to the sharing of knowledge, individuals will not be willing to participate in knowledge sharing behaviours. This author further avers that a climate that promotes sharing

of knowledge such as an open and caring climate which facilitates knowledge exchange will influence employees to voluntarily engage in knowledge sharing behaviours. Leadership of PHE institutions should therefore ensure that the organisational climate characterised by fear and mistrust obtaining at the time the study was conducted is eradicated so that employees would effectively participate in organisational decision-making.

#### **6.4.1.4 Redesigning organisational structure (reporting structure)**

Leadership of PHE institutions should revisit their traditional hierarchical organisational structures. These structures hinder employee collaboration and interaction, which are the cornerstone of effective knowledge generation and exchange especially in organisations operating in a volatile, complex and highly regulated environment. In such an environment, accurate and readily available information is critical for effective decision-making, hence effective knowledge generation and exchange. Such organisations should adopt a flatter, leaner, and more modern organisational structure which is more effective in facilitating employee interaction across departments, functions, levels and subsidiaries.

The adopted organisational structure should also be one that ensures more effective and regular interaction among members of lower, middle, and top management as well as general staff. Such a structure will help organisations a lot if they adopt a formal organisational structure that gives lower, middle and upper managers adequate authority and responsibility thus making them more effective leaders. The adopted structure should be non-hierarchical but self-organising thus allowing closer and more effective interaction of employees – a factor that will in turn enhance knowledge generation and exchange capabilities.

The PHE institutions' organisation's structures should be decentralised rather than the highly centralised ones revealed by this study which stifles employee interaction and hence the diffusion of knowledge. Graham and Pizzo (2003)'s research supports this view by stating that centralisation means concentration of decision-making authority, which inevitably diminishes creative solutions, while power dispersion stimulates spontaneity, experimentation, as well as freedom of expression which are the known lifeblood of knowledge generation. A centralised organisational structure hinders interdepartmental communication, hence sharing of information and knowledge across departments, because it

makes communication channels time-consuming and also leads to distortion and discontinuous information and ideas.

Management of PHE institutions therefore needs to design an appropriate organisational structure strategy that fully supports the creation, sharing, utilisation, and retention of knowledge as the organisation's strategic resource. A hierarchical organisation structure that dominated the PHE institutions covered in this study does not support the creation, sharing, and application of knowledge.

#### **6.4.1.5 Establishing adequate physical infrastructure**

Lack of adequate physical infrastructure such as class rooms, meeting rooms, and tearooms give an impression of poor quality service as well as inhibiting knowledge sharing capabilities. In the highly regulated environment PHE institutions operate, there is a link between accreditation and suitability and appropriateness of organisational infrastructure. Such infrastructure includes classrooms, meeting rooms, computers and computer laboratories, practice rooms, library and available reading resources, toilet facilities, fire prevention and protection systems and emergency exits. It is critical that leadership of PHE institutions is aware of the expected type and quantity of relevant infrastructure and ensures its availability so as to build a perception of quality service in the minds of regulatory authorities and other key stakeholders.

Adequate physical space for the holding of formal and informal meetings to facilitate knowledge exchange is critical for the enhancement of KM practice in organisations, especially those operating in a highly regulated environment. An environment that stimulates learning and diffusion of knowledge is one with adequate facilities for staff to interact and network regularly to exchange information and knowledge as opposed to a situation where there is no space for meetings that facilitate knowledge exchange and enhance organisational performance.

The institutions should provide adequate physical infrastructure where staff can work in a relaxed environment and effectively interact formally and informally exchanging both explicit and tacit knowledge. This view is supported by Amayah (2013) who argues that employees can share knowledge unconsciously through informal interactions, that is, without

the specific intention to do so such as during conversations over a cup of coffee, lunch breaks, and so on resulting in exchanges that help colleagues do something in a more effective and efficient manner. The importance of organisational infrastructure in influencing the TEC's decision whether to register or accredit a PHE institution or not was discussed in Chapter 3 (section 3.2.1).

#### **6.4.1.6 Enhancement of technology**

The leadership of PHE institutions covered in this study should put in place adequate Technology infrastructure such as internet and intranet facilities, video conferencing facilities and so on which enhance communication, knowledge creation, sharing, application, and retention, hence innovation. These facilities are critical requirements particularly for organisations operating in a highly regulated environment like PHE institutions in Botswana. In such an environment, information diffusion needs to be fast since information quickly becomes obsolete due to the fast pace of regulatory change.

Enhancing technology in PHE institutions will facilitate KM practices since technology is believed to be the groundwork for implementation of KM practices as it is a vital KM infrastructural capability that leads to easier and faster adoption of KM practices.

#### **6.4.1.7 Promotion of research**

Organisations that operate in a highly regulated environment need new and up-to-date knowledge. They need to be well versed with the goings-on both inside and outside their environment. Research, together with institutional advancement, is one of the most critical components of the selected environment's quality assurance initiatives and also a critical component of KM practice in as far as it promotes generation of new knowledge, regeneration of knowledge, and sharing of new and existing knowledge. It is therefore prudent that the leadership of PHE institutions ensures adequate funding of research through the establishment of an authentic and readily accessible research budget. Such a budget would enable staff who are interested in carrying out research to effectively conduct research that generates new knowledge. In order to ensure adequate research capacity, all staff members interested in research should undergo research training to equip them with the

necessary research skills which will enhance the quality and relevance of research output to enable it to attract the interest of any reputable publishers.

The leadership of PHE institutions should take cultivation of research skills among their faculties as core activities in order to broaden and strengthen their participation in the generation of new knowledge so as to enhance HE for sustainable development. The leadership should emphasise research into socio-economic and ecological issues within their communities to help solve problems within their localities. This will enable them to make a positive contribution to the social and economic development of their communities. Contributing to the development of their communities will in turn make these institutions' presence felt which leads to the creation of a positive image that is critical in a highly regulated environment. Research is critical in an environment where regulatory authorities interpret lack of institutional research as indicative of poor quality teaching and learning. There should also be emphasis on how to disseminate information in order to share research findings with communities and fellow researchers locally, regionally, and internationally.

In order to facilitate research, leadership of PHE institutions should set up research committees including representatives from all key stakeholders that include regulatory bodies as part of a collaborative approach to the development and promotion of a research agenda and culture. The committee will be responsible for mobilising research funding from within the institutions themselves as well as locally and internationally. The committee should also headhunt and bring research experts like professors from reputable research universities and institutes to conduct research workshops for academic and other interested staff in order to build research capacity. Building research capacity will lead to excellent and relevant research output which will enhance knowledge and the reputation of the institutions which will earn them trust from key stakeholders.

In order to champion and enhance research in all the PHE institutions, a research office should be established in all the institutions. This office should be manned by a well-qualified and experienced researcher. All new discoveries emanating from research should be publicised in the institution's journal or newsletter, electronic bill boards, and notice boards in order to effectively share the new knowledge with the rest of the staff members and also motivate other researchers.

#### **6.4.1.8 Enhancement of quality of human capital**

Leadership of PHE institutions operating in a dynamic environment needs to establish procedures and processes to ensure effective governance and management systems of the institutions and academic programmes. It should ensure effective teaching and learning, building of research capacity, and effective community engagement. This calls for a well-qualified, experienced and motivated HC base which easily commands the trust and confidence of stakeholders, especially regulatory authorities.

A well-developed criterion for the recruitment, development, and management of the institutions' HR capabilities is critical to ensure availability of well-qualified teaching and administrative staff with not just a bachelor's degree and/or a diploma (see Chapter 5, sections 5.2.3, 5.2.4, and 5.2.5 and Chapter 2, section 2.2.3). Lack of a well-qualified and experienced HC severely tarnishes the image of organisations thus exposing them to the wrath of regulatory authorities. Leadership therefore needs to put in place measures that will enable PHE institutions to attract well-qualified and experienced academics at the level of PhD and professor. Such measures include a suitable work environment, attractive remuneration packages, clear and well-defined career progression, and so on. If such measures are put in place, these organisations will be able to attract well-qualified and experienced academic and non-academic staff which will in turn win them confidence and trust of key stakeholders who are already sceptical about the quality of education being offered in these institutions.

Leadership of PHE institutions should empower the HR office to make professional decisions on the recruitment of personnel and to come up with a more transparent remuneration structure known to all employees and which is based on academic qualifications and relevant work experience. This should motivate staff and help these institutions retain well-qualified and experienced staff in possession of tacit knowledge who are more prepared to share it than junior staff.

#### **6.4.1.9 Establishment of well-qualified academic leadership**

It is prudent for leadership of PHE institutions to appoint academic leaders on the basis of their knowledge of academics solemnised by academic qualifications such as a PhD, and

academic titles such as Professor/Associate Professor as well as personal qualities such as charisma, confidence, interpersonal relations, team acceptance and so on determined through lecturer involvement in the process of selecting the right candidates.

#### **6.4.2 Limitations and recommendations for further study**

It is useful to acknowledge the limitation that the research findings presented here are only preliminary and that there is room for further research. The most obvious limitation is the selection of PHE institutions in Botswana as a compelling case for organisations operating in a highly regulated environment. Since the quantitative outcomes were quite strong and augmented by previous research through relevant literature, it is acknowledged that the results of this study may not be easily generalisable to all organisations operating in such a kind of environment. However, the trends are obvious and should not detract from the value of the model derived.

Any attempt to capture respondents' perceptions of KM practices in institutions using the sample size that was used in this particular study in a country such as Botswana with a total of 276 private tertiary institutions poses an obvious limitation. For further research, a sample size much larger than the five PHE institutions and bigger than the 350 respondents would make research findings much more generalisable.

A further limitation emanates from the cross-cultural composition of staff members of the institutions with different cultural backgrounds hence different world views leading to different perceptions on what knowledge to share and how to share it. Future research could therefore focus on these cultural dimensions and determine how they influence the KM processes of discovery, creation, sharing, application, and retention of knowledge.

The scope of this study was restricted to internal organisational factors that constitute KM enablers or barriers in business organisations that are family-owned and owner-managed but did not extend to external stakeholders who have a bearing on KM practices in these institutions such as regulatory bodies, government and its agencies, industry, students, parents, and the local communities. Other researchers can extend the framework of this

research by including these parameters that have been excluded due to the limitations indicated.

Further research should also be carried out to determine if indeed knowledge sharing activities in PHE institutions in Botswana differ along gender lines as advocated by past researchers. This would entail a comparative study of knowledge sharing between male and female staff members in the institutions and their appreciation of the importance of KM in organisations. There is thus need for further study to determine how exactly male and female employees differ in terms of appreciation of the role KM plays in enhancing organisational performance and their readiness to share knowledge and whether they effectively share knowledge in practice.

## **6.5 Conclusion**

The need to constantly ensure that businesses are compliant in a highly regulated environment, coupled with the complexity, diversity, and pace of regulatory change, make an effective KM model imperative because of the obvious lack of creativity in highly regulated environments. There is a need for leadership to institute effective KM practices by focusing on how knowledge enhances organisational capacity and by identifying useful KM enablers in that environment such as organisational culture, organisational structure, and strategic leadership. Leadership also needs to foster a work environment where knowledge creation, sharing, and application are enhanced.

The importance of this study in unravelling KM practices has been confirmed by the research findings which ensured the effective achievement of the research objectives. The study revealed that critical KM enablers that lead to effective KM practices were missing in the operations of these institutions meaning that these enablers were not playing a positive role in facilitating KM practices in the PHE institutions covered in this study. There was evidence of a lack of appreciation of KM by management of selected PHE institutions. The presence of the family as employees of PHE institutions covered in this study negatively affected KM practices.

Organisational structures and cultures of selected PHE institutions hindered effective KM practices. The overall organisational climate existing in these institutions at the time of the

study did not allow for KM activities to flourish. There were no effective mechanisms for internal and external stakeholder involvement and/or engagement to ensure the smooth flow of information from the institutions to the stakeholders and back. There was little interaction between the selected PHE institutions and important stakeholders outside the regulatory process. Lack of effective interaction meant that there was little knowledge exchange with these important stakeholders such as government, industry, student leadership, staff associations, and regulatory authorities.

In a nutshell, it should be noted that the state of KM in an organisation operating in an uncertain environment can be enhanced if the leadership of the organisation carefully controls the family-owned setting, the organisational structure and the organisational culture. Controlling these three factors is critical as they can detract the organisation's effective practicing of KM in an environment focusing on policy and process execution rather than knowledge creation and distribution. However, the organisation's strategic leadership, its organisational structure, and the role played by its stakeholders are great positive factors (enablers) to ensure an enhanced KM drive. These factors play important roles in harnessing knowledge in a highly competitive, albeit sometimes highly regulated, environment.

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## **LIST OF APPENDICES**

### **Appendix 1: Research questionnaire**

#### **Knowledge management enablers in an organisation**

##### **Introduction letter**

Dear Respondent,

I would like to thank you for abandoning your busy schedule and devoting your valuable time to respond to this questionnaire. The purpose of this questionnaire is to determine the existence (or absence) of knowledge management enablers in private higher education institutions in Botswana leading to the development of a model these institutions can adopt to ensure effective utilisation of knowledge as a strategic resource so as to enhance organisational efficiency and effectiveness. This will enable these organisations operating in a highly regulated environment, to enhance their reputation and gain the confidence of key stakeholders such as students, staff, government, industry and others leading to their success as business models. This questionnaire will not be used for any business purpose but for the fulfilment of the requirements of a doctoral degree with the University of South Africa (UNISA).

Name of student:               Ushe Makambe

Study Programme:             Doctor of Administration in Business Management

Name of Supervisor:         Professor Aregbeshola Rafiu Adewale

Please note that neither your name nor that of your organisation will be identified in this study so you should feel free to give your honest opinion on the issues involved.

Thank you once again.

Yours sincerely

Ushe Makambe – Cell: 0026771520997

Complete this questionnaire as truthfully as possible. The questionnaire is being completed by academic staff of five private higher education institutions (PHE) in Botswana offering degree programmes namely Limkokwing University, Botho University, BA Isago University College, ABM University College, and GIPS. A sample of 350 members of academic staff was adopted for this study and respondents were chosen through stratified sampling. Strictest confidentiality will be maintained so please feel free to give honest responses that truthfully reflect what is happening in your organisation. Findings of this study may improve knowledge management practices in your organisation which will ultimately benefit the organisation if adopted by these institutions. This questionnaire will take you at most 30 minutes to complete.

**Knowledge Management** is the systematic, organised and coordinated managerial programme of activities meant to create an atmosphere where employees freely interact to create and share knowledge and where top management puts in place mechanisms and infrastructure to encourage and reward the sharing and use of information and knowledge within the organisation and with relevant external stakeholders all in an attempt to improve organisational efficiency and effectiveness in order to satisfy internal and external customers.

**PART 1: BIOGRAPHICAL DATA (Tick the box that applies to you)**

1. Gender 

1.Male	2.Female	3.Other
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2. Age 

1. 21-30	2. 31-40	3. 41-50	4. 51-60	5. 61-70	6. 71+
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3. Highest level of education 

1.Diploma	2.Bachelor’s degree	3.Master’s degree	4.Doctoral degree
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4. Total number of years of work experience with current employer 

1. Less than 1 year	2. 1-5 years	3. 6-10 years	4. 11-15 years	5. 16-20 years	6. Over 20 years
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5. Total number of years of work experience (including with other organisations) 

1. Less than 1 year	2. 1-5 years	3. 6-10 years	4. 11-15 years	5. 16-20 years	6. Over 20 years
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6. Type of employment 

1.Temporary	2.Contract	3.Permanent
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**PART II – CURRENT STATE OF KNOWLEDGE MANAGEMENT IN THE ORGANISATION**

Please rate the following statements on the scale: Strongly Disagree; Disagree; Neutral (Neither Agree nor Disagree); Agree; Strongly Agree or Not at all; Neutral; To a little extent; To a large extent; Absolutely – whichever is applicable. In some cases, choose ‘yes’ or ‘no’. There is no wrong or right answer. Tick the box that best suits your opinion.

7. My organisation’s employees are familiar with the term ‘knowledge management’

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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8. The top management of my organisation regularly talks about the need to manage knowledge

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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9. My organisation’s employees have an appreciation of the need to share knowledge

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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10. My organisation’s employees are aware of the crucial role of knowledge management in business strategy

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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11. In general, my organisation’s employees believe that knowledge management plays an important role in the growth of the business in the future

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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12. Has your organisation instituted any activities that support knowledge management practices (such as knowledge creation, sharing, use) in the past year?

1.Yes	2.No
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13. State any activities that the management of your organisation has instituted that support knowledge management practices and those that impede these practices in your organisation

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**PART III – EFFECT OF FAMILY MANAGEMENT ON KNOWLEDGE MANAGEMENT PRACTICES OF THE INSTITUTION**

**With this question, we look into the effect of family management on the ability of the organisation to generate, share and use knowledge.**

14. My organisation is managed by family members who own it 

1.Yes	2. No
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15. My organisation’s family managers always keep a watchful eye on employee activities  

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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16. My organisation’s family managers tend to compete with other employees for influence  

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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17. To what extent does the influence of the family in your organisation prevent full exploitation of knowledge?  

1.Not at all	2.To a little extent	3. Neutral	4.To a large extent	5.Absolutely
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18. To what extent do you think the performance of your organisation could be enhanced by being managed by professional employees instead of members of the family?  

1.Not at all	2.To a little extent	3. Neutral	4.To a large extent	5.Absolutely
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19. To what extent does management of your organisation by family members negatively impact on employee trust of colleagues?  

1.Not at all	2.To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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20. To what extent does the management of family members in your organisation contribute to staff turnover?  

1. Not at all	2.To a little extent Neutral	3. Neutral	4.To a large extent	5. Absolutely
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21. To what extent are members of the family who manage your organisation concerned with wealth preservation?  

1. Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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22. My organisation is in business partnership with other business investors.  

1.Yes	2. No
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23. Members of the family who manage my organisation possess appropriate academic qualifications  

1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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24. To what extent does the management of your organisation appoint employees to positions of responsibility through merit?

1. Not at all	2.To a little extent	3.Neutral	4.To a large extent	5. Absolutely
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25. What do you think are the major criteria used by family managers in your organisation when appointing employees to managerial positions?

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#### **PART IV – STRATEGIC LEADERSHIP AND KNOWLEDGE MANAGEMENT ACTIVITIES**

26. There is a well-coordinated knowledge management programme in my organisation.

1. Strongly disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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27. There is an office of Knowledge Officer/Manager/Director in my organisation.

1.Yes	2.No
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28. There is a board member in my institution championing knowledge management in the same manner there are board members in charge of finance, marketing, operations, quality, and research and so on.

1.Yes	2.No
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29. To what extent does your organisation’s overall business strategy include knowledge management strategy?

1. Not at all	2.To a little extent	3.Neutral	4.To a large extent	5. Absolutely
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30. To what extent does your organisation’s leadership reward employees who share knowledge?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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31. To what extent does your organisation’s leadership penalize employees who do not share knowledge?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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32. To what extent does the leadership of your organisation ensure that good knowledge management behaviour (creating, sharing, using knowledge) is fused into the organisation's performance appraisal system?

1. Not at all	2. To a little extent	3. Neutral	4. To a large extent	5. Absolutely
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33. To what extent does your organisation's leadership see to it that individual employees are rewarded for team work in the interest of the organisation?

1. Not at all	2. To a little extent	3. Neutral	4. To a large extent	5. Absolutely
---------------	-----------------------	------------	----------------------	---------------

34. To what extent does your organisation's leadership ensure that training programmes in knowledge management behaviour are promoted?

1. Not at all	2. To a little extent	3. Neutral	4. To a large extent	5. Absolutely
---------------	-----------------------	------------	----------------------	---------------

35. To what extent does the leadership of your organisation ensure that all functions are linked to share information thus enabling the organisation to tap into the knowledge of its employees?

1. Not at all	2. To a little extent	3. Neutral	4. To a large extent	5. Absolutely
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36. To what extent does your organisation's top leadership have a strong appreciation of the skills of its staff?

1. Not at all	2. To a little extent	3. Neutral	4. To a large extent	5. Absolutely
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37. What are some of the activities your organisation's leadership carries out to ensure knowledge creation, sharing, and use in the organisation? List as many as possible. If there are none, leave blank.

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**PART V – ORGANISATIONAL STRUCTURE AND KNOWLEDGE MANAGEMENT**

38. My organisation's structure is hierarchical (top-down and bottom-up)

1. Yes	2. No
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39. To what extent is there cooperation among employees in the organisation which fosters knowledge management practices?

1. Not at all	2. To a little extent	3. Neutral	4. To a large extent	5. Absolutely
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40. To what extent does information flow vertically most of the time in your organisation (top-down)?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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41. To what extent does top leadership of your organisation ensure the existence of formal networks in order to facilitate effective dissemination of knowledge?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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42. To what extent has your organisation's top leadership established a well-structured knowledge map to lead staff in the direction of the knowledge they require?

1.Not at all	2.To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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43. There is adequate infrastructure (office space, meeting rooms, tea rooms, internet, intranets) to create space which facilitates knowledge management practices in my organisation.

1.Strongly Disagree	2.Disagree	3. Neutral	4.Agree	5.Strongly Agree
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44. To what extent do employees in your organisation have easy access to social networks (Face-book, Twitter, Linked-in, etc) that facilitate interaction hence knowledge sharing within the organisation and outside?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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45. What do you think your organisation should do in order to ensure that there is effective infrastructure to facilitate knowledge sharing? List as many elements as possible.

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## **PART VI – ORGANISATIONAL CULTURE AND KNOWLEDGE MANAGEMENT**

46. In your organisation, to what extent is crucial information concentrated in the hands of a privileged few?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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47. To what extent has top management of your organisation created an environment where trust exists between employees and senior management?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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48. In my organisation, there are obvious benefits to the employee who engages in knowledge management practices (e.g. promotion, salary increase)

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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49. To what extent does top management of your organisation publicly acknowledge the source of knowledge even if it is a junior employee?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
--------------	-----------------------	-----------	---------------------	--------------

50. To what extent do employees in your organisation possess the required competencies such that you can rely on them to obtain knowledge that you need but do not have?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
--------------	-----------------------	-----------	---------------------	--------------

51. To what extent do you depend on other employees to get the job done (interdependency) to meet organisational goals?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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52. Top leadership of my organisation does not penalize employees who make mistakes while trying out new ideas.

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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53. To what extent are employees of your organisation involved in decision-making?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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54. Are there any examples of lack of trust between employees and between employees and management that you can site in your organisation? If none, leave blank

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**PART VII – STAKEHOLDER INVOLVEMENT AND KNOWLEDGE MANAGEMENT**

55. My organisation operates in an environment which is highly regulated by the Tertiary Education Council (TEC)

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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56. To what extent does the government believe your organisation is there to swindle learners of their money by offering education that does not justify the fees they charge?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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57. To what extent is there interaction between the Tertiary Education Council (TEC) and academic staff in your institution to exchange information?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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58. To what extent is your institution open to ideas coming from external stakeholders (e.g regulatory authorities, government, industry, learners)?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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59. To what extent does your institution work with industry to ensure the production of graduates that meet industry needs?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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60. To what extent has your institution's top management ensured building of research capacity to enable staff members to effectively carry out research in order to generate new knowledge?

1.Not at all	2. To a little extent	3.Neutral	4.To a large extent	5.Absolutely
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61. To what extent is your institution's Student Representative Council (SRC) free to carry out its mandate without victimisation from top management?

1.Not at all	2. To a little extent	3.Nutral	4.To a large extent	5.Absolutely
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62. In my organisation, staff members can freely form staff associations that operate freely without fear of victimisation.

1.Strongly Disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly Agree
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63. What are some of the things that you think your organisation is not doing that it should do in order to enhance its reputation in the eyes of its stakeholders?

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**THANK YOU**

## Appendix 2: Some of the hypotheses tested in the study

Research objective	Null hypothesis	Alternative hypothesis	Statistical method	Supporting literature
To investigate the extent to which organisational culture of selected PHE institutions in Botswana facilitate KM practices – (people – employees) (see section 3.3.1)	H <sub>0</sub> : There is no significant difference between the means of males and females in the awareness of KM	H <sub>a</sub> : There is a significant difference between the means of males and females in the awareness of KM.	Parametric independent samples t - test or nonparametric Mann Whitney U test	Gender creates fault lines that could function as barriers to interaction and decrease social attachment and interaction (Dube and Ngulube, 2012)
	H <sub>0</sub> : There is no significant difference between the means of males and females on appreciation of the need to share knowledge	H <sub>a</sub> : There is a significant difference between the means of males and females on appreciation of the need to share knowledge.	Parametric independent samples t- test or non-parametric Mann Whitney U test	Gender creates fault lines that could function as barriers to interaction and decrease social attachment and interaction (Dube and Ngulube, 2012)
	H <sub>0</sub> : There is no significant difference in age and current perception of KM in PHE institutions.	H <sub>a</sub> : There is a significant difference in age and current perception of KM in PHE institutions.	ANOVA test	Age creates fault lines that could function as barriers to interaction and decrease social attachment and interaction (Dube and Ngulube, 2012; Nonaka, 1994; Nonaka and Konno 1998; Guthrie, 2009)
	H <sub>0</sub> : There is no significant difference between level of education and perception of KM in the organisations based on the averages ( $\mu_1 = \mu_2 = \mu_3 = \mu_4$ )	H <sub>a</sub> : There is a significant difference between level of education and perception of KM in the organisations based on the averages ( $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$ ).	ANOVA	A causal relationship between level of education and likelihood to share knowledge and common experiences does exist (Riege, 2005; Ojha, 2005; Wang and Noe, 2010; Daghfous, 2003; Hveem and Lapadre, 2011)
	H <sub>0</sub> : The state of KM does not differ significantly with the number of years of work experience in the organisation.	H <sub>a</sub> : The state of KM differs significantly with the number of years of work experience in the organisation	ANOVA	Employees who possess different levels of work experience tend to exhibit different levels of knowledge sharing capabilities (Riege, 2005; Nonaka, 1994; Bratianu and Orzea, 2010)

### Some of the hypotheses tested in this study (continued)

<p>To investigate the extent to which organisational culture of selected PHE institutions in Botswana facilitate KM practices (people – employees) (see section 3.3.1)</p>	<p>H<sub>01</sub> : There is no difference between employees’ remuneration and their appreciation of the need to effectively generate and share knowledge</p>	<p>H<sub>a1</sub> : There is a difference between employees’ remuneration and their appreciation of the need to effectively generate and share knowledge</p>	<p>ANOVA</p>	<p>Employees create value by sharing knowledge externally and internally if they are motivated by recognition and extrinsic rewards Singh and Kant, 2008; Yih-Tong Sun and Scott, 2005)</p>
<p>To determine the role of KM enablers in PHE institutions in Botswana (See section 3.3)</p>	<p>Ho: There is no significant relationship between KM enabler constructs and the state of KM in the organisations.</p>	<p>Ha: There is a significant relationship between KM enabler constructs and the state of KM in the organisations.</p>	<p>Multiple linear regression analysis</p>	<p>Incentives and rewards that encourage KM activities among an organisation’s employees play a critical role as KM enablers (Yu, Kim, and Kim 2008; Gibbons, 2009; Iyer and Ravindran, 2009)</p>
<p>To investigate the extent to which current KM practices in PHE institutions in Botswana promote or inhibit the creation, sharing, and use of knowledge (see section 3.3)</p>	<p>Ho: There is no relationship between employee awareness of KM and the organisation having instituted activities that support knowledge creation, sharing, and use.</p>	<p>Ha: There is a relationship between employee awareness of KM and the organisation having instituted activities that support knowledge creation, sharing, and use.</p>	<p>Chi-square</p>	<p>Organisation’s leadership needs to ensure the establishment of a knowledge repository in which workers deposit and retrieve knowledge to enhance KM activities (Iyer and Ravindran, 2009). Leadership should set up structures, systems, time, create behaviours, and infrastructure that facilitate KM practices (Woodman and Zade, 2012, Jones and Mahon, 2012)</p>

### Appendix 3: Sample size table

Required Sample Size <sup>†</sup>								
Population Size	Confidence = 95%				Confidence = 99%			
	Margin of Error				Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1176	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586

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#### Appendix 4: Link between research objectives and research methods

<b>Research objective</b>	<b>Paradigm</b>	<b>Method used - questionnaire /documents</b>	<b>Question number</b>
To investigate the role of strategic leadership in enhancing KM practices in selected PHE institutions.	Positivism	Questionnaire (Appendix 1)  Documents -Institutional websites	Questions 27-38
To examine the influence of family management on KM practices in selected PHE institutions	Positivism	Questionnaire  Documents -Institutional websites	Questions 15-26
To determine whether organisational structures of selected PHE institutions in Botswana promote KM practices.	Positivism	Questionnaire  Documents -Institutional websites	Questions 39-46
To investigate the extent to which organisational culture of selected PHE institutions in Botswana facilitates KM practices.	Positivism	Questionnaire  Documents -newspapers	Questions 47-64

## Appendix 5: Letter of approval to carry out research

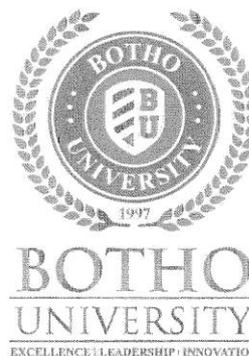
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BOS ISO 9001:2008 CERTIFIED ORGANIZATION



**Ref060/GBE/ORQM/2014**

Date: 20 August, 2014

TO: Mr. Ushe Makambe

Department of Business Management

Botho University

### REF: APPROVAL TO CARRY OUT RESEARCH FOR DOCTORAL STUDIES

The above subject refers.

This letter serves to confirm that Botho University management has granted you permission to carry out research in the institution in fulfillment of the requirement for the Doctor of Administration – Business Management degree with the University of South Africa. The topic of study is:

**“The development of a leadership-driven model for Knowledge Management practices in a highly regulated environment”**

Members of staff approached by Mr Makambe to respond to his questionnaire or interview should therefore not hesitate to cooperate.

Yours Sincerely

  
Dr M. Chawawa  
Research Manager

## Appendix 6: Ethics approval



### DEPARTMENT OF BUSINESS MANAGEMENT RESEARCH ETHICS REVIEW COMMITTEE

22 September 2014

Ref #: 2014\_CEMS\_BM\_016  
Mr Ushe Makambe  
Student #:43277748  
Prof Rene Pellissier

Dear Mr Ushe Makambe,

**Decision: Ethics Approval**

**Name:** Mr Ushe Makambe – Principal Researcher (makambe2006@gmail.com; 0771520997)

**Proposal:** The development of a leadership-driven model for Knowledge Management practices in a highly regulated environment.

**Qualification:** Postgraduate degree

Thank you for the application for research ethics clearance by the Department of Business Management Research Ethics Review Committee for the above mentioned research. Final approval is granted for the duration of the project from the date of issue.

*For full approval: The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Department of Business Management on 17 September 2014.*

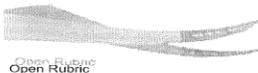
*The proposed research may now commence with the proviso that:*

- 1) The researcher/s 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 Department of Business Management Ethics Review Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*
- 3) The researcher 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.*

Kind regards,

Dr JO Cilliers (Vice-chair) on behalf of  
Prof Watson Ladzani  
Chairperson of the sub-unit RERC  
Department of Business Management

Prof Raphael Mpofo  
Executive Dean  
College of Economic and Management Sciences



## Appendix 7: Proof of language editing

8 Nahoon Valley Place  
Nahoon Valley  
East London  
5241  
21 February 2017

### TO WHOM IT MAY CONCERN

I hereby confirm that I have proofread and edited the following doctoral dissertation using the Windows “Tracking” system to reflect my comments and suggested corrections for the student to action:

*Role of knowledge management enablers in facilitating knowledge management practices in selected private higher education institutions in Botswana* by Ushe Makambe, submitted in fulfilment of the requirements for the degree of Doctor of Administration in the subject BUSINESS MANAGEMENT at the University of South Africa.

BkCarlson  
Brian Carlson (B.A., M.Ed.)  
Professional Editor

Email: [bcarlson521@gmail.com](mailto:bcarlson521@gmail.com)

Cell: 0834596647

Disclaimer: Although I have made comments and suggested corrections, the responsibility for the quality of the final document lies with the author in the first instance and not with myself as the editor.

BK & AJ Carlson Professional Editing Services