A Critical Examination of the Relationship between the Use of Gatekeepers, Trust, and Organisation Knowledge-Sharing

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A Critical Examination of the Relationship between the use of Gatekeepers, Trust, and Organisation Knowledge Sharing

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The following publication output is appended to this thesis.

Abstract

This thesis critically examines the relationship between gatekeepers, trust, and an organisation’s knowledge sharing. The research applied mixed methods with the case study approach. In this research the concept ‘gatekeeper’ is widely used to represent a class of those who are part of a knowledge management strategy; they collect information and knowledge and contextualise this before they can share it with the rest of the members of the organisation’s knowledge networks - within the formal and informal organisation. In this study, it was found that there was a strong relationship between the openness of a given firm, as regards its openness to knowledge sharing and its level of trust and whether or not a firm uses gatekeepers. In light of the evidence, knowledge sharing was found to be a function of trust and gatekeeping. The thesis proposes a model in which trust and openness is the glue holding together knowledge-sharing activities and the Gatekeeper role within the triple helix innovation system was to create an environment to nurture trust, facilitate networking and knowledge sharing within the innovation and knowledge system. The gatekeeper role is seen as crucial to translate and align local knowledge and align this with the modern knowledge systems.
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CHAPTER 1: INTRODUCTION TO THE THESIS

This thesis is built around eleven knowledge-intensive organisations located in Rwanda and Uganda. Research shows that a major source of technical knowledge can be found within the formal organisation (Zenger et al., 2002) as it can be from the informal organisation (Allen, 1977; Allen and Cohen, 1969; Farris, 1971a, b).

The informal organisation can be described as the net sum of all of the interpersonal relationships\(^1\), within the formal organisation used to achieve individual goals which may differ from the key goals of the organisation (Farris, 1971a). The informal organisation itself is not mandated by the formal organisation; rather, it arises spontaneously as the result of organisational members constantly interacting with each other (Zenger et al., 2002).

The formal organisation is guided by a carefully designed structure, and formal appointments are often characterised by written contracts (Zenger et al., 2002). Routines, norms, and employees’ behaviour, culture, attitudes and networks develop over time and in response to the requirements of the formal organisation structure. The first problem with the formal organisation is that it assumed that its structure may represent these silent natures of human beings but in reality, the organisation structure, written contracts can never represent the true holistic nature of an organisation. The second problem arising from the formal organisation is that the formal structure reduces its capacity to share knowledge across its units and therefore reduce its capacity to innovate (Nickerson and Zenger, 2001).

As opposed to the formal organisation with its associated problems discussed above, the informal one is governed by social networks which are bound together by a culture, social values, and identity, motivated primarily by mutual gains (Grannovetter, 1983; Zenger et al., 2002). The informal organisation is particularly important and prevalent in the targets- and team-work-driven environment such as manufacturing\(^2\),

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\(^1\) These are silent combinations of social and hierarchical relationships. However, hierarchical relationships may, over time, evolve into social relationships which may result from acquaintance and over-time interactions.

\(^2\) Manufacturing is used here in the sense it was defined by the Industrial Welfare Commission of the State of California(2002p3): “any industry, business, or establishment operated for the purpose of preparing, producing,
finance\(^3\) and R&D organisations. In these industries, knowledge constitutes the source of power upon which competition, innovation, and knowledge of products leads to a more distinctive position in the market place than that held by any other industry (McDermott, 1999). Within developing countries such as Rwanda and Uganda, it is mooted that integration of these three areas of national economies is the way forward to improve economic performance and industry competitiveness as a result (Juma, 2011, Watkins and Verma, 2009). For example, Juma’s (2011) extensive work concluded that opportunities exist for improved economic and financial performance, provided there are a basic infrastructure, streamlined knowledge creation, and information-sharing systems upon which other innovations in different fields will follow (pp. 205-217). This requires that organisations in catalyst sectors such as manufacturing, R&D and finance take advantage of being latecomers to technology and lead in streamlining systems, by “accessing useful knowledge necessary for key decision making in a timely manner” (Juma, 2011, p. 23).

Writing about a learning organisation, Gavin (1993) and Juma (2011) argued that unless organisations can focus on the fundamentals (i.e. build a conducive climate for the people to trust each other, to be open and to learn), then there can be no expectation for an organisation to improve. The informal organisation in a manufacturing and R&D functions to process needed technical knowledge outside the formal scheme because of the behavioural orientation of technical persons (von Zedtwitz, 2004). McDermott’s (1999) research shows that experts and technicians may fear sharing knowledge because they fear losing influence and the power associated with it.

Expert\(^4\) employees need expert knowledge and expect to freely exchange it without the burden of a formal bureaucracy. There is a great deal of technical communication within a particular manufacturing and R&D organisation because

\(^{3}\) The National Bank of Rwanda (2007) defines the financial sector as including banks, insurance companies, and those who provide financial brokering services.

\(^{4}\) There is a tendency in the literature to associate ‘technical’ knowledge with the engineering field. However, it is the researcher’s view that in every field there will exist both technical knowledge (for technical level staff) and ‘expert knowledge’ (for those in senior, expert posts). A plumber or a lab technician may possess technical knowledge in that regards, but this does not necessarily translate that this employee is now an expert in the field. Although both types of knowledge may not be mutually exclusive, in normal circumstances the expert’s position tends to be more senior than the technical one.
particular technical and expert knowledge becomes localised. Technical expert knowledge tends to become localised within an organisation as it is typically esoteric to a unique project—what Cronin et al. (2011) call the innovation production system of the organisation. Each organisation is unique with regard to its resources, e.g. management, technical, capital and machinery. On Zedtwitz et al. (2004) conducted research into distributed R&D teams and production arrangements within manufacturing organisations across 18 firms. From 150 in-depth interviews with engineers, supply chain members, human resources and managers of those companies, they drew out lessons that (1) each manufacturing and R&D organisation is unique in its set of approaches and constraints regarding technical problems, and (2) they have common results: “There were no straightforward or easy answers for managing global innovation. We gained the impression that even leading companies were still in a state of experimentation with a number of sometimes contradictory approaches” (p.25). There were areas of shared approaches with only very limited variations on managing distributed teams of experts, access to information, managing tacit knowledge, tapping into local knowledge, using cross functional teams, protecting themselves from competitor intelligence, tapping into the know-how, and managing geographical distances (Zedtwitz et al., 2004, p.26). The challenges across their research were identified as how to realise work across cultures, in different languages and from different kinds of expert knowledge residing within different units of the organisation. The solutions to these challenges were found to come from both the formal and the informal organisation, especially the communities of practice and face-to-face and virtual informal meetings.

Trust, cultural distance and openness were seen as challenges which influence whether the firm has no choice but to promote informal organisation (Zedtwitz et al., 2004). Moreover, the same factors are influential when it comes to deciding whether two or more technical persons form an interpersonal relationship that, in turn, determines the structure of the informal organisation (Zedtwitz et al., 2004). The blurring of structural boundaries in organisation (or the informal organisation) is well-suited to the behavioural orientation of technical and expert persons and consists of the interpersonal relations
between technical and expert persons (McDermott, 1999). These relations are influenced by proximities. From this emerge different types of gatekeepers with several appellations; for example Chief Knowledge Officers (CKO), Knowledge Transaction Officers (KTO), Knowledge Managers, and other functional titles related to the formal organisation. In addition to the formal organisation with defined structures, there emerges a virtual organisation. For example Karine (2009) shows that there are more gatekeeping researchers in the Management Information Systems (MIS) and Computer Science field than there are in Management Sciences. In the MIS field, prominent names are associated with “Editorial functions” and “Librarianship” (Anderson, 1997). The open sources online introduce website editors and alike, but which are now part of primary sources of knowledge for many scholars and practitioners (Karine, 2009).

Other titles and roles are associated more with the informal organisation, and therefore an informal role. These include the Knowledge Gatekeeper (KG), sometimes referred to as the Technological Knowledge Gatekeeper (TKG) (Allen, 1977) and the Key Man (Farris, 1971a), Boundary Spanners (Sverrson, 2001), Ambassadors (Cranefield and Yoong, 2007), and Star Persons (Whelan et al., 2010). From an analysis of the literature, however, it seems that all these titles do not lend to any meaningful differences in what they do and how they do it. They all perform the same task—to look for information, vet it, and share it with those who require it (Allen, 1977).

From this perspective, it seems that the research has not made much progress. Karine (2009) explains that this may be due to the fact that all research in this area has been applied vertically. Further, Karine (2009) adds that only a serious few go beyond mentioning the gatekeeper as a mere concept, and that these were conducted predominantly from the perspectives of same economies, cultures, and available knowledge infrastructure and resources. In summary, technical persons need technical knowledge, and they may obtain this from within the formal or the informal organisation. There is currently a lack of knowledge as to what influences these technical
people, these “gatekeepers”, to ask for help, and why they would be motivated to ask whoever they chose. This thesis investigates whether trust and the openness culture influence gatekeepers’ work and their roles. Rwanda and Uganda are East African countries which were chosen to enrich research perspectives, and provide further thoughts on possible factors that shape gatekeepers.

5 The word ‘gatekeeper’ in this thesis will henceforth be used where it refers to any of the names mentioned herein or any other general concept where specification is not deemed possible, but which performs the role described as that of a gatekeeper.
1.1. The Research Problem

What is the relationship between knowledge sharing, culture, trust, and the role of a knowledge gatekeeper in organisations? The researcher asked this question on the back of an argument that took place just over a decade ago, when Weitzman said: “Ultimate limits to growth may lie not so much in our abilities to generate new ideas, as in our abilities to process to fruition an ever-increasing abundance of potentially fruitful ideas” (Weitzman, 1998, p. 331); thus it was determined that

...how well an individual, an organization, an industry, a country, does in acquiring and applying knowledge will become the key competitive factor. The knowledge society will inevitably become far more competitive than any society we have yet known–for the simple reason that with knowledge being universally accessible, there will be no excuses for non-performance… (Drucker, 1994, p. 9).

This suggests two challenges that businesses are faced with: (1) Developing innovative tools and devising strategies for collecting appropriate information, and (2) being able to translate this information into knowledge which sustains their competitive advantage. Gatekeepers keep the organisation in contact with external world - they are part of broader knowledge management efforts that firms may establish to sustain competitive advantage, especially the know-how which is often that which is implicit and is gained through long-term experience (Von Hippel, 2005, pp. 8, 67) and termed “sticky” to refer to the difficulty in extracting it from those who have it.

According to the Center for Successful Innovative Societies at Princeton University, Rwanda and Uganda use gatekeeping strategies to carry out different activities that include knowledge management (Lyer, 2012). They do this by hiring well-connected and highly-experienced technical people for two reasons—to transfer the know-how to local industry counterparts, thus contributing innovative ideas for rapid economic transformation (e.g. the case of Rwanda in Watkins and Verma [2008] and in Lyer [2012] and Blair, [2011]) or, as in the case of Uganda, through new product development
(Kwesiga, 2007) and knowledge transfer partnerships (Rwanda Development Board (RDB), 2010). The concern of this research is to explore whether there is a relationship between knowledge sharing, culture, trust and the use of a knowledge gatekeeper in organisations in these two countries.

This question is further chosen within the justified background of the need to debate how and why a knowledge society is built in a context of overdeveloping countries which, since their independence, continued to run a hybrid of knowledge systems - The indigenous and the modern knowledge systems. Bovin and Morohashi (2002, p.13) defined IK as knowledge that is “locally bound” or “culture- based and context-specific”. According to them, this knowledge is said to be “non-formal”, and is “orally transmitted”, and generally not documented. IK is dynamic and adaptive to new situations by virtue of its “holistic in nature.” IK is the knowledge created and used over many years and generations by a given community (Briggs, 2005). IK has no boundaries; it transcends all sectors of the economy of a nation. Indigenous knowledge follows systems and principles unique to people with similar values and history. In Rwanda and Uganda, employees have developed their own way of knowing and practicing knowledge in a way that is appropriate to Rwanda and Ugandan culture, fears and hopes. Many modern systems currently in place (including the education system) date from post-1960 and yet continue to maintain workplace practices that originate from an old education system which is rooted in a pre-colonial period (ishuli ry’umuco known as Itorero) and which has similarities to the heavily westernised systems -Socialisation leads to trust, and trust leads to knowledge sharing (Baxter, 2012). A review of education policy documents from both countries (Rwanda Ministry of Education, 2008; Uganda Education Policy and Strategy, 2009; Tertiary Education policy statement; The World Bank, 2002) makes no single reference to local or indigenous knowledge. In particular, the two countries never used key words such as indigenous knowledge, social capital, democratic, to social cohesion. They, however, casually used key words such as human capital, knowledge-based economy, efficiency, entrepreneurial, and knowledge transfer. Densely used or referenced key words include technology, global, regional, market, and private sector.
The reality from the evidence gathered here is that while there is agreement over the role that universities can play in improving the quality of the economy and social life, there are serious gaps that remain in the understanding of how quality can be achieved. There remains an overemphasis on technology, but no reference to absorptive capacity. They (the countries) refer to knowledge transfer, but there is no consideration of assumed (prior) knowledge. This is where a major problem arises - to assume that indigenous knowledge has no role to play in knowledge systems including education policy seems to be simplistic.

The author has this academic interest (knowledge transfer and sharing between and within two distinctively different yet complementary systems of western and indigenous knowledge systems) in the field, in which he has been conducting research for almost a decade. The author hails from within the East African Community, specifically Rwanda; and he spent two years at the helm of a Singapore dummy Economic Development Board in the region (Rwanda Development Board, 2008-2011). As Head of National Human Capital Development, he was in charge of matters related to attracting know-how and developing talents in different areas of need of the economy, particularly the service, manufacturing, and value-adding industries; and he held specific overall responsibility for The National Knowledge Transfer partnerships and knowledge management. The Rwanda Development Board (RDB) and other industries had been promoting the gatekeeping roles formally in the form of hired “Technical Experts.” These experts had specified roles of collecting, vetting, contextualising and sharing knowledge on best practices, coaching talents, and connecting them with their global networks. The talents were selected from within the local national pools of experts. They were paid as any other employees for both the formal and informal roles they had to carry out.

Over a period of two years, it emerged that a significant amount of time was spent on drawing parallel relationships of modern versus locally bound systems (often characterised by balances of power towards the senior or status officials) and on building trust between the host companies, themselves a source of knowledge (or their counterpart firm, called the ‘knowledge-base’). It appeared - as Hardwig (1991) stated -
that “...those who do not trust cannot know...” (p.793) and “those who do not trust cannot have the best evidence for their beliefs” (p. 694). The supposition from Hardwig is that in order for knowledge to be transferred, there needs to be trust and in order to have confidence that transfer will actually materialise, one has to be confident in one’s own sources of knowledge. This argument stands in contrast with a body of evidence. For example, the motivation for knowledge transfer in merger and acquisitions (M&As) is based on a mutually beneficial relationship rather than on trust. The best case examples were documented in Harorimana and Harebamungu (2012) where, for example, Lenovo, a Chinese Government-owned computer company, acquired one of the United States of America’s leading PC companies’ (IBM) personal computers division in 2005. In other cases, it may be that knowledge sharing and transfer is the only option for business survival, e.g. HP and Compaq Computer Corporation (2002). Ambiguity therefore exists in what makes knowledge transfer and knowledge sharing succeed. These examples illustrate how context may dictate the decision on when to share, or not to share, knowledge. The question then arises: Can there be success in knowledge transfer through gatekeepers where there is no trust? The problem is that there is a gap in knowledge with regard to the use of knowledge gatekeepers in Rwanda and Uganda - both for the recipients of knowledge and for those who intend to help but are not sure about the source of their own expertise on those countries’ prior knowledge.

1.1.1. Research Aim

The aim of this research is “To critically analyse the relationship between knowledge sharing, trust, and knowledge gatekeeping with reference to cases from Rwanda and Uganda”

1.1.2. The Research Question

What is the relationship between knowledge sharing, culture, trust and the use of a knowledge gatekeeper in organisations?
1.1.3. Research Objectives

In order to answer the above research question and meet the research aim, three objectives are identified:

I. Analyse different types of gatekeepers within the case studies under consideration.
II. Analyse the knowledge environment in Rwandan and Ugandan organisations.
III. Critically analyse the relationship between trust, openness towards knowledge sharing and gatekeeping.

1.1.4. The Research Framework

The study argues that there is a clear need to link science, technology and innovation policies to IK so as to accelerate economic growth through the proposed knowledge identification and transfer processes. Previous studies including those of Argote and Ingram (2000), Argote et al. (2006) and Ashleigh et al. (2003) indicate that lack of trust reduces chances of openness and knowledge sharing between two parties who should, in normal circumstances, agree to share knowledge. It renders knowledge transfer and learning from one another near to impossible. Ashleigh et al.’s (2003) study of trust in KT amongst communities of practice (CoP) found that as people engage in and place emphasis on lateral relationships, they find an increasing need for trust in working relationships. This thesis argument is that knowledge sharing and mutual trust are embedded not just between individuals involved but within systems and networks of institutions. On the basis of studies on trust and knowledge transfer, it is possible that people are exposed to those they think would oppress IK and its systems, and as a result, they feel dominated and vulnerable. If they feel vulnerable, they are likely to resist outside expertise despite the latter’s positive reason for intervention. The figure below shows the two pillars that make knowledge sharing possible in a developing country’s context:
Knowledge sharing is supported by two important pillars - Trust (and by extension openness), and the Gatekeeper. The thesis basis is that without either of these pillars, successful knowledge sharing and transfer is near impossible.

In this direction, widening the role of the gatekeeper within IK application is essential in areas which require collective action or measures that reflect upon collective interests for recipients of Universal Knowledge – Rwanda and Uganda. There are inherent constraints that include different cultures, weak institutional systems, problems associated with submission which characterise societies with high power distances, lack of finances, limited absorptive capacity, and centralised, often weak and vulnerable political systems. To overcome these barriers, this study will suggest that both western and indigenous knowledge systems need someone to play a linking role to bring isolated people and institutions together for a common good - this is the gatekeeper. The gatekeeper will play the role of broker and help to build trust and social relationships through continuous dialogue, or the SECI way (Nonaka and Takeuchi, 2005). This means that the role of the gatekeepers in these developing countries will be to engage in the task of brokering shifts from the “single-loop learning” (Argyris and Schöen, 1978) and over focus on individuals expertise and technology transfers (acquiring of technologies) without reconsidering the strategies that has failed over time. Assuming that these two
developing countries decided to change their strategy and actions in order to focus on “double-loop learning” (Singe, 1990, Kim, 1993:42), the problems of clarifying the vision for long-term scientific development still remain. Sometimes funding is the primary issue and it carries political obligations, but sometimes it is poor workforce commitment which is rooted in cultural barriers (Kim, 1993) and lack of leadership intent and absence of inspiration (Senge, 1990), which a gatekeeper is able to offer. The introduction of a gatekeeper in knowledge transfer constitutes the major shift from a double-loop learning towards a “triple-loop learning” culture. This will imply changes in technical choices - strategy and actions to be taken - and clarifies the vision and intent which are necessary to secure long-term commitment from leaders and institutions.

The significance of this study lies in the fact that, in such developing economies where the access to advanced technologies remains costly and absorptive capacity is low, an understanding of IK could act as a catalyst which shifts the way knowledge transfer between a developing and a developed country is understood towards a more cooperative approach. This is something which could potentially reduce failed initiatives and knowledge transfer costs as trust is brokered and interactions become better as a result. In order to test the above hypothesis and answer the research question, three hypothesis (H) will be tested:

**HP 1:** Knowledge environment of an organisation influences the company choice of its knowledge management through gatekeepers.

**HP 2:** There is a relationship between the gatekeeper, and having trust and openness in a company. Companies with openness to knowledge sharing employ trust. These companies tend to use a formal gatekeeper who is a member of and the appointee of the organisation.

**HP 3:** Companies in which there is no openness may still have trust and use an informal gatekeeper.

In cases where there is no openness and a resultant effect of lack of trust, there will still exist gatekeepers who may work outside the organisational standard rules. In
these cases, the gatekeeper will be a member of the organisation as well as a facilitator who enables these companies to build linkages, and to promote openness and trust.

This hypothesis can now be represented below:

![Diagram](image)

**Figure 2: Research implementation hypothesis**

The argument here is that if trust does not exist between employees in a company, then there arises the possibility of using knowledge gatekeepers. The type of knowledge gatekeeper used is greatly influenced by the strength of trust between the employees in a company. The intent of this research is to analyse these hypotheses in organisations in the two countries under investigation: Rwanda and Uganda. The structure of the Thesis is as follows:

![Diagram](image)

**Figure 3: Structure of the thesis**
**Chapter One** introduces the rationale of the study, defines the research questions and the hypotheses, and introduces the overview of the research framework.

**Chapter Two** covers the literature survey. The literature review in this chapter is organised under three broad thematic areas. The first one is the underlying architecture of knowledge. This gives a conceptual framework on knowledge-related theories; that is to say, knowledge types and knowledge management as well as the factors that influence knowledge sharing and transfer. The second theme is about the analysis of the processes involved in knowledge transfer by knowledge gatekeepers (KG) and the Communities of Practice (CoP). In addition, light is shed on the factors that are embedded in CoPs to enable them to act as agents of knowledge transfer (KT). This theme points to the role played by factors such as culture, organisational distance, social relationships, trust, etc. The third thematic area gives an analysis of the current state of Indigenous Knowledge (IK) within a broader context of knowledge transfer research.

**Chapter Three** focuses on the analysis of the knowledge environment and knowledge sharing conditions in Rwanda and Uganda. It identifies challenges and opportunities to knowledge management in the respective countries. The chapter reviews the nature of the triple helix innovation system of these countries, and argues that the role of the indigenous remains an important one and that an organisation’s efforts to evolve into modern systems remain by and large marked by difficulties that are inherent from colonial times on the one hand, and on the deliberate downplaying of indigenous knowledge systems on the other. The chapter concludes with a proposition to review Nonaka and Takeuchi’s SECI model to include the role of the gatekeeper whose brokerage role can facilitate double-loop and triple-loop learning.

**Chapter Four** is the methodology chapter. This chapter describes the research design and methods used in this study. It explains the multi-level case-study design and the rationale behind using it as the preferred method. The design and the methods were considered on the basis of their philosophical, theoretical and practical value. Equally pertinent in this section is the description of various research tools and instruments — the questionnaire
and interviews — and how they were designed and administered in this study. The chapter builds on the findings from a pilot study from which important lessons are learnt. It further discusses the sampling process of the firms which participated in the study. The constructs used in this research were chosen, defined and used in line with this study’s propositions, objectives and research themes intended to study the role of “knowledge gatekeepers” in knowledge management in Rwanda- and Uganda-based organisations. The processes of data collection, analysis and discussions are done in accordance with pre-defined objectives and three hypotheses that are to be tested during the data analysis.

**Chapter Five** reports the research findings and discusses in detail the results that were obtained. Its discussion is aimed at bringing together a coherent body of primary and secondary evidence in order to generate theories about trust, openness in organisations and the use of gatekeepers as a knowledge management strategy. The thesis presents its findings and analysis. The researcher presents the data collected, and analyses and discusses the findings of this study. This is accomplished by underscoring the three objectives, and testing the corresponding hypothesis. The resulting findings are used to inform and draw conclusions.

**Chapter Six** recaps the research questions, the research objectives, and the methodology that was used to answer to the research questions and meet the research objectives. The main findings of the study will represent the contribution of the study to the field of knowledge including the relationship between trust and gatekeeping. The chapter proposes the model in which knowledge sharing is the function of trust and gatekeeping. Finally, there is a discussion on implications of the study to both practice and the academic community. The limitations of the study are discussed, including the limitations of the case study research as regards to what extent they can be generalised, and the nature of the PhD research which is narrow and limited in terms of scope, time and resources.
CHAPTER 2: KNOWLEDGE TRANSFER AND CONTEXT WITHIN THE KNOWLEDGE-BASED ECONOMY - SURVEY OF THE LITERATURE

2.0. An Overview

The chapter discusses different ways organisations may share and transfer knowledge. The review shows that knowledge gatekeeping is one of the ways organisations use to access knowledge that resides within the formal and the informal network. The literature critically evaluates gatekeeping theories and asks critical questions hitherto not addressed by the academic community. The literature shows that despite different terminologies, concepts used do not change the substance of what gatekeepers do or how they do it. This practice means that studies continue to say the same thing - but say it differently. A case is made that future research should go beyond a mere description of who they are and what they do to include factors that influence gatekeeper choices of who they talk to. Human beings are such that they share information and knowledge primarily with those they have met or have spoken to, and even better, a person they have a relationship with.

Research is therefore needed to address knowledge gaps in the following areas:

1) Relationship between trust and social interactions, which promote openness with each other, and the use and role of the gatekeeper.

2) Ample evidence shows that the relationship between trust, learning culture (where people are open to each other), and the need for trust is greater when the knowledge required is very rare, is coming from outside an organisation, and is tacit. That said, there is a critical gap as to whether trust, learning culture and prior knowledge may make the work of the gatekeeper more difficult or easier.

3) Most of the evidence available predominantly comes from developed country settings. It is an open question whether evidence obtained from such sources will necessarily remain applicable in different regions, different contexts, and different learning cultures. There is a need to diversify the source of evidence with regards
to understanding the factors that influence knowledge gatekeepers - hence the researcher asks whether there is a relationship between knowledge sharing, trust and using knowledge gatekeepers based on the findings from the selected case studies in Rwanda and Uganda.

2.1. Preliminary Concepts

2.1.1. Knowledge sharing vs Knowledge Transfer

Here, the author introduces concepts that require readers to be acquainted with their meanings as used in the context of this thesis. Knowledge sharing is not the same as “information sharing.” Similarly, “knowledge sharing” is not the equivalent of “knowledge transfer.” In the United States Department of Defense (USDoD) research team that introduced the concept of knowledge sharing, Patil et al. (1992) suggested that the goal of knowledge sharing would be to “develop techniques, methodologies, and software tools for knowledge sharing and knowledge re-use, design, implementation, or execution time” (Patil et al., 1992, p.4). Knowledge sharing is therefore more complex than information sharing and much closer to knowledge transfer. However, “knowledge sharing requires communication, which in turn requires a common language” (Neches et al., 1991, p. 38). Thus, “information sharing” becomes a sub-component of knowledge sharing in itself.

Knowledge sharing goes much further than to achieve a continuous application of converted knowledge. Converted knowledge can be practiced (Cook and Brown, 1999). This process becomes much more complex in its process because it entails social interactions, and complex problem- it involves a shift from the single-loop learning to the double-loop and triple-loop learning before actual knowledge transfer (KT) takes place. The Office of Science and Technology (OST) (2007) of the British Government defines KT as: “the process of transferring good ideas, research results and skills between universities, other research organizations, business and the wider community to enable innovative products and services to be developed” (OST, 2007.p. 3). In addition, KT may
involve the “effective sharing of ideas, knowledge, or experience between units of a company or from a company to its customers”.

At an organisational level, KT is defined as: “the practical problem of getting a packet of knowledge from one part of the organisation to another (or all other) part(s) of the organization” (Argote and Ingram, 2000, p. 151). Argote and Ingram’s (2000) study defined KT in terms of observed changes in experiences, both at the organisational recipient units as well as the source. Changes in organisation knowledge “routine or best practices can be observed through changes in the knowledge or performance of recipient units” (p.151).

Attempts to define KT link (1) the types of knowledge being transferred: knowledge being perceived as tacit or codified, and (2) physical and social factors: the source and recipient, the distance knowledge travels, and cultural differences and identity. All these, however, are but elements that have featured in knowledge creation and knowledge transfer research that attempts to provide a definition in the first place, and the models in the second place.

As this chapter sets out, reference is made to knowledge sharing and extracting value from knowledge exchange. Readers are advised that the author willingly accepts that the two concepts are not interchangeable as knowledge sharing is a continuation from information sharing, and it is much more complex than information sharing. Knowledge sharing and transfer within the context of organisations in developing countries is influenced by prior knowledge too, and prior knowledge is associated with indigenous knowledge.
2.1.2. Possessed versus practiced knowledge

Those who research knowledge sharing including Nonaka and Takeuchi believe that knowledge must be possessed through social interactions first, and then is converted into practiced knowledge through externalisation (Nonaka, 1994). The argument was made that knowledge transfer in developing countries, as in other places, can succeed if it considers prior indigenous knowledge. Evidence show however that IK is both practiced and possessed.

**Possessed** because is based on “the web of relationships as opposed to discovering particular ‘laws’ and;

**Practiced** because it is used in their daily lives as a source of food, heath, and spiritual life and is based on the changing eco-system that is the ultimate source of knowledge (Battiste and Henderson 2000, p. 44); Those who advocate for the developed countries argue that once knowledge is possessed, then it should be possible to extract and transfer or indeed even sell it like a commodity - a view that has been challenged by those who believe in the need to align prior indigenous knowledge with the modern knowledge as a pre-condition to successful knowledge transfer (Briggs, 2005; Saad et al., 2008). It is worth recognising, however, that possessed IK knowledge is generated by a system and through interactions with that system, a relationship that makes it impossible to separate the recipient learner from the system that has generated that knowledge.

2.1.3. The Manual versus Knowledge Worker

The foundation for the knowledge economy was first introduced by Drucker (1966) in *The Effective Executive*, in which he described the difference between the manual worker and the knowledge worker. A manual worker works with his hands and produces things. A knowledge worker, in contrast, produces ideas, knowledge, and information (Drucker 1966, p. 3). For Organisation for the Economic Co-operation and Development (OECD) countries, the “rules and practices that determined success in the industrial
economy” of the nineteenth and twentieth centuries need to be rewritten “for an interconnected world where resources such as know-how” trump more tangible resources (Drucker 1969, p. 12).

To date, research into how these rules can be rewritten at the level of firms and industries in terms of networking, knowledge creation, knowledge transfer, and knowledge management processes is subdivided and is lacking in integrated approach. However, there is an ever-increasing “role and significance of knowledge as an input to economic processes” leading to fundamental changes (Smith, 2000, p.3).

Some of these changes rest “on advances in information technology that are leading to a paradigm shift” (Smith, 2000, p. 2). This paradigm shift is linked to the fact that the world is experiencing “basic changes in economic functioning and changes in the economic rules for both business and policymakers “(Smith, 2000, p. 2). Rwanda and Uganda are later-comers, as their first visions in this regard appeared in early 2000 and they are clearly articulated towards becoming knowledge-based economies. What is known, however, is that there exists a dual economy where typical agrarian systems (such as Research in Use programmes) exist along the emerging services such as ICTs, Manufacturing and Finance Sectors, which are knowledge-intensive (Department for International Development, 2012).
2.1.4. Knowledge and Knowledge Management (KM)

Although the debate on the concept of ‘knowledge’ may have existed before the time of Plato, he can be singled out for having defined it as "justified true belief"; since then, however, the concept has acquired many definitions.

The Collins English Dictionary (1998, p. 857) for example defines knowledge with three entries:

(i) expertise and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject, (ii) what is known in a particular field or in total; facts and information or (iii) awareness or familiarity gained by experience of a fact or situation.

In addition, Bolisani (2008) shows that KM is a cross-cutting issue, composite in nature and diverse in typology. He suggests that understanding KT calls for an appreciation of the dual nature of knowledge — tacit and codified. Polanyi (1966) defined tacit knowledge as knowledge that is accumulated over time through experience. It is difficult to put it in written form and it depends on the context in which it is learnt and applied. Codified knowledge, on the other hand, is written or recorded in manuals. It is not context-dependent and can be transferred through manuals in written form.

This study posits that since knowledge can either be tangible or intangible, KT and KM should therefore be understood to mean the sharing of ideas, knowledge, or experience between a group of people or between units of a company or between a company and its customers and vice versa. KM is therefore a process responsible for gathering, analysing, storing and sharing of knowledge within an organisation with the primary objective of achieving knowledge management so as to improve organisational efficiency and reduce duplication of existing knowledge.
2.1.5. Tacit knowledge and knowledge codification

According to Klein (2007), the organisational knowledge interchanges between tacit and codified forms. The way this is achieved has been demonstrated at large in Nonaka’s (1994) spiral model in which knowledge is created as well as transferred through socialisation. The act of interacting with others allows people to learn from one another. Through this interaction, people can come up with new insights and ideas that may lead to new knowledge development and application (externalisation). Socialisation can help people to determine what knowledge can be codified, and that which cannot. “The process of codification includes three aspects; these are model building, language creation, and the writing of messages through storytelling” (Klein, 2007, p.41). With development and change in several technologies, these three activities have been affected by changes in costs and benefits in particular, and technological development has cut down the costs of codification (Cowan and Foray, 1997; Gourlay, 2007).

Technical change is another area that facilitates the diffusion of codified knowledge; for example via web pages - this is increasing the value of codified knowledge. There are, however, some issues that can be raised here; for example, the effects of “temporal relations” between the three aspects of codification suggested above which, in some cases, are inevitable given the nature of advances in technological changes. The codification process may be dependent on language and the context of the knowledge being codified; moreover there has been suggestion that the ongoing process in which codification would take place may be path-dependent (Cowan and Foray, 2000).

The path dependency of knowledge is very much related to the type of knowledge itself. Some areas remain of interest to researchers following Nonaka and Takeuchi (1995). Can tacit knowledge be made explicit? For example, Gourlay’s (2006) critique suggested that “difficulties include the fact that it is by definition personal and context-based” (Gourlay 2006, p. 60) on the holders’ fear that making it explicit entails losses and that extraction requires a supportive environment involving trust and appropriate social structures (Gourlay, 2007). It is probably of little surprise to tacit knowledge theorists such Nonaka and Takenchi (1995) and Tsoukas (2003) that tacit knowledge cannot be
codified, therefore implying that if this knowledge could be codified it could no longer be considered as tacit knowledge. During social gatherings, people translate personal and team experiences to develop knowledge databases (Klein, 2007; Taylor, 2004). These databases are retrievable in a form of codified knowledge. However, this is an attempt to elicit somebody else’s experiences. People also use video conferencing, podcasts and so on. These are tools that aim at facilitating social interactions, where one can see the body language as well as hear the person speaking. What does a person learn from this process? Is this codified knowledge being shared with a semi-tacit knowledge element attached? In this case, it would serve a purpose to consider recent research on computer-mediated knowledge (Reihlen and Ringberg, 2006; Taylor, 2004).

2.1.6. Knowledge Conversion Models

Among the (several) models which exist with regard to KT, some have been developed more than others (Harorimana, 2006). Among those successful models, many appear to concentrate at organisational levels. At organisational levels, they include studies on (1) knowledge gatekeepers (Allen and Cohen, 1969: explored later on in this chapter); (2) Communities of Practice (CoPs) (Lave and Wenger, 1991); and Nonaka (1994) and Nonaka and Takeuchi’s (1995) knowledge conversion model, widely known as the “SECI model.”

Nonaka (1994) was the architect of the SECI model, but this was yet to be fully developed (Nonaka and Takeuchi, 1995). Later studies (Nonaka et al., 2000) provide the detailed accounts of the knowledge creation process, which allows us to understand the dynamic nature of knowledge creation, and offers advice on how to fruitfully manage such a process. Below is a summary diagram of Nonaka’s model as proposed in different versions of his studies.
Figure 4: Nonaka’s Model
Four important aspects are identified here; these are the Vision, the Staff, the System, and the Structure. The vision refers to a Leadership which is required to be able to drive the knowledge management initiatives; and the system needs to be expounded to include the customers, communities of knowledge, and the entire network of the related industries (Porter, 1991; 2003), thereby surpassing the organisational boundaries. The structure needs to balance the functional issues with the need to socialise, externalise, combine and internalise knowledge created within the broader benefit of the company. The staff are specifically the middle managers who represent the translation of the grand theory into the operational practice. Spencer (1997), while summing up Nonaka’s presentation on the introduction of the book, Knowledge Creating Company (1995) at the Knowledge Advantage Conference (1997), writes:

The role of the middle manager is to support, nurture, care about, initiate and complete the knowledge spiral. They play the critical role between the “Grand Theory (what ought to be)” from the top, and the “Front-line (what reality is). They translate Grand Theory into Mid-range theory, which is then tested on the front line. Contradictions flow back to the Middle manager, which must then be communicated to and resolved with top leaders. The action in the middle is the “Cross-levelling of knowledge (Spencer 1997, p.3).In the SECI model, knowledge creation is a continuous dialogue between tacit and explicit knowledge (see Figures 2 and 3) (Nonaka, 1994; Nonaka and Takeuchi, 1995). This interaction is represented in a spiral knowledge creation diagram that becomes larger in scale as it moves up through the organisational levels. Along this process, the circle can trigger new spirals of knowledge creation and the circle starts again (Figure 4).
The analysis is provided in the diagram below:

<table>
<thead>
<tr>
<th>Tacit Knowledge</th>
<th>Tacit Knowledge</th>
</tr>
</thead>
</table>
| Process of socialization: (Empathizing)  
This is where people share tacit knowledge through a face-to-face communication and shared experiences. | Processes of externalization: (Articulating)  
People are able to build up concepts. These concepts are combined with tacit knowledge, consequently facilitating its communication via interactions and recordings. |
| Processes of internalization: (Embodying)  
Less experienced learn from those who are most experienced and knowledgeable. People share experiences and external knowledge becomes part of individuals' knowledge base, and finally, creating an organizational asset. | Processes of combination: (Connecting)  
This is a result of combining a choice of elements of explicit knowledge such as building archetype. |
| Explicit Knowledge | Explicit Knowledge |

**Figure 5: SECI, Knowledge Conversion Model (Nonaka and Takeuchi, 1995)**

This model has prerequisites if it is to be successful: (1) organisational leadership must be actively involved in motivating employees to dynamically support this culture of knowledge development as well as be able to manage unstoppable changes and make adjustments to required changes; (2) the ability of a company to identify its knowledge capabilities and assets; and (3) the context and the learning culture of employees must be supportive of the knowledge creation and sharing project and view this as essential to their good performance. Nonaka et al. (2000) explained this within a *Ba* model. The *Ba* model arises because each employee and each individual organisation has its own context which shapes its choices. There is, however, a need to have a shared context within
which the SECI model operates. At every stage of a SECI model, there appears an element of the “Ba” —leadership; the following diagram can be used to illustrate this:

![Diagram of Ba process]

**Figure 6: The “Ba” process (Nonaka, Toyama and Konno, 2000, p. 14)**

When both SECI and Ba are combined, the model looks like this:
Based on Figures 4 and 5, it follows that the individual context plays a direct role in the group’s efforts. The group becomes very much dependent on the individuals, but also the influence is extended to the wider process (unlike the individual attributes). Nonaka and Toyama (2004) may not have thought about the issues of identity in the way Wenger (1998) did in his work on CoPs; or indeed Cumming and Teng (2003) may not have addressed the issue of context in the same way Nonaka and Toyama (2004) present it in the above figure.

One issue remains unexplored—the relationships between trust, context, and identity were not explored in Nonaka (1995), Nonaka et al. (2000), Cumming and Teng (2003), or Nonaka and Toyama (2004), and it seems that only patchy attempts have been made to address this elsewhere (for example in Argote and Ingram, 2000; Harorimana and
From a critical analysis, it seems that the existence of strong relationships between trust in an organisation has a positive effect on the organisation’s knowledge sharing. For this to happen, however, someone needs to recognise the context including organisational systems, infrastructure, leadership, access to a knowledge infrastructure such as social relationships, financing, the identity and culture of the individuals and how it shapes their behavioural orientation (Appiah-adu and Ranchhod, 1998) and, the organisation’s capacity to manage its wider ranging knowledge and expertise. Prior knowledge will almost certainly predict the likelihood of success in one’s knowledge creation transfer. It will open the “black box” of what the institution believes to be acceptable or not. In this case, it seems that success can be achieved at best through building trust between knowledge sources and the recipient (Argote and Ingram, 2000; Cohen and Levinthal, 1990; Cumming and Teng, 2003; Nonaka and Toyama, 2004). There are, however, several unanswered questions where knowledge gaps persist in that regard.
2.1.7. Cultural distance as an issue

Studies conducted on the relationship between KT and culture show that knowledge itself, and consequently the use of it, are deeply embedded in cultural routines and customary practices of communities (Heinz, 2009). In this regard, the notion of “cultural distance” explains the obstacles that may accrue to organisational performance. According to Heinz, (2009) “cultural distance” refers to culture-based factors that impede the flow of information between two parties who wish to share knowledge and technological know-how. “Cultural distance” correlates with knowledge because it imposes barriers in understanding other members of the organisation (Heinz, 2009). In the same vein, Klingenberg and Rotherberg (2009) concur with the above view by showing that the degree of “cultural distance” in cross-cultural business relationships is considered to be one of the major obstacles to successful firm performance. The underlying assumption for this is that “common identity” as opposed to the “cultural distance” between different groups of organisations impacts on knowledge sharing and KT (Shenkar, 2001).

On the relevance of culture to knowledge and efficiency in organisational matters, De Long and Fahey (2000: 113) have this to say:

Cultures heavily influence what is perceived as useful, important, or valid knowledge in an organization. Culture shapes what a group defines as relevant knowledge and this will directly affect which knowledge a unit should focus on.

According to Simonin (1999) and Griffith and Harvey (2001), the cultural factor should be considered while transferring knowledge. Bovin and Morohashi (2002, p.13) defined indigenous knowledge as knowledge that is “locally bound” or “culture-based and context-specific”. According to them, this knowledge is said to be “non-formal”, and is “orally transmitted”, and generally not documented. IK is dynamic and adaptive to new situations by virtue of it being “holistic in nature”; it is created and used over many years and generations by a given community (Briggs, 2005); and it follows systems and principles that are unique to a community with similar values and history. Gorjestani (2000, p.1) asserts; “indigenous Knowledge is not confined to indigenous peoples alone—
all communities have developed their own body of knowledge over generations”. A legitimate question is therefore whether there can be successful knowledge transfer in Rwanda and Uganda without reference to recipient’s culture and how this influences choices and decisions on which recipient’s people can trust.

2.1.8. **Individual context is an issue**

The evident observation here is that in order to develop and implement the SECI model, there is a need to recognise *individual context*, the ability of the leadership, the systems, the vision and strategy of a given organisation or state into which staff and systems are linked through. Clearly, such a model is difficult to establish; it requires organisation-wide efforts and buy-in, which, in the view of the researcher, is difficult to establish when the basics such as desire and the ability of the leadership to coordinate and lead a change programme are lacking. GeSci (2010a) has, in particular, identified this as a particular challenge for countries in Africa, with the same study recognising Rwanda as a unique country which has exhibited the qualities a leader requires, but still having significant systemic gaps in the knowledge infrastructure⁶.

2.1.9. **The need to promote the atmosphere of trust**

The way forward in the form of a knowledge gap seems that, in order for SECI/Ba to take place, there seems to be a pre-requisite for a conducive atmosphere of trust. Kelloway and Barling (2000) recommend holding social events because they allow colleagues to know about each other’s interests and potential. Alavi and Leidner (2001) recommend debriefing sessions, and formal and informal seminars as a way trust is developed. There are still issues—potential problems that need further study. There are said to be far too many meetings and social interactions in teams at national and regional levels which fail to produce significant results; and there remains a lack of studies analysing the reason for this high level of despondency and poor results (Mwitondi, 2009). Academics, too, have asked the wrong questions - such as studying leadership, democratic governance

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⁶ Knowledge Infrastructure includes education levels, use of and access to ICT infrastructure, investment in knowledge activities such as R&D, etc. This aspect is discussed in greater detail in the second part of this literature survey, “Knowledge Environment in Rwanda and Uganda.”
institutions and systems, individual competency and availability of funds, rather than the
topic in question. Studies in all those and many other areas are legitimately needed but
they are not a priority for recipient countries. The question is: How can developing
countries learn from their advanced counterparts? The answer to such a question arises
from creating good conditions for trust and trust building and also from creating good
conditions under which recipient institution can decide what is the right kind of
knowledge and technology they require without feeling or fearing that the modern way
of knowing (which is different) will continue to downplay and trump upon the
indigenous culture and the systems that influence developing countries’ way of thinking
and doing things.

Figure 8: Knowledge Gaps (as per Nonaka et al.’s (2000) proposed model SECI/Ba)

As it stands from the diagram now, there is a gap from the prevailing perspectives to
knowledge sharing, creating, and transfer as proposed in Nonaka and Takeuchi (1995),
Nonaka et al. (2000), Teng (2003), and Nonaka and Toyama (2004). A legitimate question
(for example) as to whether this model is applicable to African organisational cultures
remains to be evidenced. Secondly, the SECI model appears to be linear and evidence of
its flexibility is still lacking. Can it change direction to start at any of its steps? Can it
respond to changing patterns of a learner’s needs during the KT process? (Refer back to
Figure ).
Nonaka’s SECI model aims to study knowledge creation and KT processes within the sociological context of an organisation. Cumming and Teng’s model takes the process a step further to understanding the relationships and interdependency of knowledge and the environment both at the source and at the recipient site. This is essential in any study of KT, given that both the type of knowledge and the nature of relationships that facilitate KT would dictate the outcome.

Cumming and Teng (2003) proposed a KT practice based on relationship interdependency. This model gives an overview of what happens when KT involves many organisations but left many questions unanswered; the relevance to the context is not addressed and the issue of generalisation is left to an open critique. For example, their works were empirically realised within the American context of the organisation to demonstrate that a successful knowledge creation and transfer will depend on whether there exist similarities between the source and the recipient.

Those similarities can be in the form of tasks, routines, tools (such as computer and software infrastructure), the culture and the identity. The same however fails to recognise that in certain areas, the human competency factor and willingness to commit will determine whether, for example, the organisation will prioritise investment in the physical as well as the soft infrastructure. Both Argote and Ingram (2000) agree that context is important. In this sense, we can argue that their models are relevant in a given context. Within Rwanda and Uganda, there are additional issues7 that need to be considered such as access to infrastructure, limited human capacity, lack of up-to-date essential knowledge to perform routine tasks, limited or no structured knowledge management strategies, and the value of knowledge, which is widely underplayed or ignored (GeSci, 2010a; Konde, 2009; World Bank, 2009). It now follows that soft issues (relational context, tasks) play a significant role in organisational decisions; it is less clear, however, if the same applies in the Rwandan or Ugandan organisational contexts. Do these factors remain unchanged? Are they recognised as primary challenges as suggested by the Argote and Ingram (2000) study? The field currently lacks knowledge on an

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7 A detailed analysis with discussion of each of these issues is provided in the second part of this thesis.
extended and/or alternative to a model proposed by Argote and Ingram (2000) to take care of the context of Rwanda and Uganda, two countries at the bottom of the knowledge infrastructure in Africa (GeSci, 2010a). From the above discussion, it can be inferred that IK and Western forms of knowledge do not compete; they are not mutually exclusive because one does the job that the other cannot do. Research recognises that there is interconnectedness between collective knowledge (practiced) and individual knowledge (possessed knowledge). Pinch et al. (2003) introduce the term “architectural knowledge” (ibid: 377) to refer to knowledge that can be understood within the organisational structure, and in that context alone. They give several examples of this form of knowledge in the UK’s M4 corridor and argue that this architectural knowledge was relevant only in that region contexts and could not be understood or converted into individually owned property since it is embedded in local systems and culture.

Finally, the majority of KT studies (Argote and Ingram, 2000; Cumming and Teng, 2003; Kanchana et al., 2011; Nonaka et al., 2000; Wenger, 1998) seem to agree that where an element of trust is strong, knowledge to be transferred can be identified, and the context and extent of its application can be agreed upon by both the source and the recipient. In the absence of trust, knowledge identification becomes more subjective, and less likely to achieve change, which must be reflected in terms of changing behaviour (or at least changing practice) at the recipient unit. The importance of having social relationships in knowledge transfer is that people are able to identify areas of tacit gaps with one another. Thus, trusting one another becomes an important tool in identifying tacit knowledge to be transferred (Kanchana et al., 2011). Social relationships are perceived as important in this process of identification; it is even better when people have similar cultures and understanding (Alavi and Leidner, 2001) - but how can this achieved given the context of Rwanda and Uganda? The thesis proposition is that, extending Cook and Brown’s (1999) epistemology foundations of knowledge-possessed versus practiced knowledge, Chapter Three of this thesis will explore whether it is plausible that there exists scope for interaction between modern and indigenous knowledge systems.
2.2. The use of CoPs

Communities of Practice (CoPs) are also known by other names. Hustad (2004) describes them as a network of communities of experts, or ‘occupational communities’ (Van Maanen and Barley, 1984). This difference in nomenclature does not imply that CoPs are different. It can be observed that some communities may either be sub-sets of other communities or act as independent units within larger communities; for example, Van Maanen and Barley (1984) describe the CoPs as:

... a group of people who consider themselves to be engaged in the same sort of work, whose identity is drawn from their work; who share with one another a set of values, norms, and perspectives that apply but extend beyond work related matters, and whose social relationships meld work and leisure (p. 287).

CoPs create and sustain work cultures that are unique, consisting of task rituals, standards for proper and improper behaviour, and work codes on routine practices, all of which attest to the logic and value of these rituals. Demonstrating that KT processes take place in social contexts, Lave and Wenger (1991) show that people are naturally conditioned to their modes of interpersonal interaction. They show that the way people interact directs what they turn their attention to, and how they learn new things. Historically, CoPs were supposed to play an important role in providing a physical, social, and cultural context where the exercise and growth of knowledge takes on meaning and purpose (Choo, 1996), and it is this basic social infrastructure that enables CoPs to externalise both their tacit and codified knowledge through transfer processes.

The basic characteristics that define a community include interactions of people, a common view of the world, and a certain degree of shared identity (Amin and Cohendet, 2004; Wenger, 1998). Accordingly, Kimble et al. (2008) suggest all community members are connected and coordinated; they enjoy complementary mechanisms in an organisation. In support of this assertion, Bowles and Gintis (2000) and Kimble et al. (2008) show that communities made of people who interact directly and frequently in
multifaceted ways are held together by social rules. They identify three types of communities within a firm: (1) the Communities of Practice, (2) the Epistemic Communities and (3) the Knowledge Communities. Their features were discussed at large by different authors, and along with their goals, are illustrated in the figure below:

<table>
<thead>
<tr>
<th>Type of community</th>
<th>Properties</th>
<th>Interaction</th>
<th>Structure</th>
<th>Common goal</th>
<th>Learning processes</th>
<th>Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epistemic Community</td>
<td>No agreement</td>
<td>Irregular</td>
<td>No principal form of governance (Haas,1992)</td>
<td>Deliberate problem solving (Knowledge creation). Saint-Onge and Wallace (2003).</td>
<td>Firms should plan and embed knowledge strategies (creating, sharing, transferring) because it is a resource</td>
<td>Critical factor, strong element of trust (Kanchana et al., 2011; Haas, 1992).</td>
</tr>
</tbody>
</table>
like any other. A firm is presented as another form of an epistemic community (Håkanson, 2006, 2010).


Table 1: Properties of Different Communities: Commonalities and Differences

Kaplan (2001) introduces the concept of epistemic communities at the firm level but there is a lack knowledge on how to relate the “whole” of the firms and its membership made up of the employees. Kaplan (2001) suggests that “the knowledge-based theory of the firm seems more like a theoretical patchwork than a solid body of theoretical knowledge” (p. 3). Although we may agree with Kaplan, there have been developments indicating that broad strategies for creating and sharing knowledge cannot be separated from the cognitive behaviours and the culture and identity of the individuals; hence issues associated with the firm-view of knowledge still require extensive research to understand the relationship between the individuals who constitute the “whole” (Harorimana, 2009b, ix). For example, the Knowledge Community can be temporal and formal. Its membership does not have a social contract (moral identity), nor does it communicate regularly outside the normal working times. It is answerable to organisational structure and this makes it difficult to share, learn, and transfer knowledge without breaking the organisation’s codes and rules, and for this reason, its members are under obligation to request permission to say what they have to say in the public domain.
They have to act for the “benefit” of their employer; as a result, active members of the community may be unable to act on their knowledge and skills independently from the organisation they work for.

In addition, Wenger (1991; 1998) and Amin and Cohendet (2004) show further differences between CoPs, project teams, and task forces that organisations use to solve their problems. This is illustrated in the table below:
<table>
<thead>
<tr>
<th>Group</th>
<th>Functions</th>
<th>Basis for Membership existence</th>
<th>Cohesion</th>
<th>Lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoP</td>
<td>Share experiences, promote self-development by building up on existing knowledge of members' expertise; Helps members to define their place, role and identity within the community (Wenger 1998, Wenger et al., 2002, Breu and Hemingway, 2002; Coan and Ritchie, 2006).</td>
<td>Attracted by others within same field, Wenger (1998) own decision (i.e., members select themselves) (Coan and Ritchie, 2006).</td>
<td>Members are omitted from each other's professional and social development (i.e. welfare at work, joined collective bargaining within a given profession, members recognised professional norms (Coan and Ritchie, 2006; Wenger 2002).</td>
<td>“So long as members have an interest in improving the practice and maintaining the community”. (Wenger, 1998; Wenger et al., 2002).</td>
</tr>
<tr>
<td>Project team</td>
<td>Execute tasks assigned with specified deadlines (Oertig and Buergi, 2006)</td>
<td>As assigned by the management (Cranefield and Yoong 2007).</td>
<td>Project milestone and goals (Oertig and Buergi, 2006; Cranefield and Yoong, 2007).</td>
<td>Until the work is completed (Cranefield and Yoong, 2007).</td>
</tr>
<tr>
<td>Formal</td>
<td>Strictly speaking to perform the ongoing</td>
<td>Appointed by a relevant requirement and</td>
<td>Job/performance requirement and</td>
<td>Until re-organisation, a</td>
</tr>
<tr>
<td>Team/Working team</td>
<td>CoP properties: Team and networks, expanded from Coan and Ritchie (2006)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>work with specified output at the end. Time limit may be given, tasks are generally not clearly specified (Cranefield and Yoong, 2007; Breu and Hemingway, 2002).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>authority to be part of this team and perform broadly defined tasks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>continuing, common goals (Wenger, 1998; Wenger et al, 2002).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fuzzy picture becomes clear. At this stage the formal team or working team may hand over to a project team</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Informal communities of networks (Breu and Hemingway, 2002)</th>
<th>To collect and share information and common matters of interest (Breu and Hemingway, 2002).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reciprocal value and acceptance, members search for and share valuable knowledge</td>
<td></td>
</tr>
<tr>
<td>Perceived value in belonging and participating (Breu and Hemingway, 2002)</td>
<td></td>
</tr>
<tr>
<td>Perceived value in belonging and participating</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: CoP properties: Team and networks, expanded from Coan and Ritchie (2006)

From table above, CoPs need not be confused with teams or task-forces. A task force is tied to a specific assignment; once that assignment is completed, the task-force disbands. On the other hand, whereas a project team is bound to a specific process or function, it is structured in such a way that it deals with the interdependencies of different roles in that function or process. In project teams, roles and tasks often vary, whereas in CoPs they generally remain the same.
2.2.1. Relevance in organisations

Current research supports the effectiveness of communities of practice in the organisational realm (Zboralski, Salomo and Gemuenden, 2006). First, employees are exposed to a setting where strong interdependence is the norm. This norm can lead to an ethos of collective responsibility with mutual accountability among members and the larger community (Johnson and Johnson, 2009). Lave and Wenger (1991) and Wenger (1998) observed that in a community of practice, apprentices learn most effectively in relationships with their peers and near-peers, with the master (educator) serving as just one important instrument for learning. Communities of practice can increase the likelihood that employees will find their own voice and niche within a particular discipline (Wenger et al., 2002). The result for learners is a stronger connection to the material because they are able to self-direct and self-select areas of interest that are most relevant to their lives (Kimble et al., 2008). Kimble et al. (2008) suggested that communities are dynamic and constantly evolving. The members display different roles and levels of expertise and can be classified as novices or experts; or according to their participation, as observers or actors. People are incorporated into a community and learn from the periphery. As they are more competent in their practice, they become core members.

2.2.2. Benefits for Communities of Practice

The first benefit of CoPs comes from the perspectives of adult learning andragogy; where CoPs constitute an important way of engaging employees at work within what some may see as continuing education, industry-based training, or coaching and mentoring and in some instances a master-apprentice relationship based on mutual trust and support (Knowles et al., 2005). All these strategies still need more understanding, but a good start comes from Wenger (1998) as extended in Kimble et al. (2008). From their perspectives, the benefits arise in that communities contribute in the short and long term, to the organisation and also to the members that compose it. Below is a condensed analysis of the benefits as recorded by various authors.

<table>
<thead>
<tr>
<th></th>
<th>In the short term</th>
<th>In the long term</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MEMBERS</strong></td>
<td>• Help with challenges</td>
<td>• Personal development</td>
</tr>
<tr>
<td></td>
<td>• Access to experts</td>
<td>• Reputation</td>
</tr>
<tr>
<td></td>
<td>• Trust</td>
<td>• Professional identity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Networking</td>
</tr>
<tr>
<td><strong>ORGANISATION</strong></td>
<td>• Troubleshooting</td>
<td>• Strategic capabilities</td>
</tr>
<tr>
<td></td>
<td>• Knowledge sharing</td>
<td>• Innovation</td>
</tr>
<tr>
<td></td>
<td>• Synergy of the units/sectors</td>
<td>• Retention of talent /knowledge</td>
</tr>
<tr>
<td></td>
<td>• Knowledge recycling generates new knowledge</td>
<td>built over time through retained talents. These talents become Key Persons in the business continuity</td>
</tr>
</tbody>
</table>

In the above table, the term “Key Person” is used to mean a person who is considered more important in the organisation because he has many connections with the market and the clients, and has built up substantial knowledge of the products and processes over time. It is similar with Whelan’s (2010) definition of a “Star Person” with the sole difference that Whelan (2010) focuses on connectivity with the external world. The Star Person has unique skills in building up communication networks through which he/she accesses valuable innovative ideas. The star person brings the organisation new ideas and innovations; he shares the same with CoP members whose role is to revisit the idea with a view to extending it before it is adopted as CoP property. The Key Person, however, could be anyone who is essential to company success (assuming that if the company loses him, there would be significant loss of revenue). This person could also be a highly talented employee, with proven skills in problem solving. The position of this author is that in an organisation, there will be key people who are more talented than the other organisational members. The benefits of such persons extend inside and outside
firm boundaries as opposed to the CoPs whose benefits are largely associated with internal focus and not necessarily oriented towards revenue generation (i.e. companies may not necessarily lose significant revenues if a CoP was not there). Nonetheless, CoPs do present benefits to a company.

Breu and Hemingway (2002), Duguib (2005), Håkanson (2006), Oertig and Buergi (2006) and Kimble et al. (2008) reflect that benefits of CoPs do exist. The major benefit of communities of practice is that they generate learning. This is learning that occurs in context - "situated learning" (Lave and Wenger, 1991). This means that to learn in these communities, people interact with others with whom they have built relationships and apply what they learn directly to their work. The problems that are exchanged (analysed) are authentic and arise in the real working environment. These real problems are solved in groups, where different people bring different skills and experiences, which together provide more knowledge to solve situations. People develop problem-solving skills directly in complex and real situations. This author contends that in certain circumstances, it is possible that certain complex problems require an analysis that extends to the wider organisational environment. Far too often, analysing a problem requires stakeholder or competitor analysis. The author argues that in such situations, CoPs are less placed and less qualified to be able to scan the external environment as a group. Drawing from the literature survey thus far, it is argued here that in such circumstances, the CoP will:

1) Delegate one best-qualified person or a small team of highly experienced experts to carry the task (e.g. scanning outside firm boundaries for market conditions, acceptability of new innovations, of a new product, seeking stakeholder opinions, etc).

2) The CoP provides guidance on internal knowledge and acceptable norms.

3) The technically appointed person or group (working team) uses the internal knowledge offered by the CoP to produce a coherent proposal for review and endorsement by the wider CoP members.
4) Their task may carry a certain level of terms of references along the lines of informal working groups but in a more specialised manner. They were referred to as gatekeepers (Allen, 1977) previously, but clearly research is needed to understand the relationship between those perceived as “the experts” working within the framework of, and who are part of the CoP itself.

Emphasis is given to the fact that adults learn best in situations where they can apply their previous knowledge and experience. The growing interest in communities of practice lies in the dissatisfaction that sometimes exists with traditional methods of job training. In the case of situated learning, it arises from a knowledge that is not encrypted and transferred to another context, but happens directly when and where they are performing tasks. It poses the question of whether the company should encourage the creation of CoPs in order to retain this kind of situated learning and take advantage of the existence of communities of practice or ignore them and lose the associated benefits. Following from the perspectives emerging from the literature analysis, the following hypothesis can be postulated: The existence of strong relationships and trust in an organisation has a positive effect on the organisation knowledge sharing; and this likely to happen where People have opportunities to socialise.

Based on the above, the key models of Nonaka and Takeuchi (1995), Argote and Ingram (2000), Nonaka et al. (2000), Cumming and Teng (2003) and Nonaka and Toyama (2004) can be revisited, to develop a line of thinking to integrate the concept of CoPs as a way to promote social interactions. This will lead to building trust, sharing knowledge, learning, and thereby transfer in that particular order. Below is the proposed integration from the theories thus far. A gap analysis is proposed thereafter:
Figure 9: Identified knowledge gaps from research on knowledge sharing, creation and transfer (Nonaka, 1995)

From the above figure, the following issues are emerging:

1) Knowledge transfer research from modern knowledge systems to developing countries cannot assume away indigenous knowledge and its systems, but how can both systems talk to each other? Several researchers have not coherently built the picture for a sharing, knowledge-creating and transfer model, although they agree on emerging key issues that affect such a model.

2) It seems that thus far, the conductive environment that allows trust to develop has not been perceived or included in the modelling process. Hence some knowledge gaps persist around key areas.
a) The relationship between knowledge sharing and learning culture of the organisation needs to be addressed. It seems that an intermediary is required, an agent who may be familiar with both sources but independent enough to advise and support the gated parties in their quest to address challenges associated with lack of external awareness of what the internal constraints and opportunities are.

b) The relationship between learning culture, and the way people trust each other at the workplace organisation is cognisant of external and internal factors as indicated by Nonaka (1995) and Nonaka et al. (2000) through the Ba and SECI models.

c) In this case, there is a lack of knowledge in the field as to how the trust between the gated is built, although the factors that lead to trust building - such as having a common purpose (which is developed in a social context) - are known. Also, people meeting and discussing issues in formal and informal events, meetings, and team work were mooted by some academics as the best way to really build trust; but there seems to be no evidence to support those claims.

With many questions being asked, the next step is to develop evidence to build an environment conducive for trust building and enabling knowledge creation and knowledge transfer. Although we now know what motivates employees’ willingness to share and create knowledge in a spirit of “togetherness” by building trust, we still lack the knowledge and understanding of who does the navigation through the complexity of knowledge at the source without fear of losing business secrets to outside competitors and potential future competitors. The potential solution should be considered from two perspectives:

1) *Organisations themselves get together and agree to work together.* This form of solution may be guided by mutual benefits, such as the balance of power and market influence. Harorimana and Harebamungu (2012) analysed the relationship between proximity learning, and innovation. Several examples of mergers and acquisitions illustrated that many acquisitions had an element of desire to access essential market and quality-driven innovation culture, leadership exposure, and access to essential knowledge (e.g. the case of the Lenovo acquisition of IBM
organisational learning is still dependent upon the presence of good learning strategies that enhance the effectiveness of the learning process. Organisations should encourage learning during the innovation process; even then, trust and the desire for innovation constituted primary factors that influenced their decision on whether or not to transfer knowledge and share best practices and necessary knowledge. It is worthy to note that many such strategies were very expensive and they carried organisational uncertainties. Besides, the complexities that come with such relationships as strategic alliances are likely to raise barriers and costs that less resourced organisations can hardly afford. In the light of the above issues, this view can be ruled out as a recommended strategy to decontextualise knowledge with a view to adapt to the needy organisations.

2) A second solution could be offered by a knowledge gatekeeper.
2.3. Use of Knowledge Gatekeepers

It is argued that knowledge gatekeepers create a shared socio-cultural context that enables the translation of ‘tacit’ meanings, knowledge codification, and transmission. According to the pioneer of the concept of the “knowledge gatekeeper” (Allen, 1977), a ‘gatekeeper’ is a key person (or a group of people) who facilitates knowledge transfer by informal communication by taking an intermediary role. Gatekeepers “differ from their colleagues in their orientation toward outside (knowledge) sources” (p.144). On average, gatekeepers read, advise local communities, search current available information as well as publish scientific information more than an ordinary employee, and publish papers more than researchers, scientists, academics and local leadership do. Initially, Allen (1977) identified gatekeepers as:

… A small number of key people to whom others frequently turned for information. These key people differ from their colleagues in the degree to which they exposed themselves to sources of technological knowledge outside their organization. Their features are such as they constitute a small community of individuals, they are at the core of an information network, they are overexposed to external sources of information, and the linkages they develop with external actors are more informal (p. 145). Below is proposed the illustration of Allen’s (1977) definition:
Figure 10: Concept illustration of Allen’s (1977) view of the Gatekeeper and extended in Whelan et al. (2010)

The gatekeeper referred to by Allen is inside the organisation, connected to Gatekeepers X, Y, Z within his network. From figure 12 above, XYZ gatekeepers are conversant with external knowledge and hence are useful. When the gatekeeper inside the organisation has a problem, he may consult them and vice versa. The line managers may have a problem as well—in which case they will turn to the knowledge gatekeeper within their firm for help. In this sense, line managers can only access the external world (or external knowledge via their inside gatekeeper). Research thus far seems to contend with Allen’s model but fails to raise some important questions: for example:

1. To whom do gatekeepers X, Y, and Z talk to, and what are the motivations for their choice as to who to talk to?
2. Do they talk to each other before they address a problem raised by Gatekeeper A? How does this interaction shape the nature of the answers given? These questions
add to an even more complex question that was asked elsewhere, which is yet to be answered.

(3) Should a gatekeeper have a social connection (we can safely exclude professional connections)? How does the work of the gatekeeper reshape itself and regain its existence?

The literature studying knowledge gate-keeping (KG) between the years 1995 and 2007 as reflected in the top ten ISI index of (impact) journals in management science as well as information systems journals, shows that a total of 453 journal articles mentioning a gatekeeper were published (Karine, 2009). Only 3% of those articles analysed the concept in depth, and only 18% used knowledge gate-keeping as a factor in their research. In management studies, KG is mentioned in 34 articles, which were published in journals of an impact factor of Four and higher, and each with a citation average of Seven. In Management Information Systems (MIS), KG is mentioned in 16 articles with an impact factor of Two and above with a citation index of Three. In management studies in particular, there is a far lower incidence of studies of the gatekeeping role (Karine, 2009).

If an organisation such as an R&D agency is a gatekeeper, their employees in different functions may serve as links and facilitate relationships between the industry and the R&D in-house knowledge base. For example, the marketing team may be able to identify market trends and communicate market drivers to in-house teams who develop responsive products. These teams translate relationships, cultures, and values of their client’s profiles to fit tastes and affordability by target clients (Von Hippel, 2005). It is reasonable to ponder to what extent culture and identity affect the work of the knowledge gatekeeper.

The work of a knowledge gatekeeper often engages two distant parties - the source and the recipients, referred to as “The Gated” (Karine, 2008, p. 1493). This thesis uses this terminology to mean the source of knowledge and the recipient. The distance between the source and the recipient may be in terms of physical distance (Simonin, 1999b) and

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8 Karine used the concept to mean “an entity subjected to a gatekeeping process”.

different cultural meaning that we require a cross-cultural communication strategy (Holden, 2010). With R&D activities being outsourced by many manufacturing companies through SMEs, however, the work of knowledge gatekeepers may be outsourced. In this sense, knowledge gatekeepers may have technological expertise, but they have little cultural attachment and identity with the clients and their work is relatively limited to either the recipient’s tasks or the recipient. While the sending source may have collective experience of the technical requirements on the ground, the gatekeepers do not necessarily reflect company culture, and they may lack a moral authority to shape how priorities are decided by those who are working as full time employees. A question therefore is this: What should be the attributes of a knowledge gatekeeper?

One issue that arises from the literature survey is that gatekeepers interacted with two distinct systems: (a) the modern system that is organisationally based, with all that goes with organisation systems and processes; and (b) the indigenous knowledge systems (Wilson, 2007). The indigenous knowledge systems are described as complex, localised, and heavily dependent on oral traditions (World Bank, 1998) while the indigenous knowledge is defined in Bovin and Morohashi (2002, p.13) as knowledge that is “locally bound” or “culture-based and context-specific.” This knowledge is said to be “non-formal,” is “orally transmitted,” and is generally not documented (p. 13).

Indigenous Knowledge is dynamic and adaptive to new situations by virtue of its being “holistic in nature.” Harorimana (2009) considers IK as an alternative source of knowledge that is being modernised through automation and systematic recording of processes. Harorimana’s (2009) research was conducted by a knowledge gatekeeper in three forms: people, R&D departments, and organisations with a specific mandate to collect, vet, process and disseminate information. There are two methods of communication taking place here: (a) Information about companies and their ultimate goals towards IK, and (b) information about indigenous people, their products, and how they use them (customer feedback into organisation R&D systems). It should be noted that the processing of this information lies by and large within the hands of the
knowledge gatekeeper and the firm more so than with the customer. Clearly there is an interaction between indigenous knowledge and new organisation-based knowledge. What remains as a gap here is to understand how these two knowledge systems can work systematically, connected together, to achieve global properties and provide the added value in the production process. With so much not known about the systems of knowledge within industries that are exploiting IK, the role of the knowledge gatekeeper is brought in to help bridge knowledge management gaps between two distant systems of knowledge. Arguing about the role of gatekeepers in organisational knowledge-sharing in a development context, Wilson (2007) had this to say:

...the evolution has been driven by persistent issues concerning capacity and knowledge-in-context and by changing approaches to development practice. ... however... a further epistemological turn is needed that conceives of co-operative learning as ‘learning with’, where difference between actors is conceived as a resource, rather than a problem, for knowledge production (2007, p183).

Wilson’s (2007) argument is that at the heart of the technical assistance is an established technical assistance framework through which developed countries send “technical experts” to host countries. These technical experts are drawn in to bridge the knowledge gap between the sending institution (in developed country) and the host institution (often a developing country). The problem that Wilson highlights, however, is that there is need to have a strong trust between the sources and the recipient and move towards ‘learning with’ instead of considering “learning from” (2007, p.183). The emphasis was that it is not enough to have the “expertise”; the knowledge of the context is perceived as equally important as is the expertise itself and the absence of one of these means the technical expert role become fruitless (Wilson, 2007, p.184). Developing countries host several “technical experts” in different institutions, so they are considered as knowledgeable, but no research has been done as regards to how the “context” of Rwandan and Ugandan organisations is understood by those technical experts, and it is important that this research aligns gatekeeping theory along the context within which gatekeepers in the form of technical experts work. In summary, professionals may trust
each other on the basis of expertise offered to one another, but it is not necessarily the case when the learning culture is open.

Trust is a rule which governs business transactions more than professional rules would do. The difficulty with this is that a different perspective in the mind of the gated—a certain level of openness and welcoming someone new with the company—needs to be there. This study's hypothesis is that where there is openness, trust will be strong and the role of the gatekeeper should be to facilitate the operation of a system where the gated may trust each other. Through this openness, employees and companies will identify each other's weaknesses and strengths, which will lead to mutual support, and lessons can be learnt (Wenger, 1998).

2.3.1. Types of gatekeepers in an organisation

We acknowledge that the gatekeeper theory is a little outdated. It has been over 20 years since any significant investigation into the gatekeeper concept has been conducted. In more recent years, the CoP literature has highlighted the related concepts of central connectors, boundary spanners, and knowledge brokers. However, little discussion exists as to how these concepts relate to or build upon the influential gatekeeper theory (Whelan et al., 2010, p. 490).

The Technological Knowledge Gatekeeper (TKG) concept was pioneered by Allen (1977), who stated there can exist certain key individuals in a high-tech manufacturing and R&D laboratory who are capable of effectively bridging the organisational boundary impedance and who provide the most effective entry point for ideas into the lab. Technological knowledge gatekeepers transmit relevant ideas to expert persons within the organisation as the second step in the process. Those experts may then transmit the ideas to others in the organisation in a multi-step process in which experts are exposed to new external technological ideas via a gatekeeper. Technological gatekeepers frequently provide colleagues with state-of-the-art technical ideas from external sources while occasionally providing colleagues with well-established technical knowledge from sources which are not necessarily external.

Knowledge gatekeepers are the experts who most frequently exchange technical knowledge with other organisational members. The empirical support for the gatekeeper role was obtained by asking technical persons to name colleagues from whom they most
often obtain technical knowledge, and the data analyses were based on an average communication frequency of once or more per week. Therefore, the operational definition of gatekeepers demands that they frequently provide colleagues with knowledge (Allen, 1977, p. 29). It is not necessary or likely that a technical high-tech manufacturing and R&D gatekeeper frequently provides technical-type knowledge to a non-technical person.

It is also unlikely that technical persons would frequently depend on non-specialist technical knowledge from a specific subject field because a non-specialist is less knowledgeable and hence less reliable than the technical knowledge from a specialist in the field. This means that a technological expert can rely on advice from colleagues in the same or comparable expertise area are more so than he would rely on an administrator’s information.

Although Allen (1977) clearly argues that the technological gatekeeper role is an informal one, some of the findings and analyses of Allen and other researchers indicate that it may equally be a formal role. Allen (1977) states that for effective and efficient high-tech manufacturing and R&D work, management must keep their personnel aware of the results of research done elsewhere, and gatekeepers function to help accomplish this goal. If successful experts have an active goal of keeping their experts informed of external research, it is likely that they are aware of and support existing processes which effectively and efficiently help accomplish that goal.

In particular, it seems likely that successful experts are aware of and support technological gatekeepers. This assertion is supported by experts to identify who they thought were gatekeepers, and found that the overlap between management guesses and the data were in the region of 90% (Farris, 1971b).

**Key Men**

There is an evident gap in regards to how the academic research kept pace with the application or use of key people in companies (Farris, 1971a). Whelan et al. (2010) explored how an organisation obtains knowledge from outside through talented connectors. Using Allen’s (1977) definition of the gatekeeper, they extended their study
to the network theory and applied it to a small R&D organisation in Ireland. They found that in organisations, there exist “stars” who exhibit competencies of good communicators with social skills necessary to interact and make social connections from which they can access knowledge (p. 497). This knowledge is further brought into the company and is communicated to internal colleagues. They further recommend that organisations should focus in the few individuals who are key to producing higher-level results than the others:

Underpinned by the principles of talent management, we argue that disproportionate resources should be allocated to the small number of positions which make the biggest difference to strategic success (Whelan et al., 2010, p.497).

The FTSE 100 companies typically invest in their key sales people who have built up extensive networks in the market place or who are rare talents in the business. These companies insure against the potential loss that could result if a key person leaves the company or decides to switch loyalty to a potential competitor. To solve such problems, companies continuously tighten controls through policies (e.g. contractual confidentiality, exit procedures, who talks to who arrangements, and clearly laid out processes). In return, the key person is awarded monetary or status rewards. These roles are established over time; although they are widely recognised within the business practice, there are no academic organisations that have identified a Key Person.

Farris (1971a) asked more than 100 scientists in a division of a NASA laboratory to name colleagues who were most helpful to them in their technical decision-making. More specifically, they were asked to name colleagues who were helpful for (1) providing original ideas, technical knowledge and organisational knowledge, (2) thinking through ideas and critically evaluating ideas, and (3) assuring a fair hearing and providing administration assistance. Each scientist could name as many colleagues as they wished. Three-quarters of those named as helpful held the relatively less technical administrative roles.

Farris (1971b) found that these administrative roles existed mostly along formal organisation lines. Those named for the more technical roles - providing original ideas,
providing technical knowledge, and thinking through ideas - were helpful within the informal organisation. That is, they provided colleagues with useful administrative-type knowledge. Typically they did so as part of their informal position in the organisation while Key Men who provided colleagues with useful technical-type knowledge typically did so within the context of the informal organisation, not as a perceived formal position requirement. As a way to close this discussion, it seems that Key Men exist as part of an informal network of the organisation. They are not organisational appointees, their role is voluntary, and it relies on colleagues’ endorsement.

There are issues that emerge from prevailing studies with regards to the use of key people as a knowledge management strategy.

- Methodologically, researchers such as Nickerson and Zenger (2001), von Zedtwitz (2004), Garvin (2008), Karyeija (2010), Whelan et al. (2010), and Karyeija (2012) extend the knowledge in the field by the use of mixed methods with greater focus on qualitative analysis supported by descriptive statistical data and direct quotes from respondents. They then code, categorise, and detect patterns (Yin, 1994; 2006). In addition Whelan et al. (2010) argued for “in-depth case studies to examine how firms organize their external knowledge search processes” (p. 492).

- Whelan et al (2010) argue that gatekeepers can be CoPs, boundary spanners, or indeed organisations that all exhibit the same characters and functions. There are Key Men in R&D organisations and the “gatekeeping role can be performed by a single individual or by a combination of internal and external communication specialists” (Whelan et al., 2010, p. 499).

While their work was a step forward in understanding the gatekeeper research, there are issues that remain unaddressed, which require further study:

- The authors did not address the issue of attributes that are exhibited by members in the same network. For example, is there a relationship between knowledge (or expertise), the learning culture of the gatekeeper’s or the Star’s host organisation with the way in which people share knowledge? Is trust in the host organisation important? What is the role of this Star person?
• Should trust be an issue, and is there a link between using a knowledge gatekeeper and trust in organisations? and how does culture of the organisation shape the Star’s or key person’s work?

It should be noted that Whelan et al.’s (2010) study was limited to a single organisation. Whelan et al. (2010) recommended that future studies should consider analysing the role of the stars and the gatekeeper within multiple organisations in order to understand these attributes, and how they differ from one company to another and one type of business to another. They did not address the issues of whether the culture has any influence on the way the stars or the gatekeeper work. They had equally expressed concerns that Allen and Cohen’s (1969) and Allen’s (1977) work is outdated and that questions relating to its relevance were not addressed. There is a question as to why no further research has been conducted under the same flagship since Farris (1971) to date, but there are many online blogs which suggest that this role exists in modern business practice.

Knowledge Transactions Officers

Knowledge Transaction Officers are named after the role they hold within the formal organisation. Unlike gatekeepers, technological gatekeepers, and key men, those who are in this position are distinguished by the sum of their responsibilities which constitute a core performance measurement of their work. This role is sometimes referred to as Chief Knowledge Officers or Chief Knowledge Managers: but who are they, and what is their role in a company?

Garvin et al. (2008) surveyed 143 professionals from manufacturing and R&D organisations about the knowledge-source value of each colleague, knowledge-use habits, and personal characteristics. Directors of Knowledge Transactions were defined as having a high knowledge-source value. To determine the knowledge-source value of an individual, a Knowledge Potential index (IP)⁹ was developed which has three knowledge-

⁹ He uses IP as a reference to an intellectual Property of the respondent (what is owned by them as opposed to what their employer may claim rights over). This is by and large respondent’s tacit knowledge.
source dimensions: 1) quality, 2) quantity, and 3) accessibility. Each technical professional was given an IP value based on the number of times he or she was named by each technical professional as one of the top three technical knowledge sources. A median test was used to compare individuals with high and low IP. Directors of Knowledge Transactions are described as being a node in the internal communications network and/or a receiver of external knowledge, highly technically competent and high performers. Garvin et al. (2008) attempt to extend Farris (1971) who views the role as encompassing the entire technical knowledge source roles identified in the literature, and specifically, the Technological Gatekeeper role. There is lack of clarity however as to whether knowledge is perceived as convenient because no specialist is available if, for example, there is low demand for technical knowledge from that particular subject field.

In summary, several researchers support the existence of the gatekeeper role in knowledge-intensive organisations in developing countries. The problem arises because there is currently a lack of evidence beyond the manufacturing and R&D industries which are also predominantly influenced by a different knowledge infrastructure which is unavailable to developing countries. The culture may be different too because evidence is lacking to suggest that gatekeeping research exists within African research beyond those who have made progress in areas of National Innovation Systems (Juma, 2010; Saad and Zawdie, 2008). Where this research has been done, it is argued that gatekeepers are a significant development because they vigorously monitor the external research environment (boundary spanning) and frequently provide their organisational colleagues with new external technical knowledge (knowledge-brokering role). Inside the firm, gatekeepers frequently provide their colleagues with state-of-the-art, specialist, external technical knowledge on a more formal basis, whereas, occasionally, gatekeepers provide their organisational colleagues with well-established, non-specialist internal technical knowledge on a more informal basis.
2.3.2. Knowledge gatekeepers outside firms’ boundaries

**Boundary spanners**

There is a problem when it comes to studying knowledge gatekeepers outside a firm’s boundaries. At the moment, the role is perceived as informal in nature and is associated with economics of knowledge rather than being seen as a management studies concern. For example, the knowledge transfer process is presented as an adaptive process of interactions that “relies partly on spatial proximity to spread and create knowledge” (Rychen and Zimmermann, 2008, p.2). Although it is not supposed that gatekeepers may do well if they are isolated from the rest of the world per se, their work is such that separating them from their outside connections could drain them of their meaning (Morrison, 2008). The role of gatekeepers within wider networks is a key feature of the process of knowledge creation and transfer that opens knowledge renewal and possible recombination. Local arrangements (for example, the introduction of a gatekeeper) within a global network can allow firms to “take advantage of spatial proximity while retaining outside access to a large variety of resources and opportunities” ((Morrison, 2008, p.67).

Another advantage is that knowledge gatekeepers can be very good boundary-spanning mechanisms which are not necessarily subject to strict control and rules that may apply elsewhere if the firm as a whole attempted to access the information from elsewhere. In fact, Scott (2006) points out that in a network economy, there is a fundamental difference between innovation that comes from R&D programmes and innovation that occurs by coincidence. In the first case, it is clear who is participating and what the aim is. The latter may occur when firms engage in mutual discussions and assessment; individuals caught up in this discussion will often arrive at insights that would otherwise have remained hidden from them. Scott (2006) argues that this is where a gatekeeper can be an essential element. As a member of such an informal negotiation, he can create a holistic picture of where innovation is likely to come from. It is therefore much easier to predict the best candidate to conduct such highly socially driven but skillfully approached negotiations.
Gatekeepers can be one of the ways firms may set up temporary places, or “proximity spaces” where people from industries, academia and governments may meet to exchange ideas and challenges, and find agreeable solutions relevant to their knowledge problems and contexts, as well as gaining support in developing business processes, and assistance in setting up systems with the ultimate intention of the locals being able to run these systems independently. In this case, however, locals would still have access to the benefits provided through the network of experts (that is, the gatekeepers). Knowledge gatekeepers therefore play a diffusion role; a linkage role and they are a source of knowledge and specific information to businesses.

**Firms as Knowledge Gatekeepers**

In an attempt to study the role of the gatekeeper in manufacturing firms in the Murge district, Southern Italy, Morrison’s (2004, 2008) studies investigated “to what extent leading firms located within a successful Italian furniture district behave as gatekeepers of knowledge” (Morrison, 2008, p.817). While their empirical analysis was carried out on a small sample of technicians working within firms’ knowledge intensive units, findings can serve as an indication of the role of leading firms in knowledge creation and knowledge-sharing practices within the contexts of industrial districts in Southern Italy. Within this theoretical framework, Morrison (2004) concluded that leading firms cannot necessarily serve as knowledge gatekeepers.

On the one side leaders may behave as district’s screening actors. That is they incorporate within their networks the best providers and subcontractors. A creative-destruction mechanism then favours the survival of the most efficient ones. On the other side they could produce perverse effects. They may strengthen internal asymmetries and in turn exasperate conflicts, in particular between large and medium firms (Morrison, 2004, p.30).

It is therefore believed that in some regions companies may present asymmetric structures that limit the extent to which they can share knowledge outside their boundaries of networks. Firms do use their buying influence to incorporate within their networks the best suppliers and sub-contractors or “portage.” These leading firms can
create and develop destructive mechanisms inhibiting and sometimes preventing knowledge flow to the outside world. Moreover, von Hippel (2005), in *Democratizing Innovation*, has argued that leading firms incorporate subcontractors and create sub-networks of suppliers as well as an end-user-supplier relationship. In doing so, firms are able to collect the information they need from their customers. Firms are, in return, able to develop products that meet customers’ aspirations and standards, and the ownership of the acquired (both old and new) knowledge remains the property of the firm.

In the context of leading firms, Porter (1991) has suggested that firms may prevent their knowledge from freely circulating, particularly if they believe that this is the source of their competitiveness. Moreover, firms may not want to share knowledge because of the costs and risks involved. Pan and Scarborough’s (1998) research has shown that because time is a scarce resource in organisations, extrinsic rewards signal to employees that time spent sharing knowledge is deemed important by the organisation. Indeed practitioners and researchers have identified nontrivial extrinsic rewards for knowledge sharing as an important motivator to knowledge transfer (Davenport and Prusak, 1998; Gupta and Govindarajan, 2000; Knowledge Partnership Management Group [KPMG], 2000), but surprisingly, surveys have found that the majority of organisations’ executives do not believe that their organisations reward or recognise knowledge transfer and knowledge sharing (KPMG, 2000). Moreover there is an almost total lack of hard evidence available to support the claim that large firms cannot be gatekeepers for those new or relatively weak and small firms. Rather, there is evidence which suggests that some large firms may help to train local human capacity, particularly where weak governments are unable to provide the skilled labour needed by firms investing in their countries. In this regard, some large companies engage in supporting local businesses through initiatives, and by investing in research and development activities as well as in training staff (Rychen and Zimmermann, 2008).
### 2.3.3. Summary and the way forward in Gatekeeping Research

To conclude this debate, it appears that knowledge gatekeeping research has evolved over time and several concepts have been used differently by different scholars to mean relatively the same thing (with limited differences that emerge in some areas) as per the table below:

<table>
<thead>
<tr>
<th>Concept name</th>
<th>Also known as</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technological Knowledge Gatekeeper</strong> <em>(Allen and Cohen 1969, Allen, 1977)</em></td>
<td>Star Person (Whelan et al., 2010), Knowledge Gatekeeper (Allen, 1977)</td>
<td>Operate within an informal organisation. They tend to bring in innovative ideas but do not necessarily send out the same.</td>
</tr>
<tr>
<td><strong>Key Man</strong> <em>(Farris, 1971a)</em></td>
<td>Key Person (Harorimana, 2012)</td>
<td>Operate within an Informal Organisation; mentor those with less experience. Their absence can mean organisations losing significant revenue. Some organisations may purchase risk insurance to protect the potential loss should the Key Man die or switch allegiance. Subjected to controls, restrictions and high-level confidentiality clauses.</td>
</tr>
<tr>
<td><strong>Chief Knowledge Officer</strong></td>
<td>Chief Knowledge Manager, Chief Knowledge Transactions Officer, Director of Knowledge</td>
<td>Part of the formal organisation. Are appointed by the organisation management and perform specified duties for which they report on</td>
</tr>
</tbody>
</table>
Transactions performance.

**Boundary Spanner**
(Sverisson, 2001)

Ambassador, Flag Bearer, Advocate (Cranefield and Yoong, 2007), knowledge seekers/knowledge senders (Herzog, 1981; Ali et al., 2002; Sonnenwald, 1995)

Part of the informal organisation. Bring in and take out knowledge within the wider knowledge environmental. Can link with external market, but equally take out as and when needed (give and take relationship).

**Knowledge brokers**
(Sverisson, 2001)

Knowledge intermediaries (Max Lock Smith Centre, 2000; Howells, 2002, Sonnewald, 1996)

They act in the form of consulting roles where services are provided as part of a brokerage deal.

| Table 3: Different Types of Gatekeepers in Organisations |

Clear messages emerging as the discussion moves forward are that:

1) The gatekeeping function is performed by individuals and is not a collective role as yet.

2) The primary role is to link the organisation with its external environment.

3) They all collect information, they vet it, and they share with colleagues or junior employees in their network who need the information. Gatekeepers do not distribute or share knowledge with everyone in an organisation; they are selective as to whom they share knowledge with.

4) There are over 20 concepts that are used within management, technology, and innovation research as well as the management information systems that do not seem to present any major shift from this basic definition given above. This thesis views this as because all the studies have built upon or used Allen’s (1977) thesis as a start line; they focused on internal processes of communication instead of focusing on the understanding of the case in context.
5) They are all overly reliant on the quantitative method, with all the weaknesses it entails, that is good on testing established truths and weak on unearthing differences that may emerge in a situation (Yin, 2006; 2009).

6) These concepts are developed from one perspective—R&D organisations. This makes it difficult to establish whether knowledge developed in this area can be generalised to other industries.

While they focused on analysing the social network of the gatekeeper with a view to obtaining information as to whom they talk to, none of these studies attempted to study key issues that shape the social network and knowledge sharing and transfer theory (see Szulanski [2000] on knowledge stickiness for example). Issues such as Trust (Kanchana et al., 2010) and Identity (Wenger, 1998) dominate the knowledge-sharing culture that prevails in an organisation because how open or closed people are to each other may depend on the extent to which they trust each other (Cumming and Teng, 2003); it may also depend on how the management of a company supports social events (Wenger, 1988). These factors are very important in order to distinguish the context and therefore inform choices as to which type of gatekeeping is appropriate, e.g. a formal role or informal role of gatekeepers. Future research should therefore seek to move beyond what gatekeepers do and how they do it to include factors and attributes that influence gatekeepers’ choices. This is an area in which knowledge is critically lacking.
2.4. Factors and Attributes that Shape Gatekeeping

2.4.1. Trust

The issue of trust in an organisation has been studied before. From the earlier argument, it follows that a gatekeeper is required to link the source of information and the recipient of it (or those who may require it). This need is guided by the need to contextualise the tasks and the routine and align these to the needs of the requiring party (Argote and Ingram, 2000; Cumming and Teng, 2003). This need has raised issues associated with trust and how it may lead to organisational acceptance, improved performance, and innovation. Kanchana et al. (2011) studied the “interrelationships among knowledge management, organisational learning and innovation” (p. 145). Using empirical evidence obtained from 35 Thai manufacturing companies, they demonstrate that “effective knowledge management will lead to better learning and subsequently more innovativeness in an organization” (p. 155). Elsewhere the argument goes that trust and the desire for innovation are among the primary factors that influence the decision to engage with one another (Krot and Lewicka, 2011), and improve organisational performance (Pastuszak et al., 2012). As such, it is trust that determines to which degree the relationship between two parties who want to work together can be established (Argote and Ingram, 2000). In a recent empirical study, Czop and Leszczynska (2011) demonstrated that in manufacturing industries, organisational culture is very important, especially for a company with a desire to increase its level of innovativeness.

In the industry such as manufacturing where the potential exists to achieve exponential growth in innovation and the demand for better decision making, ‘trust’ has never been as important as it is in this climate of industry stress hence linking trust, innovation and learning need to be studied. How this happens in practice is where we lack studies and there is only very limited evidence. In this regard, it follows that

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This section of the thesis was discussed at length in the published outputs of this thesis especially in Harorimana, D. 2010. Preface in Cultural Implications of Knowledge Sharing, Management and Transfer: Identifying Competitive Advantage, IGI Global. Hershey, New York (pages xx-xxxi).
gatekeepers were seen as essential in brokering relationships and building trust. Allen (1977) found that knowledge gatekeepers tend to be line managers, while Krot and Lewicka (2011) observed that knowledge transfer and innovations are mostly affected by trust in supervisors.

In 2002, the IBM Institute for Knowledge Based Organizations (IKO) released an article entitled *The role of trust in knowledge sharing*. The article explored the boundaries of trust and knowledge sharing; it argues that the nature of knowledge sought affects the trust in knowledge sharing. For example, it states that in cases where knowledge required is experiential or tacit, competence-based trust is greater in the provider of that knowledge. Hence, the hypothesis of this study is that the gatekeeper is the link person whose role is to build trust between the source and recipient with a view to providing information and knowledge to more likely recipients, henceforth called “the gated” Karine (2008, p.1493).

### 2.4.2. Culture

There is no agreement on what actually culture is among scholars. In organisation studies, the definitions that are more often than not followed are that of Weik (1985), who suggested that “culture consists of a person’s theory of what his fellows know, believe, and mean, a theory of what code they are following. It is this theory to which the actor refers when interpreting the unfamiliar and creating sensible events” (Weick 1985, p.382). In this thesis the term culture is used in the way Schein (1990) defined it - as

a) a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is to be taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems” (p.11).

In addition to this, the thesis adopts Wilkins and Dyer (1988) definition that culture "is [composed] of the values, competencies, and beliefs of a group of people that strongly influence whether and how organizational strategies are implemented” (p. 522). This
thesis is therefore context-specific, dependent on and unique to a given organisation and/or a group of people that are studied.

The studies conducted on the relationship between KT and culture show that knowledge “itself and consequently the use of it are deeply embedded in cultural” routines and customary practices of communities (Heinz, 2009). In this regard, the notion of “cultural distance” explains the obstacles that may accrue to organisational performance. Cultural distance can be associated with all those interpersonal relationships that create communication barriers between the organisation and individuals. This research extends this definition, however, to define cultural differences as a set of differences that emerge between two distinctive parties - institutions and people who may have shared interests to accomplish a certain goal but disagree on the ways to actually execute it.

On the relevance of culture to knowledge and efficiency in organisational matters, De Long and Fahey (2000) have this to say:

Cultures heavily influence what is perceived as useful, important, or valid knowledge in an organization. Culture shapes what a group defines as relevant knowledge and this will directly affect which knowledge a unit should focus on (p. 113).

It should be argued that trade on the global scale compels organisations to engage with people from different cultures and geographical locations (Williams et al., 1998). According to Simonin (1999) this factor should be considered while transferring knowledge. Despite the fact that the research on KT has intensified in recent years, many studies on KM tend to overlook cultural issues when it comes to the practical implementation of KT (Argote and Ingram, 2000; Cumming and Teng, 2003; Kogut and Zander, 1995; Simonin, 1999; Szulanski, 2000). While all these studies identify “cultural distance” as a felt constraint of KT, they nevertheless fail to specify whether “cultural distance” applies to organisational units or to individuals within those organisations. Associated with this is the human identity.

According to Wenger (1998), learning is central to human identity. His work focuses “on learning as social participation where the individual is an active participant in
the practices of social communities” (CoPs) (p.48), and hence constructs a personal identity through these communities. The concept of the CoP developed from the understanding that a group of individuals participating in communal activity continuously experience a shared identity through engaging in and contributing to the practices of their communities. For Wenger, organisational learning is best achieved if the realities of CoPs are recognised. For organisations, learning sustains the interconnectedness of CoPs through which an organisation discovers itself and becomes more effective.

2.4.3. The type of knowledge being shared

Several studies (Chartrand, 2002; Lundvall and Johnson, 1994) described the ‘know-why’ as that knowledge which is associated with scientific theories of the principles and laws of nature. This is the kind of knowledge that underpins the advancement of the technological development of products and processes in most industries. The production and reproduction of ‘know-why’ (Chartrand, 2002, p. 12) is often organised in specialised organisations, such as research laboratories and universities. To gain access to this kind of knowledge, firms have to interact with those organisations that own this knowledge; using any possible mechanism which is available to them. There are different ways an organisation accesses this type of knowledge including engaging in direct contact, and joint activities, such as recruiting experience experts, or opening virtual platforms where knowledge-sharing activities are conducted. With regards to ‘know-how’, this refers to the ability to execute a task. Argote and Ingram (2000) argued that task performance requires insight and personal judgment that can be described and understood. An example of this ‘know-how’ can be how to conduct a training needs analysis. ‘Know-how’ (Chartrand, 2002) is typically a kind of knowledge developed and kept within the boundaries of an individual’s experiences, intuitions, and feelings, and involves trust and confidence when imparting it from one person to another.
2.4.4. Systems and technologies

Finally, the presence of technology does not necessarily mean better knowledge management, just as the absence of it may should not mean that knowledge management cannot be accomplished using different means and processes - because after all, while knowledge management can be about processes and technologies, it is the inputs and the minds that work on those processes that matter most - whether electronically or manually. This thesis argues that the barriers such as those discussed herein shape the kind of knowledge management strategy that is adopted by a given organisation. The argument presented is that the absence of technologies means that knowledge management tasks need to be performed differently, using resources available and within the context imposed by the constraints as well as the priorities of the organisation. Gatekeeping functions can be performed differently, and some may be more costly than the others. The best option for those organisations that lack resources and capacity should be the least costly, but which can still be executed and which achieves the desired impact. To sum up this thematic area on IK and its transfer, it is important to take into account the epistemological foundations of knowledge. Poor understanding of IK’s epistemological foundations could pose real problems in the sense that it gives ‘knowledge’ a narrow perspective, leading to the conception of IK as traditional, backward, unscientific and therefore inferior. Other problems associated with understanding IK arise from the difficulty of defining its nature and scope. The key message supported in this section is that in order to solve problems faced by developing countries, IK should be treated fairly, in appreciation that successful knowledge transfer depends much on openness of recipient, their prior knowledge and absorptive capacity .

Finally, the thesis here is that in developing economies such as Rwanda and Uganda where the knowledge intensive sector’s access to advanced technologies are at a low level, an understanding of IK could play a critical role in fast-tracking development on the basis of a knowledge-based economy in developing countries such as Rwanda and Uganda. Accordingly, in order to attain and maximise the benefits of economic growth through IK and its transfer, a gatekeeper can act as an important link to facilitate IK
management as he plays the role of broker and helps to build trust and social relationships between two knowledge systems that were distant - the indigenous and modern systems through which learning, knowledge sharing and transfer takes place.

2.5. Conclusion

This section of the literature survey evaluates several ways in which knowledge is obtained, shared, and transferred around organisations. Among many models reviewed, the gatekeeping strategy appears to be more relevant to developing countries like Rwanda and Uganda than the other models, primarily due to its flexibility which allows combining an exploitation of the organisation’s formal units and knowledge that reside within its informal network. The use of gatekeeping is perceived to be relatively easy because, depending on context, an organisation may choose to take a formal or an informal approach, yet still achieve the same goals irrespective of whether they promote the formal gatekeeping or informal roles. This literature survey reveals knowledge gaps. Whichever way the organisation chooses, there are factors that shape gatekeepers’ work —trust, context, culture and identity - and the relationship between the knowledge source and recipients may shape people’s and organisation’s choices as to where they will go for information, and whom they speak to. No research exists with regards to understanding whether there is a relationship between trust, the learning culture, and the use of gatekeepers’ organisations. It is proposed that an organisation may use gatekeepers in different ways to build trust, but there is currently a lack of knowledge on how trust may influence the gatekeepers.

Other researchers preferred to focus on the way trust is built and nurtured through communities of practice, and still others argued that formal and informal social events play significant roles in facilitating knowledge sharing and trust building. There is a lack of knowledge, however, in regards to whether people have opportunities to socialise and if employees will develop trust with each other; there are in fact gaps in the research showing:
The relationship between Communities of Practice and trust in an organisation;

Whether team working would necessarily mean that people would trust each other;

If there is a link between being a member of the same community of practice and trusting each other.

The literature also shows that factors such as the relational context, trust, and nature of tasks are better developed through social events, which allow opportunities for social interaction. The problem with this is that those perceived as highly technical tend to work informally with those they know within the confines of the profession or the community of practice, and as a result organisations may organise social events as a way to promote a certain level of informal structure which gives opportunities for different people to share their expertise areas and experiences. This will, hopefully, one day be helpful to the organisation through the ‘who-knows-who’ approach. That said, there is a need to find out if this is indeed true, even when industry profile and location changes. The research question continues therefore as: “What is the relationship between trust and organization knowledge sharing through knowledge gatekeepers in Rwanda and Ugandan knowledge-intensive organisations?” This concept, the “knowledge intensive organisation”, refers to a company where most work is performed by educated personnel, and where professional knowledge is more vital to the firm’s survival than the other resources are. Examples given include accountancy and financial management firms, engineering firms, consultancy, R&D, high-tech companies and many more (Swart and Kinnie, 2003). In this thesis the concept ‘knowledge-intensive organisation’ is used to refer to which category is targeted - manufacturing, R&D and financial firms. More specifically, the target respondents are those fitting the definition of being knowledge workers (Drucker, 1966, p.3).
CHAPTER 3: THE KNOWLEDGE ENVIRONMENT IN RWANDA AND UGANDA

3.0. Overview

This chapter introduces and analyses key features of the knowledge environment in Rwanda and Uganda and provides the context for the empirical research of the thesis. Knowledge creation and transfer in Rwanda and Uganda has been constrained by the predominantly traditional socio-economic culture in these countries that were inherited from the colonial era, and both countries continued to run hybrid systems of modern and traditional organisation, to date. The main issues faced by both countries is particularly externally driven policies and reform programmes that did not give due recognition to indigenous knowledge. The chapter discusses the industry-government-universities relationship in a triple helix innovation system and highlights the role played by research institutes to show that, despite challenges encountered, there is an improvement in the knowledge environment system. At present, NGOs continue to act as knowledge brokers to government and the private sector, and the role of higher-learning institutions is still fuzzy. Among issues of importance, the governance and policy environment underpinning activities in knowledge transfer and knowledge sharing were dominated by external influence with limited local ownership on decisions. Leadership, power distance and individualism influence decision making in the knowledge environment in Rwanda and Uganda. The chapter observes that in both countries, reforms to become market-driven economies are coordinated under visions to become knowledge driven economies. Triple helix innovation systems are taking shape and there is a cautious optimism over strategic leadership, and that improved cultural orientation may enhance the state of organisational knowledge, organisational learning and relationship balancing in response to feedback on the effectiveness and usefulness of the organisational outputs.
3.1. A difficult start for African Universities, characterised by external forces, weak local orientation and ownership of policy choices

African countries are latecomers to the knowledge-based economy (Konde, 2009; Mwitondi, 2010; World Bank, 2009) and there is evidence of a long history of neglect by former colonial masters. Further, many Universities were set up by and with programmes that are ill-suited to adapt to indigenous knowledge systems which were the most widely accepted form of knowledge. The pre-colonial era dotted African Countries with very few elite graduates where, for example

Zaire…reached independence without a single national engineer, lawyer, or doctor.’ With all its copper wealth, Zambia had only a hundred university graduates and a thousand secondary school graduates. In 1961, the University of East Africa (serving Kenya, Tanzania, and Uganda) turned out a total of only 99 graduates for a combined population area of 23 million (World Bank, 1991,p.10).

Rwanda’s sole University had only a handful (1200) of graduates between 1963 and 1994; yet these graduates were to serve a population of seven millions. The political instabilities in Uganda under the dictatorship of Milton Obote in the 1980s and before, and the Rwandan ethnic conflicts between 1959 and 1994 had many educated elite killed, while others were forced to free from political tensions which, as in many developing countries, tended to target the educated elite. Evidence also shows that the Rwandan and Uganda capital flight can only exemplify the trend that exists across the African continent: “the continuous outflow of skilled personnel contributes to a widening gap in science and technology between Africa and other continents. Africa’s share of global scientific output has fallen from 0.5 in the mid-1980s to 0.3% in the mid-1990s” (Woldetensae, 2007, p. 3).
3.2. Cultures and global issues driving policies on local knowledge environment

Up until now (though there is evidence of a changing trend), many developing countries in Africa lack the vision and leadership necessary to drive their agendas; including quality research and teaching, which corresponds and is tailored to local systems and needs. To this is added an absence of meaningful private sector leadership roles in the national economy. Capitalising on the weak leadership and absence of owned vision for education, research, and the almost absent market-oriented policies, former colonial powers and their own multi-lateral agencies such as the World Bank and IMF dictated which political course to take in the areas of education and governance. They practically used resources to control and direct policy choices (Sawyer, 2004). The following is an illustration of this:

In low- and middle-income countries the rates of return to investments in basic (primary and lower secondary) education are generally greater than those to higher education. Therefore basic education should usually be the priority for public spending on education in those countries that have yet to achieve near universal enrolment in basic education (World Bank 1995, p. 56).

This statement echoes an earlier argument by Psacharopoulos (1981), who posed the argument that there are more benefits in investing in primary and secondary education because there were better economic returns than the investment made towards delivery of quality higher education. His research was widely followed by the World Bank and IMF, and then by major financers to social programmes in post-independency States. High Education financing by Multi-lateral Agencies declined sharply from 14.5% to 7.8% of the Bank’s lending to Higher Education provision, (Ilon, 2004). At the same time that the Multi-lateral Agencies were arguing for reduced financing, they were also insisting on democratic governance, requesting structural reforms, and more importantly, promoting access. Although these were important choices to be made for the good of the developing nations, financing was, and remains, an issue. Many developing countries liberalised education provision but they also took large debts to finance and expand higher education.
access and improve quality. During this period, the public debt rose from a collective USD6 billion to USD170 billion (Atuahene, 2012, p. 5; Ilon, 2004; World Bank, 1999). Countries’ knowledge environments are discussed herein.

As a result of great state involvement in African universities, academic freedom has curtailed which has affected curriculum development and deterred private involvement especially in public universities (Atuahene, 2012, p. 9)

Since the independence of both countries (Rwanda, 1962 and Uganda 1963), the business of education remained firmly in the hands of the Government of the day. Due to weak private-sector involvement in education, and the weak capacity of many institutions to engage in meaningful and large commercial research activities that can generate significant revenues for institutions, the majority of universities are funded or subsidised by the State. In other cases, Universities are heavily funded by development partners and non-governmental organisations through grants and loans that are acquired by the State; for example, funds from the World Bank, and the World Bank arm in charge of Private Sector Development, the International Monetary Fund, the United Nations Development Programme (UNDP), the African Development Bank (AfDB), the European Union (EU) and Bi-lateral agencies such as the DFID. The United Kingdom Department for International Development is the largest education support provider in Rwanda and it has supported the first ever Knowledge Transfer Partnership (KTP) programmes in Rwanda (2009) and Uganda (2008) in an attempt to bring together Universities, Government and Industry leaders and forge a triple helix system. These interventions led to Rwanda’s first ever policy on the Triple Helix Rwanda KTP Policy, under which programmes are funded by the African Development Bank (AfDB). The major issues developing countries face is the extent to which funding is provided and limited human capacity (World Bank, 2011, p. 8). The NUR (2009) states

When the National University of Rwanda (NUR) was reopened in 1995, the research part was characterised by poor rate of lecturers holding a Doctorate degree (PhD), most qualified lecturers were overburdened with teaching, lack of coordination of research structures, lack of incentives and literature for both teaching and research and inadequacy between research objectives and funding” p.7.
As an illustration, the source of funding year-on-year in Rwanda’s largest and public University (2007-2009) shows the following:

![Bar chart showing sources of funding](chart.png)

**Figure 11 Sources of Funding to the National University of Rwanda (Source: NUR Annual report (2009, p. 2))**

The above figure shows that between 2007 and 2009 alone, Government’s institutional funding was between 79% and 64% of the total institutional budget. The second highest funding source was development partner finance (representing 21% in 2007, and 36% in 2008). There was no internal revenue arising from research and consultancy of any form prior and including the year 2007. This was because the Government policy forbade all public Universities and colleges from engaging in Business including paid consultancies. The trend has changed now and the new reviewed 2008 policy on Higher Education encourages Universities to conduct paid consultancies, work with the private sector and the government. According to the same policy however, a publicly funded University must accept that the Chancellor is the Minister of Education. The question therefore is this, can there be a balance of power required in a partnership where the funding authority is at the same time the appointing and the final decision maker of another partner as this is required within a partnership arrangement? Within this context, there is
clearly a need to find a strategy through which limited resources can be used better, lead to innovation and sustainable efficiencies in the knowledge environment system.

Despite progress towards reforming the education systems in Uganda and Rwanda, there are still critical areas that shape the national knowledge environment that are fundamentally untouched upon and remain firmly in the hands of the state control in both countries. Under the Rwanda Education Policy (2005, and 2008) and in Uganda, under “The Universities and Tertiary Institutions Act, Act 6 of 2001”, Part VIII Section 31) states that: “The Vice-Chancellor shall be appointed by the Chancellor on the recommendation of the University Council from among three candidates recommended by the Senate”. But the Chancellor here, as the law requires, is an appointee of the President of the Republic of Uganda. The following is an extract from a recent speech by the Vice Chancellor of Makerere University “We are grateful to H.E the President of the Republic of Uganda for having appointed Professor Kagonyera Chancellor of Makerere University for another term after Makerere University Council unanimously recommended him for re-appointment”11 . This is where the major issues of University governance become an important area of debate when attempts are made to analyse the knowledge environment not just in Rwanda and Uganda but in developing countries in general. Taken as it is today, and in Ugandan society where power distance is very strong (Twinoburyo, 2012, p. 2), the President is an unquestionable authority. This means that it is even unlikely that, in such a society, should institutional structures such as the University Council decide otherwise, they can disobey a presidential order. Below is how cultural dimensions (Hosfted, 2001)12 were described by a Ugandan scholar:

Power Distance Index is perhaps the most crucial for Ugandans. … Ugandans, either out of colonialism or circumstances, have a strong belief in hierarchy. When one meets a Ugandan, they will usually ask where one works or what university degree they possess. Ugandans will address themselves as Engineer XX, Director XY, Architect XZ, Afande PQ e.t.c. …Many Ugandans look up to the president unquestioningly and he will equally back down orders, in return.

nobody in the NRM can question why the chairman’s position has never been contested. It is a given that only him must occupy it until he decides to give it to somebody else. The president, at a whim, summons anybody to wherever he is, and he can do as he pleases with any institution of the state. Why? Because he has authority and people have given him that space” (Twinoburyo, 2012, p. 3).

The above extract is taken from an analyst based in Uganda. Moreover, the author has no doubt that this is indeed the case and resonates well in Rwanda. Although it can be difficult to state categorically that government involvements in a higher authority appointment is necessarily a bad thing, a check on those who hold senior positions in almost every developing country can be linked to political royalties, family ties and at times, regional and ethic affiliations. The informal nature that governs this practice lies within the five cultural dimensions. University appointment aspects of national life are closely attached to the cultural dimension discussed above, but equally, trust and power appears to be enshrined in almost every aspect of institutional life whether-public-private, or Civil Society. It is not uncommon to see that appointments for academic and leadership posts are more politically motivated than they are technically based, and this may partially explain why, in many weak economies, the knowledge institutions remains firmly in the hands of the State control and, the private sector role remain very basic. This is typical in countries where Governance, security and economic performance are still fragile. In higher hierarchical societies such as Rwanda and Uganda, saying “yes” does not necessarily translate into commitment or indeed into an outright agreement. It is locally known as “saving one’s own face”, thereby meaning that saying yes does not mean they are necessarily convinced nor are they obliged to be committed. Of particular interest, and unlike many advanced countries where one’s promise has to be honoured, East African communities have a short-term orientation because authorities tend to agree with whatever instructions they receive from their superior and they may do so either to maintain and save their own position or exert their influence; and rarely do leaders and academics from those regions accept and offer public apology or indeed resign from a

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13 At present, there is not good evidence upon which a definitive position can be established in both countries beyond the public administration aspects. None-the-less, there is a widespread belief that cultural dimensions tend to be relatively the same across East African countries (Hofsted, 2001).
position. In other aspects, it is a cultural way of life to offer reciprocity (material or in royalties), and gifts are often exchanged in both public and private life spheres, especially between the public officials and subjects. This being an acceptable norm alone demonstrates how important cultural differences emerge - can it be acceptable for a public officer to accept gifts from a junior or a comparable authority without raising the question of “conflict of interest”? Is it acceptable that states interfere with University academic life without attracting public resistance?

3.2.1. Cultural influence on Leadership, decision and learning
Karyeija (2010) argues that there is no such a thing as an “African culture, but there is a Ugandan way of doing things that is considered as acceptable” (p.142) which shapes what individuals and organisations consider to be important and valuable. In a recent thesis on Uganda, culture and how it shapes employee performance management, Karyeija asked whether culture matters. He concluded that the culture of “who knows who” and “who relates to who” is a predominant culture in the day-to-day activities of organisations in Uganda and it has a bearing on who one trusts or does not trust (Karyeija, 2010, p.162). Karyeija’s thesis shows that there is a tendency in companies to respect and hence trust a son of a higher authority or an elderly person. He refers to the saying which says “the older one is the wiser” (p. 136) to support what was found in the neighbouring Country of Rwanda, Tanzania, where Hofsted and Hofsted (2005, p.54) found that power distance and uncertainty avoidance were common features of the Tanzania society. Similarly Karyeija (2012) found that Ugandan culture tends to respect the older people and consider them wiser than the young people, implying that although young people may well be educated and better trained, the society’s culture would require them to submit to the status of power of the elders; but the elders do not equally have to submit to those who are younger than them. He goes on to demonstrate the impact this culture has on administrative practices and decision making where he shows that trust is equally attached to age and social relationships with high ranking managers.
Karyeija’s (2010, 2012) findings extend Haghirian’s (2007) point where he argued that organisations “are located in countries with differing cultural backgrounds; therefore a business relationship is influenced by the cultural background of the organisation. This is also the case for knowledge transfer issues” (p. 8). According to Simonin (1999), the central aspect that facilitates transfer of knowledge is the cultural and social background of the persons transferring and/or receiving knowledge. Knowledge itself, and consequently the use of knowledge, are deeply embedded in its cultural context. Karyeija (2010) observed that Uganda’s organisations may be unable to see beyond their routines and customary practices despite the fact that leaders should not be working against conventionally accepted principles of leadership neutrality.

The organisation culture of Uganda seems to be a top-down approach, and this has a bearing on what institutions can achieve. The level of openness and trust, and the context they are operating in have been mooted as a cause for concern because: (1) it allows managers to tolerate poor performance of employees, (2) those who denounce the practice may face retribution from managers, and as a result (3) it encourages a culture of bending evidences to suit the manager’s decisions in nepotism. Empirical evidence presented in the thesis shows that trust is associated with kinship and social connections, and that education, background, language, and ethnic belonging have no bearing on who one vests his trust in. He argues that the dominant factor in who Ugandans trust is inclined more towards who has proven to be loyal to another and as a result, the culture of “loyalty” and submission is prevalent among employees. In one aspect, Karyeija (2010, 2012) shows that where one is not connected or has been perceived as resistant to the manager (and therefore not submissive), a first attempt is organised to win him over by using a middle man whom the manager trusts with a message. This message has however been interpreted in two ways. First, the messenger will be asked to share the view that the recipient should submit to the authority, and that he will benefit from the connections in different ways. Second, if the messenger sees that submission is unlikely, a threat of retribution may be used. A difficult question that arises from this can be that we really do not know what the initial message was, or if the manager or another influential
person will want to coerce employees into submission without internal controls (i.e. harassment at work, human resources procedures, internal regulations, etc.) being applied and followed to protect the employee. Nonetheless, there is a lesson here which is useful for this thesis—that a third party is required to broker a relationship and build trust between two parties whose message is not passing through “someone who can lend the air” (Karyeija, 2010, p. 148). The role of the third person is to facilitate the brokering of a relationship, and an initial contact is often organised by a confident.

With regards to the leadership structure as related to communication and knowledge, Karyeija’s (2010) research shows 61% of the interviewees (of 142 in total) “expect to be told what to do and that a boss takes care of his subordinates as if they were his own children” (p. 153), and this is emphasised in the analysis where, using interviews and questionnaire results, he concluded that:

Communication usually flows downwards through the hierarchy – the boss just passes on information and decisions to juniors, or upwards, where the junior makes proposals for decisions through the same chain of command. However, most juniors will not offer unsolicited contributions because they consider it better to be instructed (p.154).

The above discussions can be summed up this way: in a knowledge environment with strong power distance, leaders may make decisions that shape the way people go about their business, and the way they think and perceive things, but more importantly, their commitment is based on individual loyalty with short-term perspectives. In such organisation, knowledge management maybe stifled due to lack institutional systems that are built around individuals. Our thesis in this regards is that, in such organisations, there may be weak systems learning, the double loupe and triple loop learning becomes weak and everything is focussed on single loop learning or the individual technical problems,, Argyris & Schön (1978) instead of capturing lessons and analyse the wider-systemic failures (including lack of trust between employees) that formal organisations cannot address. The question here whether problems are considered holistically, identifying areas of systems and communication breakdown due to for example, and rejection due to
political influence, cultural differences, and communication breakdown (Kim 1993). This is the double loop learning moving towards the triple loop learning.

3.2.2. The Academic Freedoms and Governance
The argument can be made that the desire by the State to be in direct control is a significant indication of power-play within areas that should be focussed on research and education, and on enlightening everyone, whether in agreement with the State or not. One may argue that it exemplifies the absence of trust by the State in the education system to manage its affairs. This assumption carries significant public recognition to those who are familiar with African politics especially in the countries under target. In Rwanda, it was the educated that took the lead in using their ethnic card and helped the government to plan and execute genocide. Ironically, it is the elites who were political targets and many of them were killed; others are serving prison sentences for crimes against humanity they committed in Rwanda.

In Uganda, the liberation struggle was fought within the intellectual circles in Makerere as it was on the frontline. Makerere University was brought to its knees by political demonstration where students had joined those rising up against the dictatorship rule of Obote. The question of royalty and shared belief shapes decisions on different matters of research opinions relating to the strength of the institutions, systems and cultural belief that are influenced by a power distance (Ball, 1990). It is not unheard for political arguments to be used to challenge academic evidence in these countries - often referring to the fact that the source of knowledge “who said it” can be more important than the “what did he say?” This version has often held true in social research, which may contradict the government’s version of events of the day; but it has also been used by Western Science to oppress and neglect the vast body of research evidence that emerges from those countries, particularly where they contradict established western versions of events, such as those surrounding IK (Briggs, 2005; Heinz, 2009; Wilson, 2007).

In the process, there arise challenges to truly understanding the extent to which modern systems have succeeded or failed - academic freedoms, academic judgements which are taken for granted in developed countries cannot be considered in same light in
these two countries. It can be summed up this way- Universities in these countries may exist to advance science beneficial to their populace, but more importantly, they are there to serve the purpose of the government of the day or, alternatively to follow the donor-financing requirements with all the risks and short-term sightedness this may entail, (Brock-Utne, 2003). What this led to is failed University formal institutional structures. Universities need to rise to the occasion and transcend powers of influences which come with financing or indeed political influence that the states retain.

3.3. Towards a Triple Helix Innovation System

Generally speaking, developing countries have an overreliance on Government funding (Teferra and Altbach, 2003). The role of the State in many (particularly) single party\textsuperscript{14} or military dictatorship states was evidenced by the Appointment of Ministers of Education, Prime Ministers and Presidents as Chancellors of Academic and Research institutions (Atuhane, 2012). To date, however, there are only slow moves towards governments stepping back from direct control of University decisions and having promoted governance structures that make operational and strategic choices. Some level of autonomy is granted to Universities’ administration to make final decisions on which programmes to offer or not to offer depending on market demands. Other areas have seen spectacular progress. The opening of the University funding system where, beyond religious groups who were allowed to start and run tertiary teaching and research institutions well before the African independency year of the early 1960s, the private sector can, at present, invest in education sector due to market oriented policies that countries are promoting (World Bank, 2008).

The promotion of market-oriented policies is seen as a step towards promoting a triple helix innovation system where, the government works closely with the private sector, Universities, research institutes and colleges of learning in several ways, aimed at improving the quality of graduates, encouraging industry participation in course design

\textsuperscript{14} For clarity, this is concept of a Single party State is used herein to refer to a Country where the Government elected or not elected, a Single Party claims electoral result of 75% and above of the National Votes and there is no single party in opposition able to gather at least 10% of the Vote.
and promoting knowledge transfer to industries (Atuhane, 2012; Saad et al., 2008). For example, Rwanda has adopted a 2010-2013 Knowledge Transfer Partnership Strategy (RDB, 2010), Rwanda National University has 21 active Knowledge Transfer Partnerships (NUR, 2012), The Institute of Agricultural Science (Research Institute based in Rwanda) “ISAR” has over a dozen, Uganda’s Science-based Researching University Makerere has listed over 80 active knowledge transfer partnerships (Makerere University, 2011), and The Uganda Institute of Industrial Research (UIRI) has registered over 20.

3.3.1. The triple helix system in developing countries: challenges and opportunities

There are three players in the knowledge environment in Rwanda and Uganda: The industry, the academic (the knowledge-base) and the government. This tri-partite relationship is known as the helix system (Loeydof, 2000).

Triple helix innovation is a process by which academia, government, and industry collaborate (i.e., engage in a process of mutually beneficial leveraging of resources) to create or discover new knowledge, technology, or products and services that are transmitted to intended final users in fulfilment of a social need. Final users then consume the knowledge, technology, or products and services or they use them to produce new goods and services that are ultimately sold or consumed. In addition, serendipitous benefits of the new knowledge, technology, or products and services accrue to unintended final users (Institute for Triple Helix Innovation, 2012).

Existing evidence points out that the triple helix system works well where each helix commits to the purpose of the relationship and the quality of interaction is properly defined (Shinn, 2002). Evidence from those who researched the triple helix system and the knowledge environment in East Africa including Uganda and Rwanda have discussed in greater details the weaknesses that are prevailing within the triple helix system. They are cited as

- Weak institutional coordination,
- Governance systems that are very weak, where changes are essentially driven by a small number of individuals while others are followers (individual drivers),
- Knowledge institutions which are heavily dependent on external aid for both education and R&D activities,
- A very small share of spending on R&Ds and learning,

15Internal communications from listed institutions.
• Weak private sector involvement in R&D and programmes design for Universities and colleges,
• The high level of brain flights: here the best qualified leave for better paid jobs in developed countries,
• The paradox of education - there are many “graduates” without who are unemployed primarily due to the system failure to provide entrepreneurship education or prepare them for the world of work, and
• Discriminatory evidence by over-emphasis (political interest), ethnically defined and in some cases, religiously driven policies, private sector support and many others.

The lists of problems identified in the triple helix system represent a wider problem that the knowledge environment of the sub-Saharan Africa faces. Within the triple helix system, the term ‘industry leaders’ used within the local context of Uganda means ‘enlightened people’ within the industry sectors. In Rwanda they are referred to as ‘experienced’ and considered as senior people within their industry sector. In the usual way, this concept maybe used to mean those people who distinguished themselves by the positions they hold (technical performers), the level of education (Masters and above), others hold extensive experience such as an Undergraduate Degree with more than 25 years of experience within the relevant industry and are connected with the external world more than an average employee as evidenced by searching for and access to industry-leading knowledge, writing and publishing as well as transmitting knowledge to those who are considered less knowledgeable. The most noticeable role played by these people within the triple helix system is the relationship and knowledge brokerage, trust building and acting as connectors within the innovation system.
3.3.2. The triple helix and knowledge infrastructure in Sub-Saharan Africa

The World Bank (2009) conducted an assessment on readiness to becoming a knowledge-based economy in African economies including Uganda and Rwanda. The Bank used four pillars to assess how Uganda and Rwanda were doing with regards to building knowledge-driven economies.

The following were considered as essential in order to build a knowledge infrastructure, which is needed in order to be a truly knowledge-based business environment: (1) Economic infrastructure, (2) Innovation infrastructure, (3) Education and Training infrastructure and (4) Information and Communication Technologies infrastructure. Beneath these, however, lies a major issue, which, although they did not see as a pillar, they described as the most difficult one to establish. The "soft" knowledge infrastructure which included inspirational capable leadership with capacity to coordinate and manage knowledge in order to deliver the other four pillars.

The World Bank ranking could attract lengthy discussion, but as many other studies have shown, the soft pillar constitutes a major prerequisite in order to achieve economic infrastructure (e.g. funding R&D programmes, education and in ICT) (Britz et al., 2006; GeSci, 2010a, c; Konde, 2010). To illustrate this point, Saad and Zawdie (2008) detailed studies into the different ways of knowledge creation and knowledge sharing through university, industry, and government collaboration in developing countries, and observed that for technological learning and innovation to occur through the triple helix system, the entrepreneurial role of the universities is crucial. “This would require major organisational and cultural transformation within and between each of the triple helix spheres” (Saad and Zawdie, 2008, p.249). These authors conclude that many developing countries are still building modern knowledge systems and networks along the existing

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16 United Nations Economic Commission for Africa, The World Bank, The African Development Bank, and the majority of academics (with the exception of economists like Dambisa Moyo) contradict themselves and each other. Some argue that what African countries need is better leadership and knowledge management skills. But when it comes to problem analysis, they revert to the physical infrastructure and money in order to do better. Why then do they shift focus?
traditional lines of governance inherited from the Colonial times and it is important that this context is recognised.

3.3.3. Comparative analysis of Rwanda, Uganda, and other major African economies

The World Bank Knowledge Infrastructure ranking has four pillars which are aggregated into two parameters. Each pillar was scored out of a maximum of 10 points at national level by assessing Organisations’ Capacity and Access to ICTs, Experts’ Knowledge through Education and Training, and Access to Resources for R&D through government investment facilitation, as required for building or achieving a knowledge-driven business environment. Table 1 shows the positions of Rwanda and Uganda in relation to other countries\textsuperscript{17} in building knowledge-driven business environments. Mauritius and South Africa are on the top of the list, while Rwanda lies in the bottom four and Uganda is the mid lower table.

\textsuperscript{17} Here we list only few countries. A full list can accessed via the website of the World Bank databank http://data.worldbank.org/indicator/
Table 4: A Comparative Analysis of the State of Knowledge Infrastructure in Selected Countries. Source: GeSCI (2010a, p.7)

<table>
<thead>
<tr>
<th>Country</th>
<th>KEI</th>
<th>KI</th>
<th>Economic</th>
<th>Innovation</th>
<th>Education</th>
<th>ICT</th>
<th>R&amp;D(^{18}) expenditure as% of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uganda</td>
<td>2.36</td>
<td>1.76</td>
<td>4.18</td>
<td>2.33</td>
<td>1.8</td>
<td>1.76</td>
<td>0.41</td>
</tr>
<tr>
<td>Rwanda</td>
<td>1.14</td>
<td>0.85</td>
<td>2.02</td>
<td>1.22</td>
<td>0.67</td>
<td>0.64</td>
<td>0.2(^{19})</td>
</tr>
<tr>
<td>Mauritius (Africa’s best)</td>
<td>5.48</td>
<td>4.63</td>
<td>8.01</td>
<td>3.63</td>
<td>4.03</td>
<td>6.23</td>
<td>Not reported</td>
</tr>
<tr>
<td>South Africa (Africa’s Second best)</td>
<td>5.38</td>
<td>5.33</td>
<td>5.55</td>
<td>6.85</td>
<td>4.68</td>
<td>4.45</td>
<td>0.93</td>
</tr>
<tr>
<td>Denmark (Europe’s best)</td>
<td>9.52</td>
<td>9.49</td>
<td>9.61</td>
<td>9.49</td>
<td>9.21</td>
<td>9.21</td>
<td>3.2</td>
</tr>
</tbody>
</table>

The World Bank (2009) and GeSci (2010a) have discussed the ranking table. The Knowledge Economic Infrastructure (KEI) score is obtained by aggregating the score on the innovation capacity, training, education, and information and communication technologies as well as economic incentive regimes.

Knowledge Infrastructure (KI) is obtained by aggregating scores on education, innovation, training, and information and computer technologies alone. The table herein is a comparison of the three categories that may serve as baseline to this study. The

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\(^{19}\) According to the World Bank (2012), countries spending below USD$100million USD are not listed. The data presented here were obtained from the Annual Budget Report (2011) of the government of Rwanda.
message from the comparison is how close African countries are to each other. For example, on a scale of one to 10, Rwanda (which is at the bottom four of the rank) with 1.14, is 1.2 points lower than Uganda (2.36). Uganda is ranked in the mid-lower range of the same table and is only three points below the African best (Mauritius, 5.48) and South Africa (5.38), Africa’s second best on KEI. Equally, though, there is a resounding message from table 2. There is a stark difference between the European leaders (Denmark, 9.52), and the African leaders (Mauritius, 5.48). Rwanda and Uganda are even further down. Should Africa baseline itself towards recent emerging economies such as Malaysia (6.10) and Singapore (8.26)\textsuperscript{20} without changing the current development speed\textsuperscript{21}, these countries would require close to 230 years to achieve the takeoff level towards becoming a knowledge economy (Government of Rwanda, 2010a).

\textsuperscript{20} Singapore expenditure on R&D as a percentage of GDP was 2.6\% in 2009, up from 2.3\% in 2007. Compare this with current 0.2\% expenditure for Rwanda and 0.41\% of GDP for Uganda, then becoming a knowledge economy requires extraordinary efforts from the two governments of Rwanda and Uganda. In order to take off they need to reach a minimum threshold of 2\% R&D expenditure within the Vision document plans of their own.

\textsuperscript{21} The “speed” is used here to reflect on the slow progress as observed within economic and human development indicators published by the World Bank year-on-year.
3.4. The Way Forward

It is important to note the similarities of the two countries, Rwanda and Uganda. In terms of geography, languages spoken, and the history of the two people (Ugandans and Rwandans), both countries face similar challenges and opportunities and they belong to the same East African community. This opens a window to make cautious assumptions on cultural similarities. There has been no such study on culture, trust and openness in Rwanda, and there are no academic studies that discuss the issue of knowledge management. Such studies are needed to contribute significantly towards Organisation Science in Rwanda. Although this thesis is unable to draw comparisons between Rwandan and Ugandan bureaucratic cultures, it adopts the same view as The World Bank (2009), GeSci (2010a, c), and Mwitondi (2010) who reviewed Rwanda’s and Uganda’s readiness to become knowledge-based economies. Their focus was knowledge infrastructure, including the need for better knowledge sharing, interconnectedness through networking and socialising between scientists, universities, research institute, the industry, and governments. To achieve this, they highlight the need to:

- Improve knowledge management capacity;
- Promote industry, academia, and government cooperation on research and innovations patenting;
- Build human capital development, which is necessary to have a qualified population that participates in the day-to-day knowledge-based businesses and from which qualified personnel are recruited to utilise both physical and soft knowledge infrastructure;
- Institute and enforce regulatory environments which are necessary to promote knowledge-related products and encourage knowledge transfer towards Africa;
- Improve on currently limited international collaborations (as reflected in joint patenting registrations);
• Improve current levels of technology and innovation financing which is, in many countries, very limited to far below 2% of the national GDPs. According to the World Bank Report (2012), Singapore expenditure on R&D as a percentage of GDP was 2.6% of the GDP in 2008, up from 2.3% in 2007. Compare this figure with the current 0.2% expenditure for Rwanda and 0.41% of GDP for Uganda, and it can be observed that becoming a knowledge economy for these two nations requires extraordinary efforts from the two governments of Rwanda and Uganda in order to take off as knowledge-driven economies (King, 2004). They need to reach a minimum threshold of 2% R&D expenditure within the duration of their Vision document plans of their own, or otherwise the aspirations expressed remain simplistic in nature. They are also quick to point out that the state of African countries in this regard reflects only minor differences. Below is (GeSci, 2010)\textsuperscript{22} the overall assessment:

A quick glance at the ranking of countries by the World Bank using two of its indices - the knowledge economic index (KEI) and the knowledge index (KI)\textsuperscript{3} – shows that in most cases the KEI and KI scores do not seem to deviate from each other radically... Using a 10-point scale with 10 being the highest score, only South Africa and Mauritius have a score of above 5 in the KEI and/or KI scores. Regarding education and training, only eight African countries considered here have a score of more than 2. As a whole, there are more African countries with a score of 3 or higher in economic incentive environments than in the other indices – innovation, education and information and communication technologies (ICT). The preliminary assessment indicates that much has to be put in place to improve all the four pillars of most African countries if they are to meet at least the basic requirements of a knowledge economy (GeSci, 2010a, p. 6).

It is equally important to note the various stages each country may go through. For example, in Uganda, Karyeija’s (2010) thesis shows an even greater challenge that is associated with the already existing challenges of creating and sharing knowledge with

\textsuperscript{22} It is important to recognise that GeSci was summarising the World Bank (2009) Knowledge Infrastructure findings. These findings are widely used for decision making by multi-lateral agencies such as the United Nations Development Programme and others.
Uganda’s organisations: “Worst of all, decision makers do not understand the complexities of the issues about which they are supposed to decide, as only 28% of the respondents (N=142) observe that they do” (Karyeija, 2010, p. 145).

A report by the Government of the Republic of Rwanda (2011) into the State of Capacity Building in Rwanda shows that the primary challenge faced by organisations is to conduct capacity needs assessment and come up with appropriate redress strategy. For them to do this, they state the need to move away from thinking that the problem is money to dealing with the real issue of the knowledge management. What do they mean by knowledge management?

The report argues that individual actions create value for organisations only if they contribute to outcome variables that the organisations are interested in. With the current vision of the country (to become a knowledge-based economy), apart from the individual’s work-related performance, how creative and innovative they are in their work context is increasingly being valued and is becoming the expected norm. In a work environment, the satisfaction of employees would be critical if organisations were to gain competitiveness by building upon the knowledge of their employees. Not only is it an essential factor in ensuring that the organisation’s tactical operations run smoothly, but it is also important from a strategic perspective if organisations are to capitalise on the knowledge of their work force. The report makes a case that where individuals managed their knowledge by creating, sharing, storing, accessing, and applying their knowledge in their work context, they were able - and they were expected - to be more creative and innovative, perform better and be more satisfied in what they do.

The President of Rwanda, Paul Kagame, announced to the National leadership (2012) what Malone (1997) had already argued; that globally connected decentralised decision makers play an increasing role in the emerging knowledge-based economy. President Kagame identifies three fundamental decision-making structures through which organisational decision-making is carried out. They are the independent and decentralised decision makers, centralised decision makers, and connected decentralised decision makers, and connected decentralised decision makers, and connected decentralised decision makers, and connected decentralised decision makers, and connected decentralised decision makers, and connected decentralised decision makers, and connected decentralised decision makers, and connected decentralised decision makers, and connected decentralised decision makers, and connected decentralised decision makers, and connected decentralised decision makers.

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23 His Excellency President Paul Kagame, National Leadership Retreat (2012).
decision makers which he calls, translated in English, “leaders, and facilitators” (Kagame, 2012). In each case, irrespective of who makes the decisions, based on their aggregated information, what each entity knows and what knowledge is shared will be important.

It has not come as a surprise to many in recent years that the Innovative Societies of the University of Stanford in the United States of America (2012) describe Rwanda’s leadership as a “miracle” of the twenty first century and an “international development role model”, but they are equally quick to ask what makes this possible (pp.2-3). The researcher has been asked this question several times by leading international academics and policy makers, but was unable to provide a decent answer that could stand the test of academic rigour. What the researcher saw was a display of a high level of acceptance of mutual constructive criticism, and a level of trust between members of the private sector and the government bodies such as the Rwanda Development Board.

This assumption was highly influenced by the literature search into issues of identity, trust (Wenger, 1998), the use of gatekeepers (Allen, 1977), and the science that is built around social networks (Granovetter, 1983) — all essential aspects of the day-to-day focus observed time and time again in Rwanda. The President is surrounded by the Presidential Advisory Council which includes strategist Professor Michael Porter of the Harvard Business School, politicians (Tony Blair, former UK Prime Minister and Bill Clinton, Former United States President) and business leaders (such as Bill Gates, Sir John Hunter, and Lord Sainsbury) and many others. From a review of States leaders’ forum speeches (Kagame, 2008; 2009; 2010; 2011), leadership retreats, Private Sector Round Table, and National Dialogues, one theme keeps emerging — “Agaciro,” translated as “Value.” Kagame adds, “Agaciro Urakiha,” translated as “no one else other than yourself can give you value”

During this thesis development, the author consulted key leadership speeches and learned what inspires CEOs across a spectrum of industries; and they made constant reference to “indigenous values” and “indigenous knowledge.” These terms were closely linked with national pride and national development, and became a slogan for organisational- and individual-based performances.

The position taken by this thesis is to focus on these characteristics and ask the important question - what do we do about the characteristics as regards unlocking potential for knowledge creation, sharing and transfer? The quality of the knowledge base and the policies that govern the triple helix system in the developing countries including Rwanda and Uganda may be weak; but the situation could be improved. The question is, with these characteristics of the knowledge and the knowledge environment itself, how can it be improved?
3.4.1. Can democratising innovation and technology drive economic transformation of Rwanda and Uganda?

It has already been argued in this work that knowledge sharing and KT success may be market-demand-driven (Heikkilä, 2002). The case of Rwanda and Uganda refers to the firm’s ability to sell manufactured products locally (Porter, 2003; 2008). The industry growth therefore would benefit on a population’s capacity to buy, and there is currently no evidence to support the view that even if goods were produced, there would be customers because current economic circumstances (reflected in disposable income) do not support this. Of course the paradox here is the fact that if firms in Rwanda could develop products using IK, they could reduce substantially on spending levels on product development (PD) and therefore lower costs, allowing many people to access the products at low cost.

The argument put forward can be sustained on the basis that the firms’ ability to produce goods and sell at an affordable price has been a good step in the wrong direction. This is because IK may present potential upon which R&D and PD can take off in Rwanda and Uganda. The relatively low reference to and exploitation of local resources such as IK is therefore likely to impact negatively on knowledge creation (Juma, 2011; Watkins and Verma, 2008). In addition, firms do not see the need to introduce new goods and there is limited level of understanding and interpretation of what competition can do to improve the market conditions (Vale, 2004); for example, competition may force them to improve services or introduce new goods and innovate. On innovation, Porter (2008) contends that it is possible to drive innovation - a result of successful knowledge sharing and transfer - by simply increasing the population’s purchasing power.

This is more or less true but this maybe applicable to some sectors and not necessarily true for the others. In a few, but successful, economic sectors such as telecommunication, companies are driven by market demand. For example, both Rwanda and Uganda experienced an unprecedented growth in Internet connections in the last ten

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27 Economists calls this the supply-demand model. It assumes that if there are more goods, prices will fall in line with demand. This economic model is applicable where there are competing firms for the same market.
years and there were many shops selling secondary products in the area of mobile technology and the Internet, the finance sector has tripled both in share and coverage. The Internet was also expanding, becoming more competitive, and attracting investors while many people had become increasingly selective, demanding better and higher-quality services.

In other sectors such as agriculture and animal husbandry, the use of IK could prove necessary as improved processes become less costly and the manufacturing industry could take off more rapidly in the rural areas where the majority applies IK and IKM in day-to-day activities. Institutional internal and communications reviewed and show many KTP examples too, and MTN and the National University of Rwanda have signed a strategic KTP agreement, Finance sector experts from leading banks are training on professional courses in Universities such as the Institute of Finance and Banking (SFB) and Commercial Bank, (BCR); Uganda Industrial Research Institute and Makerere University have existing KTP agreements with Mukwano Industries, The Institute of Agricultural Research in Rwanda has joint partnerships with NUR to deliver KTP projects with farmers and a food processing factory to enhance IK-related output and develop products from the local knowledge resources, especially fats and oils.

While it is difficult to establish to what extent these development are leading to provision of better services, innovation through continuous improvement, those who interacted with the countries years aback can see the changes on the streets and villages and there are at present noticeable evidences of knowledge transfer through engagement with service users; there is an unambiguous frustration in the delayed progress in the area of value addition, expansion of manufacturing base-and this is generally agreed to be caused by an over-reliance on foreign interventions and over-reliance on foreign primary goods.

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28 East African Community (EAC) Financial and Economic Integration Committee report to the Secretary General of the EAC, 2011

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3.4.2. Need for high-level knowledge-sharing and transfer

A fundamental question is now posed: What type of knowledge gatekeepers are required in the context of Rwanda and Uganda? The literature shows different types of gatekeepers in Western and major economies of Europe and North America. Rwanda and Uganda are yet to establish which types of gatekeepers exist and operate within their countries, as research into this issue is non-existent.

UNECA’s (2010) recent work shows that Africa in general and therefore Rwanda and Uganda in particular could benefit from encouraging the creation of small groups of highly specialist scientists. UNECA’s scientific argument is that those small centres would employ a few highly qualified individuals to play the role of knowledge brokers, linking local firms to the outside world and resource centres that may be dispersed across the continent (Konde, 2009). However, they did not study how this can be achieved in practice and they do not define pre-conditions (especially the cognitive and social pre-conditions) that need to be in place. This is contrary to what the evidence has shown to date: the lack of commitment to initiatives, lack of sustained interactions leading to few or no joint ventures, and very few successful R&D projects have been successfully run on the continent. Hence it is difficult to critically review the effectiveness of their argument.

Regardless of what they are called, the proposed gatekeepers have three clear roles to play: (1) being knowledge managers, (b) acting as knowledge agents for companies, and (c) being promoters of knowledge initiatives by searching, vetting, and communicating scientific ideas to those companies in remote regions that are less connected to the rest of the world (Konde, 2009; UNECA, 2011). The problem is that in an academic and practical sense, there are still major problems; there is no analysis of pre-requisites to make this possible, and the implementation model of how these gatekeepers could work with the rest of the government and private sector organisations is not defined. At this stage, the author believes that the discourse should not only contribute to an understanding of the
prerequisites, but also contextualise these with the use of the “enlightened people” comparable to knowledge gatekeepers\(^\text{30}\)(Allen, 1977).

\textbf{Identity.} While problems are being identified, others have focused on the positive picture that has emerged from countries along their historical lines. Mwitondi (2010) shows that leading countries in innovation in Africa are those that promoted networking and sharing knowledge, and are doing so within and between their countries. They have similar cultures\(^\text{31}\), they speak the same languages (with the exception of the South Africa-Egypt relationship) and have a common identity (shared past, language, religion, etc.). In certain circumstances, he argues that scientists and companies from these countries developed networking relationships. These are knowledge-based social structures which are aligned with former colonial powers (such as links between Britain-South Africa- Nigeria). Others are CoPs designed and working along cultural similarities (Morocco-Egypt-Tunisia). Such CoPs have strong cultural and regional values that are transcending national level relationships.

Mwitondi (2010) insists that their benefits have been more of connections with the outside world, but there is little evidence of real changes—no evidence of firms’ joint ventures, no joint research facilities, no joint efforts in R&D, and no firm-firm networking with companies themselves. There are no joints patents that are forthcoming as a result. If this is considered the problem with Rwanda and Uganda, a knowledge gap exists as to why those who seem to be connected to each other in a CoP have failed to achieve significant results. Clearly there is a gap in the knowledge as to why people with similar interests and similar culture are not yet realising their full potential; a gap in the knowledge that needs to be analysed.

\(^{30}\) Several studies have used the concept of Knowledge Gatekeepers interchangeably with Chief Knowledge Officers, Technological Knowledge Gatekeepers, Key Man, Knowledge Managers, etc. to mean someone responsible to search for information, vet it and distribute it to those who may need it. We believe that there may be differences with (cautiously) a certain level of overlaps. This thesis subjects the same concepts to the respondents to find out if there are differences in practical terms between and if there are any new concepts currently in the news. Such new concepts will extend the body of knowledge in that regard as well.

\(^{31}\) Examples of these includes existing collaboration between Tunisian, Egyptian and Morocco Universities in North Africa for Arabic countries and South African (Wit University), Nigeria (Ibadan) Kenya (Moi University) and University of Zimbabwe in Sub-Saharan Africa. These Universities have established partnership including research, and distance education programmes such those offered by UNISA, through partners’ institutions.
Trust. Harorimana and Harebamungu (2012a) argue that where companies considered the cultural barriers as important, there would be an absolute necessity for business managers to align their business modelling. This can be achieved internally through CoPs and externally with the cultural background within which they wish to trade through gatekeepers. Understanding the role that culture plays in employee performance and how it relates to and/or impacts the business constitutes an essential step towards positive results. Argote and Ingram (2000) and Cumming and Teng (2003) touch on the understanding of how culture can influence business relationships.

Although they do not show the relationships between individual culture, organisational culture, and the tasks people perform or how they perform them, their study seems to point towards an agreement that culture influences what people consider as a priority or valid. The GeSci (2010a, b and c) and the World Bank (2009) studies point towards the mind-set as an issue that needs addressing in the process of creating knowledge-driven businesses. Neither study shows to what extent this is actually an issue and linking the mind-set to individuals and organisational culture cannot be an exaggeration. A point that will be explored later in this study is that cultural practice may be biased towards the who-knows-who in Uganda or Rwanda; it is the extent to which this influences employees’ day-to-day dealings with the company and learning processes. This is analysed

1. Within organisations and teams through meeting regularly in formal and informal social events where they are able to discuss matters that affect them;
2. Employees being able to challenge each other’s ideas and even challenge their managers on issues related to business performance; and
3. Trust in an organisation as reflected through the ability to argue without fear of retribution and the appreciation of other ideas by managers. Another way is the employees’ confidence that their ideas are taken seriously and they are
implemented by the organisation, thus reflected the value attached to the implementation of those ideas.

Context. Recognising the cultural barriers has other effects other than how business modelling and delivery can be done. For example, an integration of cultural values within businesses means that the former cannot easily (or successfully) network and share knowledge with their counterparts from different cultures and business practices (Linda and Argote, 2000). The question of how to break down knowledge-sharing barriers therefore becomes an important one; a common approach is to seek an intermediary, a trust builder and/or a relationship broker. Besides the use of knowledge gatekeepers discussed above, within companies there are existing mechanisms that make knowledge sharing possible (e.g. Project-based knowledge sharing through Ba, the SECI model [Nonaka, 1994], and CoPs [Wenger, 1998]). There exists the knowledge. For example all the evidence reviewed did not make a single reference to an established knowledge management model, and there is an agreement that KM strategies are much diversified, and the methodologies currently followed are far from being agreed upon (Bolissani, 2008).

Elsewhere (Juma, 2011; Konde, 2010), there seems to be confusion between National Innovation Systems and the National Knowledge Management Strategies. These studies rarely addressed the corporate knowledge creation and knowledge management weaknesses, strategies, and constraints to knowledge creation. It is imperative that this context is understood, in order to further develop the discussion. The challenge emerging from these studies seems to agree that it is the sum of the units that make the whole together and that the environment shapes the organisational capacity to achieve its potential and vice-versa. In similar economies under study here (in East Africa), knowledge cannot be assumed, nor the relevance of these models to African economies. More research is required to clarify the relevance of either of the named models to such regional economies.

32 Both Ba and SECI models are analysed further in the next section.
It is possible, however, that in a functioning organisation’s normal knowledge-management cycle, one or more of these strategies must be used in order to achieve maximum results (Lundvall, 2009). In this thesis, the focus is on the combination of two strategies as they have been argued to be complementary to each other’s strengths and weaknesses. These are 1) use of knowledge gatekeepers and 2) use of CoPs. The combination will result in a combined model which builds both internal (within the firm) and external (connecting with the organisation’s environment) linkages. On this basis, we propose that in organisations where support is provided by knowledge gatekeepers, employees tend to be more open. The openness is measured by the extent to which employees are able to:

- Contradict each other’s and their manager’s views,
- Hold social events, formal or informal, which give them the opportunity to network and share ideas,
- Trust each other as reflected in how companies use their ideas once these are collected.

Now that there is a developed understanding of what potential issues could arise, the next section considers knowledge creation and sharing strategies that have been widely used, and develops a set of assumptions that have a theoretical basis of what the problems are and what potential solutions could be. What could be the most useful model to take forward?
3.4.3. Use of CoPs and internal-external networks

Konde (2009) has recommended that African scientists organise themselves into networks supported by few leading, well-resourced centres of excellence. GeSci (2010a, c) and Adams et al. (2010) have shown that there exist some level of communities which are based on similarities in cultures, identity, and geographical and cognitive proximities at a national level. These communities share knowledge but are critiqued to be overly inward-looking. The authors see an opportunity whereby they could do better\(^{33}\). One way that is rooted in Mwitondi’s (2010) discussion is the creation of a family of initiatives aimed at promoting knowledge sharing. Konde (2009) and Mwitondi (2010) suggested that such programmes can enable the businesses to improve their competitiveness, productivity, and performance by working together, in a coordinated, complementary way between industry, government, and the knowledge base\(^{34}\).

Based on the analysis of the evidence, the author suggests that the strength of the CoPs model lies in the following points:

1) Building a common view of the world around;
2) Having a strong identity with community members and what they believe in; social and cognitive proximities are fulfilled.

Employees in Rwanda and Uganda are already aware of or have worked in community and physical proximities; hence the conditionalities of prior knowledge and path-dependency test are met. Because the concept of community of practice and knowledge networks has been used in certain spheres at national levels, it is possible to combine this concept of CoPs with another concept of an externally linked agent - the knowledge gatekeeper - who then assists internally connected employees to maximise their knowledge and furthermore, cascades the model down to the organisational level.

\(^{33}\) The concept of doing better can be subjective, and not specify what exactly needs further doing. At a generic level, however, there are many reports by different development partners and International academics. In this report, there are a prevalent weaknesses, lack of detail at a micro level, overly repeated yet untested claims, and proposed models that directly suggested without analysing the context they were developed in and the culture, identity, and assumed prior-knowledge and path-dependency requirement. Cohen and Levinthal (1990) show the importance of prior-knowledge and absorptive capacity. It is this weakness, in our view, which may partially define why many models fail to succeed in African economies.

\(^{34}\) A knowledge base can be a university or a research institute.
How can these identified weaknesses be mitigated? Published reports and research documentation in Rwanda and Uganda did not address the contribution of the nation’s universities and research institutes (the knowledge base) to the development of the desired knowledge economy (RDB, 2010). However, experience from rapidly developing economies elsewhere demonstrates that some of the essential factors leading to the competitiveness of the private sector companies are:

- The capacity of the knowledge base to provide the expertise required by the private sector,
- The ability of the private sector to absorb and use knowledge, and
- The effectiveness with which they work together.

Both the World Bank report *Building Science, Technology and Innovation Capacity in Rwanda*, (2008) and the African Development Bank report *Mapping Science and Technology for Industrial Development in Rwanda*, (2009) have reported that these three characteristics are either feeble or non-existent in Rwanda, while they were described as very weak and near non-existent in Uganda. The Report *Life Science Convergence Centre, Rwanda, 2008* provides “A Summary of Gaps in Rwanda’s Functional Innovation System” (GoR, pp. 13-14). This summary unambiguously points towards a series of gaps; the need for knowledge management is an obvious one. There are no specifics however, and once again there were no definitions of key terms (the ambiguity means they cannot know exactly what the problem is and the concept of networks was limited to the basic naming).

The problems are knowledge gaps that can be identified in at least two levels: First, there are indications of solutions to the problem. There were several short-lived networks that were created, and no research to review as to why these knowledge networks died. There is no extended research into how networks of knowledge are built, what they are, and what makes people wish to be or not be part of them. The premise of this thesis is that, when they start, they have a joint enterprise but they are not connected with the external world; thus they are deprived of the benefit from of anticipating future problems to be cognitively and socially prepared to fend off issues like distrust,
incompatible relationships within network members, and desire that may shape how their interests may change over time.

The second problem is one that the OTF (2009) describes: companies rarely scan their environment with a view to enhancing their competitiveness and know-how as required at international and regional level precisely because, even those who seem to work in complementary markets are not networked together, they are not networked and are not integrated as results. The position of this thesis is that if institutions and, by implication, employees are not networking with each other and some seem to not be aware of what they know or do not know, it is not possible to connect when institutions cannot identify what they know and what they can or cannot do with what they know. This issue is addressed where people work in a community of practice or as part of a network of experts; they work better where there is a strong level of trust (Goman, 2002). Trust can come from having a joint enterprise, but also when they interact during social events (formal or informal). They events can be an opportunity to be open to each other without being subjected to leadership hierarchy or managerial controls, and as a result build a bond which allows them to build a certain level of confidence in each other. Below is a selection of what leading academics have to say in this regard:

In an organization with a positive social interaction culture, both management and employees and interact frequently with each other, with little regard to organizational status. Organisational effort should be focussed on creating opportunities for employees to interact, whether formally or formally, to foster knowledge sharing. Creating these opportunities should aid in building trust among employees, to overcome the knowledge sharing obstacle whereby employees are not comfortable sharing knowledge with people they do not know (Kharabsheh, 2007, p. 422).

Kelloway and Barling (2000) suggest some benefits of social interaction with respect to knowledge sharing. They include employees who are more knowledgeable about their colleagues’ potential for being knowledge sources, as well as employees who trust more colleagues, and trust more completely overall, and who are willing to share knowledge with them as a result.
Informal opportunities would include unscheduled meetings, informal seminars, or coffee break conversations. Formal opportunities would include training sessions, plant tours and scheduled debriefing. While knowledge sharing may be facilitated through formal opportunities, this may stifle creativity (Ramirez, 2007 p.1).

Clearly, it is necessary for companies not just to link internally through CoPs but also externally through social events, interactions with colleagues from outside their own workplace, and the profession as a whole. A key to this is also the company’s desire to scan the environment they are in and bring the information from without, within. This function is best fulfilled by the knowledge gatekeepers. This thesis contends that the existence of strong relationship and trust in an organisation has a positive effect on the organisation knowledge-sharing and the role of the knowledge gatekeeper is to build organisation capacity to manage what it knows best through building trust between knowledge sources and the recipient.

3.4.4. IK and knowledge transfer within firms in developing countries
The current debate identifies two issues that should be addressed: (1) the need for an epistemological review of IK in light of Cook and Brown’s (1999) epistemology of practice, and (2) the need for a review towards developing IK through an institutionalisation process. The institutionalising of IK from the Western perspective has been influenced, by and large (knowingly or not), by epistemologies of possession that knowledge can be transferred from one system to another without needing to be related to the recipient system. This thesis argues that there is room to improve the way knowledge transfer takes place. The gatekeeper should serve as a trust-building agent, or a facilitator of relationships and accessibility. In the proposed KT model, IK is related to the epistemology of possession before it evolves into the epistemology of practice (Cook and Brown, 1999); this point is illustrated in the figure below.
Figure 12 reflects the current thinking along the lines of economic geographers and development scientist with regards to knowledge creation and transfer in regional studies. They have developed this line of thinking for some time, especially with regards to knowledge networks and social network theory (Granovetter, 1983) where the compatibility of knowledge networks between the source and the recipient is seen as key to success (see Cumming and Teng, 2003), and the tie strengths which are characterised by the social connections and emotional intensity are vital for knowledge transfer and learning by the recipient from the source (Granovetter, 1983; Johnson, 2007).
3.4.5. The Ba and SECI Models - how useful are they?

Knowledge is possessed by employees through interactions and socialisation and it is possible to share experience with and impart knowledge to one another through group interaction. These groups may be from diverse systems, and they may interact through social networks, but they will need to establish the relationship with indigenous systems. This is where the Gatekeeper becomes an important player. Figure 16 below sets out the proposal of this thesis in this regard (adapting Nonaka’s SECI model):

![Diagram of the SECI model](image)

**Figure 13: Adapting Knowledge Transfer to a Developing Country: An Integrated model from Cook and Brown (1999), Nonaka’s (1994), Wenger (1998) and Granovetter (1983).**

**Source: the researcher**

At present socialisation and externalisation are happening in distinctively two different knowledge systems - modern and universal. What is needed is to introduce someone who can move round these two systems, from the centre towards the outer side. When both sides have established a minimum level of trust, they will stick to their words. Figure 16 shows that people can come together and share new achievements:
Socialisation stage: Recognition and identification
This is where people share experience and challenges of different systems. The key here is to analyse and ensure that both modern and IK knowledge-based systems are understood in the same light. At this stage, people do not know what works and what does not work (validation). However, the outcome of the process should be that people are able to separate the type of knowledge that is indigenous and that which requires or has been influenced by modern systems and technological changes. Once people agree on what is relevant and in what context, they can then start to adopt new systems and technologies

Externalisation stage: Articulating recording and communication
This is where people should be able to build up concepts, and establish their understanding and a position. These concepts are combined with prior experiences (including IK). Where taped narration and drawings exists, they can enhance processes at an early stage of knowledge identification. This step may be extended to codification of know-what and potentially, design necessary steps for transfer of know-how.

Internalisation stage: Embodying
The less experienced learn from those who are most experienced and knowledgeable. This step involves dissemination to a wider organisation and adds the exchange of knowledge that promotes a wider and deeper ripple impact of the knowledge transfer. People share experiences and external knowledge becomes part of the individual’s knowledge.

Combination stage: or connecting
This is a result of combining a choice of elements of socialisation and externalisation. It is an essential step where knowledge generated is transferred in a new context. This is where they start to try knowledge in different situations to ascertain its consistency. Pilot studies are a common practice at this stage.
At the end of this process, knowledge is created and externalised, and is ready to be used or indeed codified. The ultimate test, however, is to subject both parties to a test of whether the process and relationships has indeed led to trust. This will emerge indirectly as choices and decisions of what to value are ceded to the recipient firms/people/countries that can now rightly decide on the right kind of technology and know how they want. This is opposed to what has been in practice for many years, which is driven by donor- and well-resourced rich countries. Here will emerge a sound level of commitment between both parties without fear that one might trump on the other. This understanding would call for a three-level model system approach which is broadly targeted towards policy and institutional coordination, and a second level which target to design and implement appropriate firm strategies. For example, one can consider creating an innovation institution which has responsibilities to coordinate and enhance KTP efforts, and support and promote the triple helix innovation system. The third level of the model is in-built within the innovation institution and the triple helix institutions as a whole. It would address issues associated with an individual’s mind-set and be tactical in nature. This level focuses on human resources training on different areas such as mind-set change regarding leadership, communication, coordination, developing a climate conducive to nurturing trust and enhancing member-member networks (Argote and Ingram, 2000). This level will monitor individual and institutional bottlenecks to the performance of the triple helix system, and focus on delivering key learning and improvements. One of the main problems discussed in the knowledge environment of both countries is the political influence. It will be very important to recognise that a triple helix system works well where true partnership exists. The proposed model recommends that ministries and donor institutions are kept to the minimum on policy and strategy inputs, and then allow the public universities, institutes and colleges to represent state interests; this relationship is clearly outlined in the figure.
3.5. A Three-level Knowledge Management Model

The outcome from the review of the literature thus far shows that gatekeeping constitutes one of the ways organisations in Rwanda and Uganda could adopt to access formal organisation knowledge as well as knowledge that resides within the informal network. The context of these countries is unique in that organisations want to remain innovative and competitive within regional dynamics, even though the knowledge infrastructure of the two countries is very limited in terms of capacity, economic and financial resources, and expertise. In the face of this, gatekeeping is appropriate because it connects them with their business environment, and brings in innovative solutions and ideas from outside networks, and companies may be able to access the gatekeeper’s network through his work with the company. With this context in mind, it seems logical to think about a model that would allow the implementation of the gatekeeping role in Rwanda and Ugandan organisations.

1) This literature analysis highlights the need to analyse whether gatekeeping is indeed relevant to Rwanda and Ugandan organisations; in which case the thesis proposes whether organisations

   a) Use an informal strategy (KG, TKG, Key Persons, Boundary Spanners);

   b) Promote and align organisational internal competencies with the external environment;

   c) Combine option (a) and (b) and, in the most interesting scenario, the thesis may unearth other wide initiatives of knowledge management which are used because they are appropriate to the context the organisations in Rwanda and Uganda are in. At this stage, and based on the literature reviewed, it seems logical to foresee the possibility of a three-level model.
**Level One: The Knowledge Environment Strategy**

A system-based model would aim to bring the systems and knowledge environment forces together—the knowledge base (Universities, Colleges, and Research Institutes), the State, the development partners, and the knowledge users (the industry).

**Level Two – The Firm Strategy**

This level constitutes the firm’s choice as related to its environment. This is where organisations may, on the basis of a firm’s own context and its learning culture, shape its choice as to which aspect of knowledge management takes priority—the formal or the informal strategies? The question will then be addressed as to which these strategies should be.

**Level 3: A Combination of Formal and Informal Gatekeeping**

The organisation environment, the firm priority, its systems, culture, and procedures all shape the employees' behaviour and choices to engage or not to engage in knowledge-sharing activities. Issues of distance in culture, proximities, identity, and trust all can shape an individual employee's decision on whether to engage or not in a gatekeeping strategy. The question is: Which factor is more or less favourable for which company and how does this shape the gatekeeper's ability to link the organisation with its own units and its own external environment?

Taking into consideration all the discussions, it is reasonable to suggest that the proposed model should include the possibilities to explain how trust and openness to each party are related with the gatekeepers. Below is the proposed model:
According to the theory proposed, it is possible to have an institutional arrangement such as a University, industry organisation and - even better - a stand-alone innovation centre from which the gatekeeping strategy is planned and executed. The gatekeeper would then interact with and between the industries, the knowledge base and the government and development partners searching for knowledge and funds, and contextualising whatever knowledge he sees as relevant to the context. The gatekeeper conducts research in knowledge identification (including indigenous knowledge aspects, and creates and transfers knowledge which is needed and may lead to new products. The gatekeeper is linked to international bodies, institutes of research and industries. He is the channel through which the industry, the Universities, the Government and Development Partners can be linked together. If this model is to work, it is necessary to identify whether there exists a relationship between trust and openness and the gatekeeper's work. This is a gap to be addressed.
3.5. Conclusion

There are two important conclusions drawn from this literature review; the gatekeeping itself and the factors that shape gatekeeping are interdependent. Previous research however does not link both in any significant way and the field lacks knowledge in understanding the relationships that may exist.

3.5.1. On Gatekeeping -

There is a contradictory thesis in the literature as regards Knowledge Gatekeepers in companies. Some argue that they are actually barriers to knowledge-sharing in organisations; others disagree and rather argue that Knowledge Gatekeepers should be perceived as facilitators who link an organisation to its external world. The question in this regards is whether Companies, who tend to use knowledge gatekeepers as their facilitators in knowledge sharing and transfer will perceive his role as being that of facilitator, leading to external linkages with third parties.

3.5.2. On Context-

The literature supports a view that the existence of an employee’s strong relationships with and trust in an organisation has an effect on the organisation’s knowledge sharing; but knowledge is lacking on many specific issues, such as whether in a company with openness to knowledge sharing, there will be trust, or whether a company in which there is no openness may still exhibit trust. Given a specified context, it is still not known if companies with openness to knowledge sharing may still have trust and whether the choice to have a formal or informal gatekeeper is guided by the prevailing level of trust as related to the level of employee openness to one another.
CHAPTER 4: METHODOLOGY

4.0. Overview

This chapter discusses the mixed research methodology, the design and the methods used, including the multi-level case-study design and the rationale behind its use. The design and the methods were considered on the basis of their philosophical, theoretical and practical value. “A methodology refers to the philosophical framework and the fundamental assumptions of research” […]. It is the “framework that relates to the entire process of research” (Creswell, 2006, p.5). It involves a researcher’s decision as to which way to orient the design (Creswell and Clarke, 2006), the data collection, the analysis and finally, the presentation of the findings obtained from the raw data (Silverman, 2004, p. 4). The “design refers to the plan of action that links the philosophical assumptions to specific methods” and “methods, on the other hand...they are more specific. “They are techniques of data collection and analysis, such as a quantitative standardized instrument or a qualitative theme analysis of text data” (Creswell and Clarke, 2006, p.5). As Thomas (2003) observes, the design process should take care to ensure that it responds to the research question.

Research is a multi-level process which can be complex depending on the research question (Saunders and Lewis, 1997). To examine the relationship between gatekeeping, trust, and openness in organisation knowledge-sharing, this study uses mixed methods, as per Chan (2001). The quantitative method involves data to reinforce large sets of qualitative findings (Chan, 2001).
4.1. Iterative Methods of Inquiry

The “iterative method” in this research should not be confused with iteration as it is predominantly known in mathematical sciences (Kalambi, 2008, p.53). An iterative method lies in the middle of inductive and deductive reasoning (Creswell, 2003). The “iterative framework for qualitative research” looks at previous knowledge and claims to develop assumptions using an inductive thinking (Strivastava and Hopwood, 2009, p.77; Thomas, 2003; 2006). In certain instances a theory is challenged by addressing it to a respondent and asking their view. For example, where there is an apparent contradiction with the existing theory, a question is posed in a specified context and new insights from the respondent are sought.

4.2. Qualitative Versus Quantitative Methods

Quantitative research consists of those studies in which the data can be analysed in terms of numbers... qualitative research describe events, persons and so forth scientifically without the use of numerical data. Qualitative research is more open and responsive to its subject... They are not mutually exclusive. It is possible for a single investigation to use both methods (Best and Khan, 1989, pp.89-90).

In practice, researchers mix qualitative and quantitative methods (Patton, 1980; 2000). In this research, in-depth interviews were conducted to collect information about organisation culture, context, employee trust, and company relationship with its third-party partners. Interviews were conducted with “industry leaders” (the gatekeepers) to understand what drives them, what informs their choices about knowledge sharing, and the extent to which they trust one another. This aspect is very important because, as Yin (2009) suggests, interviews are uniquely placed to contextualise, explain and interpret a situation as is. This way, one can collect purely qualitative data (Steinar, 1996). One in-built mechanism involved asking respondents at the end of each interview to reflect on
what was discussed during the interview itself and, keeping in mind all the factors and the unique context of the organisation, provide conclusions. These conclusions were based on five to 10 short statements where the respondent had to choose only one best option which represents his view. Scores range between one and five: strongly agrees (1), agrees (2), somewhat agrees (3), disagrees (4) or strongly disagrees (5) (Karyeija, 2010). In this part of the interview we generated sets of quantitative data which supports our qualitative argument within a specified context (Creswell, 2003; Karyeija, 2010).

The letter R in the following coding, R1, R2, R3, R4, R5, and R6 designates companies located in Rwanda. The digits that follow designate a unique identity name of a given company that was investigated. Similarly a company located in Uganda is identified by a letter “U” followed by a company-unique identifier digit of 1-5: U1, U2, U3, U4, U5 designate companies. For confidentiality reasons, their exact names cannot be revealed. Both respondents and company leadership has given explicit or tacit permission to conduct the research. The companies were selected on the basis of size, close location to town and cities for ease of access, financial status (financially viable as per last auditor’s reports); and whether they employed at least 250 plus full-time employees, who had been with the company for at least five years. To be considered as a knowledge-intensive organisation, the study limited itself to those firms in finance, R&D and manufacturing sectors.

The research, however, was not interested in the size of the respondent sample as such. In fact this study’s sample (discussed below) was not designed on the basis of the representative ratios but rather on the purpose; this means the ability of the sample to provide others with detailed in-depth accounts of what happens when people trust or do not trust each other in a workplace organisation, and why it happens (e.g. when to share or not share knowledge and whether the use of an internal member of an organisation to train and provide linkages has something to do with internal levels of trustworthiness to entrust responsibilities to those they believe can duly execute them). Another aspect is what happens when two partners do, or do not, trust each other. The questionnaire revealed patterns that were “leads”. Enquiries at R1 revealed R1 had a partnership with
R6 in knowledge-haring and transfer activities, but R6 had not been considered in the initial design. There were potential details about partner relations, trust issues, and gatekeeping, all of which must be understood. Perhaps this is where the strength of qualitative research lies - being able to explore and evaluate a situation in a given context, the “qualitative research is more open and responsive to its subject” (Best and Khan, 1989, p.90).

The researcher was able to re-adjust and shift the inquiry from an internal view of R1 to bring on board another important partner of R1, R6. This development cannot be possible within a purely quantitative research (Burney, 2006). Here, the researcher was able to revisit and extend the design to R6 because qualitative research “tends to focus on exploring, in as much detail as possible, smaller numbers of instances or examples which are seen as being interesting or illuminating” and “aims to achieve ‘depth’ rather than ‘breadth’” (Blaxter, Hughes and Tight, 1996, p.61).

4.2.1. Quantitative data
Quantitative research “consists of those studies in which the data concerned can be analysed in terms of numbers”; it “is based more directly on its original plans and its results are more readily analysed and interpreted” as opposed to the qualitative research which is “more open and responsive to its subject”. They “are not mutually exclusive” and “it is possible for a single investigation to use both methods” (Best and Khan, 1989, p.89). A combination of both approaches does not mean, however, that a research is necessarily quantitative. It is the nature of the data and how they are analysed that establishes the difference (Chan, 2001). In this research, 11 companies (six from Rwanda and five from Uganda) were sampled on the basis of two primary conditions - accessibility and company permission to make available their staff to participate in this research free of charge; and from these 155 questionnaires were distributed across firms. Of these, 105 were returned completed.

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35 More details about the sample size and the nature of business are discussed in the following sections of this chapter.
4.2.1. 1. The samples and their validity

The researcher used the initial information obtained from managers and network contacts to identify and choose potential respondents. Below are the sample statistics per company (corresponding to the number of distributed questionnaires). Alongside the sample from each company, the table shows the number of responses received. Marshall (1996) advises qualitative researchers against random sampling which is used often by quantitative researchers because, “random samples to be selected, the characteristics under study of the whole population should be known; this is rarely possible in a complex qualitative study” (p523). The validity of qualitative research is based on relevance and their ability to provide deeper meaning and explanations to the research questions. To be able to do this however, access to detailed information is a necessary step which is part of the validation of a sample itself (Marshall, 1996). Samples were selected on basis of validation criterions that are discussed below:
Table 5: Purposive Sample Statistical Frames

<table>
<thead>
<tr>
<th>FIRM</th>
<th>Distributed questionnaires</th>
<th>Returned questionnaires</th>
<th>Not returned</th>
<th>Nature of business</th>
<th>Size of the firm at time of research</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>40</td>
<td>15</td>
<td>25</td>
<td>1, 2</td>
<td>425</td>
</tr>
<tr>
<td>R2</td>
<td>19</td>
<td>16</td>
<td>3</td>
<td>1, 2, 3</td>
<td>282</td>
</tr>
<tr>
<td>R3</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td>1, 2, 3</td>
<td>250</td>
</tr>
<tr>
<td>R4</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>222</td>
</tr>
<tr>
<td>R5</td>
<td>10</td>
<td>9</td>
<td>1</td>
<td>2</td>
<td>89</td>
</tr>
<tr>
<td>R6</td>
<td>25</td>
<td>17</td>
<td>8</td>
<td>1</td>
<td>67</td>
</tr>
<tr>
<td>U1</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>1, 3</td>
<td>500&lt;sup&gt;36&lt;/sup&gt;</td>
</tr>
<tr>
<td>U2</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>1, 3</td>
<td>400</td>
</tr>
<tr>
<td>U3</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>1, 3</td>
<td>600</td>
</tr>
<tr>
<td>U4</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>1, 3</td>
<td>520</td>
</tr>
<tr>
<td>U5</td>
<td>15</td>
<td>15</td>
<td>0</td>
<td>2</td>
<td>69</td>
</tr>
<tr>
<td>Totals</td>
<td>155</td>
<td>105</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>100</td>
<td>67.7</td>
<td>32.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above table shows the profile of the sample number of respondents who responded to the questionnaire and the interviews. The Human Resources Department holds the files of their employees and could offer the researcher access to the list of names that can be

<sup>36</sup> Uganda-based companies could provide estimates only and there were no central records from which accurate data could be drawn. However, HRD estimates were said to be close (with a margin error of +/-50). This margin error however cannot impact on the results of the findings of this research which needed to only be a medium to large firm (which is 50+).
consulted. Their decisions in drawing up the list were based on the criteria which were developed during the study design process.

a) *Experience in the industry (with a minimum of 10 years).* This helped the researcher to establish the differences between the nature of industrial practice and the specificities of some individual firms.

b) *Length of employment at the company (a minimum of five years’ experience for employees and three years for the managerial position).* This enabled the researcher to understand what was specific to the organisation in terms of trust and learning cultures.

c) *The level of qualifications.* This was necessary to maintain the definition of a knowledge worker, and it is assumed that it would be unlikely that someone without a degree would be a knowledge worker in the industries being researched.

d) *The cost benefit factor.* Their willingness to answer to questions free of charge was taken into account. The study did not pay for this research.

e) *The position in the company.* Some positions were judged less important to the research. They included secretaries, drivers, and junior-level technical officers. Others’ positions had overlapped duties; which was considered not important in this research; this included production line leaders which overlapped with team leaders, and senior scientists which overlapped with junior scientists.

f) *The nature of the work they did.* Only those in relevant areas being inquired about were asked to answer the questionnaire. This was important to ensure the context was taken into account by a respondent. The respondent who identifies with a question is more likely to make a better judgment on the issue and therefore enhance the quality of the answers. For example, in some companies have team leaders, and senior Scientists. These two roles were differentiated by the Lead Scientists who carried managerial and coordination responsibilities and have team management responsibility including mentoring and knowledge transfer.
First, the above table shows that out of the 155 distributed questionnaires, 105 (approximately 68% were returned, 32% were not returned). This took a cumulative period of four months as opposed to three months as had been pre-planned. This was a very high and satisfactory return rate, given the seniority of those concerned and therefore the job demands on the part of the respondents, but also considerably high if considered in line with other social sciences and business-related research where the return rate is around 25-40%. In fact, previous research (Cumming and Teng, 2003; Karyeija, 2010; Szulanski, 2000) had only between 25% and 30% returns, which was still considered as satisfactory to provide a sound basis for conclusions. In Rwanda and Uganda, respondents had no history of such research, and they were pleased to be involved in and associated with such an innovative way of studying their workplace. The table also shows that the selected number of respondents is different across organisations because this study’s sample is a “purposeful sample” (Onwuegbuzie, Kathleen and Collins, 2007, p.281).

Below is a distribution of the sample by position inside the organisations under investigation.

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37 The few observations made by respondents at the time of submission of their questionnaire may explain why the sample was highly motivated: “This is new here, and everyone should be pleased that such a research has come to us”. Head of Department at U1 “We will most certainly benefit from this type of research, it’s new to us”. CEO R2 “This questionnaire made me think deeply about what I do, how I do it”. Manager U5. “…I really never thought to link all this before”. Manager R6. “The good thing is that these questions capture your attention all the time, you cannot guess an answer …”. Employee R3 translated from Kinyarwanda as “ibi bibazo bituma ukomeza kugira amatsiko yo kumenya igikurikiyeho, ntiwanafindura igesubizo nyacyo udatekereje cyane”.
Table 6: Respondents by position

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales and Marketing of R&amp;D outcomes</td>
<td>5</td>
</tr>
<tr>
<td>Engineers</td>
<td>40</td>
</tr>
<tr>
<td>Human Resources</td>
<td>20</td>
</tr>
<tr>
<td>Key Knowledge Workers - Administration support</td>
<td>20</td>
</tr>
<tr>
<td>Members of CoPs</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>105</td>
</tr>
</tbody>
</table>

One hundred and five questionnaires were returned with a combination of numeric and short explanatory answers on certain statements. Numeric answers were then computed in SPSS. The questionnaire contained 72 very short statements requiring every respondent to choose one, in the best options of answers ranging from how strongly they agree (1), agree (2), somewhat agree (3), disagree (4) or strongly disagree (5). It is these values that were computed against each variable. These descriptive statistics are then used to support much larger qualitative analysis obtained using in-depth interviews and observations (Steinar, 1996; Yin, 2009). The in-depth interviews provide a platform from which to conduct a contextual analysis of the observations and perceptions of the respondents on a range of statements (Steinar, 1996) - a practice which is common within social and business sciences research. The clarity lies within the desire for “understanding social phenomena.”

The questionnaires elicit answers of numeric and non-numeric types. The quantitative data provide an opportunity to generate patterns which an in-depth qualitative inquiry can follow up. The purpose for the quantitative data is generating patterns, trends, similarities and differences that may be interesting. It was through this
process that, for example, two outlier cases\textsuperscript{38} were discovered. In addition to this, 62 interviews were conducted as well, in two phases.

4.2.2. Qualitative methods

In this aspect of the research, the researcher relied on the respondents' views from the discussions, because the issues associated with trust, knowledge and knowing are impossible to accurately quantify but it is possible to explain them and qualify them while drawing on multiple sources of data (Yin, 2003). The subject is studied in their natural setting (Bryman, 2001). In exploring issues associated with trust and openness, it was important that respondents provide their own direct insights, find their natural voice, and “narrate” what they experience in their daily lives. It is when they reflect on their own experiences that they can generate “thick descriptions” of what they know; they remember shaping their choices (Bryman, 2001, p.273). Respondents can talk about what otherwise “purely quantitative methods may neglect” including “the social and cultural construction of the variables” (Silverman, 2004).

Trust and culture-related studies are complex, even more so when they need to consider how they break down barriers, such as choosing who to talk to about a problem, or who to ask for help on a resolving a given problem. They become more subjective, more complex and more like a hidden routine which is difficult to narrate without reference to examples in order to identify a specific incident that best illustrates the complexity of a respondent’s experience (Eisner, 1991).

An interview questionnaire was used, which was primarily prepared as a guide document only, and the interview was allowed to flow naturally (Yin, 2009). The interviews are now examined, following which the observations will be revisited. Interviews were used to add breadth to the questionnaire. For in-depth interviews, respondents had to provide qualitative answers to the researcher, based on a number of questions, including; “How does trust influence knowledge sharing”, “Why would you be

\textsuperscript{38} These two cases were later designed. In-depth interviews were more appropriate at the U1 outlier because the respondents had contributed to the responses to the questionnaires. At R6 however, a questionnaire was considered together with those at R1; plus two in-depth interviews were conducted to explore and explain different questions related to gatekeeping, communication processes and knowledge-sharing practices. These questions brought both breadth and depth to the research reporting.
open to this person and not the other”, “What is the role of the gatekeeper?”, “What is the relationship between openness, trust and knowledge gatekeeper?” and “When do you feel most comfortable to share knowledge?” These type of questions require respondents to “explain”, “illustrate”, and “contextualise” balance and take a position to a given context (Yin, 2009, p.67), as well as generate qualitative data in the form of short answers. In terms of qualitative data, we are able to distribute questionnaires to collect opinions-data from respondents on a wide range of issues. These data were in numbers. The interviews were used to generate “thick descriptions of events, and they allow the researcher to examine processes”, practices and respondents’ decisions in relation to the relevant concepts (Karyeija, 2010, p.94).

The intention was to approach the research problem iteratively (Creswell, 2005). Iterative philosophy is sometimes referred to as a mixed philosophical stance where both deductive and inductive thinking are followed. In such cases, a mixed research design is also called for (Patton, 1980). In a mixed method, quantitative data may be used to support a qualitative argument (Johnson et al., 2007).

Cumming and Teng (2003) studied knowledge transfer, trust and third-party relations in R&D settings, Szulanski (2000) studied impediments to knowledge transfer across multi-nationals, and Pineda, Zapata and Lamirez (2009) studied strengthening knowledge transfer between the University and enterprises. They tried to quantify trust and social relations, but they did not qualify these. Chan (2000) used mixed methods to inquire about learning behaviours in a hospital learning environment. Biloslavo and Prevodnick (2009) used mixed methods to inquire about the impact of organisational culture on knowledge management in higher education; and Karyeija (2010, 2012) applied mixed methods to inquire whether culture matters in performance appraisals in the Ugandan Civil service. It is preferred in this research to focus first and foremost on the qualitative methods, which are supported by a certain degree of quantitative data.

In this study, the quantitative data gave a respondent’s perspective of understanding the relationships between trust and learning culture in their organisation, their voice on trust matters, gatekeeping choices and understanding of what it is from
their own perspectives, and they spoke about their context in a much broader way. Over a four-month period, enough data were collected to help provide a much deeper understanding of issues before the researcher embarked on the interviewing stage.

Mixed methods offer a unique opportunity to have more than one source and more than one empirical type of data (Yin, 2009). The quantitative method provided data that were used to detect specific trends, similarities and differences from which were selected more interesting, but fewer, cases to be studied in much greater detail (Karyeija, 2010). Consequently, qualitative methods were used to dig deeper into the technical know-what and the technical know-why. From these perspectives, two outlier cases emerged (see R1 and R6 relationships and the case of U1, which reveals how the gatekeeper relationship evolves to include a CoP). These two cases were designed in the same way as the in-depth interviewing - but at a much later stage - with different and much more targeted questions.

4.2.1. In-depth interviews

In-depth interviews, as suggested by the name, offer an in-depth understanding about the events under investigation, and where and when they happened; and why they happened in the way they did (Yin, 2009). In-depth interviewing was used to examine the relationship between trust, openness, and the use of gatekeepers in organisations. In-depth interviews were divided and run in two distinct but linked phases.

The first phase was a critical evaluation of how respondents understand and relate with the broader aspect of knowledge management within their own organisation. The second phase was an in-depth evaluation of how trust may shape a respondent’s view and choice of who to share knowledge with over the other. It considered issues of openness, social relationships, prior knowledge, organisational procedures and how they interact with third-party relations, and explored how organisations may choose to use a form of gatekeeping over the other KM strategies.

In order to appreciate the KM environment, the researcher asked whether managers, key knowledge workers, and employees have an understanding of what Knowledge Management Systems they run. Those with a certain level of leadership and
managerial responsibilities were interviewed because they are at the cutting edge of KM initiatives (planning, implementing and evaluation of outcomes). It is important to note that, as Yin (1994) suggests, observation and interviews go hand in hand. The researcher observed through the ways the respondents communicated (body language reading, playing between statements, and choice of illustrative examples) and followed up with more questions, seeking clarity of confirmation on issues that seem simply not quite right. Table 5 below shows those interviewed with regards to this particular aspect.

Table 7. Interviewees

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Number Round 1</th>
<th>From which company</th>
<th>Number Round2</th>
<th>From which company</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEOs/DG/PDG</td>
<td>2</td>
<td>R1 and U1</td>
<td>9</td>
<td>All except R1 and U5</td>
</tr>
<tr>
<td>Director of Operations</td>
<td>8</td>
<td>All but R6,U5</td>
<td>9</td>
<td>One from each manufacturing and R&amp;D company. None from U3,U4 and R4</td>
</tr>
<tr>
<td>Head of departments (Human Resources and Finance)</td>
<td>11</td>
<td>1 HR from each company</td>
<td>8</td>
<td>All directors of finance but R6, U3,U4</td>
</tr>
<tr>
<td>Engineers (With team leadership responsibilities)</td>
<td>8</td>
<td>From all but R4,U2, and R5</td>
<td>14</td>
<td>1 from each manufacturing and R&amp;D company but R6 (2), U5(2)</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td></td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

The preliminary and opening phase consisted of in-depth interviews with leaders to grasp the overall picture of knowledge environment. One may call this phase the pilot phase (of 22 prominent respondents as shown in the table above). This researcher, however, shares the view that, as some qualitative researchers experienced, there can be a distinction drawn between the pilot phase and a main phase, since unlike using a questionnaire, in this phase he continuously learned and improved his interviewing techniques, and his
handling of difficult respondents (especially some who were talking too long and others who were really difficult to hold a freely flowing conversation with). In this phase, Yin’s (2003) interview techniques hints were helpful to the researcher, who continuously learnt and improved as the research progressed in response to respondent direction. The researcher strove to be accommodative and to remain mindful of the respondent’s constraints of time and space, and their freedom to speak or to keep quiet, or to shorten or elaborate an answer (Yin, 1994; 2009). The basic guiding principle here is that the study must consider the advice of Denzin and Lincoln (2000, p.3), that “…qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, and phenomena in terms of the meanings people bring to them”.

Following the initial phase and an indication of the overall Knowledge Management systems appreciation, the researcher took a one-week break to analyse, digest and reflect on the information obtained thus far. Strivastava and Hopwood’s (2009) practical advice on the iterative framework for qualitative researchers was useful in that regard. Multiple “rounds of reflection on the data” raised additional questions, (Strivastava and Hopwood, 2009, p.77). The second phase of interviews was very involved; 40 scheduled interviews which generated more than 250 pages of interview notes. These were then analysed and compared with the first 22 interview results. The write-up was updated to reflect the changes and enriched data. In total, more than 120 statements are referred to and used in the analysis part of this thesis.

4.2.3. The interview guide

The interview guide is in appendix 3 of this thesis. The interview discussion guide was primarily designed to explore different activities of knowledge creation, sharing and transfer that are taking place or in which the respondent has been engaged in. From this perspective, the second part of the guide explores “to what extent…” culture, trust, and openness shape or is linked to the activity of sharing, creating and transferring knowledge. The third and last section is focused on the “what” and “how” questions. The research asks about the “what” – what the organisation does in the case of lack of trust and openness. In this section, insights to this question were sought – the ultimate aim was
to spark a discussion about gatekeeping. Do they use gatekeepers or not? What does the organisation do when there is an issue of trust and openness that is stopping knowledge sharing from happening, or when it is delaying knowledge transfer? To what extent does the organisation facilitate knowledge-related activities within the company, between employees themselves, and between partners? To what extent does trust, openness and learning culture shape their choice of who to partner with, and who to share or not share knowledge with? This section borrowed some questions from Argote and Linda (2000), Szulanski (2000) and Cumming and Teng (2003). Other questions were developed from the researcher's own understanding and interpretation of the theory, the context and the design of this research. Borrowed questions were contextualised, and simplified to fit the purpose and context before being used. From this phase, much primary data were generated, which analysed the “social phenomenon” surrounding trust, openness and gatekeeping in Uganda and Rwanda. The differences, similarities, and interesting points that emerged during this stage were established, following which a theory was generated by the researcher (induct theories to be tested in the future).

The main problems at this stage were associated with conflicting priorities from other duties, and this requires more patience and tie-management to complete and return the questionnaire. On the researcher’s side too, the research required intensive and ongoing contact with respondents, and physically monitoring progress to ensure those targeted actually respond to the questionnaire, attend the interviews etc. This approach was purposely to enhance quality and reliability of the data collected.
4.2.4. The research instruments design process

Researchers tend to classify the questionnaires based on the degree of freedom or discretion of the interviewer when asking questions. Thus, there are three classes:

- **Structured**: The questions and possible answers are formalised and standardised. The respondent is offered a choice among several alternatives such as choosing how they may or may disagree with a statement. This format is used when one has to conduct many interviews and when the order of the questions and answers is important.

- **Unstructured**: These tend to be general questions, which are focused on the research topic. The interviewer allows greater freedom in the formulation of specific questions. The questions are asked in any order and using vocabulary appropriate to the level of each respondent.

- **Semi-structured**: They set out a script with key questions and an order that is not rigorous, and sometimes, not, the expression with which questions is asked.

However, many researchers may combine two or more of the above in one single research. Cumming and Teng (2003) combined structured and semi-structured questions to third-party relations among R&D teams across 12 organisations. Argote and Linda (2000) combined structured and semi-structured questions to inquire about knowledge transfer between organisation units’ tasks, tools and people. Whelan et al. (2010) combined semi-structured questions for a written questionnaire supplemented with in-depth interviews to explore the knowledge creation and sharing among talents in R&D organisations. In this research, structured and semi-structured questions are combined to collect quantitative and qualitative primary data. These are supplemented with in-depth interviews to gain greater insights into the issues; “what” do gatekeepers do, “why” trust is so important and “why” would they trust one and not the other. Questions are asked as to how openness and social relations might be associated with trust and organisational choice of which gatekeeper to use (formal or
informal). Questions are also asked about at what stage is a given choice is more appropriate, and why.

Mapping the situation in regards to the relationship between trust, openness, and the use of gatekeepers in organisations is closely linked to the knowledge environment itself. This required the questionnaire to cover:

- Culture
- Trust
- Type of knowledge commonly shared
- Relational context
- Gatekeeping
- Prior knowledge

This is necessary so as to be able to perform comprehensive analysis which would inform the analysis. To borrow lessons from Delamont (1992), “it is harder, more stressful and it is time consuming” (p.viii).

The questionnaire comprised 73 questions. The first 17 questions were about knowledge sharing and culture in this section, and addressed issues such as organisational learning culture ‘openness’, holding social events, how the company uses employee knowledge, whether type of education received influenced how people interact and share knowledge, how people may feel free to seek or give information and to whom they prefer to impart this information and feel comfortable with. This would include a teammate, colleague at work or those they socialise with during informal and formal events.

Section 2 of the questionnaire had three questions on the “types of knowledge being transferred or shared.” Questions in this section distinguish the knowledge difficult

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39 Selected respondents had an ascertained minimum level of understanding of management science and they were qualified to a Degree level. This level of qualification assured the research the ability to interpret a definition such as a gatekeeper or a CoP. The researcher was at the organisation whose employees are responding to the questionnaire and this was to provide additional explanations and examples to facilitate understanding, and improve accuracy of answers to questions that used technical concepts.
to learn from books from whether employees would prefer to consult manuals as their first point of reference or to ask a colleague who has “solved” a similar problem before.

Section 3 had 12 questions under one theme: “relations with a third party partner”. This was defined as a third party providing services to the respondent’s core business support. This section is closely linked with section 1 which relates to “openness”; and section 6 which looks at networking and trust. Section 3 deals with issues related to “willingness” to interact and “inverting resources” to “decontextualise” or “embedding” as well as questions also asked to illicit responses about issues and problems associated with this process – “culture differences/culture similarities.” It is here the thesis raises questions about the impact of the bureaucratic process on knowledge sharing and how the organisational networks cope with restrictive mechanisms - “operational mechanisms’ similarities and differences”.

Section 4 covers “gatekeeping” and includes seven questions in total. It begins by providing a definition of a gatekeeper which has been simplified to the level considered as accessible to an average employee (see questionnaire introduction section in appendix 2^40). After providing this definition, several scenarios were proposed;

“Who is the gatekeeper in their company?”

“Are they themselves gatekeepers?”

“Is a gatekeeper a full-time or part-time job? Is it paid or not?”

“Does the company act as a gatekeeper itself?”

In this section, respondents were given the opportunity to provide short explanations about the nature of gatekeepers or of the gatekeeping function. In some instances, the literature suggested that communities of practices (CoPs) can be a place to “create” mature identity, build trust and a place to socialise, and develop commitments to knowledge sharing.

Section 5 consists of 10 questions which focus more on CoPs. This section was introduced by a definition of a CoP but in the way CoPs are observed in a given

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^40 These are technical performers who access information and contextualise it into useful, relevant knowledge before one can share with other colleagues; willingness to share knowledge with colleagues within or outside firm units.
organisation (see questionnaire section 5). In many ways, CoP questions are closely linked with sections 1, 3 and 6. The section also posed questions about the perceived benefits from social events, professional membership, knowledge in context, and benefits of CoP. In addition to this, two question required respondents to name -

- “at least three members” who are in the same CoP” and
- “at least one member from the community with a professional background in which they may have in contact with for the last three months”.

In this section it was necessary to establish the network of CoP members by following ‘who is who’ in the network.

Section 6 of this questionnaire focuses on “trust”. Naturally, it is very difficult to objectively measure to what extent one trusts another. One way trust is assessed is, however, when we see the resulting actions. In this research, we ask questions that are indirectly reflective of when one can assume that there is trust or not.

For example, if one asks whether a person can trust a colleague with information, he may agree or strongly agree. However, to accept this version of answer on face value may probably be misleading. So such a statement is followed by evidence-searching questions such as; when you have a problem who do you contact first for help?

- a colleague, or
- an extended friend (relations)

Another question in this section addresses the issue of networking and how respondents interact when they have an opportunity. Do they stick together; or do they look for those they do not know but they believe may have useful knowledge? Is there evidence to suggest that networking is actually happening? Here for example the questionnaire asks respondents;

- to name at least one person who holds an important position of authority in a particular field of expertise based on the respondent’s area of interest, that they have been in contact for at least the last few days/weeks to seek assistance in problem-solving for business ideas, areas of interest for further enhancement, identifying potential areas, and many more.
• On how many people (respondents) called them to ask for technical assistance in their areas in the last few days and weeks.

Finally, Section 7 covers indigenous knowledge (IK). New knowledge may be path-dependent. Entailing 10 questions, this section focuses on prior IK, as to whether;
• It influences their thinking, view and interpretation of new knowledge
• They sometimes experienced “cultural clash” or misunderstanding with those who do not relate to their IK; or if indeed IK does not have any impact in what they do. This section is oriented towards an understanding and an overall appreciation of the “context” of knowledge environment in the organisations under study.

In order to generate knowledge from this questionnaire, case effect analysis was used. The questionnaire had pre-determined answers. All respondents were asked to do was to choose the best option which represents their view - strongly agree (1), agree (2), somewhat agree (3), disagree (4) and strongly disagree (5); or where the statement does not apply (0). Some questions were borrowed from Cumming and Teng (2003) and others from Szulanski (2000), while others were developed based on the researcher’s theoretical understanding and personal experiences and informed by preliminary research companies’ websites, internal communications and official reports.
4.3. The Units of Analysis

The more that a single study integrates mixed methods across these five procedures, the more that mixed methods research, as opposed to multiple studies, is taking place (Yin, 2006, p.42).

To examine the relationship between trust, openness, and gatekeeping in organisations, the *case study* was chosen as the unit of analysis. The case study represents the best strategy for researchers who intend to study subjects in their natural settings (Yin, 1994; 2009). The case study strategy allows inquiring about social phenomena in their contexts (Creswell et al., 2004), by answering to research questions such as “why” and “what”. It is the best place to explore issues in much deeper detail (Yin, 2003). In the case studies, a series of questions was used which were designed to get to know the respondents and the context of their answers within the *context* of the entity under study as regards to how they interpret trust, openness and the gatekeeping in their respective contexts. The goal is not only to understand the entity being studied, but also to know the category it represents (Creswell, 2003; Yin, 1994). For the same reasons a combination of *exploratory* and *explanatory* types of cases was chosen (Yin, 2003). As an illustration, R6 and R1 relationship explains how trust is related with the ongoing knowledge transfer activities that were taking place between R1 and R6. The rest of the cases were *explanatory*. They facilitate the interpretation of strategies and processes use a particular company as regards to trust building, creating a climate of trust-promoting openness, and using gatekeepers.

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41 Yin (2006. p.42) recommends that integration or the “mix” be done across the five steps of a case study design namely, research questions, the units of analysis, the sampling levels, data collection and the analytical stage.
Findings from a total of nine manufacturing companies and two R&D firms (one in Uganda and one in Rwanda) are reported in this thesis. Below is a detailed introduction to each of the case studies:

### Table 8: Units of Analysis in Rwanda

<table>
<thead>
<tr>
<th>FIRM CODE</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>A manufacturer of beer and soft beverages. R1's second-best brand was developed from the traditional indigenous practice of sorghum brewery, a beer where local people use indigenous practices to make beers (a mix of water, sorghum flour, mixed and heated to the boiling temperature and thereafter it is kept for one to two days to ferment with between 15-30 concentrate of alcohol). R1 has revolutionised this indigenous practice to become one of the foremost successes in the indigenous knowledge (IK) evolution in Rwanda through automation and R&amp;D, to raise the quality to internationally acceptable standards. Heineken is the parent company.</td>
</tr>
<tr>
<td>R2</td>
<td>One of the pioneer manufacturing companies in Rwanda. They manufacture, market, import and trade in over 150 products. Currently R2 is one of the most diversified companies in Rwanda.</td>
</tr>
<tr>
<td>R3</td>
<td>This is a unique manufacturer of clothes and cotton/wool-based products. R3 is today a growing composite textile mill with an in-house garment manufacturing facility. They produce various types of fabrics, such as shirts, suits and sheets of cotton, and of polyester/cotton blend. R3 recognises the inputs of local producers in the basic processing stages, using traditional methods such as cocoons locally known as Umugwegwe. Recently R3 have introduced a banana textile technology, which is perhaps one of the newest exploitations of local products by exploiting local resources, using local knowledge of the communities. The supply chain of the cocoons and banana fibre plants are heavily dominated by the local population (who are organised in cooperatives</td>
</tr>
</tbody>
</table>
from farming to extraction, processing and value addition) and it is highly recognised that IK plays a key part in the success of this firm.

| R4 | R4 was founded in 1963 and is now under the ownership of a London-based private equity investor in emerging markets, with a major focus on Africa. R4 supports its partners but recently experienced the problem associated with differences in workplace cultures, and lack of technical know-how. |
| R5 | R5 is an R&D firm with additional mandate to conduct a knowledge brokerage relationship in coffee related sectors. It was created in 1964, initially; with mandate to supervise coffee-related activities in the country. Today, it conducts R&D activities, sets coffee quality standards and classification systems, control the quality of coffee and issue quality and origin certificates, collect information relating to the coffee industry, promote cooperation among various economic sectors within the coffee industry through collaboration, support coffee farmers’ associations in the production, pulping, washing, collecting, and finally, they train those who are involved in the coffee industry. |
| R6 | R6 is a private company that manufactures plastic and recycles plastic-related products to obtain raw inputs. This company has active programmes of knowledge sharing and transfer with R1 who operating in a complementary market. |
Table 9: Units of Analysis in Uganda

<table>
<thead>
<tr>
<th>Firm Code</th>
<th>Profile/ description</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>U1 is a manufacturer of cleaning products, soaps, oils, and derivative products. The company serves the east and sub-Saharan African markets. This particular company is a holding of a group of companies. Some of its subsidiaries are studied separately because of their uniqueness in products, systems and organisational focus which are distinct from the parent company.</td>
</tr>
<tr>
<td>U2</td>
<td>U2 is a manufacturer, and largest value adding to agricultural produce in Uganda and East African region. It dominates the regional markets in oil-related products.</td>
</tr>
<tr>
<td>U3</td>
<td>U3 is a manufacturer of detergents and floor cleaning products. Located in the city of Kampala, it is a subsidiary of another Uganda company operating in complementary markets.</td>
</tr>
<tr>
<td>U4</td>
<td>U4 is a manufacturing company. It has a range of household plastic-ware products. Its target markets are in both industrial and home-based clients in Uganda.</td>
</tr>
<tr>
<td>U5</td>
<td>U5 is an R&amp;D institution with a knowledge brokerage mission. It has three incubation centres under one roof. U5 undertakes research into food processing and the development of ceramics and other products, as well as several pilot plants for production, engineering and manufacturing workshops. U5 identifies, contextualise appropriate and affordable technologies that enhance adding value to local products so that they can be processed for national, regional and international markets. They do that through focused R&amp;D, designing prototypes, partnership with private enterprises, building capacity of indigenous entrepreneurs in undertaking viable industrial production processes and in their ability to produce high quality marketable products through research training and technical know-how and finally, by providing demand-driven scientific and industrial R&amp;D.</td>
</tr>
</tbody>
</table>
Case study approach/units of analysis is employed in this research to provide a unit where the researcher could inquire about all the aspects that form the research question - trust, knowledge sharing, learning culture, and the use of gatekeepers as a response strategy to trust or lack of openness and capacity to interact in the organisation. Different questions and their related issues were considered as they emerged in every case study. The assumptions made in the previous chapter are moved forward to be analysed in the unit of research and analysis. In the end, it is the unit that comprises the whole. The researcher brings the evidence together from all these cases and combines it in a systematic way to generate a theory. These diversified cases add strength to the evidences because, unlike previous researchers, this research wants to establish similarities and differences in the gatekeeping strategy and roles. The diverse cases will allow the researcher to document evidences, analyse the role of the gatekeeper from different industry perspectives, and enrich the gatekeeping theory in a way that no other researcher has done so far. Another important observation that makes this unit very rich is that they contain private companies and semi-public institutions. This study can obtain different perspectives using different sources (Yin, 2003). It is important to highlight here that the main interest of the study lies in case variability (differences) and the ability to collect as many views as possible on the same perspectives. The focus is not on numbers and sample size (Yin 2009, p.77); rather the focus is on unearthing contextual meaning of trust as it is forged through social relations and through workplace interactions, and how it shapes the decision of a company on whether or not to use gatekeepers. It is about the ability to provide a deeper and more comprehensive understanding of the events and issues from the same unit of analysis.
4.4. Outlier Cases

Following the questionnaire analysis, two outlier cases appeared more interesting than the others. They are outliers because they exhibited unique aspects that were not intended to be analysed from the outset but were revealed from the questionnaire findings. For this reasons, additional follow-up was required to conduct an-depth analysis of both.

Case 1: R1

Although it was seen that R1 has “openness to knowledge sharing”, it could also be seen that they did not have trust, and disagreed with the use of gatekeeping. That was the only level that the researcher could know from the details provided in a quantitative data and from the outset of previous literature; it was not clear as to why or how a company feels they are open, but at the same time they do not accept that they should trust their partners (R1). Why were the “whys” unknown? Because the data collected were quantitative in nature and could not explain this. Furthermore, during the design, R6 was not included; and at that stage, the researcher was unaware that the relationship existed. R1 respondents had mentioned R6 in their response sheets and the researcher was interested to explore more about this relationship. In-depth interviews were the most appropriate at this stage of a research. The same previously designed interview guide was used to interview respondents at R6. These are presented in the respondents’ statistical frame along with the others.

Case of U1: The CoP

In U1, it could be seen that they had trust and were open to knowledge sharing but still they did not support the use of gatekeepers as individuals. The “why” was not obvious, although there were indications that some people worked in a formal aspect of gatekeeper that the company supported. This was unique from all other questionnaires; but the why and how could not be read- there was a high level of “technical know-how” people which
does not translate to trust and openness. The in-depth interviews represented the second chance to follow up with those people who were named by colleagues as part of the network. The in-depth interviews were held with outlier cases and in the form of focus groups (Denzin and Lincoln, 2000), to allow much deeper exploration of difficult questions than one-to-one in-depth interviews could offer. Their strength comes from subjecting the different viewpoints to critiques from peers before ascertaining that the outlier evidence is as strong and as relevant as it could be (Denzin and Lincoln, 2000).

To conclude this section, a case study is “an empirical inquiry that investigates contemporary phenomenon in depth and within its real-life, context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2009, p.19). The researcher chose to use a holistic case study inquiry because the study of trust and a learning culture (openness or closeness) is complex and requires inquiring about different issues that are inter-related. For example, holding social events may relate to an organisational desire to promote group-based learning and collective ownership, and promoting people interaction may be associated with the desire to identify who knows what or the technical know-who.

This does not explain, however, whether trust can be promoted through these activities. Sometimes organisations may organise different activities as a way to address identified gaps in trust - but they may choose to use a relationship broker over a gatekeeper. Clearly, these are complex issues worthy of inquiry. The case study offers a unique opportunity to “cope with the technically distinctive situation in which there will be many more variables of interest than data points and as one result” (Yin, 2009, p.19). From the case study we can study people and their context, and study the organisation and its context. Different sources of information were reviewed, including the secondary data - the literature offers insight into the case study before embarking on a fully fledged design process or the implementation stage. The case study “relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result.” Thus, in this research, different units are studied; primary data are collected using different tools (a questionnaire, different interviews, secondary data, its benefits), and
“prior development of theoretical propositions to guide data collection and analysis” (Yin, 2009, p.19) is used.

Yin suggests that “when several cases are studied under one theme or topic; they are called multiple-case studies”. The research is inquiring how gatekeeping, trust, and openness are related within a context of an organisation. To achieve this, the entire research question is integrated in each of the units of analysis. From this approach, holistic understanding is developed, from which “it is possible to draw a single set of cross-case conclusions from multiple case studies” (Yin, 2009, p.20). The case studies are designed in a systematic way such that (1) the unit of analysis or the case study is defined, (2), the theory or the propositions and issues that are underlying the anticipated research are clearly outlined, and (3) the decision was taken to use a “holistic” case study. In the next section the researcher will “define the procedures to maintain the case study quality” (Yin, 2009, p.24).

4.5. Data Collection and Validity Issues

The procedures to maintain the quality of the case study were built through the following staged approaches. Marshall (1996) recommends that the most valid sampling techniques for qualitative researchers as that which is “purposeful”, “convenient” (Marshall, 1996:522). The research analysis introduces a descriptive approach with qualitative findings supported with, wherever this is possible, descriptive statistics. “Utilizing such methods adds certainty that the data collected is valid” (Yin, 2009, p.74).
4.5.1. Quality and diversified research instruments

To obtain reliable primary data means that good and purposeful research instruments are used. For this reason, care was exercised with the design of the questionnaire and the interview guide document\(^{42}\) (appendix 3). The decision was taken to stage the research interviews so that the researcher would be able to reflect on the process itself. He also benefited from the research questionnaire pilot study, which was a smaller version of the large-scale data-collection activity. This pilot study constituted “trial run[s], done in preparation for the major study” (Polit et al., 2001, p.67). It provided the opportunity to conduct a 'trying out' of the questionnaires with 20 respondents from R1 and U1, so in-depth interviews were conducted with one person at each of these companies as well. The pilot run benefited the research because it showed in advance that the questionnaire was too long with 87 questions. After the pilot run, these were reduced to 72 questions. The researcher further benefited from the research protocols aspect - he learnt that with in-depth interviews time management was critical, such as learning how to “break the ice” when the conversation was not moving as planned. He also discovered that many of the questions were not familiar to managers in Rwanda and Uganda as had been initially planned. For this, the interview guide was revisited, and broken down into several small questions to spark discussion. From this discussion, useful insights into the day-to-day practices, context of issues, and the “whys” and “the hows” were obtained. During the inquiry, the researcher realised that it was good to have a note-taker as well, so he asked the HR office through a friend and they willingly offered the use of some of their staff to take notes, free of charge. There was also time to review the notes together to develop a proper case report after the interview. The results from the pilot were analysed and results were published in the Electronic Journal of Knowledge Management, 7(1), 63-76. Because this practice of using a note-taker had worked so well, the research that ensued used the same technique and a note-taker was always provided free of charge. This note-taker was equally available for discussion and clarification of thoughts after the

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42 The in-depth interviews follow an unstructured order. The guide document was meant to serve as a document with which I can cross check any question or issues that are important but have not been explored.
interviews. After this step, notes with any other material used were then taken away by the researcher for further analysis.

*Using diversified sources of data.* The validity is maintained by not relying on one version of sources. Yin (2009, p. 98) recommends “maintaining multiple sources of evidence”. The researcher relied on multiple sources of evidence in this way:

*Secondary data.* (see appendix 10, secondary data collection log book). The researcher reviewed governance instruments\(^{43}\) of the organisations studied. These policies provided information about the size of the company, the governance structure, the nature of business, and third party relations. They provided information about anti-trust policies and procedures, learning- and knowledge-creating strategy documents and government-related laws (auditing, human resource compliance, training, policies related to science, technology and R&D-related investments). The researcher found out, for example, that the majority of organisations had a top-down culture as a way of management and leadership decision-making. In this process, he was able to confirm the size of the organisation, and the financial history gave assurances regarding the company history to see what has been done by other researchers, and how they have done it. From the literature survey, the researcher identified many gaps in academic fields of study where trust, gatekeeping and openness to knowledge sharing as a way of an organisation culture belong.

*Using secondary data:* The researcher learnt that the majority of studies used quantitative methodologies to inquire about a subjective and highly qualitative subject topic like trust, relational issues, contexts, and communication between gatekeepers. Subsequently, he concluded, upon evaluation of the evidence, that several weaknesses and gaps he identified in the literature may well be associated with the choice of research samples -

\(^{43}\) Governance instruments include financial reports, approved action plans, human resources and personnel policies, workplace relations polices and strategies, systems management policies, policy on usage of company assets and property, and others.
particularly in R&D industries - which were overly reliant on one definition of gatekeepers. Hence, this researcher joined the growing list of those who critiqued the overreliance on the application of Allen’s model (Karine, 2009). This thesis however adopts a different approach. While Allen’s view may be correct, it has its limitations associated with contextual meaning. This is why this research intends to re-assess gatekeeping relevance in different industries, within different contexts, so that we can obtain new insights and new knowledge in this regard. The researcher learnt that some earlier researchers applied mixed methods successfully (Karyeija, 2012; Whelan et al., 2010), and their findings provide insight as to why they chose a mixed methodology over purely quantitative or purely qualitative ones, which was very helpful.

*Keeping a chain of evidence.* The primary data were collected through several channels and from several sources as per Yin (2009, p.98); from interviews (see interview guide in appendix 3) and the administration of questionnaires (see appendix 2 of this thesis) (Creswell, 1998, p.11). The secondary data were collected and coded as the study progressed (see appendix 10: secondary data log book). The multiple sources of data allowed the researcher to triangulate using different sources of evidence. The data collected were coded in different stages of the reduction process using case reports (see appendices 4, 5, 6 and 7). The data were then computed for analysis to generate data trends (see for example appendix 8: data cubes). The analysis was done primarily following two sources of the documentation - the data which were computed, the case reports which are typed from handwritten notes and from the secondary data, e.g. reports and other internal communications. The chain of evidence was maintained by keeping the diary and the list of evidence collected (appendix 10), but also this was maintained during the step-by-step process that the research followed. Below is the procedure followed in maintaining a chain of evidence:

1. Coding questionnaires returned
2. Data entry into SPSS
3. Preliminary analysis - the findings (case report inputs)
4. Interviews conducted in the order of R1, R2, R3, R4, U1U2, U3, U4, and U5
5. Case report writing
6. Preliminary interview findings analysis, update units of analysis results - findings from step three
7. Case report inputs revisited
8. Writing provisional case report
9. Design outlier cases: chose a purposeful sample, devise the strategy; hold in-depth interviews
10. Code, analyse findings from the outlier cases
11. Merge qualitative and quantitative findings in line with evidence collected
12. Cluster, associate, detect patterns
13. Develop chain of material evidence that supports different classes and patterns
14. Summing up findings from both interviews and questionnaires

In research, iterative methods as a mode of an inquiry of this research has an ultimate objective to
condense extensive and varied raw text data into a brief, summary format; to establish clear links between the research objectives and the summary findings derived from the raw data and finally to develop of model or theory about the underlying structure of experiences or processes which are evident in the raw data (Thomas, 2003, p.1).

The purpose of the approach taken for data analysis was to avoid the risk of losing an important aspect of a qualitative inquiry as advised in Thomas (2003); that “the primary purpose of the inductive approach is to allow research findings to emerge from the frequent, dominant or significant themes inherent in raw data, without the restraints imposed by structured methodologies” (p.2). Research instruments of analysis adapted from Yin (2006) were used.
4.5.2. The findings reduction process

Each company was identified in the order of R1, R2, R3, R4, R5 and R6 for Rwanda and U1, U2, U3, U4 and U5 for Uganda. This means a respondent in Rwanda was coded, for example, as 101R1. The themes of analysis were given a unique code for Trust, Openness, and Gatekeeping to denote the three major themes under study. It was critical that this coding be followed so that the researcher could follow and update the evidence and findings as the research progressed. In a much broader sense, how the evidence-gathering, coding and analysis were implemented is presented below.

Theme coding (see worksheet 1, appendix 4). There are three themes for three objectives. These are:

- Gatekeeper
- Openness
- Trust

This theme is the main theme from which several other sub-themes emerge. The sub-themes are considered and coded as the study moves along and this level of coding is recorded on worksheet 2 (appendix 5).

Variable coding. Coding a direct quote is called Variable coding. This means the data are used as collected under a particular statement (e.g. “A Higher Education qualification is not needed”, “knowledge gatekeeper is not our full-time member” of the organisation or, I am a “member of a professional association”. These statements are coded as V1, V2 and V3 respectively and they appear under the sub-theme category in the case report matrix. These codes are linked to the utility or prominence of the statement which are coded as follows: Using the example above, V1, V2 and V3 are sub-themes under the “gatekeeper”.

Utility coding. Once different variables have been generated, “direct quotes” are merged into clusters which are classified as “Utility findings” and are coded along the following five categories.

1. Strongly agree with… that…
The utility is defined by the level of prominence after all the respondents in a unit of analysis have been interviewed. To facilitate the analysis, a digit value is attached to these clusters as 1, 2, 3 and 4, and a utility report emerges from the findings (see appendix 11).

Clustering code (worksheet 3, appendix 6). From the above utility report, a cluster coding is produced. The cluster coding is called “clustering”. Clustering is based on three distinctive themes (Gatekeeping, Trust, and Openness). Under these themes each variable is classified as having:

- High prominence, Strongly Agreed (Code, SA)
- Middling prominence, Agreed, (code, A)
- No prominence at all, disagreed (code, DA). This category includes those who somewhat disagreed, disagreed and strongly disagreed.

Noise (Statement not applied)

4. Data Coding Process and Analysis Tools

4.5.2.1. Analysis of qualitative findings

Researchers argue that it is important that in mixed research each instrument is not seen as a stand-alone item (Yin, 2006). The advice given to avoid this pitfall is that data must be integrated as the coding and analysis move along; once clustering is complete, the integration process of the findings starts. Table 8 below is drawn on the basis of the example used earlier regarding the “Gatekeeper” theme and is merged with interview findings indicated in letters inside brackets. Worksheet 1 below shows the averages of how respondents across companies who answered to the questions regarding V1, V2 and V3, strongly agreed (1-1.4) or agreed (1.5-2.4) and disagreed (2.5-4). During the interviews, findings from each firm and each theme were summarised in line with predominance (overall agreed, disagreed, strongly agreed and so forth). From each unit of analysis and the outlier units, several respondents were interviewed, at which time they
discussed the research questions. After the interviews, however, several notes were generated amounting to several pages (see appendix 4: field notes). These pages were reviewed at the end of the unit of analysis. A reduction technique was applied to identify continuously emerging themes. These themes are classified using a second report sheet which is called a matrix report (appendix 5). In this matrix, prominent quotes are highlighted. They are given the number of the respondent identifier with the organisation (e.g. YR1). Quotes from the same case report represent the company (e.g. R1, R2 ...U1, U2 ...U5). Both the case reports and the matrix of prominent themes are clustered (see appendix 6), and merged with the quantitative data findings on essential levels of overall assessment in appendix 9. Key quotes in matrix reporting (appendix 5) are used during the write-up process. The emerging themes provided essential aspects of the case writing. Findings in appendix 9 allowed for comparability and ensuring integration and consistency between quantitative and qualitative findings.

Following case reports, a multi-case report was generated. The themes were linked with the objectives of this study. The multi-case report therefore was aimed at providing answers for the questions that were reflected within the aims and objectives of this study. With this, the objectives, research themes (presented case reports) and the research propositions all lead to one end result; providing an answer to the main research question which is to critically analyse the relationship between gatekeeping, trust and openness in an organisation. Using letters to show where they agreed (A), Disagreed (DA), strongly agreed, (SA) and so on, a table was drawn up representing the prominence of every firm. In the table below, the two figures are merged with the prominence of those variables as reflected in the cluster reports (see example of worksheet 2 below). It can be observed here that the findings are now merged into one figure, from which analysis and interpretation of the findings can be done.
Table 10: Worksheet 1

<table>
<thead>
<tr>
<th>Firm</th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>3.41(DA)</td>
<td>3.41(DA)</td>
<td>2.81(DA)</td>
</tr>
<tr>
<td>R2</td>
<td>3(DA)</td>
<td>4.25(DA)</td>
<td>1.75(A)</td>
</tr>
<tr>
<td>R3</td>
<td>2.62(DA)</td>
<td>3.5(DA)</td>
<td>2.75(DA)</td>
</tr>
<tr>
<td>R4</td>
<td>3(DA)</td>
<td>4.17(DA)</td>
<td>2.83(DA)</td>
</tr>
<tr>
<td>R5</td>
<td>2(A)</td>
<td>3.5(DA)</td>
<td>3.5(DA)</td>
</tr>
<tr>
<td>R6</td>
<td>2.16 (A)</td>
<td>2.67(DA)</td>
<td>2.5(DA)</td>
</tr>
<tr>
<td>U1</td>
<td>2.67(DA)</td>
<td>4.33(DA)</td>
<td>2.73(DA)</td>
</tr>
<tr>
<td>U2</td>
<td>2.5(DA)</td>
<td>2.6(DA)</td>
<td>2.2(A)</td>
</tr>
<tr>
<td>U3</td>
<td>2.7(DA)</td>
<td>2(A)</td>
<td>2.1(A)</td>
</tr>
<tr>
<td>U4</td>
<td>2.9(DA)</td>
<td>2.6(DA)</td>
<td>2.2(A)</td>
</tr>
<tr>
<td>U5</td>
<td>3(DA)</td>
<td>3.27(DA)</td>
<td>3.6(DA)</td>
</tr>
</tbody>
</table>

Key
V1= Higher education level is preferred
V2= Knowledge gatekeeper in the company is not a full time member
V3= The respondent is member of a professional group

Cluster coding allows a comparative view of the qualitative and the quantitative data which are analysed by SPSS. In the example above (Table 10), the level of its prominence is shown in two ways. The first result in numbers shows the findings obtained from the questionnaire results regarding a given statement. The overall case assessment after the interviews is written in clusters (SA, A, DA). Because the findings are in agreement, it is now possible to claim that the consistency in the data is enhanced as well.

From these details presented in the above table, patterns can be matched and conclusions drawn. For example, where R6 says experience does not matter, they use external gatekeeping, and they do not belong to a professional group. This finding may reveal that inexperienced people may not yet be active members of professional associations. That finding can be cross-checked with the company case report which shows that from the interviews and secondary data, R1 is a young company, with just a
few engineers, freshly graduated from a local national University and they are using a partner institution R6 for support and training. They are using Technical Assistants to support their business and R1 is their partner institution. This finding is then transferred into the main report (appendix 4, where all companies are analysed individually). Below is the illustrative case example from R6 inputs into the report. Finally, this coding approach was used and linked to patterns detection. Here the data are presented in a figure. From this level, however, different kinds of clustering are possible along the three clusters that are reflected in the figure (SA, A, and DA). From those clusters, the analysis is possible and can take different approaches such as pattern-building using a decision tree, kits, figures, histograms, graphs, etc. The consistency is enhanced where both instruments (quantitative and qualitative) are merged into one finding, as reflected in the illustration example where the findings from the same unit of analysis agreed on both the qualitative and quantitative grounds. Below (table 11) is an illustration of worksheet two, which was the field level analysis of the field notes.

44 More detailed R6 findings as inputs in this thesis can be read from the findings section.
Table 11: Worksheet 2

<table>
<thead>
<tr>
<th>Worksheet 1 (case report)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Code letter for this case</strong> (include the code as is)</td>
</tr>
<tr>
<td><strong>The Site Location</strong></td>
</tr>
<tr>
<td>Source of information and context—interview R6, field visits</td>
</tr>
<tr>
<td>The challenges/constraints-A new manufacturing company, 10 years old, specialises in packaging, 23 engineers. Need to recruit highly qualified personnel in R&amp;D department.</td>
</tr>
<tr>
<td>Uniqueness in:</td>
</tr>
<tr>
<td>Theme 1</td>
</tr>
<tr>
<td><strong>Sub-themes</strong> (1-3)</td>
</tr>
<tr>
<td>— gatekeeper <em>AG Ext</em>_________</td>
</tr>
<tr>
<td>Theme 2</td>
</tr>
<tr>
<td><strong>Sub-themes</strong> (1-4)</td>
</tr>
<tr>
<td>Theme 3</td>
</tr>
<tr>
<td>Prominence of theme 1 in this case</td>
</tr>
<tr>
<td>Prominence of theme 2 in this case</td>
</tr>
<tr>
<td>Prominence of theme 3 in this case</td>
</tr>
<tr>
<td>Expected usefulness this case can be for developing theme 1:</td>
</tr>
<tr>
<td>Expected usefulness this case can be for developing theme 2:</td>
</tr>
<tr>
<td>Expected usefulness this case can be for developing theme 3:</td>
</tr>
<tr>
<td><strong>Contextual and conceptual factors identified</strong></td>
</tr>
<tr>
<td>Excerpts and quotes that appear often</td>
</tr>
<tr>
<td>“have confidence in our business”</td>
</tr>
<tr>
<td>Have a problem with social events...cost money and time...</td>
</tr>
<tr>
<td>Employee is voluntarily organising get together twice a year.... “Cannot read many pages (of the manual) and then get to do the job on time”</td>
</tr>
<tr>
<td>“Need more training but is hard to get”</td>
</tr>
<tr>
<td>“…trust is an absolute necessity and it is not possible to pretend that it is there when it is not”</td>
</tr>
<tr>
<td>At R6, trust is all we depend on, and we need that to perform successful business....</td>
</tr>
<tr>
<td>R1 trusts us, but we also trust them.”</td>
</tr>
<tr>
<td>“Gatekeepers are well trained people and we hire such people because we vest trust in them to help us through.” (GM)</td>
</tr>
<tr>
<td>“I collect and disseminate information to key business partners within our supply chain”</td>
</tr>
<tr>
<td>“I provide advice to businesses so that they can improve their production or “financial returns”</td>
</tr>
<tr>
<td>“As part of my company community we have intervened in several ways to help set up new businesses, through providing specialized advice”.</td>
</tr>
<tr>
<td>“We are a small business; hence it’s critical that each one of our senior members be trustworthy, responsible, and able to access knowledge, ideas, and innovations for our survival.”</td>
</tr>
</tbody>
</table>
Enhancing validity by using pre-designed instruments. Yet “another option to ensure validity when seeking data is to use a pre-designed measurement such as an existing instrument previously tested and found valid” (Creswell, 2005, p.27). Some research questions were ‘borrowed’ from Argote and Linda (2000), Szulanski (2000) and Cumming and Teng (2003). These questions were not copied exactly; but the meaning of their thoughts and the design style were maintained to ensure the comparability of findings.

4.6. Limitations of the Study

4.6.1. Generalisability and transferability of the findings

The first limitation of this research is associated with the case study as a research strategy in itself. The problem with case studies is that they are rarely a basis on which to generalise the findings (Yin, 2003, p.10), but the purpose of the sample is not to test a theory but rather to generate possible lines for future enquiry (Yin, 2009). The findings obtained from a case study are often subjected to this question of generalisation and transferability in particular. It is still, however, very possible to address this issue by providing a detailed account of what has been done, what has been found and how it was found. The case study as a qualitative inquiry draws its meaning from its richness to offer real-life examples and meanings that are often excluded by quantitative researchers (Blaxter et al., 1996, p.61; Yin, 2003, p.10). The purpose of this research was to explore, and explain through a critical analysis, the relationship between trust, openness, and a firm’s choice as to which form of gatekeeping it uses. The objective was to generate possible theories on three accounts:

1. Is there a relationship between company openness to knowledge sharing with trust?
2. Is there a relationship between gatekeeping and having trust and openness in a company?
3. Is there a relationship between having openness in a company, trust and the firm’s choice to employ an internal or an external gatekeeper?
This study examined the relationship between gatekeeping, trust and openness, and a firm’s choice of a knowledge management strategy through gatekeepers. Knowledge management here is defined as the entire process of identified knowledge, processing into a contextually meaningful product and sharing it with the wider network. This process entails encoding and coding for the purpose of the recipient requirements. Knowledge management is defined as an act of coordinating, managing, leading, transforming and sending contextualised knowledge for clearly defined purposes. The 105-item questionnaire generated a rich base of primary quantitative data from which frequencies related to degree of agreement were enumerated. Counting how many respondents held a position on statement allowed the detection of a “widely held view”. On the basis of these cumulative statistics, the researcher was able to detect patterns from which “dominant values” are established. The results from the interview (qualitative findings) were used to explain the patterns, to add value, to create context, and to illicit theories.

4.6.2. Further lessons learnt

Three types of challenges emerged from this study. The first was related to resources available and the second was associated with the academic field itself, while the third was associated with the research process.

There exist several layers in studying gatekeeping, trust and learning culture of people in an organisation and there are several angles that one may take. The initial phase of this study was characterised by uncertainties as regards to which particular angle to take. The challenges are also associated with the newness of the study itself; for example, there is a gap in fully integrated studies on gatekeeping, trust and openness to knowledge sharing outside those that studied gatekeeping as a way of communication between scientists. During the entire duration of the research, not one single integrated study was found. Gatekeeping research is predominantly concentrated around communications between and among scientists. Trust is studied against the backdrop of the social sciences, and is viewed rather as an inter-personal problem which has nothing to do with organisational innovation, learning and strategic choices on how they respond to lack of trust. Openness has not been investigated in the same light with trust, and certainly not
associated with gatekeeping. That absence of integration means that this research has to be assessed within the recognition and limitations of its newness of use of iterative methodology.

The design process posed a very serious challenge with regard to the best direction to take. The researcher however drew inspiration from previous researchers; that “qualitative research is harder, more stressful and more time-consuming than other types… Qualitative research is only suitable for people who care about it, take it seriously, and are prepared for commitment” (Delamont, 1992, p.viii). This reassured the researcher that it was not the time to give up.; moreover, according to Thomas (2003), he did not have to adhere to one framework of analysis which was looking somewhat incomplete. Indeed, Thomas advised that

the trustworthiness of findings can be assessed by a range of techniques such as (a) independent replication of the research, (b) comparison with findings from previous research, (c) triangulation of the findings, (d) feedback from participants in the research, and (e) feedback from users of the research findings (2003, p.4).

After several failed attempts, the researcher discovered that the more time he spent with the data, the more he reflected on it and the more he was able to detect trends and differences, thus making the frustrations of the process worthwhile.
4.7. **Ethical Issues in this Study**

4.7.1. **Negotiating access to firms’ respondents**

The researcher used strategies that befitted the situation, i.e. local cultures and the management styles specific to each organisation visited. The findings and lessons learnt from the pilot study helped to inform the researcher on a number of points including the management styles, which is a top-down culture of leadership. Being familiar with the culture of Rwanda and Uganda, the researcher knew that it had to be the CEO or his appointee who granted permission to access the company for the research. This was proven true in visits to both in Rwandan and Ugandan companies. Given the nature of the top-down management modes of all organisations visited, the researcher held an introductory meeting with the Organisational Managing Director or in other cases, the Chief Executive Officer or the Director General. In the context of this research, all these terminologies represent the same level of authority – the highest decision maker in a company being inquired about. These meetings were largely organised through informal channels with the help of introductions by friends. During the meetings, the researcher explained the research objectives and intended outcome, and then asked permission to meet the employees. All 11 organisations granted permission. The Director of Human Resources and the Director of Finance and Administration were tasked to help with the logistics associated with identifying and obtaining the right sample and accessing the right information in timely fashion. In some organisations, the role of the Human Resources Director was played by the Staff Development and Training officer. With the help of company officials, the researcher and employees concerned agreed on the day and time to meet respondents who were selected to take part.
4.7.2. **Informed consent**

“Informed consent is an important component of research and is an integral part of the research process” (Creswell, 1998, p.11). The researcher explained to participants about the purpose and methodology followed for this research. The purpose was guiding the respondents before they could decide whether or not they will take part in the study (Creswell, 2005, p.27). In any case, the participation in this research is voluntary, and they had the option at any stage of the research to withdraw without any need to explain why they were doing so.

4.7.3. **Confidentiality**

During the sampling process and the research implementation stage, the researcher came across respondents’ personal data. The respondents gave different accounts, and spoke freely in most cases. They were given assurance on the confidentiality of their data; the researcher received a letter from Southampton Solent University which addressed this question and which stated that any data provided to the researcher would be treated in the utmost confidence unless express permission was obtained, on rare occasions, to state a respondent’s name. In this research however there was no need to state the name of a person. The selection of the respondents ensured the confidentiality and privacy of the participants, by allocating an identifying number instead of their names.
4.8. Conclusion

This chapter explains the research methodology chosen in this study in order to conduct a critical analysis of the relationships between trust, openness and a firm’s choice of gatekeeping as a knowledge management strategy. The researcher detailed his reasons for the choice of a mixed methods approach, based on the ability to reach a larger number of people when the questionnaire was administered. The quantitative numbers obtained could not explain or provide answers on subtle details of the human behaviour that trust and openness entailed. This prompted a defence of the choice of the case study as the unit of analysis.

In order to obtain reliable data, the choice was made to combine multiple sources of data from which patterns can be identified. For this, 11 case studies and two outlier cases were selected in order to ensure a representative sample from which sufficient details could be obtained; and detailed accounts were available from a range of sources. The outlier cases provided a much deeper understanding of how trust and openness shapes specialist choice on who to share knowledge with and why. From the 11 organisations, detailed answers to the research question were generated. The 105 questionnaires that were returned constitute a unique source of primary quantitative data from which the researcher was able to enumerate how many respondents held a given view on trust, openness and gatekeeping.

The validity of the research findings has also been explained in this chapter; the researcher was able to link trust, openness and firm choice of gatekeeping as a knowledge management strategy. The procedures and processes involved in maintaining the quality of the research were discussed, ensuring that there is a chain of evidence, followed by an introduction to the data analysis section which should be in line with the research question: “What is the relationship between trust, openness, and the use of gatekeepers in organisations”.

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CHAPTER 5: FINDINGS, ANALYSIS, AND DISCUSSION

5.1. Overview

This chapter reports the research findings and discusses in detail the results that were obtained. Its discussion is aimed at bringing together a coherent body of primary and secondary evidence in order to generate theories about trust, openness in organisations and the use of gatekeepers as a knowledge management strategy. The chapter introduces a themed analysis that is in line with the following three objectives of the research.

The first objective of the research is to analyse different types of gatekeepers within the case studies under consideration. In the first section different kinds of gatekeeping, both formal and informal, are considered, and the key benefits that gatekeepers provide to their organisations are outlined.

The second objective of the research is to analyse the knowledge environment in Rwandan and Ugandan organisations. In a second section, the following questions are answered; to what extent do employees feel free and open to knowledge sharing in these organisations? and, to what extent do these organisations hold social events as a way to encourage openness to knowledge sharing and to promote trust among their employees? This section contributes to the overall thesis by helping to establish the soft nature of and level of prior knowledge in knowledge management systems.

The third objective is to critically analyse the relationship between trust, openness, and gatekeeping. From the literature review, it is proposed that there is a relationship between gatekeeping, openness, and trust. The evidence thus far is considered in a third section, to determine whether this relationship exists. After a full consideration of this research, evidence is mapped against each of the objectives, and conclusions are drawn on the basis and merits of the evidence available.
5.2. **Revisiting the Research Question**

What is the relationship between knowledge sharing, culture, trust, and the use of knowledge gatekeepers in organisations? In order to answer this question, the knowledge environment and the use of gatekeepers in Rwandan organisations must first be explained. This contextual understanding will then serve as a foundation to answer the main question of the third objective. The original research objectives are as follows:

- to analyse the different types of gatekeepers within the case studies under consideration;
- to analyse the knowledge environment in Rwandan and Ugandan organisations; and
- to critically analyse the relationship between trust, openness to knowledge sharing in an organisation, and gatekeeping.

5.3. **A Recap of the Main Units of Analysis**

A total of 105 employees from 11 different companies were chosen for the survey. The company details are as follows:
Table 12: Recap of Units of Analysis

<table>
<thead>
<tr>
<th>Code</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>A brewer and soft beverage company in the Republic of Rwanda</td>
</tr>
<tr>
<td>R2</td>
<td>A manufacturer and distributor of fast-moving consumer goods</td>
</tr>
<tr>
<td>R3</td>
<td>A local textile manufacturing company</td>
</tr>
<tr>
<td>R4</td>
<td>A commercial bank</td>
</tr>
<tr>
<td>R5</td>
<td>An R&amp;D and agri-business value-adding company with regulatory responsibilities in the coffee sector (Government Institution)</td>
</tr>
<tr>
<td>R6</td>
<td>A private company that manufactures plastics for housewares</td>
</tr>
<tr>
<td>U1</td>
<td>A company that manufactures edible fats and personal care products</td>
</tr>
<tr>
<td>U2</td>
<td>A manufacturer of edible fats</td>
</tr>
<tr>
<td>U3</td>
<td>A manufacturer of personal care products</td>
</tr>
<tr>
<td>U4</td>
<td>A manufacturer of plastics</td>
</tr>
<tr>
<td>U5</td>
<td>An R&amp;D Institute (Government Institution)</td>
</tr>
</tbody>
</table>
5.4. A Recap of the Research Instruments

Respondents were asked to make qualitative judgments about the extent to which they would agree with different kinds of statements that described knowledge scenarios. Responses were recorded in levels for each of the variables in the themes. The levels of abstraction were as follows:

1. Level 1 - Strongly Agree
2. Level 2 - Agree
3. Level 3 - Somewhat Disagree
4. Level 4 - Fully Disagree
5. Level 5 - Statement Not Applicable

In-depth interviews were also conducted in order to explain subtle areas of research that were not otherwise obvious from the trends and quantitative data.

5.5. Knowledge Gatekeepers in the Knowledge Environment in Rwanda and Uganda

Who are these gatekeepers?

The respondents were asked to describe to what extent they feel their roles fit with definitions of the following concepts: Key Man/Person (KM/P); Knowledge Gatekeeper (KG); and Chief Knowledge Officer/Manager. Respondents were also provided with opportunities to introduce other concepts and names, provided that key aspects of gatekeeping were still fulfilled. They were also asked to explain whether they perform these roles as part of more formal roles (that is, one appointed by the company through a contract), or whether they perform these roles as part of more voluntary activity. Two instruments were used to gather data: the questionnaire method and in-depth interviews. The following categories that were expressed by respondents were distributed within the different organisations as follows:
Table 13: Type of Gatekeepers by company of origin. Source: Research findings

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Gatekeeping Role</th>
<th>Gatekeeping Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>“Technical Assistants”</td>
<td>Formal</td>
</tr>
<tr>
<td>R2</td>
<td>Strong culture of CoP</td>
<td>Informal</td>
</tr>
<tr>
<td>R3</td>
<td>CKO/TKIG/Key Man</td>
<td>CKO- Formal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Key Man- Informal</td>
</tr>
<tr>
<td>R4</td>
<td>Use CoPs</td>
<td>TKLG- Informal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CoPs- Formal</td>
</tr>
<tr>
<td>R5</td>
<td>KG/Key Man</td>
<td>Informal</td>
</tr>
<tr>
<td>R6</td>
<td>CKO/TG/TKIG/Key Man</td>
<td>CKO/Key Man- Formal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Others- Informal</td>
</tr>
<tr>
<td>U1</td>
<td>Uses everyone through CoP and TKIG (appointed by CFO and CEO as part of Job description)</td>
<td>CoP- Formal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TKIG- Informal</td>
</tr>
<tr>
<td>U2</td>
<td>CKO/TKIG/TKIG/Key Men</td>
<td>CKO- Formal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Others- Informal</td>
</tr>
<tr>
<td>U3</td>
<td>CKO/KG/TKIG/Key Man</td>
<td>Informal/ Formal</td>
</tr>
<tr>
<td>U4</td>
<td>KG+ use CoP</td>
<td>Informal</td>
</tr>
<tr>
<td>U5</td>
<td>TKIG, Technical Assistants, Coordinators</td>
<td>T.A/ Coordinators-Formal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TKIG- Informal</td>
</tr>
</tbody>
</table>

The table above shows the different kinds of gatekeeping roles that were found to exist in the Rwandan and Ugandan firms. These roles included those identified in the literature: CKO; Key Man; CoPs; and KG (Allen’s definition). In addition to these roles, there were three other “concepts” or job functions that employees in these firms associated with the gatekeeping role. These are:

- “Technical Assistant”;
- Technological Knowledge Gatekeepers; and
- Coordinators.

After in-depth interviews, these different types of gatekeeping roles were clarified and separated into three main categories. These are:

- the Gatekeeper as subject expert;
- the Gatekeeper as performing organisational support functions; and
- the Gatekeeper as knowledge administrator.
Classification Criteria

1. *The role itself:* gatekeeping is not a communication arrangement. It is rather an in-depth reflection of one’s area of expertise, the value of one’s knowledge, one’s network, and the context within which desired knowledge may lead to positive impacts for its recipients.

2. *The function arrangement:* This involves situations where the gatekeeping role is performed as part of a formal organisation. The value attached to the role here is associated with monetary value. Rewards are defined in terms of salaries, extra day off from work, and fringe benefits. There is a formal support element to this role, whereas informal roles have no formal accountability to organisational leadership and include no monetary or formal rewards. The informal role has no established legal boundary; it relies on the ethical and moral behaviours of the expert. This “fluidity” requires a higher commitment to the role than does the formal role of gatekeeping.

*Where the role is to provide support to experts or to serve a more functional role (e.g., marketing or claims):* In these cases, non-expert-oriented knowledge may be collected, vetted, contextualised, and shared prior to its contact with an expert who in turn may conduct advanced technical analysis and apply different techniques of research before the organisation can generate new knowledge. Typically, the role of KG belongs to this category. Because of the differing levels of expertise and demands within each category, it can be seen that, in every organisation, there are far fewer CKOs, TKIGs, and Key Men than there are KGS, coordinators, and CoPs. These result in a pyramid shape as shown in Figure 15: Gatekeeping Categories. Each of the categories within this is discussed in detail below:
From the questionnaire results, the following results were recorded: KGs who are external to the organisation were 28.97% and the KGs who are internal to the organisation were 16.55% and they have access to expert-oriented knowledge. They are more interested in high-level, scientifically proven knowledge. They distinguish themselves by “who they talk to” and the context in which they use their knowledge. For example, engineers distinguish themselves for the purposes of cost savings (smaller budgets), problem solving, and convenience (proximity and friendship were driving forces). Sales and marketing departments distinguish themselves because they “are interested in business intelligence” (respondent U1), “scoping product potential” (R3), “risk assessment” (U4), and “competitor analysis”. The concept of “Techknow-logical Gatekeepers” (TKG) comes out of this attribute that it shares with that of the KG, but involves a much higher level and finer detail of expert knowledge. Besides being “the best” in terms of the quality of their knowledge, they are described as “context-experts” (Engineer U5). They know that knowledge means different things to different audiences and they capitalise on this fact (Engineer U5); “They give knowledge a contextual meaning” (CFO respondent). TKIGs are drivers of the quest to obtain knowledge, with a
special emphasis on the *techne-knowledge* that is absolutely and contextually relevant for the particular problem at hand.

The generalist includes the KG (20%) and Key Person (13.79%). Key Persons and CKOs act as key people as part of their daily jobs, and they are appointees of organisational leadership, although they are not necessarily experts. They are considered key people for the purposes of daily operations and operate within formalised units of organisations.

Knowledge Administrators (12 or 8.28%) are those employees who are perceived to be part of larger, more functional appointments, and they include Knowledge Transaction Leaders and Chief Knowledge Officers. Although they are identified as being part of CoPs, along with engineers and heads of departments, Knowledge Administrators do not seem to learn by peripheral participation. These members remain active members of the CoP inside of which small groups of engineers and only a few heads of department (typically, engineers on operations and R&D teams) form powerful and informal organisational networks. This small but powerful network of people discusses issues, completes research, and shares knowledge within itself, from which place it then decides what knowledge to make accessible to managers and colleagues within their larger CoPs. This group is characterised by the presence of strong mutual trust and person-to-person connections, and it seems to rely on informal, mutual recognition instead of more formal channels. It operates in the form of a CoP.
5.6. Technical Assistants and Coordinators in U5 and R1

These roles were described as providing “meaning translation” (respondent U5). At R1, the coordinator is required to liaise with the design and production team and the marketing promotion team (both of which are in Rwanda), as well as the headquarters team. The headquarters team provides technical support to the team in Rwanda through the coordinating TA. The TA is deployed on the ground in Rwanda in order to manage the knowledge translation process, but he also manages the risks that are associated with knowledge transfer, or the ambiguity and “meaning translation” that must occur in the transfer from a European culture to an East African culture. His role is to “promote the internalisation of processes” within R1 (respondent 1, R1) and to “build local capacity to own and use knowledge [that is] transferred through him” (respondent 2, R1).

Organisation U5 fulfils the role of Technical Assistance that is promised to the host countries as part of several bilateral cooperation agreements that support local industrial development. This concept has been widely used within development studies to refer to those people who link the host government with the knowledge network, provide access to resources, and prepare essential knowledge packages in the form of best practices (Wilson, 2007). People in this role collect, screen, and pass on information to U5’s wider knowledge network. They are “knowledge translator interpreters”, in the way that is suggested in the literature (Sverisson, 2001). They present U5 in international forums, present the work of U5 in a positive way, and act as flag-bearers, advocates, and ambassadors (Cranefield and Yoong, 2007, p. 134).

TAs and Coordinators work to develop sound understandings of local knowledge systems. However, those interviewed said that the similarities in identity, internal systems, and culture that exist between them as the sources of knowledge are so complex that they find it almost impossible to become fully conversant with the values and cultures that are reflected by their local counterparts:
“I tried my best to fit in this system, but it’s not that easy. I have failed... I do not think I made that much impact on mind-set either as yet.” (TA at R5)

“There are lots of intricacies, language issues. There are differences in how I and my team perceive the seriousness of issues... Sometime it’s really small things that matter... but small things do not matter in this culture.” (Coordinator at U5)

It can be concluded that there are various ways in which the function of gatekeeper can be fulfilled. This section identifies and discusses these ways and elaborates upon existing roles to show that TAs and Coordinators are new ways through which gatekeeping roles are being fulfilled in Rwanda and Uganda.
5.7. To what extent do managers in the targeted organisations understand the systems that they run?

The extent to which prior knowledge about systems is understood is established in this section. Second, a higher level of detail from employees and managers is obtained in order to become familiarised with the overall context as well as the level at which further questions that are more technical in nature should be introduced.

The respondents’ level of understanding of their KM environments as well as their own understanding of KM systems is assumed as pre-requisite knowledge. The extent to which the system is understood corresponds to the extent to which the knowledge-sharing environment is or is not conducive to knowledge sharing. The concept of “understanding the system” is used here in the way it has been explained in Abarbanel et al. (2012); this is, as “understanding complex systems”. This refers to complex but interrelated organisational systems that include how people, tools, and tasks interact. It includes the concepts of culture and identity, which shape how people will react to given circumstances. It also includes the fluidity and spontaneity that characterise these systems. These systems are difficult to dismantle without seeing how the respondents’ understandings represent the sum total of their appreciation of the organisations’ system vis-à-vis their job position and their own qualifications. Here, the problem of “absorptive capacity”, which prevents or facilitates knowledge sharing and transfer, is assumed. The target population for this research included those involved (at least, those who should have been involved) in organisational knowledge management activities from the strategy, design, and implementation perspectives. The starting question was; Do managers have an understanding of the knowledge management systems that they run? The following figure shows the results of this question.
Figure 16: Respondents’ understandings of their Organisations’ Knowledge Management Systems

The findings show that different levels of understanding exist within these corporations. More importantly, however, the majority of respondents displayed an advanced-to-intermediate level of understanding, with only a few possessing a basic level of understanding, of the KMS of their organisations. This level was considered to be good enough to warrant investigation of the knowledge environments of these organisations.

Another important aspect of these questions was the establishment of a baseline that would allow senior managers to rate the success of their current KMS at the time of the study. This level of analysis assured us that once the study entered into a deeper analysis of knowledge gatekeeping, the context would allow the researcher to critically contextualise the findings.
Figure 17: KMS is considered to be a Success

The overall results show that 82.5% of respondents believed that their KMS was a success, as opposed to 7% who disagreed and 3% who did not know. A small percentage of respondents abstained from answering these particular questions (7.5%) and they are not presented on this graph (figure 17). This situation reflects the fact that those interviewed were considered key people in knowledge-sharing processes or at least had some level of involvement in the KM of their organisations. There was a general expression of concern across respondents in the categories above. For example, the respondents identified a critical shortage of technical people, a lack of technological knowledge, and the high costs involved in purchasing and maintaining intelligent systems and KM computer-based systems as key barriers to KM and work performance. None of the surveyed companies employed any advanced usage of intelligent systems, for example, and their internal processes were predominantly manual. The use of Knowledge Gatekeepers (albeit with differing degrees of use) was one major way in which these companies accessed knowledge. Extending the knowledge of different kinds of gatekeeping in the selected units of analysis that were supported by KMs, a question arose: Why do organisations have an interest in the use of Gatekeepers? The researcher posed this question to respondents. The following sections present and discuss their answers, as well as discussing the results that emerged from those views.
5.8. To what extent do Gatekeepers facilitate and create external linkages within the systems?

The 105 respondents were asked to what extent they would agree with the statements, “We find that use of a knowledge gatekeeper is an easy way to improve our knowledge base” (response A) and “We reward the knowledge gatekeeper for his job” (response B). The elements of this reward are important because they may provide a basis for reflecting on the value attached to this role by a given company.

<table>
<thead>
<tr>
<th>Level</th>
<th>Degree of answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>2</td>
<td>Agree</td>
</tr>
<tr>
<td>3</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>4</td>
<td>Fully Disagree</td>
</tr>
<tr>
<td>5</td>
<td>Statement not Applicable</td>
</tr>
</tbody>
</table>

Table 14: Cluster Levels

Table 15 below shows the results obtained.
Table 15: Benefits of employing a Gatekeeper (average responses)

<table>
<thead>
<tr>
<th>Company</th>
<th>“We find that use of a knowledge gatekeeper is an easy way to improve our knowledge base”</th>
<th>“We reward the knowledge gatekeeper for his job”</th>
<th>Average response in given company</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>2.24</td>
<td>2.88</td>
<td>2.56</td>
</tr>
<tr>
<td>R2</td>
<td>2</td>
<td>2.75</td>
<td>2.</td>
</tr>
<tr>
<td>R3</td>
<td>1.38</td>
<td>2.13</td>
<td>1.76</td>
</tr>
<tr>
<td>R4</td>
<td>1.83</td>
<td>2.17</td>
<td>2.00</td>
</tr>
<tr>
<td>R5</td>
<td>1</td>
<td>1</td>
<td>1.00</td>
</tr>
<tr>
<td>R6</td>
<td>1.33</td>
<td>1.17</td>
<td>1.25</td>
</tr>
<tr>
<td>U1</td>
<td>2.47</td>
<td>2.73</td>
<td>2.60</td>
</tr>
<tr>
<td>U2</td>
<td>1.2</td>
<td>1.6</td>
<td>1.</td>
</tr>
<tr>
<td>U3</td>
<td>1.7</td>
<td>1.5</td>
<td>1.60</td>
</tr>
<tr>
<td>U4</td>
<td>1.8</td>
<td>2.2</td>
<td>2.</td>
</tr>
<tr>
<td>U5</td>
<td>2.6</td>
<td>3.13</td>
<td>2.87</td>
</tr>
</tbody>
</table>

From this table, we can derive the comparative results presented in Figure below where, “Response A” represent answers given to the question “We find that use of a knowledge gatekeeper is an easy way to improve our knowledge base” and;

“Response B” represents answers given to the question “We reward the knowledge gatekeeper for his job”
Figure 18: Use of Gatekeepers and rewarding the Role by Firms

From this figure, it can be seen that 10 of the 11 companies surveyed agreed that use of a KG is an easy way to improve their knowledge base. Four of 11 in Rwanda strongly agreed (R3, R5, R6), as did U2 in Uganda. All of these companies operate in the manufacturing and value-addition sectors. Of the 10 companies that agreed that gatekeepers are used to improve their knowledge base, only five actually rewarded this role, and only two strongly agreed that this role is rewarded. It was observed that rewards were present in value-adding industries in Rwanda, while in companies with more knowledge interests, such as R&D and finance (U5 and R4), the result was mixed. In the R&D Company, gatekeeping is not rewarded but in the financial sector (R4), the role is rewarded. From the figure above (figure 22), these companies can be classified into the following three clusters.
Table 16: Gatekeeper Perceptions by Cluster of Findings

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>Strongly agreed that KGs are facilitators who create external linkages</td>
<td>Agreed that KGs are facilitators who create external linkages</td>
<td>Disagreed that KGs are facilitators who create external linkages</td>
</tr>
<tr>
<td>Companies</td>
<td>R3, R5, R6, U2, U4</td>
<td>U1, R4, R1, R2, U3</td>
<td>U5</td>
</tr>
</tbody>
</table>

Each of these clusters can be described as follows:

Cluster 1—Companies that belong to this cluster strongly agreed that Knowledge Gatekeepers are facilitators who create external linkages. It can be seen that 36.19% of the sample fall into this particular cluster. Within R3, 62.5% of respondents strongly agreed that Knowledge Gatekeepers are an easy way to improve the company’s knowledge base, and 37.5% agreed with the same variable. R5 believes that that it uses Knowledge Gatekeepers and pays them for the job; therefore it uses Knowledge Gatekeepers as facilitators to create external linkages. Within R6, 66.7% strongly agreed that the company uses Knowledge Gatekeepers and pays them for the job, whereas about 33.3% agreed with the statement. The majority (80%) of the employees at U2 strongly agreed that gatekeepers are facilitators who create external linkages for the company. They equally use Knowledge Gatekeepers and pay them for their job. U2 and U4 agree; however, at U4, only about 50% of employees strongly agreed, and 20% agreed that they had good support for this view. A disagreement emerges in U5 because they do not see gatekeepers as facilitators to the learning process, yet they still somewhat agree that they pay them. This is a surprising finding considering that, traditionally, gatekeepers are

45 There is lack of clarity on what constitute a pay. Countries under study receive and host experts who provide voluntary services, others come in under the United Nations’ programme which encourages the diaspora to transfer their know how to
considered vital for success of R&D ventures. This finding is further explained by the fact that U5 is a semi-governmental R&D institute whose staff is supported by international institutions. Further clarity on this detail will emerge in the outlier case design section. Overall, it can be concluded that “in Rwanda and Uganda, Knowledge Gatekeepers are facilitators who create external linkages.”

Cluster 2—Companies that belong to this cluster agreed that Knowledge Gatekeepers are facilitators who create external linkages. These companies are U3, U1, R4, R1, and R2. In U3, about 40% strongly agree, 50% agree, and 10% somewhat disagree that they use Knowledge Gatekeepers to improve their knowledge. Since a majority of the employees agree with the variable, the company is classified within Cluster 2. Within U1, 20% believed that the statement was not applicable, about 20% somewhat disagreed with the variable, 26.7% strongly agreed, and 33.3% agreed. A clear majority falls within the agree category here, so U1 is classified in Cluster 2. Within R4, 16.7% somewhat disagreed, 33.2% strongly agreed, and 50% agreed that they use Knowledge Gatekeepers for the improvement of the knowledge of the company. R4 is therefore classified within Cluster 2. R2 is classified in Cluster 2 because 50% of respondents agreed with the variable of the theme, 25% strongly agreed, and 25% somewhat disagreed. Finally, responses within R1 were quite dispersed: a certain percentage strongly agreed, a certain percentage agreed, some preferred the somewhat disagreed option, and the rest disagreed. After analysing the averages here, the company was classified in Cluster 2.

From the graph, it can be seen that 40% of the sample falls in this particular region. Their responses differ. For example, if U1 and U4 are compared, although they fall in the same cluster, their responses differ by an average of 0.60. Why is this? Because of the nature of these two companies’ strengths, they may have other means of improving their knowledge bases and creating external links (e.g., belonging to professional groups). For example, at R1, a majority of respondents agreed that they “belong to a professional countries of origin. Under both schemes firms can recognises the services by a way of certificates, others provide accommodation and living costs. In current labour and income tax laws of these countries, such income is not classified as salary—but this remain a cost to the company, hence, the research adopts this middle position of “somewhat agree” that this type class of experts.
group which helps them to advance their professional knowledge, skills, and experiences” (overall agreement to statement in the questionnaire). From the theme of “community of practice”, this shows that, together with using Knowledge Gatekeepers, about 66.67% of employees in this particular company agree that they are part of a professional group within which they improve their professional skills and experiences. This group of people acts as Knowledge Gatekeepers and enhances external linkages.

Looking at the external linkages of these companies and taking into consideration the issue “the business practice and operational mechanisms of our partners are very similar to ours”, company R2 (a beverage company) uses Knowledge Gatekeepers to improve its knowledge base. Being an international company, it has business partners. About 75% of the employees in this company agreed that their practices and operational mechanisms are very similar to those of their business partners.

**Cluster 3**—Companies that belong to this cluster mostly disagreed that Knowledge Gatekeepers are facilitators who create external linkages. U5 falls in Cluster 3 because 13.3% of the employees strongly agreed and 40% agreed. This particular company uses Knowledge Gatekeepers but employees disagree that the company pays them for their jobs. The reasons provided were: “in this particular company, knowledgeable people share ideas with each other”; and “they need not be paid and the partners of this particular company are free to share ideas with each other as well” (respondent U5). There are, however, further issues that are not clearly outlined here. There was a sense of employees not wanting to express things on paper. A visit on the ground revealed more than the obvious practices and details. It was found that an informal network exists within which there is a give-and-take relationship of ideas. This aspect is explored further in the outlier study of U5.
5.9. **Gatekeeping and Qualifications within the Knowledge Environment**

According to the literature, those who fulfill the role of gatekeeper are educated, well-read, and appreciate science more than average employees (Allen, 1977; Allen and Cohen, 1969; Karine, 2009, Whelan et al., 2010). The knowledge environment is equally shaped by employees’ perceived value of knowledge, as well as the prior and absorptive capacity of the recipient base (Argote and Ingram, 2000; Cumming and Teng, 2003). However, science also shows that if people are suspicious of the sources of knowledge, knowledge sharing and transfer are likely to encounter challenges. The concern therefore is how the respondents in Rwandan and Ugandan firms respond to this scenario and what the benefits of these responses could be.

Respondents were asked to state to what extent they agreed with different scenarios. The findings are recorded in the table below, from which three patterns were detected:

1. Higher degrees or professional qualifications without experience are not valued by my employer\(^{46}\) (V1).
2. Gatekeepers were hired because my knowledge was not sufficient or considered irrelevant to execute a given task (V2).
3. I do not belong to a professional knowledge club such as a CoP (V3).

Responses from employees were analysed and then clustered in the figure below. “DA” stands for Disagree and “A” stands for Agree.

---

\(^{46}\) The implied result is that disagreement with the statement refers to the fact that companies prefer experience over qualifications. Higher educational and professional levels of qualification specified were Masters and Ph.D. level education.
Table 17: Classification of three variables

<table>
<thead>
<tr>
<th>Firm</th>
<th>V1: Higher Education Preferred without Experience</th>
<th>V2: Knowledge Gatekeeper Not A full Time Member</th>
<th>V3: Member of A Professional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>3.41(DA)</td>
<td>3.41(DA)</td>
<td>2.81(DA)</td>
</tr>
<tr>
<td>R2</td>
<td>3(DA)</td>
<td>4.25(DA)</td>
<td>1.75(A)</td>
</tr>
<tr>
<td>R3</td>
<td>2.62(DA)</td>
<td>3.5(DA)</td>
<td>2.75(DA)</td>
</tr>
<tr>
<td>R4</td>
<td>3(DA)</td>
<td>4.17(DA)</td>
<td>2.83(DA)</td>
</tr>
<tr>
<td>R5</td>
<td>2(A)</td>
<td>3.5(DA)</td>
<td>3.5(DA)</td>
</tr>
<tr>
<td>R6</td>
<td>2.16(A)</td>
<td>2.67(DA)</td>
<td>2.5(DA)</td>
</tr>
<tr>
<td>U1</td>
<td>2.67(DA)</td>
<td>4.33(DA)</td>
<td>2.73(DA)</td>
</tr>
<tr>
<td>U2</td>
<td>2.5(DA)</td>
<td>2.6(DA)</td>
<td>2.2(A)</td>
</tr>
<tr>
<td>U3</td>
<td>2.7(DA)</td>
<td>2(A)</td>
<td>2.1(A)</td>
</tr>
<tr>
<td>U4</td>
<td>2.9(DA)</td>
<td>2.6(DA)</td>
<td>2.2(A)</td>
</tr>
<tr>
<td>U5</td>
<td>3(DA)</td>
<td>3.27(DA)</td>
<td>3.6(DA)</td>
</tr>
</tbody>
</table>

For Variable 1 (V1) (Higher Education Preferred over Experience), 81.8% (9 out of 11) of the companies disagreed (DA) (R1, R2, R3, R4, U1, U2, U3, U4, U5). Two out of the 11 (18.1%) agreed, disputed this claim (R5, R6). For Variable 2 (V2) (Knowledge Gatekeeper is not a full-time staff), 90.9% (10 out of 11) of the companies disagreed (R1, R2, R3, R4, R5, R6, U1, U2, U4, U5) and only one company (U3) disagreed with this statement. For the third and final variable, Variable 3 (V3) (Employees are Members of a Professional Group), 63.63% (7 out of 11) companies disagreed (R1, R3, R4, R5, U1, U3, U5). Four of 11 companies (36.36%) agreed (R2, R6, U2, and U4). The distribution of the average responses for these three variables is projected in the scatter graph below.
The graph shows a very strong relationship between V1 (Higher Education Preferred over Experience) and V2 (Knowledge Gatekeeper is not a Full-time Member). The best-fit line for both variables merges above 2.5, which indicates that the behaviour of both variables exhibits an average disagreement. The best-fit line for V3 (Being a Member of a Professional Group) also falls on the upper half of the average scorecard section (i.e. greater than 2.5), thus exhibiting average disagreement.

In companies where professional qualifications do not matter, gatekeepers are full-time members and employees rarely belong to professional groups or CoPs. Why is this? It is natural for companies to have a full-time Knowledge Gatekeeper when they do not have employees who are professionally qualified and whose knowledge derives from their experience. In these situations, it becomes necessary to find expertise from outside. In order to introduce new and creative knowledge into the organisation, a company needs at least a few experts, or Knowledge Gatekeepers, in a full-time capacity. Since the knowledge rank of employees within the organisation is solely dependent upon Knowledge Gatekeepers, it is unlikely that employees who possess limited knowledge will be part of a professional group or club.
Still, questions arise. Why do these companies choose not to use a part-time gatekeeper? Instead of having full-time experts who are located in the developing region’s institutions, it may be possible to use an external gatekeeper who is based within their institutions and creates linkages with other African institutions. When this scenario is presented, the results appear as follows: clustering data into groups of “agree” or “disagree” showed that a majority of the companies disagreed with all three indicators as shown in table below.

### Table 18: Relationship between higher qualifications, gatekeeping, and CoPs

<table>
<thead>
<tr>
<th>Companies</th>
<th>Higher Education Not Needed</th>
<th>Knowledge Gatekeeper Not A Full Time Member</th>
<th>Member of A Professional Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>3.41(DA)</td>
<td>3.41(DA)</td>
<td>2.81(DA)</td>
</tr>
<tr>
<td>R2</td>
<td>3(DA)</td>
<td>4.25(DA)</td>
<td>1.75(A)</td>
</tr>
<tr>
<td>R3</td>
<td>2.62(DA)</td>
<td>3.5(DA)</td>
<td>2.75(DA)</td>
</tr>
<tr>
<td>R4</td>
<td>3(DA)</td>
<td>4.17(DA)</td>
<td>2.83(DA)</td>
</tr>
<tr>
<td>R5</td>
<td>2(A)</td>
<td>3.5(DA)</td>
<td>3.5(DA)</td>
</tr>
<tr>
<td>R6</td>
<td>2.16 (A)</td>
<td>2.67(DA)</td>
<td>2.5(DA)</td>
</tr>
<tr>
<td>U1</td>
<td>2.67(DA)</td>
<td>4.33(DA)</td>
<td>2.73(DA)</td>
</tr>
<tr>
<td>U2</td>
<td>2.5(DA)</td>
<td>2.6(DA)</td>
<td>2.2(A)</td>
</tr>
<tr>
<td>U3</td>
<td>2.7(DA)</td>
<td>2(A)</td>
<td>2.1(A)</td>
</tr>
<tr>
<td>U4</td>
<td>2.9(DA)</td>
<td>2.6(DA)</td>
<td>2.2(A)</td>
</tr>
<tr>
<td>U5</td>
<td>3(DA)</td>
<td>3.27(DA)</td>
<td>3.6(DA)</td>
</tr>
</tbody>
</table>

- **Higher Education Not Preferred**: Agree = 2/11 (18.1%) [R5, R6]; Disagree = 9/11 (81.9%) [R1, R2, R3, R4, U1, U2, U3, U4, U5].
- **Knowledge Gatekeeper not a Full-Time Member**: Agree = 1/11 (9.1%) [U3]; Disagree = 10/11 (90.9%) [R1, R2, R3, R4, R5, R6, U1, U2, U4, U5].
- **Employee Part of a Community of Practice**: Agree = 4/11 (36.3%) [U3, U4, U2, R2]; Disagree = 7/11 (63.7%) [R1, R3, R4, R5, R6, U1, U5].

The projection of this classification into a scatter plot depicts a strong relationship between the three variables.
Figure 20: Distribution of the averages of the three variables

The relationship between variable 1 (Higher Education Preferred over Experience), variable 2 (Knowledge Gatekeeper is not a Full-Time Member), and variable 3 (Employees are Members of Professional Groups) is as follows. The best-fit line for all of the indicators mentioned falls visibly within the disagreement section of the average scorecard distribution. It can be said that they all return a false tag to each of the respective indicators that is mentioned above. Based on the analysis, it can be concluded that companies that do not prefer professional qualification over experience tend to have a Knowledge Gatekeeper as a full-time member (i.e. not part-time), and employees of such companies rarely belong to a CoP or professional group.

From these findings, it can be observed that companies who tend to use knowledge gatekeepers as facilitators in knowledge sharing and transfer perceive this role as leading to external linkages with third parties. Overall, however, the analysis concludes that the majority of companies believe that, for whatever reason, “Knowledge Gatekeepers are facilitators who create external linkages”.

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Table 20: Summary of Cluster findings

<table>
<thead>
<tr>
<th>Cluster 1: Agree that KGs are facilitators who create external linkages</th>
<th>Cluster 2: Disagree that KGs are facilitators who create external linkages</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1, R2, R3, R4, R5, R6, U1, U2, U3, U4</td>
<td>U5</td>
</tr>
</tbody>
</table>

It can be seen that 100% of respondents from Rwanda and about 80% of respondents from Uganda support the idea that Knowledge Gatekeepers are facilitators who create external linkages. Since a majority of the responses support this theme, it can be concluded that although the two countries have different cultures and regulations, both feel that Knowledge Gatekeepers are facilitators of knowledge who create external linkages.

With regard to findings about the knowledge environment involving gatekeepers’ qualifications, experiences, and educational levels, the findings show that, whenever companies provided gatekeepers, employees’ expertise was valued less, especially in terms of how companies promote internal learning and use innovative ideas from their employees. In these companies, employees believed that their professional qualifications (especially those with PhDs and Masters Degrees) were not valued. Indeed, because the knowledge of employees was described as not valued by the employer, employees in these companies rarely endeavoured to take steps to improve their expert knowledge through professional networks such as CoPs. This leads to the conclusion that the impact of Knowledge Gatekeepers can be both positive and negative. They can be positive because evidence shows that gatekeepers introduce new ideas and provide exposure for the company through external linkages; they can be negative because employees do not feel valued and this hinders knowledge-sharing efforts.
5.10. Is there a relationship between openness, knowledge sharing, culture, and gatekeeping?

A questionnaire and in-depth interviews were used to answer this question. Results of this analysis were combined by investigators following a “knowledge discovery process”. Responses from the 105 employees were recorded in levels for each of the variables in themes. Respondents were given different questions to answer. They were to provide short explanations and then allocate an overall score according to these five levels. Respondents had to choose the one score that reflected their best judgment under the circumstances. The three scenario categories are as follows:
Table 21: Categories of analysis: Trust, openness, and use of Gatekeepers

<table>
<thead>
<tr>
<th>Cat1. Openness to Knowledge Sharing</th>
<th>Cat2. Trust</th>
<th>Cat3. Knowledge Gatekeepers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Whether respondent managers in a company believe that people share ideas openly</td>
<td>1. Whether they would trust a colleague with knowledge/information</td>
<td>1. Tapping into external knowledge networks and how they access these networks (e.g., “Other ways we use to train our staff include using an external Gatekeeper who knows better”)</td>
</tr>
<tr>
<td>2. Whether or not to give information to any workmate who needs it</td>
<td>2. Whether they prefer to seek advice from a relation, even when this person is not their company workmate</td>
<td>2. Not formal or Informal (e.g., “Knowledge Gatekeeper is not our full-time staff member”)</td>
</tr>
<tr>
<td>3. Whether knowledgeable people keep ideas to themselves</td>
<td>3. Evidence of having and exploiting formal or informal knowledge networks of gatekeepers (e.g., “When I was stuck on one of my tasks, I called a colleague from outside my company”)</td>
<td>3. Why do they use a gatekeeper (e.g., “We find the use of a Knowledge Gatekeeper to be an easy way to improve our knowledge base”)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Perceived value of a gatekeeper (e.g., “Knowledge Gatekeeper is the source of novel knowledge”)</td>
</tr>
</tbody>
</table>

From this stage, data were collected on different statements under these three categories that were further classified by means of a decision tree, analysis, and coding techniques.
**The Decision Tree**

To locate the companies in which all three elements of the test were present; the decision tree induction method was used. Test attributes for this decision tree included openness of knowledge sharing, the presence of trust, and the use of Knowledge Gatekeepers.

In order to implement this classification, we used statistics to determine the positive cumulative frequency of our test attributes for each of the companies. These frequencies are shown below. The figures used were derived from the firms-level analyses of the data sample.

Table 22: Cumulative frequency for positive data (Source: appendix 7, Data Cubes)

<table>
<thead>
<tr>
<th>Positive Cumulative Frequency</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>U1</th>
<th>U2</th>
<th>U3</th>
<th>U4</th>
<th>U5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness of knowledge sharing</td>
<td>62.18</td>
<td>57.14</td>
<td>69.64</td>
<td>63.10</td>
<td>80.36</td>
<td>69.05</td>
<td>53.81</td>
<td>59.29</td>
<td>68.57</td>
<td>58.57</td>
<td>39.05</td>
</tr>
<tr>
<td>Presence of Trust</td>
<td>49.67</td>
<td>55.56</td>
<td>65.28</td>
<td>53.71</td>
<td>72.27</td>
<td>55.56</td>
<td>67.78</td>
<td>71.61</td>
<td>48.15</td>
<td>57.04</td>
<td></td>
</tr>
<tr>
<td>Use of knowledge gatekeepers</td>
<td>47.06</td>
<td>42.85</td>
<td>55.36</td>
<td>47.62</td>
<td>64.29</td>
<td>69.05</td>
<td>42.85</td>
<td>64.28</td>
<td>90.00</td>
<td>44.29</td>
<td>38.10</td>
</tr>
</tbody>
</table>
From the above table, an induction tree can be built as follows:

Figure 21: Decision tree: Openness, trust, and use of Gatekeepers—company-level analysis

This decision tree helped the researcher to achieve the study’s objective of determining the test attribute configuration for each of the 11 companies that were used in sampling. The information obtained can be classified as follows:
Table 23: Firm classification as per decision tree

<table>
<thead>
<tr>
<th>Company</th>
<th>Results and Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3, R5, R6, U2, U3</td>
<td>It was observed that openness, knowledge sharing, and learning culture had a strong influence on the level of trust between employees within these companies. Those companies that displayed both knowledge sharing and trust also used Knowledge Gatekeepers.</td>
</tr>
<tr>
<td>R2, R4, U1</td>
<td>There is openness of knowledge sharing and learning culture and the decision tree indicates the presence of trust between employees of these companies. Knowledge gatekeepers, however, are not used.</td>
</tr>
<tr>
<td>R1, U4</td>
<td>There is knowledge sharing between employees, and these companies do not use Knowledge Gatekeepers as sources of knowledge.</td>
</tr>
<tr>
<td>U5</td>
<td>The observations for U5 were unique. There was no sharing of knowledge, but there was an element of trust between employees. This company did not use any Knowledge Gatekeepers.</td>
</tr>
</tbody>
</table>

In order to further explore the relationship between knowledge sharing, trust, and the existence of Knowledge Gatekeepers, the dimensionality reduction technique was applied to create tables within which positive values for the percentage frequencies from the data cube (see appendix 7) were added in order to determine the relationship between knowledge sharing, learning culture, the role of trust, and Knowledge Gatekeepers. The relevant data are presented in figure 21 and table 24. The relationship between knowledge sharing, learning culture, and trust in these organisations was determined using the tabulated analysis above. In the figure below, detailed analysis from the interviews is recorded with regard to the impact of knowledge sharing culture and trust.
Table 24: Comparative Analysis: Trust and Openness to Knowledge Sharing. (See Data Cubes in appendix Seven)

<table>
<thead>
<tr>
<th>Company</th>
<th>Comments/Analysis/Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R1</strong></td>
<td>Where the theme of <strong>knowledge sharing</strong> is concerned:</td>
</tr>
<tr>
<td></td>
<td>- 64.71% of employees agree and 35.29% disagree that they share ideas openly; 0% of employees feel that this variable does not apply to them.</td>
</tr>
<tr>
<td></td>
<td>- 70.59% agree and 23.52% disagree that they give information to any workmate who needs it; 5.88% feel that this variable does not apply to them.</td>
</tr>
<tr>
<td></td>
<td>- 35.29% agree and 64.70% disagree that knowledgeable people in their company keep ideas to themselves; 0% feel that this variable does not apply to them.</td>
</tr>
</tbody>
</table>

Therefore, most employees of R1 share ideas openly and give information to workmates who need it. In addition, these employees do not feel that knowledgeable people in their company keep ideas to themselves.

Where the theme of **trust** is concerned:

- 40.00% of employees agree and 60.00% disagree that they trust their colleagues with the knowledge/information that they share with them; 0% of employees feel that this variable does not apply to them.

- 66.67% agree and 33.34% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 0% feel that this variable does not apply to them.

- 46.67% agree and 53.33% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their company to help; 0% feel that this variable does not apply to them.
Therefore, most employees of R1 do not trust their colleagues with the information/knowledge that they share with them, and many employees prefer to seek advice from relations outside of their workplace. However, not many of these employees have called outside colleagues when stuck on a task.

| R2 | Where the theme of **knowledge sharing** is concerned:  
- 75.00% of employees agree and 25.00% disagree that they share ideas openly; 0% of employees feel that this variable does not apply to them.  
- 50.00% agree and 50.00% disagree that they give information to any workmate who needs it; 0% feel that this variable does not apply to them.  
- 50.00% agree and 50.00% disagree that knowledgeable people in their company keep ideas to themselves; 0% feel that this variable does not apply to them.  

Therefore, most employees of R2 share ideas openly, give information to workmates who need it, and do not feel that knowledgeable people in their company keep ideas to themselves.  

Where the theme of **trust** is concerned:  
- 75.00% of employees agree and 25.00% disagree that they trust their colleagues with the knowledge/information that they share with them; 0% of employees feel that this variable does not apply to them.  
- 50.00% agree and 50.00% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 0% feels that this variable does not apply to them.  

- 25.00% agree and 75.00% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their company; 0% feel that this variable does not apply to them.

Therefore, most employees of R2 trust their colleagues with the information/knowledge that they share with them, and many employees prefer to seek advice from relations outside their workplace. However, not many of them have called outside colleagues when stuck on a task.

<table>
<thead>
<tr>
<th>R3</th>
<th>Where the theme of knowledge sharing is concerned:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- 100.00% of employees agree and 0% disagree that they share ideas openly; 0% of employees feel that this variable does not apply to them.</td>
</tr>
<tr>
<td></td>
<td>- 62.50% agree and 25.00% disagree that they give information to any workmate who needs it; 12.50% feel that this variable does not apply to them.</td>
</tr>
<tr>
<td></td>
<td>- 12.50% agree and 87.50% disagree that knowledgeable people in their company keep ideas to themselves; 0% feel that this variable does not apply to them.</td>
</tr>
</tbody>
</table>

Therefore, all employees of R3 share ideas openly, most give information to workmates who need it, and many do not feel that knowledgeable people in their company keep ideas to themselves.

Where the theme of trust is concerned:
- 87.50% of employees agree and 12.50% disagree that they trust their colleagues with the knowledge/information that they share with
them; 0% of employees feel that this variable does not apply to them.

- 50.00% agree and 50.00% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 0% feels that this variable does not apply to them.

- 50.00% agree and 50.00% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their company; 0% feel that this variable does not apply to them.

Therefore, most employees of R3 trust their colleagues with the information/knowledge that they share with them, and many employees prefer to seek advice from relations outside of their workplace. However, not many of them have called outside colleagues when stuck on a task.

<table>
<thead>
<tr>
<th>R4</th>
<th>Where the theme of knowledge sharing is concerned:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- 100.00% of employees agree and 0% disagree that they share ideas openly; 0% of employees feel that this variable does not apply to them.</td>
</tr>
<tr>
<td></td>
<td>- 83.33% agree and 16.67% disagree that they give information to any workmate who needs it; 0% feel that this variable does not apply to them.</td>
</tr>
<tr>
<td></td>
<td>- 0% agree and 100.00% disagree that knowledgeable people in their company keep ideas to themselves; 0% feel that this variable does not apply to them.</td>
</tr>
</tbody>
</table>

Therefore, all employees of R4 share ideas openly, most give information to workmates who need it, and all feel that knowledgeable people in their company share ideas.
Where the theme of **trust** is concerned:

- 66.67% of employees are in agreement, and 16.67% disagree that they trust their colleagues with the knowledge/information that they share with them; 16.67% of employees feel that this variable does not apply to them.

- 33.33% agree and 50.00% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 16.67% feel that this variable does not apply to them.

- 33.33% agree and 50.00% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their company; 16.67% feel that this variable does not apply to them.

*Therefore, while most employees of R4 trust their colleagues with the information/knowledge that they share with them, only a few employees prefer to seek advice from relations outside of their workplace or have called outside colleagues when stuck on a task.*

---

Where the theme of **knowledge sharing** is concerned:

- 100.00% of employees agree and 0% disagree that they share ideas openly; 0% of employees feel that this variable does not apply to them.

- 100.00% agree and 0% disagree that they give information to any workmate who needs it; 0% feels that this variable does not apply to them.

- 100% agree and 0% disagree that knowledgeable people in their company keep ideas to themselves; 0% feel that this variable does not apply to them.

*Therefore, all employees of R5 share ideas openly, give*
information to workmates who need it, and feel that knowledgeable people in their company share ideas.

Where the theme of trust is concerned:

- 75.00% of employees agree and 0% disagree that they trust their colleagues with the knowledge/information that they share with them; 25.00% of employees feel that this variable does not apply to them.

- 75.00% agree and 25.00% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 0% feel that this variable does not apply to them.

- 25.00% agree and 50.00% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their company; 25% feel that this variable does not apply to them.

Therefore, while most employees of R5 trust their colleagues with the information/knowledge that they share with them and most prefer to seek advice from relations outside of their workplace, only a few have called outside colleagues when stuck on a task.

<table>
<thead>
<tr>
<th>R6</th>
<th>Where the theme of knowledge sharing is concerned:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- 100.00% of employees agree and 0% disagree that they share ideas openly; 0% of the employees feel that this variable does not apply to them.</td>
</tr>
<tr>
<td></td>
<td>- 33.33% agree and 66.67% disagree that they give information to any workmate who needs it; 0% feel that this variable does not apply to them.</td>
</tr>
<tr>
<td></td>
<td>- 66.67% agree and 33.33% disagree that knowledgeable people in their company keep ideas to themselves; 0% feel that this variable does not apply to them.</td>
</tr>
</tbody>
</table>
Therefore, all employees of R6 share ideas openly, most employees do not give information to workmates who need it, and most employees feel that knowledgeable people in their company do not share ideas.

Where the theme of trust is concerned:
- 66.67% of employees agree and 33.34% disagree that they trust their colleagues with the knowledge/information that they share with them; 0% of the employees feel that this variable does not apply to them.
- 100.00% agree and 0% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 0% feel that this variable does not apply to them.
- 50.00% agree and 50.00% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their company; 0% feel that this variable does not apply to them.

Therefore, while most employees of R6 trust their colleagues with the information/knowledge that they share with them, many of those employees prefer to seek advice from relations outside of their workplace, and they have called outside colleagues when stuck on a task.

Where the theme of knowledge sharing is concerned:
- 66.67% of employees agree and 33.33% disagree that they share ideas openly; 0% of the employees feel that this variable does not apply to them.
- 80.00% agree and 6.67% disagree that they give information to
any workmate who needs it; 6.67% feel that this variable does not apply to them.

- 26.67% agree and 60.00% disagree that knowledgeable people in their company keep ideas to themselves; 13.33% feel that this variable does not apply to them.

Therefore, most employees of U1 share ideas openly, give information to workmates who need, and feel that knowledgeable people in their company do share ideas.

Where the theme of trust is concerned:

- 60.00% of employees agree and 33.33% disagree that they trust their colleagues with the knowledge/information that they share with them; 6.67% of employees feel that this variable does not apply to them.

- 66.67% agree and 26.66% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 6.67% feel that this variable does not apply to them.

- 60.00% agree and 33.34% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their company; 6.67% feel that this variable does not apply to them.

Therefore, most employees of U1 trust their colleagues with the information/knowledge that they share with them, prefer to seek advice from relations outside of their workplace, and have called outside colleagues when stuck on a task.

<table>
<thead>
<tr>
<th>U2</th>
<th>Where the theme of knowledge sharing is concerned:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- 100.00% of employees agree and 0% disagree that they share</td>
</tr>
</tbody>
</table>
ideas openly; 0% of employees feel that this variable does not apply to them.

- 60.00% agree and 40.00% disagree that they give information to any workmate who needs it; 0% feel that this variable does not apply to them.

- 30.00% agree and 60.00% disagree that knowledgeable people in their company keep ideas to themselves; 10.00% feel that this variable does not apply to them.

Therefore, all employees of U2 share ideas openly, most give information to workmates who need it, and most feel that knowledgeable people in their company share ideas.

Where the theme of trust is concerned:

- 90.00% of employees agree and 10.00% disagree that they trust their colleagues with the knowledge/information that they share with them; 0% of employees feel that this variable does not apply to them.

- 50.00% agree and 50.00% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 0% feel that this variable does not apply to them.

- 70.00% agree and 30.00% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their company; 0% feel that this variable does not apply to them.

Therefore, most employees of U2 trust their colleagues with the information/knowledge that they share with them, half of employees prefer to seek advice from relations outside of their workplace, and a majority has called outside colleagues when stuck on a task.
Where the theme of **knowledge sharing** is concerned:

- 100.00% of employees agree and 0% disagree that they share ideas openly; 0% of employees feel that this variable does not apply to them.

- 90.00% agree and 10.00% disagree that they give information to any workmate who needs it; 0% feel that this variable does not apply to them.

- 0% agree and 100.00% disagree that knowledgeable people in their company keep ideas to themselves; 0% feel that this variable does not apply to them.

*Therefore, all employees of U3 share ideas openly, a majority gives information to workmates who need it, and all feel that knowledgeable people in their company share ideas.*

Where the theme of **trust** is concerned:

- 80% of employees agree and 20.00% disagree that they trust their colleagues with the knowledge/information that they share with them; 0% of employees feel that this variable does not apply to them.

- 80.00% agree and 20.00% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 0% feel that this variable does not apply to them.

- 30.00% agree and 70.00% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their company; 0% feel that this variable does not apply to them.

*Therefore, most employees of U3 trust their colleagues with the information/knowledge that they share with them and prefer to seek advice from relations outside their workplace; few have called outside*
Where the theme of **knowledge sharing** is concerned:

- 100.00% of employees agree and 0% disagree that they share ideas openly; 0% of employees feel that this variable does not apply to them.

- 90.00% agree and 10.00% disagree that they give information to any workmate who needs it; 0% feel that this variable does not apply to them.

- 10.00% agree and 90.00% disagree that knowledgeable people in their company keep ideas to themselves; 0% feel that this variable does not apply to them.

*Therefore, all employees of U4 share ideas openly, a majority gives information to workmates who need it, and a majority feels that knowledgeable people in their company share ideas.*

Where the theme of **trust** is concerned:

- 60.00% of employees agree and 40.00% disagree that they trust their colleagues with the knowledge/information that they share with them; 0% of employees feel that this variable does not apply to them.

- 50.00% agree and 50.00% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 0% feel that this variable does not apply to them.

- 40.00% agree and 60.00% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their company; 0% feel that this variable does not apply to them.

*Therefore, most employees of U4 trust their colleagues with the*
information/knowledge that they share with them and prefer to seek advice from relations outside of their workplace. However, only some have called outside colleagues when stuck on a task.

Where the theme of knowledge sharing is concerned:

- 26.67% of employees agree and 73.34% disagree that they share ideas openly; 0% of employees feel that this variable does not apply to them.

- 53.33% agree and 46.67% disagree that they give information to any workmate who needs it; 0% feel that this variable does not apply to them.

- 46.67% agree and 53.33% disagree that knowledgeable people in their company keep ideas to themselves; 0% feel that this variable does not apply to them.

Therefore, very few employees of U5 share ideas openly, almost half of employees give information to workmates who need it, and almost half feel that knowledgeable people in their company share ideas.

Where the theme of trust is concerned:

- 40.00% of employees agree and 60.00% disagree that they trust their colleagues with the knowledge/information that they share with them; 0% of employees feel that this variable does not apply to them.

- 66.67% agree and 33.34% disagree that they prefer to seek advice from a relation even when this person is not their company workmate; 0% feel that this variable does not apply to them.

- 46.67% agree and 53.33% disagree that when they were stuck on one of their tasks, they called a colleague from outside of their
company; 0% feel that this variable does not apply to them.

Therefore, only some employees of U5 trust their colleagues with the information/knowledge that they share with them, and most prefer to seek advice from relations outside their workplace. However, only some have called outside colleagues when stuck on a task.

Common themes or findings occur within the following companies: R1, R3, U1, and U2. These similarities are:

1. Most employees share ideas openly, give information to workmates who need it, and feel that knowledgeable people in their company share ideas.

2. Employees trust their colleagues with information/knowledge they share with them, prefer to seek advice from relations outside their workplace, and have called outside colleagues when stuck on a task.

Differing perspectives on these themes come from companies R2, R4, R5, R6, U3, U4, and U5. These perspectives are:

1. Most employees share ideas openly and give information to workmates who need it, but most employees do not always feel that knowledgeable people in their company share ideas.

2. Employees trust their colleagues with the information/knowledge that they share with them, but they do not always prefer to seek advice from relations outside of their workplace or call outside colleagues when stuck on a task.
The relationship between knowledge sharing, learning culture and trust in these organisations was determined using the tabulated analysis above. The objective of this analysis was to identify whether the relationship between these two elements had any impact on the assumptions that:

**Assumption 1:** Knowledge environment of an organisation influences the company choice of its knowledge management through gatekeepers;

**Assumption 2:** There is a relationship between the gatekeeper, and having trust and openness in a company. Companies with openness to knowledge sharing employ trust. These companies tend to use a formal gatekeeper who is a member of and the appointee of the organisation.

**Assumption 3:** Companies in which there is no openness may still have trust and use an informal gatekeeper.
### Table 25: Case by case analysis of trust and openness

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Knowledge Sharing</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>Most employees share ideas openly and give information to workmates who need it. These employees do not feel that knowledgeable people in their company keep ideas to themselves.</td>
<td>Most employees do not trust their colleagues with the information or knowledge that they share with them. Many employees prefer to seek advice from relations outside of their workplace, but not many of them have called on outside colleagues when stuck on a task.</td>
</tr>
<tr>
<td>R2</td>
<td>Most employees share ideas openly and give information to workmates who need it. They do not feel that knowledgeable people in their company keep ideas to themselves.</td>
<td>Most employees trust their colleagues with the information and knowledge that they share with them. Many prefer to seek advice from relations outside of their workplace, but not many of them have called on outside colleagues when stuck on a task.</td>
</tr>
<tr>
<td>R3</td>
<td>All employees share ideas openly and most give information to workmates who need it. Most do not feel that knowledgeable people in their company keep ideas to themselves.</td>
<td>Most employees trust their colleagues with the information and knowledge that they share with them. Many employees prefer to seek advice from relations outside of their workplace, but not many of them have called on outside colleagues when stuck on a task.</td>
</tr>
<tr>
<td>R4</td>
<td>All employees share ideas openly and most give</td>
<td>Most employees trust their colleagues with the information and knowledge</td>
</tr>
<tr>
<td></td>
<td>information to workmates who need it. All feel that knowledgeable people in their company share ideas.</td>
<td>that they share with them. Only a few prefer to seek advice from relations outside of their workplace or have called on outside colleagues when stuck on a task.</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>R5</td>
<td>All employees share ideas openly, give information to workmates who need it, and feel that knowledgeable people in their company share ideas.</td>
<td>Most employees trust their colleagues with the information and knowledge that they share with them. Most prefer to seek advice from relations outside of their workplace, but only a few have called on outside colleagues when stuck on a task.</td>
</tr>
<tr>
<td>R6</td>
<td>All employees share ideas openly. Most do not give information to workmates who need it, and most feel that knowledgeable people in their company do not share ideas.</td>
<td>Most employees trust their colleagues with the information and knowledge that they share with them. Most prefer to seek advice from relations outside of their workplace, and the majority of employees have called on outside colleagues when stuck on a task.</td>
</tr>
<tr>
<td>U1</td>
<td>Most employees share ideas openly and give information to workmates who need it. Most feel that knowledgeable people in their company do not share ideas.</td>
<td>Most employees trust their colleagues with the information and knowledge that they share with them. Most prefer to seek advice from relations outside of their workplace, and most have called on outside colleagues when stuck on a task.</td>
</tr>
<tr>
<td>U2</td>
<td>All employees share ideas openly and most give information to workmates who need it. Most feel that knowledgeable people in their company share ideas.</td>
<td>Most employees trust their colleagues with the information and knowledge. But, half of employees prefer to seek advice from relations outside of their workplace. A majority has called on outside colleagues when stuck on a task.</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>U3</td>
<td>All employees share ideas openly and a majority gives information to workmates who need it. All feel that knowledgeable people in their company share ideas.</td>
<td>Most employees trust their colleagues with the information and knowledge that they share with them. Most prefer to seek advice from relations outside of their workplace; very few have called outside colleagues when stuck on a task.</td>
</tr>
<tr>
<td>U4</td>
<td>All employees share ideas openly and a majority gives information to workmates who need it. A majority feels that knowledgeable people in their company share ideas.</td>
<td>Most employees trust their colleagues with the information and knowledge that they share with them. Most prefer to seek advice from relations outside of their workplace, but only some have called on outside colleagues when stuck on a task.</td>
</tr>
<tr>
<td>U5</td>
<td>Very few employees share ideas openly. Almost half of employees give information to workmates who need it, and almost half feels that knowledgeable people in their company share ideas.</td>
<td>Only some employees trust their colleagues with the information and knowledge that they share with them. Most prefer to seek advice from relations outside of their workplace, but only some have called on outside colleagues when stuck on a task.</td>
</tr>
</tbody>
</table>
Below is the list of key attributes from the themes of knowledge sharing and trust.

*Openness to knowledge sharing and learning culture:* Respondents had to say to what extent they agreed with the following statements:

- I am able to contradict other people and my manager (*share ideas openly*);
- my company holds social events, formal or informal, which give me the opportunity to network and share ideas (*provide information to those who need it*); and
- Employees at my company trust each other as reflected in how the company uses ideas once they are collected as well as whether people hide their know-how from their colleagues.

*Role of trust:* Respondents had to say to what extent they agreed with the following statements:

- In your company, to what extent do you trust your colleagues with knowledge and information?
- To what extent do you prefer to seek advice from a relation even when this person is not your workmate?
- I have called my external knowledge network when I was stuck on one of my tasks (i.e. I called a colleague from outside of my company for help).

The frequencies of each of the attributes above were clustered in order to evaluate this study’s assumption that knowledge sharing influences trust between employees. (This means that the researcher counted how many of the 105 respondents selected a particular response.) Once the three statements had been counted, a total of 315 answers were used as the basis for determining how strong openness is within a given company. This count reflects the real number of people who strongly agreed and those who simply agreed in one cluster; it reflects the number of people who strongly disagreed and those who simply disagreed in another cluster. After the clustering process, whether or not openness and trust are related could be compared. If a company possesses a knowledge-sharing and
learning culture, then employees of that company will experience trust. From this perspective, the findings from the conclusions that were given by respondents were brought together with the details of findings that are displayed in Figure 22: Knowledge sharing and trust in an organisation: A Cluster Analysis, and Figure 23: An analysis of relationships between Trust, Knowledge Sharing and Culture
Figure 22: Knowledge sharing and trust in an organisation: A Cluster Analysis

Figure 23: An analysis of relationships between Trust, Knowledge Sharing and Culture

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<table>
<thead>
<tr>
<th>Themes Selected</th>
<th>Cluster 1</th>
<th>Cluster 1T</th>
<th>Cluster 2</th>
<th>Cluster 2T</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Sharing and Learning Culture - Agreed</td>
<td>224</td>
<td>260</td>
<td>122</td>
<td>138</td>
<td>29</td>
</tr>
<tr>
<td>Knowledge Sharing and Learning Culture - Disagreed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge Sharing and Learning Culture &amp; Trust - Noise (SNA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

where
- (3 questions from Knowledge Sharing and Learning culture + 105 number of respondent = 318 Total frequency for Cluster 1)
- (3 questions from Trust + 105 number of respondent = 318 Total frequency for Cluster 1T)
In the figures ‘An analysis of relationships between Openness to Knowledge Sharing and Trust’ above, it can be seen that, for Cluster 1, the frequency of agree and strongly agree for the three questions about knowledge sharing and learning culture is 224 out of 315. This result is above 50%, thus indicating that there is knowledge sharing within organisations in both countries. In Cluster 1T, the frequency of agree and strongly agree for the three questions about trust is 260 out of 315. This result clearly shows that there is trust within organisations in both Uganda and Rwanda. The research results show that in representation after clustering, the majority of surveyed employees within both countries believe that knowledge sharing, learning culture and trust have a close relationship. Subsequently, a new variable is introduced to find out whether openness and trust are linked. The use of gatekeepers is also linked. In companies where trust exists, is the use of gatekeepers supported as well?
Gatekeepers and Trust in an Organisation

The figures below show observations from the findings as regards the variables. “S-Agreed” denotes strongly agreed; “S-disagreed” denotes strongly disagreed.

**Figure 24: Relationship between use of Knowledge Gatekeeper and trust**
Figure 25: Relationship between trust and use of a Knowledge Gatekeeper. Source: Questionnaire cumulative per cents

The comparative figures show that, wherever we have a Knowledge Gatekeeper in an organisation, trust is high (blue colour). Where organisations resent the use of a Gatekeeper, however, the result is that trust is very low. These findings suggest that in a firm within which more people fulfill diverse roles of gatekeeping, there will be a resultant effect on trust. This line of thinking is subjected to kite in order to find out how closely related gatekeeping and trust are in a given organisation:
Figure 26: Patterns of knowledge sharing learning culture, having trust, and use of a gatekeeper

The following patterns can be observed in the information presented in the figure above:
companies R2, R4, U1, and U5 possess knowledge sharing and trust but no gatekeepers;

- R1 possesses knowledge sharing but no trust;

- U5 does not possess knowledge sharing, trust, or a Knowledge Gatekeeper; and

- R3, R5, R6, U2, and U3 show that there is a strong relationship between knowledge sharing, trust, and the existence of a Knowledge Gatekeeper.

Intersections in this figure indicate the presence of a strong relationship between variables. The kite shows that there is a strong relationship between trust and the use of gatekeepers in R3 and R6, but, interestingly, employees in those companies felt that openness is limited there for various reasons. When explaining why R1 would be open to receiving knowledge from partners but still not trust these people, one of the respondents said, “We are a competitive organisation, but we also have threats from EAC markets... you cannot be open when it comes to competitiveness and business intelligence” (R1).

Explanations from different firms are recorded below:

**R1**

“Here at R1 we depend on headquarters’ R&D teams. They do most of the work while only a few of our staff team up with our parent headquarters. We have strong intellectual property protection policies meant to protect our innovation and important ideas.” (Respondent)

“We still share and we are still open to those we perceive as not our competitors.” (Respondent)

”We still share knowledge but at personal level connections.” (Engineer)

**R2**

“We are a company which is in declining phase.... knowledge sharing is not that very important.” (Respondent)

“Trust is not an issue though… but at a personal level.” (Respondent)
“We depend on one or two people here for searching ideas, bring them to us and then tell us what to do…. Do I need to trust them, No, I do not think!… I think I am here to execute the order only!” (Respondent)

**R3**

“If you do not trust… you do not give… and if you do not give you do not get.” (CEO)

“We absolutely link our success to trust…. Our partners, our success is all about ‘gatekeeping’ in the way you explain it to me… but also more rather coordination.” (Respondent)

**R4**

“We are an expanding business, but we are also in a renewal situation. From the point of collapse we are now hiring the best and most well-connected to make sure we are linked with the market, with the government, and with our clients. We have a small team of practice people who meet to share experiences, swap information, and find out how they can expand this business.” (GM)

“Trust, this is not something I ever thought about… but a restructuring organisation is bound to lack trust any way.” (Director)

“Here we do not have a particular formal way of doing things, we depend on the general orientation from the owner…. We need more ideas, more knowledge, more innovations… but those who have them wants more rewards, they want them valued…. Our competitors are doing the same, for this reason, the element of individual trust is not quite settled.” (Team Leader)
R5

“They are an important part of our work and our mission. They offer high quality information which would cost us fortunes—especially for cooperatives, and knowledge related to new technologies in the sector.” (Respondent)

“They are scientists we collaborate with around the world.” (Respondent)

R6

“At R6, trust is all we depend on, and we need that to perform successful business…. R1 trusts us, but we also trust them.” (Respondent)

“Gatekeepers are well trained people and we hire such people because we vest trust in them to help us through.” (GM)

“We are a small business; hence it’s critical that each one of our senior members be trustworthy, responsible, and able to access knowledge, ideas, and innovations for our survival.” (Respondent, marketing department)

U1

Here everyone should fulfill these roles, everyone in my team…. Together we stand, together we fall…. We promote a team approach, we search for ideas scan the market, work without products teams and we turn ideas into products.” (GM)

“At U5, we consider ourselves as a community of practice rather than the roles I see proposed…. Everyone fulfills these roles.” (Engineer)

“Here knowledge is the source of our business… about the market, about our suppliers, our clients, even knowledge about our staff.” (Director)

“ Asking me about trust…. Well we do trust each other, certainly… but gatekeepers…. Probably but we do not believe in individual success…. We believe in teams, in knowledge sharing for collective good.” (Director)

“We do not use gatekeepers… but we have a more or less similar role… We have two products knowledge coordinators and we have two
Knowledge Managers…. These roles are appointed to facilitate the work of engineers and technicians here. They search knowledge and make sure technical people can access it.” (HR Manager)

U2
We share lots of resources with U1… so most of our activities are linked to theirs. Here we trust one another, when it comes to using external people to show us what to do… that is dependent of what we want done. (Respondent)

"Normally we are comfortable to ask our own staff to prepare a topic, or search information, and then share with everyone.” (Respondent)

“In-house training is important in this, and it is part of company ownership by the employees…. Other work we use internet to share knowledge and information.” (Respondent)

“Yes, we have trust in ourselves, this is why we do not need an external gatekeeper… but we use an internal one rather.” (Respondent)

U3
“Gatekeepers are a source of novel knowledge, provide us with useful information especially with regards to new technological information. They are, many of them located abroad with two of us here.” (Respondent)

U4
“We are just in weaker position at the moment… It is like we are declining. We now depend on only me and few of us.” (Respondent).

“We still have our small community of six people and we do meet often, discuss ideas, and agree to search some from outside.” (CoP member)

“Where it is possible, we help each other… but this is within our own understanding and the relationship that has evolved after many years of
work together…. We do trust… but I think more for those I know…. I cannot trust someone I have not met often…. Working together is not enough for me to trust someone.” (Head of Department of Production)

“The main problem here is that we work for different clients…. These clients have different requirements with regards to their products, secrecy, due to competitiveness.” (Respondent)

“It would be unlikely that I share with a colleague about a project of a competitor…. What about if they hear that I disclosed the information…. That would be the end of my career here.” (Engineer)

“The nature of our business means you must be private… but it does not mean our employees do not trust, they trust but in specific boundary of relations, of business and within the confines of the policies on intellectual properties of clients, confidentiality and leadership requirement.” (CEO)

“We still trust each other… and we swap information…. I think each one of us is a gatekeeper of knowledge in that we look for knowledge, and we also send for the knowledge…. We meet in a small team and discuss… but I do not need to tell everyone that so and so and I were holding a meeting on a client A or B. This is the purpose of having small teams of people you trust, you share experience, passion, and I really do trust them and they trust me… but we are very few and we are very informal.” (Engineer)

The patterns or common themes that emerge here are:

**Pattern 1**: Those who have trust support the use of Gatekeepers. The important examples are R3, R5, R6, U2, and U3, all of which possess trust and strongly support the use a Knowledge Gatekeeper as a facilitator for knowledge sharing. The interviews reveal that gatekeeping is used both
formally and informally, and these companies are driven by business interest rather than the sense of meeting a perceived social need.

Pattern 2: This pattern includes those expressing differing perspectives on the relationship between use of gatekeepers, trust and openness. For example, companies R2, R4, U1, and U5 possess trust, but they do not use a Knowledge Gatekeeper to facilitate knowledge sharing. R1 and U4 do not possess trust. They also do not use a Knowledge Gatekeeper to facilitate knowledge sharing. These discrepancies were clarified in the interviews with people in those companies (see Figure 27: Illustration of TKIGs and how they work at U1, below). These employees argued that, although they are open to sharing knowledge, the formal organisations have policies and procedures that, when strictly enforced, impose how and to whom one should speak. As a result, employees have trust but are not necessarily open to formal knowledge sharing. Under these circumstances, employees resort to knowledge sharing through informal organisational networks, which are composed of CoPs as well as individual commitments to one another.

Outlier case: U5 Openness and Trust issues

From the initial analysis of the questionnaire findings, U5 exhibits unique characteristics with regards to knowledge management through gatekeepers. It was observed that employees in U5 do not share knowledge openly and do not trust each other (based on the available evidence). It was also observed that U5 does not use Knowledge Gatekeepers. In order to find out why this was the case, the CEO was interviewed about this observation; he responded:

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47 We note that readers might want to know why this trust exists, even when there are these restrictive rules. The concept of trust in a formal organisation is a larger issue which could not be addressed in this thesis in as much depth as required, and thus further studies are required.
It can be difficult to obtain some sensitive data across organisations even though we are literally working on the same thing for one institution... We are often working for different clients with different requirements... This individualised context is very important to us as a company... We are trusted as an organisation because we are able to offer the maximum assurances to our clients that, should they share their business ideas with us, or should they ask us to conduct R&D research, they can be sure we will manage it within the highest level of privacy and confidence between the assigned scientist and the client alone.

Additionally, a group of three scientists in a focus group was asked to discuss the history of U5 before reacting to evidence gathered from the questionnaire. A colleague within the company took notes. A summary of this discussion was then typed and cross-checked with two of the scientists who attended the focus group. The following summary provides a contextual understanding of that discussion:

U5 is a semi-government institution, which, during the 1990s was performing very well. It had won several market contracts; it played an important role in Ugandan industrialisation. In the early 2000s, this company experienced a moment of relative quietness, departing employees, and a subsequent loss of major funding from the government, development partners, and the industry. The company’s leading scientists joined other private sector institutions. The downfall of U5 was imminent and it was felt all around. In 2005, the institute received funding from the government to hire scientists, and experts from around the world in different aspects of value addition, manufacturing, bio-chemistry, and construction joined in. The new Chief Executive Officer was hired from the US to oversee the institute’s renewal. This company is, at the time of this research, in its renewal phase.

Asked why they seem to lack openness and trust at U5, the scientists responded by explaining what they do at the company. These comments included: “we collect”; “we
“We create new knowledge for our clients... This knowledge is competitiveness-related; it has several aspects that are protected within the contracts we sign with them.” (Respondent Scientist Supervisor)

“There are very serious confidentiality rules here.... It’s part of the game, it’s part of the profession.” (Respondent, Engineer)

“We from time to time can ignore formal channels and use a contact you know based on trust placed in them and then you can get what you want.” (Respondent, Biologist)

Upon consulting the company’s internal communication documents about governance, production, and operational management, it was noted that U5 has issued notices to staff associated with R&D and Operations to “desist from discussing any issues associated with products standards, compliance or any matter that is likely to cause breach of confidentiality as stipulated under the intellectual property rights enshrined in the contracts”.

Can these observations be compared to the other findings of this research? The results above can be generalised by thinking about relationships that involve knowledge sharing. For example, in response to the question of whether partners are free to share business knowledge about future projects, a majority of the respondents from the various companies agreed that there were free to share knowledge, but they also pointed out that knowledge sharing is sensitive and depends very much on the extent to which respondents trust each other. Here are some of their views about this matter:

“It all depends on whether I perceive knowledge as valuable or not, whether I can access it through other means without having to reveal it to anyone else.” (Respondent U2)

“Understanding the best practice and content of knowledge intended to share is one of our reasons we really relate.” (Respondent R1)
“Understanding their practices, their ways of life, their values and culture [etc.] is the key to successful learning of their practices, especially when it involves their indigenous knowledge. [These populations] can be very resistant towards their secrets.” (Respondent U1)

“It is not because the intention is bad in itself... but the context of the knowledge itself, whether it’s relevant to us, whether the person understand why we may do things this way here and do the same differently elsewhere.” (Respondent U3)

“Our success depends on getting context right and that is why our customers trust us.” (CEO R4)

From these comments, it can be observed that while openness, trust, and gatekeeping may be related, the extent to which these concepts are valued by partners will depend upon context and the value that these partners attach to the knowledge itself. From interviewees’ perspectives, and in the context of developing countries investigated, lack of knowledge sharing and trust was equally related to the power relations and hierarchical culture; as is reflected within the organisational structures, the funder’s vested interests that routinely are reluctant to share knowledge and encourage trust.

**Outlier case, U1:** TKIG and its CoP in U1 - it could be seen that they had trust and were open to knowledge sharing but still they did not support the use of gatekeepers as individuals. The ‘why’, however, remained unclear to the researcher. There were indications that some people worked in a formal aspect of gatekeeper that the company supported. This was unique from all other questionnaires. But the researcher could not read the ‘why’ and ‘how’ - there was a high level of “technical know-how” people, which does not translate to trust and openness. The in-depth interviews represented the second chance to follow up with those people who were named by colleagues as part of the network.

The analysis was conducted with the assumption that when a small number of people are connected to each other, this may be due to the fact that these people are
close to each other, thus making openness and trust within an organisation less relevant to the few experts who are part of a larger workforce that displays only a generic level of knowledge (Allen, 1977; Whelan, 2010). In-depth interviews were held with three people who

- had PhDs and 10 or more years of industry experience;
- had registered or published in a relevant leading journal, were at the leading edge of scientific research, and worked within a manufacturing and R&D-related position, and
- had engaged in a knowledge transfer project within the last three years and had held scientific recognition as reflected through, for example, having won awards of excellence from a professional body, peer nomination, published scientific articles in recent years or is active professional membership.

It was agreed that scientists are individuals who are well qualified for technology transfer and knowledge management. Each scientist holds at least a PhD and has relevant scientific research experience. They are technological gatekeepers: “abahanga baminuje mu bwenge”. The prefix *techne* suggests that they are at the cutting edge of technological and scientific knowledge. The TKIGs at U1 argued:

“In the case of a problem within the company, I can find useful information from those who are non-specialists.” (Respondent 1)

“Their job is to coordinate and facilitate my work.” (Respondent 3)

These people are “coordinators and have daily mandate to report what the industry wants that we need to do… But one person can be a specialist on one area and the other… so it becomes necessary to have someone who can manage the experts.” (Respondent CEO)

Coordination is not the job of a scientist *per se*, but coordinators have to manage those in the scientist category of employees. Coordinators were not considered part of the

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48 While one may be connected to the other, it is not always the case that they are close. The notion of closeness is reflected in terms of how this connection is exploited (or consulted when a problem arises), and this must happen not as an occasional encounter, but one used a primary source of help when one has a problem.
company’s core mission; the company’s TKIGs described their role in knowledge management as “critical”. Interestingly, those in the TKIG category considered the role of these coordinators as “necessary for time management” (Respondent 4), as “maximising use of resources” (Respondent CEO), and as important for “coordination” (Respondent 4).

It emerged from the discussions that those in administrative roles are engaged in communicating by means of wide knowledge management efforts but are rarely allowed to divulge information to outsiders. This observation is in line with the earlier findings of this study in companies R1 and R6, where employees are also restricted from divulging critical business information. At U5, the Key Man follows organisational procedures and reports to the Director of Finance and the General Administration Services department. These people are technically qualified within their domains and more knowledgeable about the general affairs of the business than other members of the organisation’s networks. They were described by those colleagues in the core operations departments (R&D and New Products Development [NPD]) as “Knowledge Gatekeepers”; but to a lesser extent than were the TKIGs. When comparing KG and TKIG roles on a scale of 1 to 100, the respondents’ ratings of gatekeepers was between 20% at the lower boundary and 35% at the upper boundary.

After this analysis of U1’s diverse gatekeeping roles and how they are perceived among the company’s employees, the next step was to try to understand the TKIGs within the company’s knowledge environment. There was a pattern of TKIGs bringing knowledge into the company from outside, especially with regards to market-related ideas and R&D opportunities. Figure 32 represents findings obtained from the focus group discussion with three scientists considered TKIGs at U1. It considers this communication process (irrespective of what the TKIGs communicated). The research further considered knowledge environment factors as conveyed by a scientist at U1. In Figure 27, G1, G2, G3, and G4 represent the different TKIGs in U1; E1, E2, E3, E4, and E5 constitute different employees (with different functions and at different levels within U1). The dark boundary line represents the U1 organisational boundary, while the outer line represents the national boundary or the context within which U1 operates.
Information comes into U1 from G1; it is then shared with G2, G3, and G4. It eventually reaches those in E1–E5 through ongoing interactions. It was revealed to the researcher that the physical proximity of U5 (e.g., to E5) has no bearing on early access. In one case, a respondent reported, “I sometimes hear information from G4”. The findings indicate that deciding where and when to share information is dependent upon two important factors: first, how useful a person is within the network in terms of reading and critiquing analyses and giving feedback in a supportive way; and second, how trusted the recipient is.
What can be observed is that the nature and type of business of U5 (R&D) has a significant bearing on the way that trust and openness manifest themselves there. This aids understanding of what governs social relations at U5.

Toward the end of every interview, the respondent was asked to provide a list of what they believe constitutes the top three attributes of a gatekeeper. The lists that they provided were very long. Some of the units of analysis saw gatekeeping as a “leadership role” (R1, U1, R6); in this category mixed results were found. The study was unable to detect why a firm that believes in collective systems working together to generate and transfer knowledge would be associated with leadership aspects. Clarity on this point is still lacking.
5.11. Key Summaries and Analysis of the Findings

Keeping in mind that Allen was initially considering “a few people who are connected to the outside world” (Allen, 1977, p. 148). Building up from the findings, Table 26, shows the combined results.

Table 26: Pattern analysis: Openness, trust, and use of Gatekeepers

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Openness of knowledge sharing? YES/ NO</th>
<th>Trust exists YES/NO</th>
<th>Use of Knowledge Gatekeepers? YES/ NO</th>
<th>Reflection on findings from respective institutions (source: interviews)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>Individualism dominates</td>
</tr>
<tr>
<td>R2</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>Strong culture of CoP</td>
</tr>
<tr>
<td>R3</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>CKO/TKIG/Key Man</td>
</tr>
<tr>
<td>R4</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>Uses CoPs instead</td>
</tr>
<tr>
<td>R5</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>KG/Key Man</td>
</tr>
<tr>
<td>R6</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>CKO/TG/TKIG/Key Man</td>
</tr>
<tr>
<td>U1</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>Uses everyone through CoP and TKIG</td>
</tr>
<tr>
<td>U2</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>CKO/TKIG/TKIG/Key Men</td>
</tr>
<tr>
<td>U3</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>CKO/TG/TKIG/Key Man</td>
</tr>
<tr>
<td>U4</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>KG+ use CoP</td>
</tr>
<tr>
<td>U5</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>KG—no team, no CoPs</td>
</tr>
</tbody>
</table>

The key and probably most interesting finding here is the fact that Technological Gatekeepers and Key Persons are abundant. This situation could be understood from an organisational culture perspective: organisations that seem to dominate the business
culture focus on individual and interpersonal relationships more than they do on functional relationships.

Another important aspect here is the desire by organisations to support or not support KM initiatives such as meetings, social events, the promotion of CoPs, and the like. The influence of the appointing authorities can be a significant source of orientation as to where priorities are put and the extent to which information is screened (especially for Key Persons and CKOs).

Category one is those individual factors that are closely correlated with a person’s experience (i.e. years of service in the industry), education background, and position occupied inside the organisation. Those who are directors and heads of departments often appear in the TKG category; those in supply chain and marketing appeared predominantly in the KG category; and those in outside core-product support functions like finance, corporate administration, and legal departments all appear in the Key Person category. From Table 20 there is an emerging pattern between companies that were rejected as not possessing trust and those that possess a specific type of gatekeeping—the use of CoPs or a combination of CoPs and a TKIG. An in-depth analysis of these findings was conducted for one specific case, that of U1.

If these findings are consolidated in a kite, it can be seen that learning culture (read hereafter for openness) in an organisation has a strong association with trust. It can also be seen that, where gatekeeping is strongly promoted, trust tends to be stronger.

For companies like R2, R4, U1, it is not necessarily the case that where there is trust between employees, Knowledge Gatekeepers are also used as sources of new knowledge. In these companies, there is no relationship between the use of knowledge gatekeepers and trust. However, the companies explored displayed a strong relationship between openness to knowledge sharing and trust. This means they are open to sharing knowledge with those whom they trust most.

For companies like R3, R5, R6, U2, and U3, there was a strong relationship between knowledge sharing, trust, and the use of Knowledge Gatekeepers. Employees from all of these companies trust each other to share knowledge, and where there is the
presence of trust, there is also the use of a Knowledge Gatekeeper. Overall, the use of gatekeepers was accepted as an easy way to improve a company’s knowledge base in both the Rwandan and Ugandan units. One controversial case that needs further study is U5, the R&D Company, which appears not to support any of the established themes thus far. The view of the researcher is that U5 may be a unique case, a contextual analysis of which is still required.

5.11.1. Gatekeeper attributes

In order to understand the attributes of a gatekeeper, it is necessary to consider the role itself as well as the expectations of those who support this role, and whether the role is formal or informal within different stages of the organisation. From the research, evidence emerges for certain attributes, some of which were seen and expressed by senior managers of those organisations studied and others that emerge from the analysis of complex empirical findings presented herein. In this section, selected extracts from the interviews that concern the benefits of gatekeeping as expressed by senior managers are discussed, followed by those attributes and benefits that emerge from the overall analysis of the research findings.
### Table 27: List of Gatekeeper benefits. Source: Interview findings

<table>
<thead>
<tr>
<th>WHAT THEY SAY</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced time for decision making and accelerated inter-organisation collaboration</td>
<td>“Facilitates fast cross-organisation collaboration on major issues. Some of the staff know each other and can negotiate at personal level.” (Respondent Line Manager Eng)</td>
</tr>
<tr>
<td>Improved organisational learning and knowledge management processes</td>
<td>“Improved ascendance to the organisational ladder. Many employees now share improved experiences on processes.” (Respondent Director 109 U1)</td>
</tr>
<tr>
<td></td>
<td>“Recent changes in processes were initiated by someone who happened to know how his network member did things and then suggested to us how to implement changes.” (Respondent)</td>
</tr>
<tr>
<td>Leveraging of available resources (human capital, knowledge management)</td>
<td>“We now know who is better connected and who is not. This allows us to allocate tasks accordingly (although people do assist one another now).” (Respondent Scientist 503U5)</td>
</tr>
<tr>
<td>Improving and increasing performance, capacity, and ability</td>
<td>“The improvements made in the capacity to manage complex problems and reaching decisions in minimum time, a thing they never experienced before.” (Respondent 301R3) “Many of these employees have developed the ability to foresee their future as competitive workforce.” (Respondent 101R1)</td>
</tr>
</tbody>
</table>
Explaining why an organisation invests in gatekeeping is very important. If an organisation has problems associated with “cultural misfit”—that is, its employees are not open to learning or the nature of the business does not encourage knowledge sharing (as is the case with R&D)—this does not necessarily mean that knowledge sharing is not happening. It does, however, mean that knowledge sharing may be happening differently, through individualised channels that evade the company’s policies and procedures. This may be the reason that the questionnaire respondents were unable to describe the knowledge-sharing activities in which they were engaged (as was revealed in the outlier case of U5). During the in-depth discussions, however, subtler details started to emerge. When interview and questionnaire findings are put together, it is shown that companies that support gatekeeping as a strategy mentioned a list of benefits of this activity, some of which are highlighted here:

- Locating knowledge (R1, R6, U1, U3, U5)
- Contextualising knowledge for the recipient base (R1, R4)
- “Sending out” knowledge and seeking for feedback on products, markets, and other reasons (U5, R2, R5, U1, U5)

Further evidence supports the view that if a company desires to connect with the external environment in order to “extend focus to markets”, it promotes informal gatekeeping. Given this study’s observation that the KG role is more appropriate for organisations that wish to expand their client bases and enter new markets, however, such informal gatekeeping may require a good negotiator with excellent skills and product knowledge.

From the evidence put forth in this thesis, the following attributes are proposed as the necessary attributes of a gatekeeper. These are not exhaustive, but they do appear regularly in those companies that support gatekeeping. In addition, the companies that supported gatekeeping also proposed attributes. This list was reassessed, and the two lists were merged into a series of repeating themes from all 11 cases. The attributes of a Knowledge Gatekeeper are as follows:
a. He or she must display an understanding of learning culture at the level of the gated.

b. He or she must anticipate participation. The role is highly interactive. A gatekeeper needs to be a person who is able to anticipate and appreciate the level of participation, and the process through which the source's knowledge is made accessible must follow an agreeable pathway following gated acceptable rules and values.

c. He or she must be able to decontextualise knowledge at the source, which should coincide with an ability to embed this knowledge at the recipient site;

d. He or she must be able to qualify (context dependency) the importance that is attached to the knowledge by the gated;

e. He or she must create relationships that are consistent and mutually beneficial; this includes the ability to remain an honest, open, independent and trusted partner during interactions between source and recipient while at the same time transferring knowledge;

Looking at the evidence and discussion thus far, it is clear that trust and openness are closely linked with the work of the gatekeeper. The openness serves as a stepping stone for interacting parties and it is the gatekeeper who is at the cutting edge of this role. The study also demonstrates the link between openness and trust; that is, where there is openness and trust, the gatekeeping function was found to be usefully seen as providing linkages between the organisation and its partners; that is, knowledge sharing is a function of trust and gatekeeping.
CHAPTER 6: SUMMARY AND CONCLUSIONS

6.0. Overview

This chapter recapitulates the research questions, the research objectives, and the methodology that was used to answer to the research questions and meet the research objectives. The main findings of the study will represent the contribution to of the study to the field of knowledge. The chapter also discusses the implications of the study for both practice and the academic community. The limitations of the study are also indicated.

Research into gatekeeping has existed for over four decades, and yet the field still lacks a comprehensive theory and understanding of the phenomenon. This is particularly true in the case of developing countries. As a strategy to promote innovation and learning, gatekeeping was mooted as one way that African countries could address to bridge the gaps in short-term knowledge management; however, the understanding of what this entails continues to lack substance. One of the problems associated with gatekeeping is the interpersonal relationships that characterise the phenomenon. These have not been studied in conjunction with the research into gatekeeping. The concept itself is predominantly informed by Western concepts of evidence and lacks context for developing countries; still far less for Rwandan and Ugandan organisations.

This thesis suggests that any means of addressing issues of knowledge gaps is welcomed in these countries. It would be even better if the use of gatekeepers as a strategy for identifying, creating, and sharing knowledge within Rwandan and Ugandan private-sector organisations is contextualised by knowledge of the local environment. To accomplish this, the researcher decided to explore whether there was a link between trust, openness to learning, and gatekeeping, and the results show that a link does exist. Trust and openness to learning are pre-conditions and essential elements of an absorptive capacity to introduce gatekeepers. Otherwise, the creation of dependence upon external sources of knowledge may result in a local staff being discouraged and less enthusiastic about knowledge sharing and learning.
This research set out to explore the following objectives:

I. to analyse different types of Gatekeepers within a series of case studies;

II. to analyse the knowledge environment in Rwandan and Ugandan organisations; and

III. to critically analyse the relationship between trust, openness to knowledge sharing, and gatekeeping.

The next section presents a summary of how these objectives have been achieved against the available evidence.

6.1. Recap of the Theories

The thesis set out to critically analyse the relationship between knowledge sharing, culture, trust, and the use of Knowledge Gatekeepers in 11 Rwanda and Ugandan organisations.

The choice of the topic was academically and theoretically inspired by Allen (1977), whose work focuses on technological information sharing and technological transfer within the context of scientists working in R&D. Allen’s definition of a gatekeeper was based on three attributes. These are:

- being a technical performer;
- being a first-line supervisor; and
- being recognised by technical management experts.

Allen’s work was inspiring for two reasons. First, the gatekeeper is connected to few others within the organisational environment (although it was not known why this was the case) and was said to be a source of novel knowledge that led to innovation within the firm, yet, in Allen’s view, this informal role did not appear to cost money to companies that utilised or benefited from the role. This view was reinforced by further studies that extended this role to talent management in Ireland (Whelan et al., 2010). There were also
studies that described the same role performed by a formally appointed employee. These appointments were associated with positions such as the Chief Knowledge Officer (CKO).

After a review of the Rwandan and Ugandan knowledge environment, the researcher realised that the companies in question have very weak knowledge infrastructure (GeSci, 2009, p. 7). Leadership capacity to coordinate, ensuring that organisations know what they know, streamlining and putting into place relevant processes were all depressing issues facing these businesses. One possible solution was the thought in the proposition that African economies use gatekeeping to build a system that is internally connected and both supported by formal roles of gatekeeping and connected to the outside world through informal gatekeeping strategies. Internally, this thesis further proposed that these companies consider using CoPs (Wenger, 1998) in order to address the issue of “social and cognitive proximity” (Harorimana and Harebamungu, 2012), which is weak and lacking in many places. The problem that Rwanda and Uganda have is that, even if they choose to follow the gatekeeping strategy as suggested by others (Konde, 2006; UNECA, 2010), there is still a knowledge gap. That is, it is not clear whether the gatekeeping strategy is applicable to different contexts from that in which it was designed (i.e. the European context). Without research into this question, the much speculated model may not deliver its desired results. To this end, the researcher suggested that detailed studies in matters related to the knowledge environment in those countries be conducted.

Secondly, the attributes of gatekeepers were not really known. So far, theoretical and empirical literatures depict gatekeeping from a communication perspective, and gatekeeping is predominantly researched from the vantage point of the R&D sector (Karine, 2009). Gatekeeping, however, is not simply information seeking. It involves different sources, and these sources are connected by reasons such as the desire to innovate and to learn (Birchfield, 2005); but it is still not known whether this desire actually exists in Rwanda and Uganda. The field lacks expert knowledge about what the knowledge environment is like in these countries. It has been proposed that a gatekeeper could connect firms and scientists in Uganda and Rwanda, both internally and externally,
to others with knowledge and resources that could benefit them (UNECA, 2010). This idea remains speculative in the sense that a definition of the attributes of gatekeepers in the Rwandan and Ugandan context is lacking.

Finally, this research has argued that the use of Knowledge Gatekeepers within a given organisation is a managerial decision that needs careful analysis. Management must also delineate the specific areas within which the gatekeeper is to be of use (e.g. promotion of organisational learning, encouraging teamwork, leading the rest of the employees, to serve as a key, designated person who looks for, acquires, and distributes necessary organisational knowledge).

6.2. A Recap of the Methodology

The methodology provided a strong foundation for investigating the thesis that there is a relationship between trust, openness to knowledge sharing, and the nature and type of gatekeeping that different firms promote. This research used the mixed methods based on the case study approach. Eleven organisations served as the units of analysis. Two outlier cases were designated because they presented unique aspects that required further exploration. The case of the partnership between R1 and R6 provided insight into how trust and openness can shape partner relations. At U1, it was possible to study and analyse the ways that TKlGs work, which helped explain the factors that influence the communication process within a highly qualified network of TKlGs. The mixed research methodology with outlier cases was appropriate because quantitative data could be used to reach a wider sample of respondents. From this wider quantitative information that was collected, patterns were detected that were then analysed using data and information elicited by in-depth interviews at later stages of the research. While the questionnaire allowed respondents to speak for themselves, it was within the in-depth interviews that subtler details could be explained.

Both instruments enriched this study’s findings. Four constructs and three findings were formulated from the interview and survey data analysis. The questions in the survey
and in-depth interviews addressed each of the proposed questions for this exploratory study. The primary and secondary research objectives were obtained by identifying the characteristics of the gatekeeper, comparing the respondents’ roles to that of the Knowledge Gatekeeper, and exploring how these roles lead to success in the KM environment.

6.3. Re-assessment of Objectives and Answer to the Research Question

After a thorough investigation of the interview and survey results, the researcher assigned specific constructs from the Knowledge Gatekeeper’s characteristics and role. Three steps were taken to prepare, transcribe, and code the results of the data collected in this exploratory study. First, every interview and survey was interpreted individually for the purposes of identifying specific information from each participant and respondent. The overall goal was to identify the relationship between trust, openness, and gatekeeping. The study explored the characteristics of the roles that the participants played within their organisations, primarily because it was interested in respondents who were part of or who were supposed to play a significant part in the design and implementation of organisations’ KM strategies. It is impossible to understand an organisation’s system and strategy unless one first understands its environment; thus, the researcher started to explore and explain the organisations’ and respondents’ KM environment. Second, every interview was compared to every other interview, until similarities and discrepancies across all 11 case studies were identified. There were 105 questionnaire respondents and 62 interviews.

Significant statements were highlighted in each interview and survey. The data from these statements were used to classify the information. A manual process was conducted in order to categorise the results into figures and tables. Percentages were calculated for the totals within each categorical area. This process was completed for both interview and survey results. Refinements were made to further exhaust subcategories and identify new ones. Each category reached a final saturation point where a proposed thematic theory was able to materialise. Reducing data that showed no relevance to the
research study helped to consolidate the information and increased the meaning and significance of the remaining data.

Patterns, themes, and categories of analysis emerged from analysis of the data. One of the contributions of this study is the conceptual and empirical clarity about the relationship between openness, trust, and gatekeeping. It was found that trust, openness, and availability of resources, as well as the firm’s stage of life, govern whether an organisation should have a formal or an informal gatekeeper. Below is a recap of the ideas that meet the research objectives.

6.3.1. The Knowledge Environment in Rwanda and Uganda (Objective 1)
The knowledge environment of the Rwandan and Ugandan units of analysis is characterised by an openness to knowledge sharing and trust, with certain pockets of findings showing that the context of required knowledge and the extent to which the sources and recipients trust each other influences decisions as to whether to share knowledge, or protect it while releasing this knowledge only to those in a small group of socially connected people through informal channels within the organisations. Proximity to one another does not necessarily guarantee early access to the technical knowledge held by a TKIG. With regards to knowledge environment and gatekeepers within the units of analysis, the study results were mixed. While organisations may benefit from a short-term contribution by the gatekeeper, counterpart employees can feel that their expertise is not valued and, as a result, gatekeepers become people who come to fill in perceived knowledge gaps.

Karyeija (2010, 2012) argues that in the public service of Uganda, where there is a top-down culture, employees are not willing to challenge their managers and are not free to share knowledge and information without fear of retribution. His conclusions were drawn, however, from case studies in public sector organisations. These conclusions are not true about the private sector organisations in Uganda studied here, although his thesis may remain true for one firm within this study. Within the semi-public agency that was
analysed, one respondent argued that employees were free to share knowledge, but that they were not to contradict their manager and were not in a position to challenge his ideas. This finding suggests similarities within the top-down culture that Karyeija (2010) described as prevalent in the Ugandan Civil Service. During the interviews that were reported as part of an outlier case, a respondent at U5 referred to “the nature of the business which is R&D” instead of putting the blame on the company’s leadership or the organisation’s culture - positions that were taken in previous research. These findings are clearly not contradictory in any way. They show that the extent to which trust and openness to learning exist are dependent on the organisational context such as the nature of business a company is engaged in, its anticipated benefits from a relationship (e.g. desire to improve performance and innovation, providing client assurances and the firm’s ability to finance a formal role for Knowledge Management). Ugandan employees may feel vulnerable if they share business knowledge that is a source of competitive advantage. In the case of Rwanda, there has been no research that is comparable to that of Karyeija’s (2010, 2012) research into the importance of culture in Civil Service reform in Uganda.

In the context of developing countries, the findings shed light on Rwanda’s and Uganda’s knowledge-sharing culture within the units of analysis investigated here. There is a strong relationship between the uses of gatekeeping as a Knowledge Management strategy with the extent to which an organisation’s openness is realised. Those firms studied perceived knowledge management as an issue of coordination and the use of gatekeepers is dependent on trust, expertise, and contextual understanding of their knowledge requirement. In Rwanda, firms reported that they see gatekeeping as a coordination role to access knowledge from outside boundaries, developing benchmarks on the basis of best practices and developing a contextual meaning from the acquired knowledge. In this research, however, limitations were observed with this practitioner-oriented knowledge, because there are no prior studies that could be referred to in the Rwandan context. Therefore, the findings should be understood within this context; that prior knowledge is lacking especially to demonstrate that coordination is indeed
associated with better, fast movement of information within organisation units and inter-organisation knowledge networks as suggested from the findings of this research.

To conclude, there is recognition that gatekeepers add value to knowledge sharing in terms of coordination and facilitation and, creating an environment that nurtures trust. This means that the gatekeeper needs to be a trustworthy him/herself; but also, he/she should not be perceived as a replacement for company short staffing for the day to day operations. This is where this study adds value- the clarity of theory and practice regarding the use of gatekeepers in organisations: The evidences from this study show that *companies within which professional qualifications of employees are less valued tend to use a formal gatekeeping strategy in the form of hired gatekeepers.* In such companies, employees do not exhibit the appetite to indulge in voluntary activities such as knowledge creating or participate in knowledge sharing clubs or community of practices.

6.3.2. Types and Problems of Gatekeeping (Objective 2)

The purpose of this objective was to gather evidence that would allow for the exploration and explanation of the different concepts of knowledge gatekeeping and draw conclusions vis-à-vis the knowledge environment in Rwanda and Uganda. This objective served as the foundation for the actual thesis in several ways. The literature review contributed significantly towards answering this objective, and the empirical data provided a strong foundation upon which conclusions on the topic were drawn.

Using the empirical study, it was found that there is a significantly diverse usage of gatekeepers. Types of gatekeepers in the units of analysis include, among others, Key Men, Chief Knowledge Officers, Technical Assistants, Coordinators, to refer to those who are involved with the day-to-day knowledge management activities, collecting information and repackaging this depending on the context that requires serving and passing it on to the wider organisation network. Although different appellations, these names have similar meanings and are distinguished by the degree to which these people intervene.

Study of this objective extends existing theories about gatekeeping by showing that, in Uganda, the concept of “Technical Assistant” is used to refer to those experts who
are brought in for the purposes of gatekeeping but who also have a primary responsibility to translate knowledge into locally understandable forms. These Technical Assistants also have the mandate to assist their local counterparts, learn from them, and connect to wider networks and knowledge bases. The concept of a “Coordinator” was used in a Rwandan organisation to refer to the gatekeeper there. The activity of coordination refers to running within and between organisations, facilitating knowledge-sharing and supporting knowledge-creation efforts within the company-wide network. The concept of “KIG” distinguishes itself from the other concepts in this sense: it refers to an expert who has techne knowledge and who is seen as the best and most well-informed source of useful knowledge in his or her environment. This concept was introduced first in Rwanda, but similar roles were detected in U1 as well.

TKIGs were observed to be well connected to each other as well as connected with other employees in their organisations through loose but protected networks of scientists. In this research, they were able to be tracked in U1. These people display mutual trust within a protected group of expertise and practice. With the evidence available, the study concludes that Allen’s (1977) view of the gatekeeper is true only if it specifically refers to these few, highly qualified personnel.

6.3.3. Relationship between Trust, Openness and Gatekeeping (Objective 3)

From the evidence available, the claim here is that trust, openness and gatekeeping are strongly linked. In observing “differencing perspectives”, it emerged that those who did not have trust also did not use or support the use of gatekeeping as a knowledge management strategy. This thesis expands the research of Czop and Leszczynska (2011), who demonstrated that, in manufacturing industries, organisational culture is especially important for companies with the desire to increase their levels of innovation. In manufacturing industries, the potential for the achievement of exponential growth in innovation and the demand for better decision-making and trust are important. These organisations, more often than not, must access knowledge from both formal and informal networks in order to successfully execute their tasks and achieve their desired goals (Zenger et al., 2002). In order to help their companies access this knowledge,
gatekeepers create proximity between two or more parties that seek to create, process, and share knowledge (Allen, 1977; Whelan et al., 2010). The rules of this engagement include principles of trust and openness. Consistent with De Long and Fahey (2000), who write that “Cultures heavily influence what is perceived as useful, important, or valid knowledge in an organization. Culture shapes what a group defines as relevant knowledge and this will directly affect which knowledge a unit should focus on” (p.113), in this research it was found that the decision to share knowledge is governed by and is dependent upon whether or not the two parties trust each other. This objective has contributed to an understanding of this phenomenon by providing empirical evidence to support this claim; furthermore, this study shows that trust, openness, and gatekeeping are linked. The evidence also helps to see whether an organisation will choose to use a certain form of gatekeeping over another.

This choice is influenced by several factors. The first is the stage at which a business exists (e.g. early stages, maturity, decline and renewal). Those firms in this early stage of firm-growth category expressed concerns regarding possibilities of losing talent that produced useful ideas, which all contributed to a lack of trust. The gatekeeping in these companies remains predominantly informal because of this resource issue, which leads to a lack of support for KM initiatives.

The second factor is the nature of the business. R&D-related activities seem to attract more resistance (i.e. an absence of trust). This supports the view that very few people are connected to each other because they have met, are in a similar field of work, and discuss issues within a very small team that has developed its own ways of communicating at a more personal level.

The third factor is that of the social connections of the respondent along with the context in which the desired knowledge will be used. Those companies that did not use gatekeepers were those which were building social connectors aimed at giving their knowledge a context; that is, a meaning that uniquely addresses their problem. This group works in CoPs with some elements of informal gatekeeping.
6.3.4. The Emerging Gatekeeping Model

Finally, the research set out to critically analyse the relationship between trust, openness and gatekeeping. In this paragraph, the findings obtained under each one of the three objectives are linked to introduce the possible implementation model of gatekeeping. The knowledge gatekeeper research to date has shown its own weaknesses (Karine, 2009, Whelan et al., 2010) It is more than 40 years old, it was developed from a single industry context (R&D) and manufacturing; however, the world has moved on, knowledge workers are more abundant, and many industries have become more knowledge-intensive than was the case 40 years ago. Although gatekeeping could be effective in building inter-firm relationships, it was ineffective between intra-firm relationships and as such, an inward-looking model would only add little value to prevailing problems (Cranefield and Yoong, 2007). To build intra-firm relationships, trust and openness were linked to gatekeeping. Trust and openness, it was argued, are localised within firm dynamics and specific contexts such as prior knowledge infrastructure. This thesis proposed a framework which would allow internal-external relationships in order to successfully build a soft infrastructure in Rwanda and Uganda. The thesis thus proposes a modified mechanism of gatekeepers. This is considered a worthwhile effort to propose an enabling framework within which knowledge sharing takes place. Due to low levels of knowledge infrastructure in Rwanda and Uganda, it appears reasonable to propose from this thesis a model by combining strengths offered by “formal” gatekeeping within intra-firm networks with “informal” gatekeepers within the informal organisation. Such a model needs however to be guided by the concept of institutional arrangement which has its formal and informal organisation network as core sources of valuable knowledge. Konde (2010) suggests that the institutional arrangement may provide a “demand-driven, knowledge”; but the view held in this research remains that there many uncertainties as regards to lack of evidence to support this claim. It is however a suggestion that could be taken further, and build on the findings that are presented herein. To benefit from that knowledge residing within different institutions, there will need to be trusted people working together within formal arrangements of gatekeepers. These gatekeepers should
be open towards different partners, and act as intermediaries between the Universities and Research Institutes, the Industry and the Government. The Government in particular has a primary role in putting in place knowledge infrastructure including funding some of the R&D programmes (Saad, Zawdie and Malairaja 2008a). King (2004) suggested an increase of funding to R&D to a minimum rate of 1% for these countries to really register a minimum level necessary, expected to be increased up to a level of 2% of the GDP which is required for a Country to truly qualify as moving towards a knowledge-based economy. Other areas need funding too - for example, the funding for Higher Education to improve the *absorptive capacity* (see Allen and Cohen, 1990) through provision of relevant educational programmes (World Bank, 2010). This thesis extends Saad and Zawdie’s (2008) suggestion that the Industry, Government and the Universities in developing countries need to shift their mind-set towards becoming more “entrepreneurial” and more *creative* “than they have previously been” (p.649). They argued that a primary obstacle to this was trust and lack of openness between these key players. This thesis argues for the support and introduction of the gatekeeping strategy to make up for the lack of trust. In this strategy, the gatekeeper understands the differences in cultures of the University, Industry and Government spheres, the Development Partners such the World Bank, The United Nations, the Civil Society Organisations and all those involved in knowledge creating and innovation activities. It is crucial to include these Partners in the relationship because people feel free and are open to those they trust. In the countries analysed, consulted secondary data show that more than half of the National budgets, especially in knowledge infrastructure-oriented programmes such as Systems Development, Education and Basic Infrastructure are funded by these Development Partners. It is therefore crucial that there be a way these parties forge a common understanding in a mutually beneficial relationship. This is guided by trust and openness between each other. There are challenges as illustrated (GeSci, 2010; Saad and Zawdie, 2008; The World Bank, 2009); among others weak leadership, lack of Vision, limited Human Capacity and limited basic infrastructure. In this situation the most cost-effective option is to introduce a Gatekeeping strategy in which the Gatekeeper is an
intermediary person, a central figure who Coordinates, creates linkages, and builds Trust between Universities, the Industry, the Government and its Development Partners such the World Bank, The United Nations, the Civil Society Organisations and all those involved in knowledge creating and innovation activities. It was for example noted that there is an issue of fear of losing competitive ideas in U5, an R&D company. For this model to succeed therefore, it would need to address such issues of trust between industries and R&D experts. The role of the Gatekeeper should further be about encouraging networking and trust-building between scientific communities and the private sector.

Moving forward, the firms that this research was conducted in are working from a situation where they mainly concentrate on value-adding products, and household and industry products. As Watkins and Verma (2008) argue, indigenous knowledge constitutes one of the major sources of knowledge to be exploited, especially in the manufacturing sector. This thesis did not analyse this element in particular, but it is of the view that a forward-looking model needs to recognise this aspect - an integration of indigenous knowledge in the knowledge-sharing, creation and transfer process.

Evidence shows that the use of gatekeepers as a formal mechanism for knowledge management takes into account local context. The countries analysed have problems which result in them ranking very low on knowledge infrastructure (GeSCi, 2009; GoR, 2010, 2012; Konde, 2006; Watkins and Verma, 2008). The model proposed would need to be cognisant of this reality, and integrate technical and tertiary learning institutions, but there still needs to be trust and openness towards each other. This could be achieved by creating a meeting place, a social network, or a community of practice where those interested in improving the knowledge sharing, creation and transfer come together. Nonaka and Takeuchi (2004) say that when people come together, they create knowledge and that knowledge is not a thing that waits to be proven; instead, it is the “spiral” which goes around and around through face-to-face meetings (Nonaka and Toyama, 2004), virtual discussions (Bollisani, 2008), and social networking (Grannovetter, 1983) that creates identity (Wenger, 1998), and if people get to know each other, and work together

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for a Common Good (to improve the knowledge environment of their countries and their companies), then they can trust each other. This ongoing dialogue, supported by openness, will spark an action to generate more knowledge and share more knowledge, and the result will be an integrated four-ways structure where industry, research centres, and tertiary and technical educational institutions become more efficient, more effective knowledge managers and more innovative as a result of trusting each other and working for one another in an open, trustworthy framework which is an innovation centre. The role of this centre could be to provide a platform for knowledge management; where knowledge management is defined as “the process of identifying knowledge needs with a purpose of responding to a demand (need) using optimally the resource available to you. The search for optimal solutions will push for innovation and pre-appraisal of individual, (skills, knowledge, aptitude and competencies) and infrastructural requirements (technologies and systems) necessary for implementing the knowledge management programme”. Below is the concept model as it emerges from this discussion.
Figure 28: The proposed triple helix model of knowledge creation and transfer in a developing country. Source: Model Concept Development

The above model, if implemented, would solve two problems.

- Developing economies tend to have lower skilled personnel and the bottom heavy skills in the workforce. This means that producing managers with less
entrepreneurial capacity and hands on skills may not necessarily enhance economic competitiveness,

- The support to both Universities and Colleges are not mutually exclusive but a developing country need to focus on job creation and that, evidence has shown, the typical average Rwanda or Ugandan Citizen held as low as a secondary/high school or college certificate. This means ultimately, increased number of graduate (though maybe costly), and may not necessarily generate critical mass skills required by the industry. This model therefore takes into consideration these realities (limited funding, local conditions, weaknesses in University Curricula relevance to the industry, and the large size of a population with secondary and college level skills. Here, the proposed model is to focus on the development and knowledge promotion in indigenous knowledge based products and services, through close interaction between the Universities, the Technical and tertiary colleges of education, the industry—all, and these institutions will however face shortage of resources, worsened by political influences and cultural barriers. To mitigate these, the model proposes an Innovation Centre. This centre, effectively, plays the role of knowledge broker through its diverse, well trained, and experienced gatekeepers whose attributes and roles have been discussed in this thesis. This model, addresses further challenges namely;

- Coordination between the training providers (supplier), the industry (knowledge user) and the funders who are in some way knowledge users (e.g. Governments and government funding agencies).

- the resultant effect may be an improved capacity for innovation through increased knowledge sharing – inevitably linked to the improved trust and openness which leads to better knowledge management through gatekeepers.

To succeed, there will need to be trust. Trust will be developed if the different players interact and share knowledge, and, in the true sense of this thesis, they need to be open to each other.
Finally, it is important to restate the limitations of this model. It is an emerging, conceptual model which still requires further research. The primary objective of this thesis was to critically evaluate the glue that holds everything together. The thesis has shown that there is a strong relationship between trust, openness and the use gatekeeping as a knowledge management strategy. This is an important step because, after this thesis, further studies can now continue with a critical analysis of each and every aspect of the model, including piloting it in several case examples including the organisations that were studied in this research.

6.7. Restating the contribution to knowledge

Previous research into knowledge gatekeeping has not made a theoretical or empirical connection between openness to knowledge sharing and trust, and whether the organisation uses gatekeeping as a knowledge management strategy. Those who have studied trust and knowledge sharing did not connect these attributes to openness in the way in which this thesis has suggested it is important to do. In this thesis, the researcher was able to connect organisational openness, trust, and gatekeeping as a knowledge management strategy, and proposes an implementation model for this. Although this research uses case studies, the quantitative data that were collected were supplemented by interview findings that helped the work to develop unique insights into how gatekeepers behave and why they behave in the ways they do (e.g. choosing to whom they speak and whom they approach for knowledge). The evidence gathered, which is supported by a sound theoretical foundation, is enough to suggest a new theoretical perspective, namely, there is a strong relationship between openness, trust, and organisational choice about the ways in which gatekeeping is promoted and that Knowledge sharing is a function of trust and gatekeeping. The thesis developed a model which shows how Gatekeepers should be used within the triple helix innovation system.

In this model, Gatekeepers promote an environment that nurtures trust and promotes networking and knowledge sharing within the innovation system.
6.8. Limitations of the Study and implications for the Field

The research used a questionnaire from which it generated a large amount of information. The results from the questionnaire, together with the evidence gathered in the in-depth interviews, serve to generate the thesis that there is indeed a strong connection between trust, openness to knowledge sharing, and the use of gatekeepers in organisations. It is important, however, to recognise that this research was conducted within the context of two developing countries, Rwanda and Uganda. The study itself was based on a few case studies, and the case study methodology can make it difficult to generalise empirical findings into the wider academic domain (Yin, 1994, 2009). Nonetheless, the case study methodology’s strength is that it generates several context-bound theories from which further and broader testing can be applied in order to generate more comprehensive and more generalisable theories (ibid., p. 74). Within this limitation, the findings here shed light on the relationship between trust, openness, and gatekeeping.

A second limitation arises as the result of the purpose of the thesis. The purpose of this study was to generate theories and further ideas that could be subjected to a much wider sample than the one employed here. Such research would expound and build upon the theories proposed here and test them in different countries and regions. Such research would also generate further empirical evidence upon which the field could enhance the knowledge claimed herein.
6.9. **Academic and practical recommendations**

The concept of a gatekeeper’s benefits to his or her organisation was introduced in this study. To date, studies have addressed the question of accessing knowledge without consideration as to whether the gatekeeper actually speeds up or delays knowledge flow within his or her organisation. It remains unclear to the researcher whether slow flow of knowledge and information within an organisation can be addressed by means of an effective Knowledge Gatekeeper. This study did not analyse or consider the aspect of speed of knowledge flow, and the recommendation of this thesis is that further research be undertaken to answer this difficult question.

In this study, an attempt was made to link the concept of gatekeepers with the existing science on organisational theory. An attempt was made to answer the question of who is qualified to assume the role of Knowledge Gatekeeper in a given firm through identifying and developing a list of the gatekeeper’s attributes. Still, much wider and more diverse evidence from different regions and contexts is required to answer this important question.

There are several aspects that require further study, especially with regard to how these findings might reshape the knowledge management model that uses gatekeepers. It is the view of the researcher that a knowledge management model that takes into consideration the results of this thesis should (1) be cognisant of cultural theories of gatekeeping; (2) should address gatekeeping as part of an entity; (3) should recognise that an organisation’s desire to learn, improve, and innovate influences whether the organisation will focus on formal or informal ways of accessing, creating, and sharing knowledge, and (4) in the context of developing countries, it should consider the impact of indigenous knowledge and its systems and how these interact with modern knowledge systems. Such a strategy should not be driven by information seeking but rather should recognise that gatekeeping may come into existence for more complex reasons. It may be formed as part of an entity’s desire to achieve efficiency and improve performance, and it may be driven by the stage of growth of a particular firm (e.g. early life, growth, maturity and decline). This model also places an emphasis on the knowledge needs of organisations.
and the role of the gatekeeper in fulfilling those needs. This model emphasises the gatekeeping role over an organisation’s knowledge requirements and recognises the dynamics of human behaviour. While knowledge may be shared with broader communities, small teams of highly trustworthy people will continue to vet and contextualise knowledge before it reaches other members of an organisation’s wider network. Finally but not least, this study indicated that the Gatekeeper’s role in an innovation system is vital for alignment of modern and indigenous knowledge systems. There are limitations to which extent we can be confident on how applicable our findings may be outside the sector organisations analysed. In this regard, there is need to conduct further research on the linkages and how Gatekeeping could facilitate learning and facilitate innovations that may arise from indigenous knowledge.

During the research process, respondents spoke about the companies’ stages of growth, and they spoke about gatekeeping. Some of the institutional reports further indicated that support for social events; meetings oriented towards building a climate of “togetherness” and trust were cut down. The firm’s growth stage, the availability of resources and expertise, and the firm’s ambitions could be identified as possible factors that have something to do with a firm’s desire and ability to continue to support knowledge management initiatives through formal gatekeeping. The study was unable however to establish to what extent this may be the case. The recommendation is therefore that future studies should consider determining whether there is a link between a company’s life stage of growth and its ability to support a gatekeeping role.
References


Aloni, M., 1985. Patterns of information transfer among engineers and applied scientists in complex organizations,Scientometrics, Vol.8(5-6) 279-300 Akadémiai Kiadó, co-published with Springer Science+Business Media B.V.

Amin, A. &Cohendet, P.;2004. Architectures of Knowledge Firms, Capabilities and Communities, Oxford University.


Briggs J. 2005 the use of indigenous knowledge in development: problems and challenges. Progress in Development Studies April 2005 vol. 5 no. 2 99-114


Byamukama D.2012. Prof. Silas LWAKABAMBA underscores NUR achievements and way forward; accessed online at http://www.nur.ac.rw/spip.php?article581


Conger, J., 1998.; Qualitative Research as the cornerstone methodology for understanding leadership. Leadership Quarterly, 9(1)107-121.


Global eSchools and Communities Initiative (GeSCI) .2010c. The Knowledge Society Database. Nairobi: GeSCI (database in development)


Government of Rwanda (GoR); 2009. Life Science Convergence Center, McLaughlin-Rotman Centre for Global Health (MRC) September, 2009. [Internal report]


Güney, S.; 2004. Organizational identity and sense making in collaborative development of technology: An ethnographic case study of "building the box", The University of Texas at Austin, Austin.


270


Kagame P.; 2008. Imperative of Science and Technology in Accelerating African and Rwandan Development.” *MIT Compton Lecture*, MIT.


276


Nonaka, I., Toyama, R. & Konno N. 2000. SECI, Ba and Leadership a Unified Model of Dynamic Knowledge Creation, Long Range Planning (33) 5-34,


Saad M., Zawdie G., & Malairaja C., 2008a. The triple helix strategy for universities in developing countries: the experiences in Malaysia and Algeria, Science and Public Policy Vol 35(6)431-443


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Appendices

Introduction Letter to Respondents

As post marked [July, 2008]

Dear Sir/Madam

Re: Introduction and Research questionnaires for a Doctoral Thesis

I am conducting a research into Knowledge Gatekeeping and the knowledge sharing and transfer process in your workplace organisation as part of my Ph.D studies.

In the following pages, you will find a questionnaire to which I would like you to respond to. The questionnaire intends to provide a deep analysis and therefore some of the questions may not necessarily be fully relevant to you as a person, but could be relevant to your role in the organisation. Others may appear to be difficult to answer, but I ask you to provide any information you may have about the question. Please be honest and accurate as much as you can. Please answer my questions without hesitation because it is your first impression which generally expresses best opinions.

This research question is designed in such that it would be extremely difficult or indeed impossible to identify you. Even then, the information you provide as part of this research will be kept confidential. It will be used for the research purposes alone.

Where your answers are being quoted in publications, any indication likely to identify you will not be included in any way. You will be likely to be referred to as Respondent x or y.
Even if your organisation may have allowed us to approach you for research purposes, you are not obliged to respond to our questions and they will not have access to any of the details without your permission.

This questionnaire is designed to comply with ethical research practice of the Southampton Solent University and the Nottingham Trent University. However, should you have any query or a concern, or simply if you want to get in touch about this research, the following address should be used:

Deogratias Harorimana
Deogratias.harorimana@solent.ac.uk
Postgraduate Research Centre
Southampton Business School
East Park Terrace
Southampton
SO14 0YN
Tel: +44 23 80 31 9606, 02380319000 Ext.3606
Fax: 44 23 80 33 26 27
www.solent.ac.uk
I thank you for your collaboration.
2. The research questionnaire

In this table, you will have statements that require your judgement. Please use circle that apply.
1 = If you strongly agree
2 = If you agree,
3 = you feel that you somewhat disagree
4 = you fully disagree with the statement
5 = if the statement does not apply to you (please add this in pen or pencil)

### Knowledge sharing and Learning culture

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<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
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<tr>
<td>1. In our company, people share ideas openly</td>
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<td>2. In our company, people are able to meet to share ideas often</td>
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<td>3. I feel free and comfortable to walking up to any workmate in my company and start a conversation</td>
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<td>4. I feel free and comfortable to walking up to any workmate in my company and ask for help to solve a difficult problem</td>
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<tr>
<td>5. In my organisation, people are encouraged to meet up and share knowledge and experiences</td>
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<td>6. In this company, we often hold social events</td>
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<td>7. Social events are very formal</td>
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<tr>
<td>8. Social events are very informal</td>
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<tr>
<td>9. I would give information to any workmate who need it</td>
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<td>10. In my view, sharing knowledge improves corporate image and profitability</td>
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<td>11. The way this company treats its knowledge improves employees performance</td>
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<td>12. In this company, you can openly disagree with your manager</td>
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<td>13. In this company we prefer not to argue with our manager on ways we do things</td>
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<td>14. In this company, knowledgeable people keep ideas to</td>
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<td>themselves</td>
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<tr>
<td>15. This company is very good in using ideas that are brought about by other employees</td>
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<tr>
<td>16. In this company, I have been rewarded for teamwork achievement at least once</td>
<td>1 2 3 4</td>
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<tr>
<td>17. In this business, those who do well are those who did a University degree</td>
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**Type of knowledge being transferred**

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<tbody>
<tr>
<td>18. In this company, most of knowledge is difficult to learn from books and manuals</td>
<td>1 2 3 4</td>
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<tr>
<td>19. When I have a difficult problem to solve, I prefer to ask for help from a colleague who did it before</td>
<td>1 2 3 4</td>
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<tr>
<td>20. I can describe (or tell) everything I do</td>
<td>1 2 3 4</td>
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**Think about your company relationship with a third party or a partner**

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<tbody>
<tr>
<td>21. Our partners are open to telling us what they intend to do in near future</td>
<td>1 2 3 4</td>
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<tr>
<td>22. The main problem we have here is that our partners’ culture differ from ours</td>
<td>1 2 3 4</td>
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<tr>
<td>23. The main problem we have here is that our partners’ language differ from ours</td>
<td>1 2 3 4</td>
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<tr>
<td>24. The main problem we encounter when dealing with our partners, is that they have different procedures and routines completely different from ours.</td>
<td>1 2 3 4</td>
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<tr>
<td>25. I believe that my knowledge can be written down for future after I have left this company</td>
<td>1 2 3 4</td>
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<tr>
<td>26. I find it better to learn from my colleagues than reading the material telling me what to do</td>
<td>1 2 3 4</td>
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<tr>
<td>27. I sometimes worry about how difficult it was for me to do the task I was trained to do, unless someone demonstrate face to face how to do it.</td>
<td>1 2 3 4</td>
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<tr>
<td>28. The business practice and operational mechanisms of our partners are very similar to ours</td>
<td>1 2 3 4</td>
<td></td>
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<tr>
<td>29. Corporate culture and management styles of our partners are</td>
<td>1 2 3 4</td>
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</table>

49 Qs21-24 adapted from Cumming and Teng (2003)
50 Qs25-29 were adapted from Argote and Ingram (2000), Q31&32 were adapted from Szurowski (2000)
very similar to ours

30. Our company has committed a lots of time and personnel into networking and social relationship with our partners

31. This company has committed logistical ,financial resources to support seeking, diffusion and sharing information and experiences

32. The difficult we encounter is to document expertise of our successful employees

About gatekeeper of knowledge=knowledge intermediaries for your company day today activities. By knowledge gatekeeper I mean someone well informed, exposed to knowledge more than others, And intellectually capable to interpret what was unknown or difficult to break down in pieces the average person could understand.
In clear terms, this is someone who is able to translate highly sophisticated scientific theories into practical and applicable results.

33. Among other ways we use to train our staff include using an external person who knows better

34. We find knowledge gatekeeper as an easy way to improve our knowledge base

35. We reward knowledge gatekeeper for his job

36. Knowledge gatekeeper is the source of new (and /or) original knowledge

37. Knowledge gatekeeper is not our own full time staff member

38. I act on regular basis as a knowledge intermediary for other organisations and or charities

39. This company acts as knowledge gatekeeper for (please elaborate on nature of business relationship)

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Relational context, Community of practice (ou communauté pratique)

40. From last year, the company held at least two employee social events,

41. I am a member of at least one professional club/group

42. The professional group I belong to helps me to advance my professional knowledge, skills and experiences

Q34,36 and 39 adapted from Allen and Cohen (1969)
Qs 43,44,50-59 Were Adapted from Cumming and Teng (2003), and Argote and Ingram (2000)
<table>
<thead>
<tr>
<th>Question</th>
<th>Score Options</th>
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<tbody>
<tr>
<td>43. I can share my knowledge with a colleague, depending largely on which context</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>44. Context in which knowledge is created is always important</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>45. In this company, we are encouraged to discuss business ideas and issues with each other</td>
<td>1 2 3 4</td>
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<tr>
<td>46. I can name one to three professional associations I belong to</td>
<td>1 2 3 4</td>
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<td>...........................................................................................................</td>
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<tr>
<td>47. I can name two or three professional contacts I have shared knowledge/ideas in the last three months (please explain type of activities engaged in)</td>
<td>1 2 3 4</td>
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<tr>
<td>48. In this company, knowledge is used without assessing its contexts/considering its contexts</td>
<td>1 2 3 4</td>
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<tr>
<td>49. When I am asking for knowledge contribution (even when I am stuck), I prefer to ask in which context I should use it.</td>
<td>1 2 3 4</td>
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**Networking and trust**

<table>
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<th>Question</th>
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<tr>
<td>50. In this company, I would trust my colleague with knowledge/information I share with them</td>
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<tr>
<td>51. I prefer to seek advice from a relation even this is not my company workmate</td>
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<tr>
<td>52. In this company, we have regulations forbidding us from sharing knowledge with outsiders</td>
<td>1 2 3 4</td>
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<tr>
<td>53. Our company has intentional procedures, routines and policies to restrict the sharing of process know-how</td>
<td>1 2 3 4</td>
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<tr>
<td>54. Our partners are free to ask for advice</td>
<td>1 2 3 4</td>
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<tr>
<td>55. In my company, what qualifications you have does not matter as long as you can perform very well at your duties</td>
<td>1 2 3 4</td>
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<tr>
<td>56. In my company, qualifications do matters even if you cannot perform very well at your duties</td>
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<tr>
<td>57. In my company, higher academic and professional qualifications are preferred even if you don't have relevant experience.</td>
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<tr>
<td>58. When there is a social event, people spend most of their time talking to their workmates and groups</td>
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<tr>
<td>59. When there is a social event, people spend most of their time talking to other people to get some new business ideas</td>
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<tr>
<td>60. In my career, I have some very important contacts I speak to</td>
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53 Q40-43,58-60 were adapted from Wenger(1998)
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<td><strong>regularly</strong></td>
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<tr>
<td>61. In the last few weeks, I have spoken to someone among my professional contacts to ask for advice</td>
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<tr>
<td>62. When I was stuck on one of my tasks, I called a colleague from outside my company</td>
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<tr>
<td>63. Recently I had a call requesting for a help from a colleague</td>
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<tr>
<td><strong>Indigenous knowledge= Ubwenge gihanga and cultural asymmetries</strong></td>
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<tr>
<td>64. In my job, sometime I have to recall my indigenous knowledge (ubumenyi bwa gihanga) to better understand what I am doing</td>
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<tr>
<td>65. I find it easy to associate my tradition and cultural practice to what I do</td>
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<tr>
<td>66. I don’t think indigenous knowledge is that important in what I do</td>
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<tr>
<td>67. I can do everything without recourse to my indigenous practice</td>
<td>1 2 3 4</td>
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<tr>
<td>68. I can name at least one indigenous practice at work</td>
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<tr>
<td>69. Common language facilitate corporate learning and culture</td>
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<tr>
<td>70. I am aware of cultural clash and miss understandings that are attached to cultural differences</td>
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<tr>
<td>71. I am aware of cultural clash and miss understandings that are attached to language differences</td>
<td>1 2 3 4</td>
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<tr>
<td>72. I am aware of cultural clash and miss understandings that are attached to language differences</td>
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<tr>
<td>73. Personally, I don’t think it would affect in any ways how I do things if I was working with someone who use a different language other than mine</td>
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**Optional questions**

Can we contact you for an interview to explore some of above questions? Yes/No

Your Email…

Mobile…………………………..

Other telephone…

If you have any problem or you want simply to get in touch for any other reason, please email deogratias.harorimana@solent.ac.uk

Or Write to:
Deogratias Harorimana
SBS Post Graduate Research Centre
Southampton Solent University
East Park Terrace,
Southampton
SO14 0YN
UK.
The interview protocol and questions guide

Preliminary questions

1. Greetings and welcome.
2. Clarifications and questions from respondents about the protocol, questions,
3. Agree confidentiality levels, assurances,
4. Answer to any questions before substantive interviews
5. Interview last no more than an hour
6. You are free to leave, refuse to comment or answer at any time
7. No obligation to respond, no payment or reward offered for this interview
8. Your organisation has approved this research to take place and that is why your manager has made facilitation for your time availability. However they do not have any access to whatever you will share with me and I will not disclose any of your information in a way you may be identified.
9. With respondent permission to be interviewed being granted……
10. Further introduction to substantive interview (2minutes)

Preliminary information

1. What is position in this organisation?
2. How long have you been in …organisation… what is your total number of years of experience in this industry….?
3. Corporate culture
4. How would you describe………..as an organisation?
5. How would you characterise corporate culture of your company?
6. Interview reads the following paragraphs and explains to interviewee

“Working definitions- Knowledge Management

The author would define KM as “the systematic process of identifying knowledge needs with a purpose of responding to a demand using optimally resource available
to you. The search for optimal solutions usually may push for innovation and pre-appraisal of individual, (skills, knowledge, aptitude and competencies) and infrastructural requirements (technologies and systems) necessary for implementing the knowledge management programme in your organisation”

7. To extent you understand the systems of your organisation? Please explain.

8. Do you consider your systems as they are today a success? Why and to what extent would

9. You consider them as a success? (guidance to choose from basic, elementary, intermediary and advanced)

10. How would you qualify your level of “professional expertise”? Would you consider yourself as say expert, just some basic knowledge, intermediate knowledge, please explain why.

11. Do you consider qualifications and experience of a given employee as an issue here? Why?

12. Do you consider trust to be an issue when deciding with whom to share knowledge within your current organisation systems? Why?

Moving from a conversation- introduce the working definition of a gatekeeper

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**Knowledge Gatekeeper**

This concept can have several meanings. In this research, we are concerned with associated meanings (e.g. Key person, Technological gatekeeper, boundary spanner, key man, Chief Knowledge Officer, Chief of Knowledge Transaction). We consider that these concepts may be containing smaller aspects of differences in meaning. In the response to this question, we encourage you to take care of these different meanings. Here the definitional guide is –a Knowledge gatekeeper is used to mean any employee within your industry and that person you know from the business relationship. This person will be called a gatekeeper if, regardless of his age, he is involved in any of the following aspects of knowledge management: identification, development, screening, vetting, transacting, mediating, and distribution with a view of to resolve a problem, a close a critical gap, and improve efficiencies as a result. This person must, however, have worked in the organisation for 3 years or more, and meet the basic knowledge worker requirements such as having a degree in a relevant field of expertise. If you have someone called a different name but he/she fulfils or exceeds the definition requirements, please give the new name and explain their role in your own organisation or outside (if applicable)

13. Do you consider yourself as a fulfilling any of the roles or any other similar one as this one? Please explain?

14. Who appointed you on this role? What do you consider as the top four benefits to the organisation for this role?

11. Do you have any informal/formal process that allows your employees to engage in knowledge creation and knowledge sharing? Why?

12. What are your principle tools that your company uses to promote interaction between employees within units and inter units/departments?
13. Do you have an external source of knowledge other than your own staff members?
14. Why do you call them? Would you qualify this person as a gatekeeper and why?
15. In your view is trust an issue when choosing which person to use as your intermediary?
16. How do you ensure that trust exists or it is maintained?
17. How does your organisation support joint development of rules of conduct between the parties?
18. What would you consider to be your greatest challenges for knowledge sharing in this organisation?
19. To what extent does your organisation manage the combinations of personnel involved in the sharing arrangement?
20. To what extent does your organisation facilitate the interactions of people from different units or with outside people where appropriate?

From a conversation….explain…..

In some organisation exist different groups, teams, but some maybe formal, or informal. You probably also have those employees who just want to advance their experiences, improve their knowledge, and help each other with regards to problem solving…some refer to this particular group as a community of practice, because they have a joint enterprise, interests and they are socially connected (without even the need of your organisation). Do you have such people and groups here? Can you explain how they work?
21. Have you been involved in any of them yourself?
22. If you did - What has been your experience?
23. What do you do?
24. How does your organisation this particular group?
25. Who else support them?

26. Do you consider them necessary entities for your organisation? What would you consider as the benefits from them?

27. Are you aware of usage of Indigenous Knowledge in your organisation? Do you think this knowledge matter in terms of your learning, knowledge sharing with colleagues?
Worksheet 1: Case report for the field case reporting

(Completed within two hours of site interviews)

Code letter for this case (include the code as is) R1, U1, etc_________

The Site Location________
The activity_________________
Source of information and context

The challenges/constraints identified-------------------

Uniqueness in:
Theme 1___________
   Sub-themes (1-4)

Theme 2___________
   Sub-themes (1-4)

Theme 3
   Sub-themes (1-4) ________________
   Prominence of theme 1 in this case___________________________
   Prominence of theme 2 in this case___________________________
   Prominence of theme 3 in this case___________________________
   Expected usefulness this case can be for developing theme 1:_________
   Expected usefulness this case can be for developing theme 2:_________
   Expected usefulness this case can be for developing theme 3:_________

Contextual and conceptual factors identified _______________________________

Excepts and quotes that appeared so often in this report ____________________

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<thead>
<tr>
<th>Company Code **</th>
<th>Key findings/summary of case by case reports</th>
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Emerging agreement/prominent findings are the followings.
1,
2,
3,
And they are coming from the following companies (insert case codes)

Differing perspectives on these themes are coming from the following companies, and these perspectives are……………
1.
2.
3.

3. Worksheet 2: The case by case matrix report (compilation summary of case reports one)

** Delete or one which does not apply
4. Matrix report 3. Cluster reports from merge findings (themed reporting)\textsuperscript{54}

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\textsuperscript{54} Note for consistency—compare field report (theme 1, 2 and 3), sub themes 1-4 and compilation report from merged findings grid.
5. Data cube for gatekeeping, Trust and openness to knowledge sharing and culture
6. First set of cleaned dataset (from questionnaire) Used for Analysis

The figure presented below is the explanatory version of the processed data set obtained and used during the analysis. The purpose is to enforce the principle of simplicity and clarity. The data presentation uses codes and symbols. Below is the data set:
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7. **Cluster findings (utility value) of key themes**

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8. Secondary data collection log book

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9. Themed findings

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<td>A <em>facilitator of KT</em> Questions to consider 34 38,39,42,43,46</td>
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<td>Knowledge shared in common is a <em>positive source of KTP</em> (meaning it is a source of developing relationships, and trust) (KC2) Q56,59,64,66,69,73</td>
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<td>CoPs are <em>facilitators/barriers of knowledge sharing outside firm’s</em></td>
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The business practice and operational mechanisms of our partners are very similar to ours. The difficulty we encounter is to document expertise of our successful employees. Among other ways we use to train our staffs include using an external person who knows better. Knowledge gatekeeper is the source of new (and/or) original knowledge. Knowledge gatekeeper is not our own full time staff member.

Among other ways we use to train our staffs include using an external person who knows better.
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<th>Cultural Dimension</th>
<th>How it is defined or played out</th>
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<td><strong>Power distance</strong></td>
<td>“Power distance is the extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally.”</td>
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<td><strong>Individualism vs. Collectivism</strong></td>
<td>“The degree to which individuals are integrated into groups.” This dimension has no political connotation and refers to the group rather than the individual. Cultures that are individualistic place importance on attaining personal goals. In collectivist societies, the goals of the group and its wellbeing are valued over those of the individual.</td>
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<td><strong>Uncertainty-Avoidance index</strong></td>
<td>“A society’s tolerance for uncertainty and ambiguity.” This is a dimension that measures the way a society deals with unknown situations, unexpected events, and the stress of change. Cultures that score high on this index are less tolerant of change and tend to minimize the anxiety of the unknown by implementing rigid rules, regulations, and/or laws. Societies that score low on this index are more open to change and have fewer rules and laws and more loose guidelines.</td>
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<td><strong>Masculinity vs. Femininity:</strong></td>
<td>The distribution of emotional roles between the genders.” This dimension measures the level of importance a culture places on stereotypically masculine values such as assertiveness, ambition, power, and materialism as well as stereotypically feminine values such as an emphasis on human relationships. Cultures that are high on the masculinity scale generally have more prominent differences between genders and tend to be more competitive and ambitious. Those that score low on this dimension have fewer differences between genders and place a higher value on relationship building.</td>
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<td><strong>Long-term Orientation vs. Short-term Orientation:</strong></td>
<td>This dimension describes a society’s time horizon. Short-term oriented cultures value traditional methods, take a considerable amount of time to build relationships, and in general view time as circular. This means the past and the present are interconnected and that which cannot be done today can be done tomorrow. The opposite of this is long-term orientation, which sees time as linear and looks to the future rather than the present or the past. It is goal-oriented and values rewards.</td>
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<td><strong>Indulgence vs. Restraint</strong></td>
<td>This dimension measures a culture’s ability to satisfy the immediate needs and personal desires of its members. Those that value restraint have strict social rules and norms under which satisfaction of drives is regulated and discouraged.</td>
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