

**EVALUATION OF THE CONTRIBUTION OF KNOWLEDGE TRANSFER
IN DETERMINING STRATEGIC THINKING COMPETENCE AMONG
COUNTY EDUCATION MANAGERS IN KENYA**

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the Open University of Tanzania a thesis entitled: **“Evaluation of the Contribution of Knowledge Transfer in Determining Strategic Thinking Competence Among County Education Managers in Kenya”** in fulfillment of the requirements for the degree of Doctor of Philosophy of the Open University of Tanzania.

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DECLARATION

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Date

DEDICATION

I dedicate this work to my dear late mother Phyllis Igoji, her dedication that her last born son gets the best in life despite all odds continue to inspire me. Her gallant spirit lives on in me.

ACKNOWLEDGEMENT

I would like to thank my supervisors, Professor Jan - Erik Jaensson and Dr. Maurice Khayota for their guidance and dedication in their work. Without them believing in me, this work would not have seen the light of the day.

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ABSTRACT

The research sought to evaluate the contribution of knowledge transfer on the strategic thinking capabilities of the managers of the county education level of the Ministry of Education (MOE). The study had the following research objectives: to determine the individual manager's access to organisation's knowledge resources as an enabler to the strategic thinking competence, to determine the effect of the knowledge transfer culture on the strategic thinking competence, to establish the effect of knowledge transfer structures on strategic thinking competence and finally, to establish contribution of knowledge transferred via implementation of ISO 9001-2008 standards in facilitating strategic thinking competence of the county education managers. The study sampled 15 counties and a total of 104 education managers in different departments. The questionnaire was the main instrument for data collection. The study used descriptive statistics to find the effect of the various variables on strategic thinking competence. Regression analysis to confirm the nature and the strength of the relationship between the dependent variable and independent was carried out. The study found that the strategic thinking competence of the managers was affected by the knowledge transfer variables of; access to knowledge resources, knowledge transfer culture, knowledge transfer structures and knowledge transferred via implementation of the ISO 9001-2008 standards. The study recommends that MOE should set appropriate knowledge reservoirs and knowledge transfer structures to ensure that the managers of the devolved levels have the appropriate knowledge resources at their disposal.

Key words: strategic thinking competence, knowledge, knowledge transfer, and public sector

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LIST OF ABBREVIATIONS

CoPs	Communities of Practice
COYA	Company of the Year Award
GOK	Government of the Republic of Kenya
KM	Knowledge Management
MOE	Ministry of Education (Kenya)
SECI	Socialisation, Externalisation, Combination and Internalisation Knowledge Transfer Cycle

CHAPTER ONE

INTRODUCTION

1.1 Background of the Problem

1.1.1 General Overview

This study sought to evaluate the contribution of knowledge transfer on the strategic thinking competence among county managers of education in Kenya. Strategic thinking competence is the ability of the managers to visualise and formulate the long term direction to an organisation to ensure its sustainability (Mintzberg, 2004). It is seen as an antecedent to strategic planning (Garratt, 2004). Bonn (2001), postulates that effective strategic thinking is holistic understanding of the organisation and its environment, recognizing the linkages and complexity of the various structures and its relationships. According to Bonn (2005) individual managers' strategic thinking competence is measured by possession of the following attributes; systems thinking, creativity and the vision that the organisation envisages. Strategic thinking competence therefore refers to a managerial competence of being able to conceptualise the complex mix of diverse issues in the organisation not only to make sense of the organisation but also to chart the clear path for the organisation. The strategic thinking ability is demonstrated by the managers' ability to exhibit strategic thinking dimensions that enable them to solve problems and make decisions creatively.

Having key knowledge at disposal plays a key role in ensuring that managers have a thorough understanding of key dimensions facing the organisation. For a manager to

have strategic thinking ability, possession of knowledge becomes a key determinant (Kaulkarni and Freeze, 2006).

The focus of the 21st century organisations and countries has shifted from the era of technology and labour as the main means of productivity to that of knowledge as the most important factor of production in organisations (Wiig, 1997), the key focus being on knowledge identification and generation as well as transfer and exploitation for the benefit of the organisation. This has resulted in knowledge based organisations and knowledge economy where intellectual capital (workers knowledge). Availability of the appropriate knowledge to the managers in the organisations enables them to create strategies; in effect the knowledge enables creation of strategic thinking competence in them.

According to Ondari - Okemwa and Smith (2009) the 21st century African public service has to be a knowledge based organisations in which people at all levels individually and collectively are increasing their capacity to produce results through the acquisition, transfer and utilisation of the knowledge; where organisations encourage a new way of thinking; culminating in a collective vision, new ways of doing business and continuously solving problems. This is consistent with Fairholm and Card (2009), who argue that strategic thinking competence is holistically focused looking to ensure that the meaning and purpose are diffused throughout the whole organisation, so that appropriate goals and tactics are developed to meet the needs of the organisation. This is in line with the arguments of McEvoy *et al.* (2015) that all public sector organisations are knowledge intensive organisations whose core competence is knowledge. Today's organisations success depends on knowledge. The

organisations need to structure knowledge in such a way that it effectively manages it appropriately. This implies that organisations have to re-arrange knowledge networks as the environment for breeding ideas.

Ondari–Okemwa and Smith (2009) see successful public service managers requiring the capacity to think strategically. They argue that effective knowledge management contributes to good governance, effective performance and superior service delivery. They argue that Kenya had not effectively integrated knowledge management into public service. They found that the country did not face a major challenge in knowledge creation but in ensuring that the knowledge available is leveraged effectively to achieve the desired results. The low levels of integrating and application of knowledge in the public sector was one of possible causes of the poor service delivery, inefficiencies and poor quality of services in the public sector. This resonates with a study by Buckova (2015) on knowledge management in public administration institutions, which found that knowledge management was ineffective, as a result of knowledge non-supportive organisation culture, knowledge organisation structure and poor application of technology infrastructure in knowledge management.

Bou-Llusar and Seggara-Cippres (2006) argue that the internal transfer of strategic knowledge generates competitive advantage. This arising from not only the importance of that knowledge itself, but also the knowledge transfers process, in creating the value of that competitive advantage. The traditional organisations public sector has the top-level management at the ministerial and departmental level to give broad frameworks of strategy to give direction within the policy framework of the organisation. The decentralised managerial levels (sections, counties and districts) are

often seen as if their main role is to support the top level management with minimal policy formulation and strategy direction orientation. This in effect implies that the strategic thinking competence is mostly a reserve of the top level management which the decentralised units do not need.

However, Garratt (2004) contradicts this view. He argues that these devolved units must live at the interface of policy (strategic direction) and operations. This implies that the devolved levels should fully embrace and be concerned with strategy and strategic thinking. This is because the process of traditional top to bottom strategy formulation is not considered out of sync with the modern approach of participative strategy formulation and design (Mintzberg, 2004). This implies that the knowledge that facilitates strategic thinking competence is not only generated and originates at the top of the organisation (explicit knowledge) but needs all the different levels to share and harness the tacit knowledge available in their employees. Draganidis and Mentzas (2006) strongly suggest that the public sector organisations, which are decentralised like MOE, needed to focus on developing the right competencies in the managers in decentralised units. This has to be built by ensuring that it successfully ensures access to the right knowledge resources to the decentralised levels.

1.1.2 State of Knowledge Transfer and Strategic Thinking in the Ministry of Education in Kenya

The Ministry of Education (MOE) in Kenya on the county managers of education has been undergoing a lot of transformation since the promulgation of a new Kenya constitution in 2010. The implementation of the constitution created new decentralised county system of governance. In the ministry of education, the new county education

management level was created as a bridge to cascade down the policies of the central government to the lower levels for implementation.

In addition, it also served an important role of initiation of national policy as well as performing some key delegated functions in counties. The county level had a more proactive role than the previous decentralisation system. Thus the county management level plays a more strategic role in achieving the national goals of education at the county level. Among the strategic roles the county education management is expected to play as stipulated in the Basic Education Act (GOK, 2013) are; to interpret national policies in education based on the county's needs, initiate proposals for policy reforms, to plan, promote, develop, and coordinate education, training and research in the county in accordance with the provisions of the national education policy and the laws and policies of the county government and put measures in place to ensure all children and youth of school going age within the county attend and stay in to complete basic education.

Decentralised units in the Ministry of Education face many knowledge capacity challenges that need to be addressed. The Kenya Education Management Capacity Assessment (KEMACA) carried out noted that the decision making in the education sector was highly centralised at the headquarters, the managers at the decentralised units had capacity challenges; the biggest challenge was noted to be knowledge and skills gap. There is no doubt that the Ministry of Education has immense wealth of knowledge at the ministry headquarters, which can be harnessed for competence building in its employees at the decentralised units. However, this was not always the case. Knowledge at the top that was relevant to their needs being transferred to the

lower levels to facilitate decision making and implementing the policies of the ministry of education. (MOE, 2008) The main concern is that, however much the top ministerial level invests in creation of knowledge in form of creation of new procedures, and new cutting edge technology, if the same does not get effectively transferred to the decentralised units where it is expected to create value and create impact, then that knowledge does not serve the intended purpose. On the other hand is the tacit knowledge in the minds of the managers; the experiences and soft skills of the managers that need to be harnessed to not only create value for themselves and their operations but also increase repertoire of knowledge available in the ministry of education.

The county education managers require explicit knowledge resources that are created by the top level management. This is in form of systems of policy documents, relevant data and repositories of information. They also need the tacit knowledge from other individuals in the organisation. This tacit knowledge can only be accessed through sharing of experiences with peers and supervisors. To enable access to the explicit and tacit knowledge resources by the county education managers, the ministry of education need to create an enabling structure that supports transfer of knowledge to the county managers of education. An enabling environment to support knowledge transfer culture need to be cultivated and encouraged within MOE to ensure that there are no bottlenecks created by individuals who hoard knowledge that could be useful to others within the organisation. It is important to take advantage of the ISO 9001-2008 certification as a knowledge transfer framework. The Ministry of Education was ISO 9001- 2008 certified in August 2009 and recertified in June 2013 (MOE, 2013). The

ISO 9001-2008 manuals provide all the activities in the department of education. All the activities in the ministry are expected to fully adhere to ISO 9001-2008 standards. ISO 9001-2008 implementation enables the organisation members to access and document tacit knowledge necessary for effective implementation of ISO 9001-2008 processes. ISO certification process involves codification of processes, procedures and routines that the organisation undertakes. This results into standardized manuals to guide the work processes. Successful implementation of the ISO standards facilitates the transfer of knowledge between the organisation and its members.

Figure 1.1, shows the current structure of the Ministry of Education in Kenya. The ministry is headed by the cabinet secretary who is charged with the responsibility of providing the overall policy direction, the principal secretaries are charged with the mandate of managing the day to day function of the ministry or large divisions of the ministry known as state departments. The state departments are divided into directorates headed by directors, the directorates are: quality assurance and standards, basic education, secondary education, field and other services, human resources management, adult and continuing education, schools audit and directorate of administration.

At the county level there is the County Director of Education who is in charge of the education programs at the county. There are four departments under the directors (departments of; quality assurance and standards, schools audit, adult and continuing education and general administration).

The Structure of the Ministry of Education

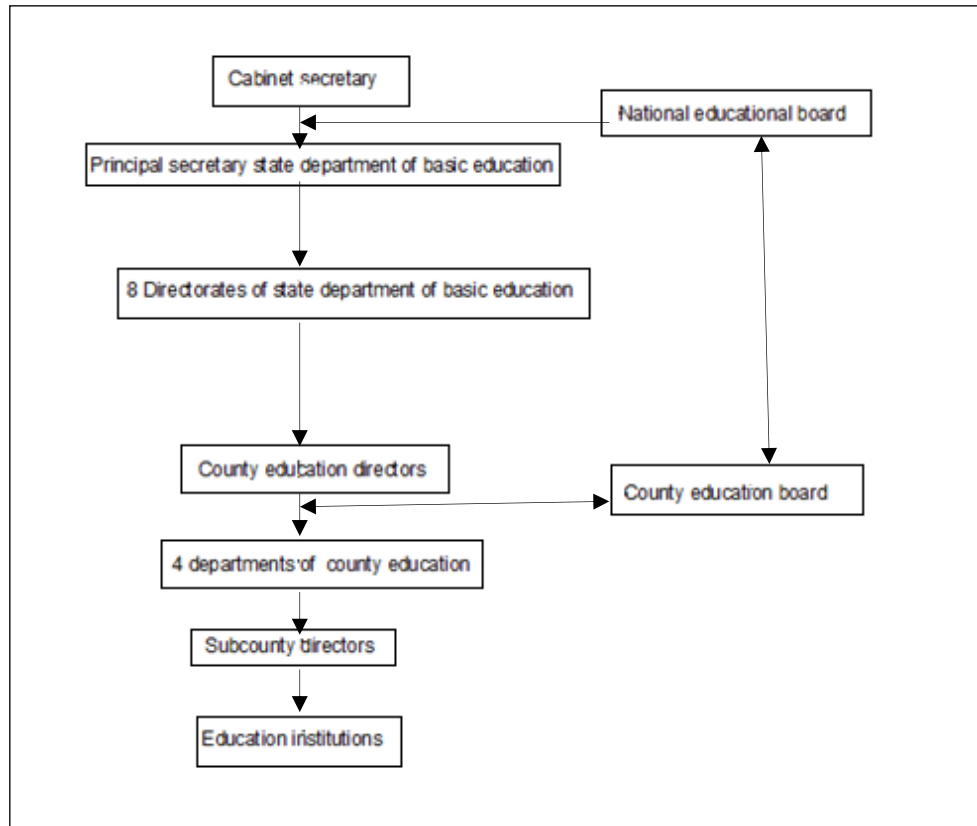


Figure 1.1: Structure of Ministry of Education (State Department of Basic Education)

Source: MOE (2015)

The national and county education boards have a mandate of providing corporate governance at national and county level respectively. Before the implementation of the 2010 constitution, most of the decision making was centralised at the Ministry of Education head offices with limited decentralisation (MOE, 2013). UNESCO (2015) education for all report on Kenya reveals that though the county level of education had been put in operation, it however suffered from lack of clear understanding of their roles, lack of adequate systems being put in place as well as lack of precise understanding of their legal obligations as contemplated in the laws and policies in place.

The study seeks to evaluate the contribution of knowledge transfer to strategic thinking competence of managers in public sector. Effective knowledge management in the ministry of education will culminate in a framework to provide the managers at the county level with the strategic thinking skills, by combining the existing national level knowledge and new knowledge created and availed at the counties by the virtue of their new roles. This is expected to culminate in new knowledge structures. The study applies Nonaka (2014), Nonaka and Toyama (2003) and Nonaka and Takeuchi (1995) theoretical framework of knowledge creation and transfer to seek to map out the knowledge creation and transfer in county education management. This is in line with Stary (2014) who argues that new structures in organisations have a role to take advantage of new opportunities to create a new strategic direction.

1.2 Statement of the Problem

Public service in 21st century has become knowledge-based; the managers have to have the capacity to produce results through effective acquisition, transfer and utilization of knowledge resources to enable them to think strategically. This will hopefully culminate in a collective organisation vision, good governance and sustainable and effective problem solving to meet the current and the future needs of the public service organisations.

Despite the important role that knowledge plays in the public sector organisation performance, there is little prioritization on the identification, creation and transfer and eventual utilization of the available knowledge resources in Kenya. However a study on knowledge management in public sector in Kenya found that the main challenge was not in knowledge creation and availability, but lay in transferring the available

knowledge and leveraging it to achieve strategic thinking competencies in the managers which in turn culminate in achievement of the desired results in service delivery (Ondari – Okemwa and Smith, 2009). Further, the studies have shown that the public sector has not institutionalised and formalised knowledge management in regards to knowledge creation and transfer. The purpose of this study was to evaluate the contribution of transfer of knowledge to achieve strategic thinking competence in managers at the county levels. The results of the study will result in formulation of knowledge transfer framework in public sector.

1.3 General Objectives

The main objective of this study was to evaluate the contribution of knowledge transfer in determining strategic thinking competence among county managers of education in Kenya.

1.4 Specific Objectives

The specific objectives of this study were:

- (i) To determine the individual managers' access to organisation's knowledge resources as an enabler to the strategic thinking competence in the MOE.
- (ii) To determine the contribution of the knowledge transfer culture on the strategic thinking competence of the county education managers.
- (iii) To determine the effect of knowledge transfer structures on strategic thinking competence of the county education managers.

- (iv) To determine contribution of knowledge transferred via implementation of ISO 9001-2008 standards in facilitating strategic thinking competence of the education managers at the county level.

1.5 Research Questions

- (i) Does the individual managers' access to knowledge resources play an enabling role in building strategic thinking competence in county managers of education?
- (ii) What is the contribution of knowledge transfer structures on the strategic thinking competence of the managers?
- (iii) What is the effect of organisational culture on the strategic thinking competence of managers?
- (iv) What is the role of the knowledge transferred via the implementation of ISO 9001-2008 standards in facilitating the strategic thinking competence of the managers?

1.6 Significance of the Study

The aim of this study was to provide an overview of the knowledge transfer framework in the public sector by providing an empirical testing of the contribution of knowledge transfer on the strategic thinking competence of managers in the public sector. The study would culminate in formulation of a unified framework that combines the knowledge transfer frameworks represented by Nonaka (2014), Nonaka and Toyama (2003) and Nonaka and Takeuchi (1995), with the strategic thinking competence seen through Bonn (2005) framework.

Knowledge management in public sector institutions is vital for their effective performance. Identifying and managing key elements that affect transfer of knowledge from the sources to where it is needed within organisations is important. Transfer of knowledge between individuals in public sector organisations facilitates strategic thinking competence in managers.

The findings will benefit the public sector institutions who seek to leverage on the knowledge to improve the productivity capacity of their managers. The clarity of the knowledge transfer framework in the public sector will facilitate effective knowledge management in the public sector.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the theories used by the researcher. The chapter contains the following main sections: knowledge transfer theories, strategic thinking theories, and a summary of the theoretical framework.

2.2 The Concept of Knowledge

According to Nonaka (2014) knowledge refers to the dynamic social process of justifying personal belief towards the truth. Knowledge is therefore seen as a process. According to Nonaka (2014) knowledge has meaning when it is used in a particular situation in a particular context. Knowledge is thus subjective, process- relational, aesthetic, and created through practice (Nonaka, 2014). Knowledge can be seen as a meta-resource that centres strategic significance to all the other organisation resources (Van den Berg, 2013). Davenport and Prusak (1998) define knowledge as fluid mix of framed experiences, values, contextual information and expert insight that provide a framework for evaluating and incorporating new experiences and information. Tuomi (1999) sees knowledge as an accumulated resource that underlies certain specific individual capabilities within an organisation. Knowledge makes certain types of performance possible. He also argues that knowledge is a product that is capable of being utilised for action leading to development.

Knowledge can be seen from two main perspectives, ontogenic knowledge and phylogenetic knowledge. Ontogenic knowledge has its source in the development of

the knowing entity. It is something that the entity learns based on its experience. Phylogenetic knowledge has its source in the inherited structures. It cannot be attributed to any one specific individual entity instead it is trans-generational or collective as it is by nature adaptational or evolutionary (Tuomi, 1999).

Knowledge can also be defined by distinguishing it from knowledge, information, and data (Liyange *et al.*, 2009). Data is raw numbers and facts, information is processed data, and knowledge is authenticated information. Figure 2.1 shows the relationship above.

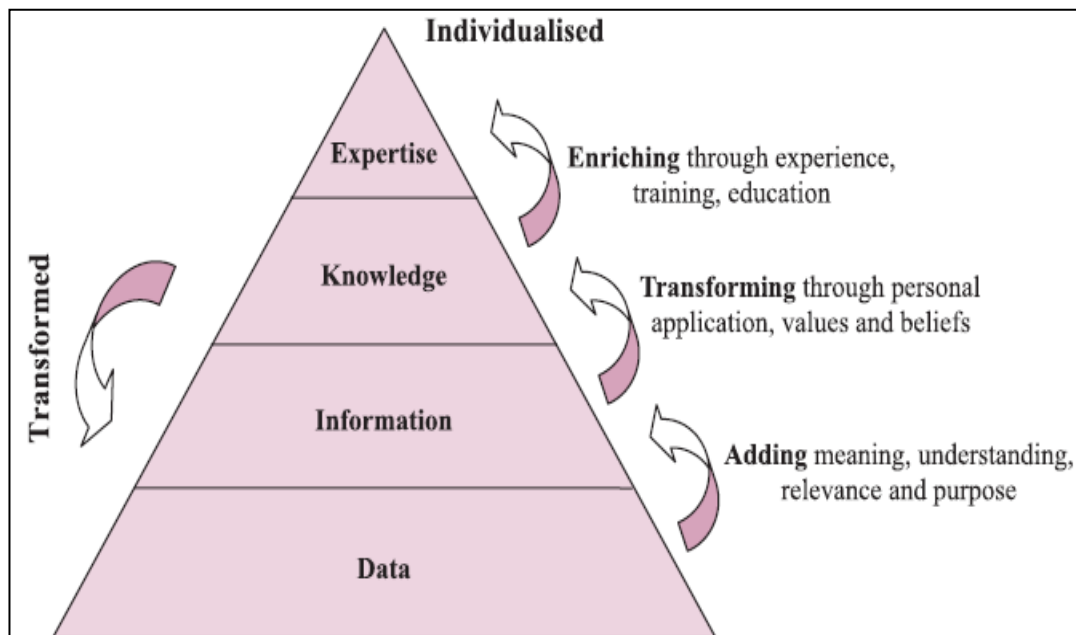


Figure 2.1: Knowledge Hierarchies

Source: Liyange *et al.* (2009:)

According to Jakubik (2011) the key issues in knowledge management are whether the learning always creates new knowledge, what type of knowledge is created during the learning process and where knowledge is located? Jakubik (2011) discusses the

concept of knowing; knowing concept is seen through different perspectives i.e. philosophical, psychological and learning theories. Knowing is made of two parts: knowing what and knowing how. This implies that it covers both theoretical as well as practical knowledge; therefore knowing and knowledge develop in two interactive thinking activities and processes.

A great deal of the knowledge of the organisation is created and stored at individual level. Davenport and Prusak (1998) argue that knowledge originates and is applied in the minds of the 'knowers'. They argue that at an organisation level it often becomes embedded not only in documents and repositories but also in the organisation routines, processes, practices and norms.

Csepregi (2011) defines individual knowledge as part of organisation that resides in the minds and the bodily skills of the individuals in that organisation. Figure 2.2 shows the distribution of knowledge in the organisations. If individual knowledge is not shared with others, it will be lost completely. This is further seen in argument by Venkitachalam and Busch (2012) who emphasise the tacit-knowing as the means through which individuals create and share know-how.

Kaulkarni and Freeze (2006) highlight that the knowledge documents which represent explicit knowledge include both internally and externally generated reports, diagrams, among many other working documents. The knowledge workers have to be aware and constantly refer to these documents in order to increase both the awareness and the competence in the area that they operate in.

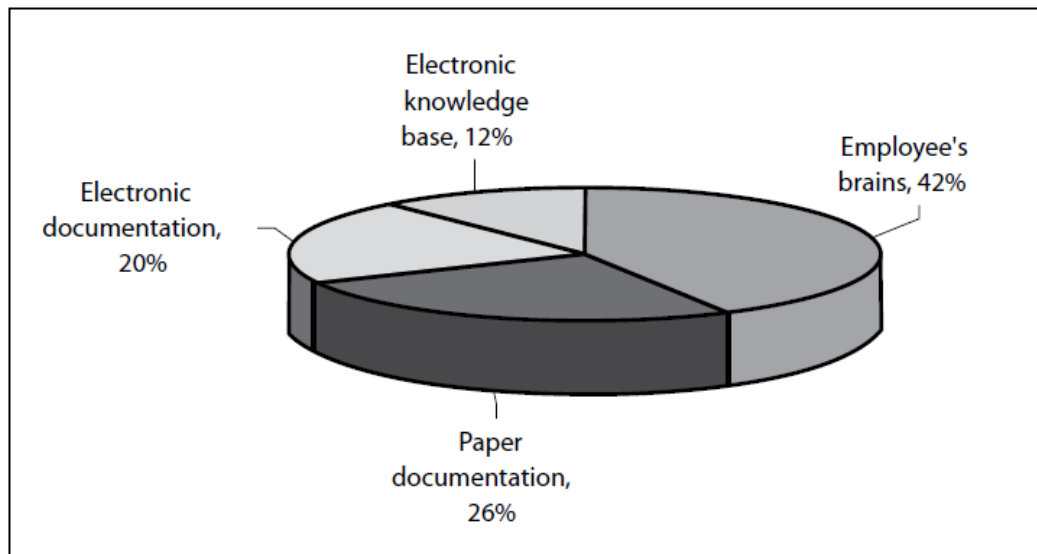


Figure 2.2: Distribution of Knowledge in Organisations

Source: Uriarte (2008)

According to Stary (2014), today's organisations success depends on knowledge. The organisations need to structure knowledge in such a way that it is effectively utilised. This implies that organisations have to arrange themselves as networks that provide an environment for breeding ideas. He argues that the networks within and between the organisations contribute to greater flexibility versatility and innovation in the organisation ways of meeting customer needs and requirements.

The appropriate networks configurations are essential for the organisations development because many of the skills and resources necessary for the organisation performance lie outside their boundaries and the individual stakeholders. This challenges the traditional top-down management organisations to adapt to highly dynamic organisations networks in order to leverage the internal and external competencies. This approach must therefore seek to adapt the communities of practice (CoPs) perspective where organisations and individuals in similar sectors have a common platform to share knowledge for their mutual benefit. Stary (2014) contends

that for organisations to be effective they have to carry out a paradigm shift from information processing to knowledge management. This implies that they must leverage on the knowledge available in order to achieve a competitive advantage. Utilisation of individual knowledge is based on the alignment of knowledge workers assignments to suitable tasks that maximise the organisations value outcomes (Csepregi, 2011).

In this study key questions are: where is the knowledge required located? Who is the custodian of that knowledge? How do we ensure that the knowledge reaches the users that need it? In the context of MOE, knowledge is found in both explicit and tacit forms. Explicit knowledge is in form of documents in both hard and electronic forms. These originate from the top level management of the ministry. On the other hand tacit knowledge is found in the minds of the individuals in the organisation. This is because of their accumulated experience and their own cognitive resources they are endowed with. Knowledge in MOE is controlled by a few individuals whose role is being gatekeepers of knowledge, knowledge gatekeepers do not own the knowledge but their role is to act as a bridge between the knowledge sources and knowledge recipients (Petruzzelli *et al.*, 2010). The knowledge gatekeepers in MOE are officials who occupy key positions and are privy to certain knowledge that may be of use to others. For the knowledge to reach the intended recipients there must be structures as well as an enabling culture for effective knowledge transfer. The ministry has both formal and informal structures for knowledge transfer. The formal structures include communities of practice, websites and knowledge databases, emails, and workshops among others.

Informal knowledge involves social media channels like Whatsapp, Telegram among others where members share knowledge informally.

2.2.1 Foundations of Knowledge

Aristotle's classical work; 'Nichomachean Ethics' perhaps forms the best philosophical foundation of knowledge. According to Aristotle quoted in Butler (2006) and Schwartz (2006) there are five dimensions to knowledge. Episteme, which is factual or scientific facts or knowledge, and *techne*, which is skills based technical action, oriented knowledge possessed by master craftsmen involving both the understanding and application of principles governing the production of social phenomena.

According to Butler (2006) knowledge provides the expert with the how, wherefore the why and with-that of the operations. Another dimension to knowledge is phronesis, an experiential self-knowledge or practical wisdom based on individual experience. Phronesis embraces both the ends and means of social action. Others were nous, which he categorized as intuition, and sophia, which is theoretical knowledge of universal truths or first principles. Knowledge can be further viewed in four dimensions (Jakubik, 2007): ontological view, epistemological view, commodity view and community/social view of knowledge.

Ontological View of Knowledge

The ontological foundations of knowledge deal with the metaphysical aspects of the nature of existence, this touch on the various meaning relationships and instances of

the abstract, concrete general and specific phenomena (Buchholz, 2006). This views knowledge as phenomenon (Jakubik, 2007).

Knowledge is viewed as a phenomenon that is in both the individual and the social level in the organisation (Nonaka and Takeuchi, 1995; Nonaka and Toyama, 2003). At the individual level we have both the implicit knowledge in form of creative forces of an individual and other intuitive forces residing within an individual. The individual knowledge can also be explicit in form of concepts that the individual knows, as well as the theoretical knowledge frameworks and facts at the disposal of the individual. The individual knowledge becomes organisational knowledge if the individual acts upon their knowledge in performing tasks within an organisation.

Schwartz (2006) argues that ontologically it is impossible to isolate and represent objectively an individual's fluid mix of experiences, values, contextual information and expert insights. This forms the hallmark of the ontological approach to knowledge where knowledge is seen as situated or temporal and having specific distribution within an organisation. The 'Ba' concept (Nonaka and Takeuchi, 1995; Nonaka and Toyama, 2003) and dynamic knowledge (Nonaka, (2014), provides a framework through which an organisation develops both collective and individual knowledge.

Epistemological View of Knowledge

According Aaron (2006), epistemology is concerned with nature and extent of human knowledge. Epistemology has its roots in the philosophical works of Aristotle, Plato and Descartes (memorable Descartes' famous statement: cogito ergo sum; I think therefore I exist). Epistemology is concerned with what knowledge is and how it can

be identified, created and used. This view renders the philosophical and the scientific nature of knowledge itself. The view has the understanding that the knowledge as a concept lends itself to philosophical arguments consistent with Aristotelian ‘episteme’ concept (Aristotle in *Nichomachean Ethics* cited in Butler, 2006; Schwartz, 2006). Knowledge is thus seen as an institutional fact since it requires human institutions to exist; for instance knowledge cannot exist without human language. However Jakubik (2007) argues that the institutional facts exist because we believe they exist and they are only seen as facts because of human agreement.

Epistemologically knowledge can be seen from the objective point of view where it is seen as a concept that can be created, acquired and transferred or shared. The knowledge can also be seen from the subjective point of view where knowledge needs to be personally experienced and is more tacit in nature. Epistemological point of view of knowledge has been having a debate about the individual and collective intelligence (knowing how) ownership of knowledge (knowing –that). ‘Knowing how’ implies the ability of a person to act, perform different tasks, ability to organize and exploit the existing knowledge accessible to the individual by the virtue of having it in the mind(s) while ‘knowing- that’ implies having access to knowledge, acquiring it and storing it in the reservoirs.

Commodity View of Knowledge

Under this view knowledge is seen as a static organisation resource. It sees knowledge as an epistemologically objective construct or entity. It is therefore an objectively identifiable tangible item (Jakubik, 2007). In this context knowledge is seen as an organisation’s intellectual capital, facts and information.

Fuller (2000) argues that knowledge is embodied by being placed in containers or reservoirs and organisation data bases, this is consistent with the arguments by Argote and Ingram (2000), that manuals among others. Knowledge in an organisation is however embedded by being placed in a social context. Fuller (2000) argues that technology helps in the embodiment of knowledge but information transfer facilitates embedment of knowledge.

Community or social view of knowledge

This views knowledge as a construct that is not static but rather a dynamic concept that is created in the social interactions. Knowledge is seen as a social construct, which is by nature a process in nature. Knowledge is created by the individuals in a social context. Through the SECI process (Nonaka and Takeuchi, 1995; Nonaka and Toyama, 2003) this social context is the 'Ba', described context where knowledge is created and constructed through a continuous process of dialogue and interactions. Community view of knowledge therefore, sees knowledge as imbued in routines, standards and day-to-day practices of an organisation. These make an organisation to stand out unique compared with its competitors.

Paulin and Suneson (2012) support this view of knowledge as something that is constructed in a social context and therefore cannot be separated from the individuals and the organisation. They view knowledge as a subjective contextual construction.

2.2.2 Knowledge and Knowledge Management

According to Davenport and Holsapple (2006), the intangible assets framework of the organisation regards knowledge as being one of the organisations' intangible assets. These have the capacity to take action. This is because it is tacit action oriented and constantly changing (fluid) which comprise the competencies of the organisation human resource as well as the organisation structure. Davenport and Holsapple (2006) therefore, view knowledge management as the art of creating value from the intangible assets. The individual competencies comprise the capacity to act in a wide variety of situations to create both tangible and intangible assets.

The individual competencies comprise five interdependent elements; explicit knowledge, skill, experience, value judgment and social network. The internal structures include the organisation resources such as computer systems, patents and culture. These are created and owned by the organisation. The external structure represents the relationships and networks, which the organisation has. This manages the perceptions of the customers and the general public. This is critical since it is concerned with knowledge flows in and out of the organisation. Value is created through transfers and conversions within these three elements. Figure 2.3 shows the relationships.

Jennex (2006) points out that for knowledge management to be effective in an organisation, there are some important factors that needed to be put in place: development of good technical infrastructure, for instance having common knowledge and information structures. Another suggestion was to incorporate knowledge

management in everyday organisation processes as well as having organisation-wide knowledge management structures.

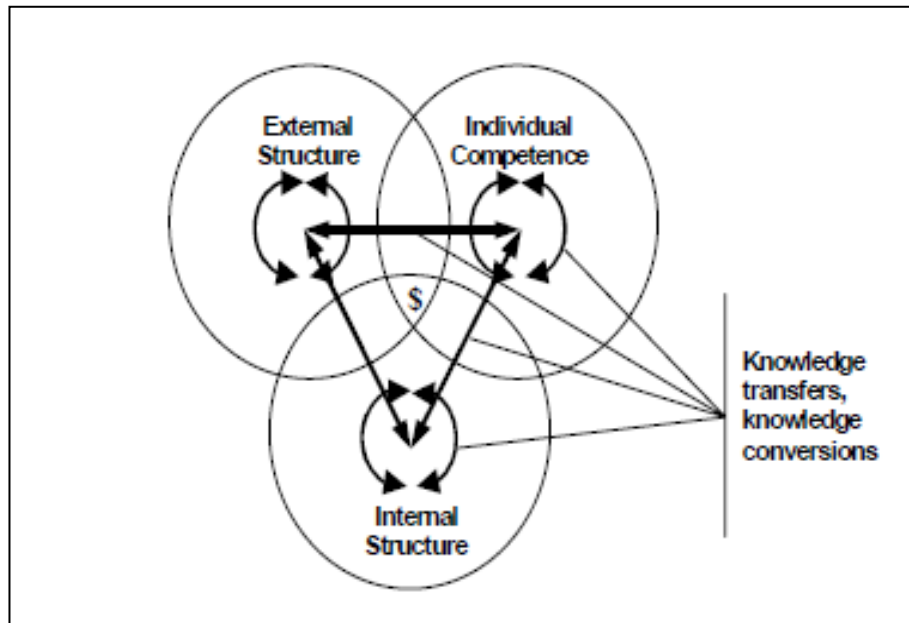


Figure 2.3: Knowledge Based Perspective of the Organisation

Source: Davenport and Holsapple (2006)

Jennex (2006) also emphasizes the need to ensure that the human resources have the required appropriate skills. This is possible through training and having the support of the top management. The main critical success factor in knowledge management is therefore creation and promotion of a culture that encourages knowledge sharing.

Knowledge transfer

Jacobson (2006) draws the distinction between knowledge sharing and knowledge transfer, she argues that knowledge sharing is the exchange of knowledge between the individuals with one communicating the knowledge and the other assimilating that knowledge. Knowledge transfer on the other hand has a focus on the structural capital and tends to focus on the conversion or transformation of the individual knowledge to

group and ultimately organisation knowledge. This knowledge is built into the processes products and services. King (2006) further differentiates knowledge transfer from knowledge sharing by positing that knowledge sharing is unfocused exchange among groups and individuals without or with little intention to receive or send knowledge while knowledge transfer involves communication of knowledge that is learned and is applied by a recipient. Similar to what Jakubik (2011) suggests that knowledge is more effective when the knowledge is more explicit than tacit. According to Argote and Ingram (2000), knowledge transfer in organisations manifests itself through changes in the knowledge or performance of the recipient units. Thus, knowledge transfer can be measured by measuring changes in knowledge or changes in performance of the recipient of knowledge. For the purposes of the current research; knowledge sharing is treated as a subset of knowledge transfer.

2.2.3 Access to organisations knowledge

Argote and Ingram (2000) argue that knowledge resources in an organisation are embedded in three elements; the organisation members, organisation tools, and tasks. This implies that the individuals have access to members' knowledge base i.e. what each of the members know and hold.

According to Uriarte (2008) 42% of the knowledge resources in an organisation are held in the members' brain. Other knowledge resources in an organisation are the tools and task that the organisation uses. These include the manuals, work procedures and other numerous work related instructions held by the organisation to ensure that the performance of work is effective. Uriarte (2008) estimates that close to 50% of the

knowledge resources are held in both electronic and paper documentation. This implies that for knowledge transfer to take place there must be some form of modification of these three elements into a final form that can be usable by both the individuals as well as the organisation.

2.2.4 Knowledge Transfer Structures in Public Sector

Knowledge transfer structures are seen as an important facilitator of knowledge transfer. Many progressive organisations use communities of practice to ensure that they have peer-to-peer transfer of the relevant knowledge resources in the organisation (Uriarte 2008). McEvoy *et al.* (2015) cite knowledge management structures as the main challenge facing most of the public sector organisations. Communities of practice are informal groupings that are separate from but are not in conflict with the formal organisational structure or hierarchy. They act as parallel structures but do not interfere with the regular responsibilities and accountabilities of staff members. They are groups in which various areas of knowledge connect people.

Nonaka and Toyama (2003) refer to ‘ba’ as the context in which knowledge is created and transferred. The ‘ba’ concept implies that the organisations must pay attention to the structural components or dimensions in which knowledge transfer is facilitated.

According to Storga *et al.* (2013) organisation knowledge structure is a reflection of the basic composition and relationship among its different knowledge assets. Organisation knowledge structure plays the role of a semantic skeleton for facilitation of effective knowledge organisation and access. They argue that electronic knowledge

networks are critical for knowledge workers since they bridge the gap between the knowledge available in the codified form and the needs of the knowledge workers.

Further, Martelo–Landrogez and Cegarra-Navarro (2014) argue that knowledge transfer and retrieval structures help to reduce the gap between the potential absorptive capacity and the realised absorptive capacity of the individuals in a firm. They also claim that the social interactions among members of an organisation and information exchanges through shared community repositories facilitate the knowledge flows and the conversion of implicit knowledge into explicit knowledge. However Lucas (2010) argues that no single knowledge management structure is appropriate for all organisations, knowledge structures develop and adapt according to the organisations development stage and the type of knowledge that the organisation deals with.

Choo and Neto (2010) conclude that managing knowledge in the organisations is fundamentally about creating an environment in the organisation that is conducive to and encourages knowledge creation, sharing and use this resonates with the ‘ba’ concept (Nonaka and Takeuchi, 1995; Nonaka and Toyama, 2003; Nonaka, 2014) by instilling a set of values and patterns and structures that enable people in the organisation to use what they know, learn and innovate. Pandey and Dutta (2013) argue that improvement of the knowledge technological infrastructure of the organisation has the potential to support the effective knowledge transfer in firms.

Peng (2013) contends that knowledge hiding or hoarding occurs if an individual feels that the knowledge they use in the work setting is their personal property, if the scenario occurs, those individuals will have a propensity to hoard knowledge and not

share it. The organisation knowledge territoriality presupposes that the individuals have an affinity to the organisation. The organisation based psychological ownership does not necessarily lead to knowledge hoarding but acts as a moderator to moderate the effects of individual psychological knowledge possession. If not well managed the organisation based knowledge ownership will lead more hoarding instead of encouraging knowledge sharing.

2.2.5 Knowledge Transfer Culture

Schein (2004), defines culture as a pattern of basic assumptions—invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration. Knowledge transfer culture refers to the propensity of the members to share and facilitate knowledge transfer within the organisation. The SECI model of knowledge creation and transfer (Nonaka and Takeuchi, 2003) where the members of the organisation are able to create new knowledge combinations and transfer these knowledge from the minds of the individual to the organisations knowledge base. This presupposes the fact that knowledge transfer is primarily a human activity and that the members culture will have a strong bearing on the success or failure of the knowledge transfer activity.

Durmusoglu *et al.* (2014) argued that the combination of a good organisation reward system and the appropriate organisation culture had a positive effect on the knowledge transfer and application by the individuals in an organisation. They found that the organisation rewards had a positive contribution to determine whether individuals shared knowledge, a strong culture of knowledge transfer would ensure the knowledge that was transferred would be internalized by the recipients of that knowledge.

Karkoulia *et al.* (2013) contend that the organisation should seek to implement formal and informal culture of the knowledge transfer in organisations to enable creation of organisations that have dynamic learning environment. This can be done through the training of the employees to help them to focus on the right knowledge and values. Peterson (2012) in a study in public broadcasting corporations in southern Africa found that the employees were unwilling to share their knowledge with their colleagues, lack of sharing was worse with their seniors, the reasons cited for the employees not to transfer their knowledge were lack of trust, fear, culture of secrecy, employee attitude and organisation politics. Dalkir (2005) comes with the common possible cultural barriers to effective knowledge transfer. She also comes with some generic solutions to overcome these challenges (Table 2.1).

The ideal knowledge-transfer culture occurs where communication and coordination between groups is emphasized. Where experts do not jealously guard their knowledge and where knowledge sharing would be actively and visibly encouraged at all levels of the organisation. This is done through recognizing and rewarding knowledge sharing and through embedding such statements in corporate and individual performance objectives.

Table 2.1: Common Organisation Culture Barriers to Knowledge Transfer

Cultural Barrier	Possible Solutions
Lack of time and meeting places	Hold seminars and e-meetings; redesign physical workspaces
Status and rewards to knowledge owners	Establish incentives and include them in performance evaluations, develop role models
Lack of absorptive capacity Not-invented-here syndrome	Hire for openness, educate current workforce. Use non-hierarchical approach based on quality of ideas and not status of source.
Intolerance of mistakes and need for help, lack of trust	Accept and reward creativity and collaboration and ensure there is no loss of status for not knowing everything.
Lack of common language (not just English vs. Spanish but engineer-speak vs. manager-speak)	Establish a knowledge taxonomy and knowledge dictionary for knowledge content standard formats, translators, metadata, and knowledge support staff.

Source: Dalkir (2005)

A culture that promotes knowledge transfer would be one where tools and taxonomies are standardized to make access and exchange easy. Where there are a significant number of semi-social events such as workshops for sharing with experts and other groups, where organisational goals explicitly include knowledge sharing. Where trust is prevalent in all interactions and where the communication channels flow across geographical, temporal, and thematic boundaries.

Durmusoglu *et al.* (2014) found that organisation rewards and the culture of knowledge sharing determined the knowledge shared and the knowledge gained. They

found that the biggest driver for knowledge transfer was a combination of the reward system and the appropriate knowledge structures in the organisation. The study had interesting conclusions that whether the culture of the organisation was weak or strong did not affect the knowledge transfer process so long as the motivation was present, however, for the knowledge transferred to be internalised it not only needed the motivation for knowledge transfer but also the right culture to support it.

Knowledge that is within an organisation comes primarily from the experiences and skills of the employees. It is created as people determine new ways of doing things or develop know-how on how things are performed within an organisation. The main element considered is specifically how information and knowledge are shared among employees in the Ministry of Education at the county level. Knowledge sharing culture is one of the most important elements that need to be understood before implementing any new strategies in public organisations. Mosoti and Masheka (2010) established that development of the right culture in the employees that support knowledge transfer was a key element in having successful knowledge transfer in public sector organisations.

2.2.6 Implementation of ISO 9001-2008 as an Enabler of Knowledge Transfer

ISO certification process involves codification of processes, procedures and routines that the organisation undertakes. This results into standardized manuals to guide the work processes. Successful implementation of the ISO standards facilitates the transfer of knowledge between the organisation and its members.

Lin and Wu (2005) argue that implementation of ISO 9000 system creates a structure that is definable through which knowledge transfer is effectively facilitated. To *et al.* (2011) argue that implementation of ISO 9001- 2000 in public sector organisations are characterised by different and distinct micro-cultures, employee competencies, and service nature among other parameters across the different departments and sections. This implies that ISO 9001-2000 implementation yields different knowledge according to the nature of organisation.

To ensure successful implementation of ISO9001-2000, To *et al.* (2011) recommend that the public sector organisations need to scrutinize their internal and external environments carefully and then strategically tailor-made an ISO 9001-2008 implementation approach that will fulfil their long term and unique needs.

Zuckerman (2000) points out that ISO 9001-2008 encourages information sharing overcoming communication barriers existing in an organisation, as well as facilitates knowledge flow. Srivastar (2010) concludes that implementation of ISO 9001-2008 promotes inter–role and inter–departmental cooperation by the means of identification of the interdependencies involved with increased functionality of the organisation culture, organisation climate and coping strategy.

The MOE was awarded the ISO 9001 - 2008 certification in august 2009 and recertified in June 2013 (MOE, 2013). The ISO 9001- 2008 manuals provide all the activities in the department of education. All the managers in the ministry are expected to fully adhere to ISO 9001 – 2008 implementation, represents knowledge transfer components since the members of the Ministry of Education are acutely aware of what

each task undertaken requires of them. ISO 9001 – 2008 implementation also enables the organisation members to evaluate the tacit knowledge necessary for effective implementation of ISO 9001 -2008 processes.

However since the implementation of the new county structures, additional tasks, processes and responsibilities are put in place. The issue that is not clear is how well the county level of management are able to leverage on the existing ISO 9001-2008 system to produce results.

These knowledge resources are effectively shared across the organisation for effective performance. The underpinning context implies that managing the operations of the MOE via the implementation of ISO 9000-2008 standards not only involves the management of explicit knowledge in instructions, procedures and processes but also a variety of tacit knowledge embedded in them (Guzman and Trivelato, 2008). The awareness and utilisation of explicit knowledge generated via implementation of ISO 9001- 2008 provides a roadmap to determining the county education managers' strategic thinking competence.

2.2.7 Strategic Thinking Competence

According to Tavakoli and Lawton (2005) the more the organisation members have at their disposal the right and quality knowledge the better they become at strategic thinking. The strategic thinking competence of managers is seen as the ability of the managers to visualise and formulate the long term direction to the organisation to ensure their sustainability (Mintzberg, 2004). Liedtka (1998) proposes five elements of strategic thinking that are measurable and identifiable: the systems thinking,

hypothesis driven thinking, thinking in time, intelligence opportunism and intent focused approach. The ability to think strategically is not only confined to the ministry headquarters but also at the devolved counties.

Further Mintzberg (2004) argues that strategic thinking is ‘seeing’ being able to conceptual the complex elements of the organisations, current, past and future all put into one. When the managers are able to exhibit the Liedtka’s five elements of strategic thinking they are able to ‘see’ the organisation’s dimensions and be able to formulate the vision and direction for the organisation.

Kumar and Ganesh (2009) acknowledge that knowledge transfer plays a significant role in developing core competence in strategic thinking by identifying, capturing, storing and transferring current and relevant experiences and insights throughout the organisation.

2.3 Theories on Knowledge Transfer

The study focused on two theoretical frameworks of knowledge transfer: theory of knowledge creation and transfer by Nonaka and knowledge transfer by Argote and Ingram (2000).

2.3.1 Knowledge Creation and Transfer Theory (SECI)

The SECI theory of knowledge creation and transfer was first developed by Nonaka and Takeuchi in 1995 (Nonaka and Takeuchi, 1995). It was later modified and improved upon by Nonaka and Toyama in 2003 (Nonaka and Toyama, 2003). It was further refined in 2014 by Nonaka (Nonaka, 2014).

The SECI model has four distinct phases: socialization (S) which implies empathizing with the reality through the actual experiences. In the context of MOE socialisation may be viewed as all the activities involved in the reflection on operationalisation of policies by the individual members. This exchange of tacit knowledge brings into MOE a pool of new knowledge. Among the methods that could viably be utilise for the socialisation phase include: use of social media, seminars and workshops, face to face meetings and communities of practice.

Externalization (E) refers to the articulation of the essence of the awareness into concepts, the tacit knowledge that has been generated through the socialisation phase in MOE needs to be codified in order to make it in a form that can be easily shared by other members of the organisation. Codification enables documentation and verification of that accuracy of that knowledge.

However the concept of externalisation according to Easa (2012) contradicts Polanyi (1966) assertion on tacit knowledge that “we know more than we tell”. The implications being that some of the most crucial tacit knowledge in the minds of the people cannot be converted into explicit knowledge and be available to the whole organisation. Further Haag *et al.* (2010) argue that most of the tacit knowledge cannot be articulated and if it cannot be articulated then it follows that it cannot be expected to be converted. Similarly Briatanu (2010) argues that transformation of tacit knowledge into explicit knowledge has a major flaw because of the difference between tacit knowledge and explicit knowledge. He argues that while explicit knowledge has only extensive dimension, tacit knowledge has two dimensions; extensive dimension

and intensive dimension. Therefore conversion of tacit knowledge into explicit cannot be accurate. He further argues that externalisation process is incumbent on the capacity of the individual to understand and transmit meaning. It also depends on how much that individual feels motivated to do it. Therefore externalization is not a linear process.

Combination (C) involves linking the new knowledge concepts with the existing body of knowledge, this enables systematizing of that knowledge seamlessly into new procedures and routines. In the context of MOE once the new knowledge has been validated it is incorporated into the ministry's procedures, processes and routines. The expectation is that being an ISO 9001-2008 certified organisation, the new knowledge will lead to updating the existing ISO 9001-2008 manuals. Briatanu (2010) however, argues that socialization and combination phases of SECI model are done in an automatic way. They are designed as processes for exchange of knowledge from one individual to another or individual to organisation or organisation to organisation. He proposed that these processes do not lead to knowledge transformation but the same knowledge passes from one individual and entity to another.

The final process in SECI is Internalization (I) which refers to embodying the knowledge to create value in form of software, technology, products and experiences while at the same time stimulating the emergence of new knowledge in the organisation. In MOE context the process of internalisation leads to the incorporation of the new knowledge into all the organisation processes, since some of organisation processes are automated, it will also mean creation of new software or updating of the

existing software where applicable. Once the new knowledge has been internalised, it stimulates the next phase of socialisation. The knowledge creation is a never ending spiral with incremental improvement with each spiral. This is diagrammatically presented in Figure 2.7.

The SECI theory is anchored on the assumption that human knowledge is created and expanded through social interactions. In the model, explicit and tacit knowledge interact and convert with each other dialectically. And it is individuals' tacit knowledge that is the basis of organisational knowledge creation.

The organisation has to unlock tacit knowledge that has been created and accumulated at the individual level. When mobilized, tacit knowledge is converted to explicit knowledge which can be shared within an organisation, eliciting the conversion of explicit knowledge to tacit knowledge and vice versa, amplified through the four modes of the SECI process.

New knowledge will be crystallized at higher ontological levels through a spiralling process, starting at the individual level and moving up through expanding communities of interaction that cross-sectional, departmental, divisional, and organisational boundaries. Through the continuous and fast spinning of the SECI spiral, where the interaction and the conversion between tacit knowledge and explicit knowledge occurs, a firm can build its capability to synthesize knowledge to pursue both creativity and efficiency.

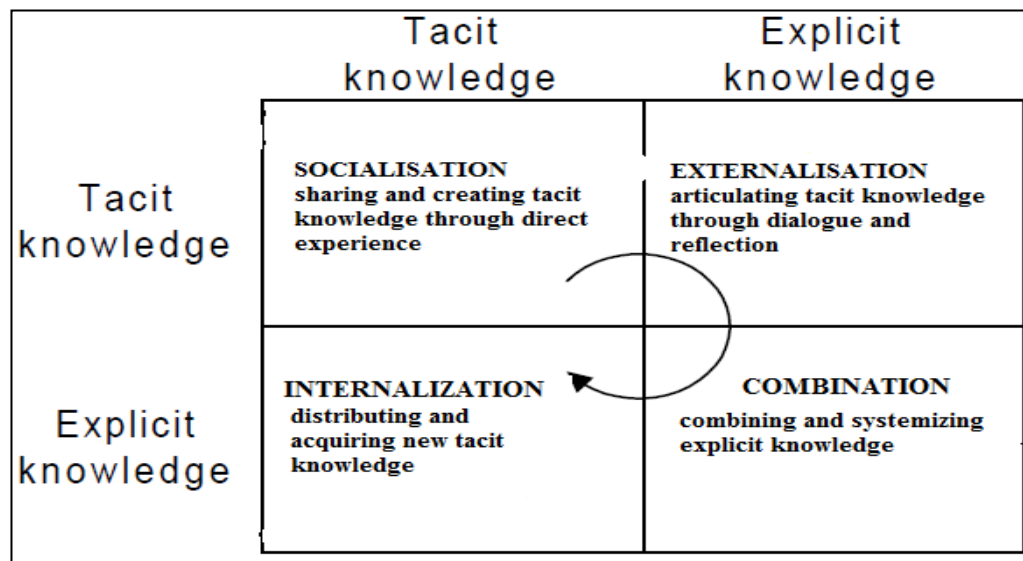


Figure 2.4: Adopted from SECI Knowledge Creation and Transfer Model

Source: Nonaka (2014:)

Tacit knowledge is articulated into explicit knowledge through the process of externalization. Tacit knowledge is made explicit so that it can be shared by others to become the basis of new knowledge. Tacit knowledge is converted into concepts, images, and written documents through discursive consciousness to rationalize and articulate the world that surrounds individuals. Through strategic discourse among individuals therefore strategic knowledge is made explicit and synthesized. This is contradicted by Gourlay (2006), who faults the model of treatment of tacit and explicit knowledge as two separate categories that are mutually exclusive. He contends that tacit and explicit knowledge should be regarded as complementary rather than contradictory entities. Gourlay (*ibid.*) views any knowledge as neither fully tacit nor fully explicit.

Explicit knowledge collected from both inside and outside the organisation is combined, edited, or processed to form more complex and systematic explicit knowledge through the process of combination process (Figure 2.4). The new explicit

knowledge is then disseminated among the members of the organisation through use of computerized communication networks and large-scale databases for instance the ISO 9001 -2000 systems.

Explicit knowledge created and shared throughout an organisation is then converted into tacit knowledge by individuals through the Internalization process (Figure 2.7). This stage can be understood as praxis, where knowledge is applied and used in practical situations and becomes the base for new routines. Thus, explicit knowledge, such as product concepts or manufacturing procedures, has to be actualized through action, practice, and reflection so that it can really become knowledge of one's own. The cycle of knowledge continues perpetually with each cycle emerging better qualitatively at the end of the cycle. However Nonaka and Takeuchi (1995) and Nonaka and Toyama (2003) take note that the knowledge transfers through the four modes of knowledge conversion forms an ever expanding spiral, not a simple circle.

In the spiral of knowledge creation and transfer, the interaction between tacit and explicit knowledge is amplified through the four modes of knowledge conversion. The spiral becomes larger in scale as it moves up the ontological levels. The knowledge through the spiral increases the capability of managers to understand their environment and how to deal with multiple issues. This is what ought to constitute strategic thinking competence capability of managers.

The applicability of SECI model in different cultural contexts has also been challenged. Easa (2012) in a study in Arabic context found that the processes of externalization are not widely used. This is due to the culture of trust or lack of it as

well as hoarding of individual knowledge that is deemed to be personal in nature. Despite some of these shortcomings cited it is agreeable that most of the SECI processes are widely applicable in different contexts including Kenyan public sector. The key precaution being that any application of SECI must ensure culture sensitivity is adhered to (Haag *et al.*, 2010).

2.3.2 Argote and Ingram Model of Knowledge Transfer

Argote and Ingram (2000) provide an alternative knowledge transfer framework which holds that knowledge in an organisation is embedded in three basic elements – its members, tools, and tasks – and the various sub-networks formed by combining or crossing these elements.

Knowledge transfer happens either by the movement or by the modification of these elements. The member–member network is the organisation’s social network. The task–task network is the sequence of tasks or routines the organisation uses. The tool–tool network is the combination of technologies used by the organisation. The member–task network (or the division of labour) maps members onto tasks. The member–tool network assigns members to tools. The task–tool network specifies which tools are used to perform which tasks. The member–task–tool network specifies which members perform which tasks with which tools. This theoretical framework is very effective in understanding the knowledge resources that the organisation has where the organisation knowledge is and who controls that knowledge. However, since it only explains organisation knowledge in situ, it does not answer the critical question of how knowledge is created, transformed, transferred and finally utilised by the members of the organisation.

2.4 Strategic Thinking Competence Framework

Mintzberg (2004) describes strategic thinking as a process of utilizing intuition and creativity and whose outcome is an integrated perspective of an enterprise. Strategic thinking competence encompasses search for alternative appropriate strategies (Abraham, 2005). It also involves systematic analysis of the organisation and formulation of its longer term direction with the aim of finding clarity in what is done and in order to do what we do in the organisation more explicitly (Allio, 2010). Strategic thinking competence is holistically focused aimed at ensuring that the meaning and purpose are diffused throughout the whole organisation, so that appropriate goals and tactics are developed to meet the needs of the organisation (Fairholm and Card, 2009; Larson and Hansen, 2005).

The United States Internal Revenue Service (USIRS) specify strategic thinking competence as leadership competency which offers another clearly different comparison to strategic planning by formulating effective strategies that take into account the external forces that affect an organisation from a national and global perspective (Internal Revenue Service, 2001).

The strategic thinking competence is of concern in the public sector because it seeks to examine policy issues and strategic planning with a long term perspective. It helps to lead to a compelling organisation vision, to determine objectives, set priorities, build upon the strengths as well as anticipating future opportunities and threats (Fairholm and Card, 2009). Therefore, strategic thinking performs the function of creating understanding of an organisation's strategic goals, linking daily tasks to strategies or

long term objectives, developing work plans based on strategic priorities and develops strategies in support for the mission (Fairholm and Card, 2009).

Strategic thinking competence is described as the “glue” that holds together the many systems and initiatives within a company (Tavakoli and Lawton, 2005). Hughes and Beatty (2005) define strategic thinking competence as a cognitive processes required for the collection, interpretation, generation, and evaluation of information and ideas that shape an organisation’s sustainable competitive advantage.

This means that the strategic thinking competence is a mental process that aims at creating understanding and views of different standpoints of reality that needs to be tackled. It is seen to be therefore a psychological process. Mintzberg (2004) suggests that strategies are visions in the head of the leader; serving as an inspiration and a sense of what needs to be accomplished. In that light therefore, approaches strategic thinking competence as a particular way of thinking with specific characteristics.

Masifern and Vila (2001) see strategic thinking competence, as structure of meaning, presented as both the medium of social cognitive action and its product. They suggest that it is more a state of mind, than just another planning process. The concept of strategic thinking is a set of ideas, principles, policies, concrete rules, and operational approaches which shape the way managers think about their role and guide their daily actions (O’shannassy, 2003).

Ohmae (1980) and Mintzberg (1994) argue that strategic thinking processes seek to combine eastern, generative, creative, synthetic, divergent thought processes with a western rational, analytical, convergent approach to problem solving. Bonn (2001)

postulates that effective strategic thinking competence is seen through the holistic understanding of the organisation and its environment recognizing the linkages and complexity of the various structures and its relationships.

Bonn (2005) argues that strategic thinking competence does not occur in a single mind but is affected by the social context in which the individual operates. The individual behaviour in an organisation is an embodiment of two entities; the individual themselves as well as the representation of the collectivity that the individual represents. According to Bonn (2005) strategic thinking competence needs to take cognizance of three critical elements; systems thinking, creativity and the vision that the organisation envisages. Figure 2.5 shows the interrelationships of these three elements.

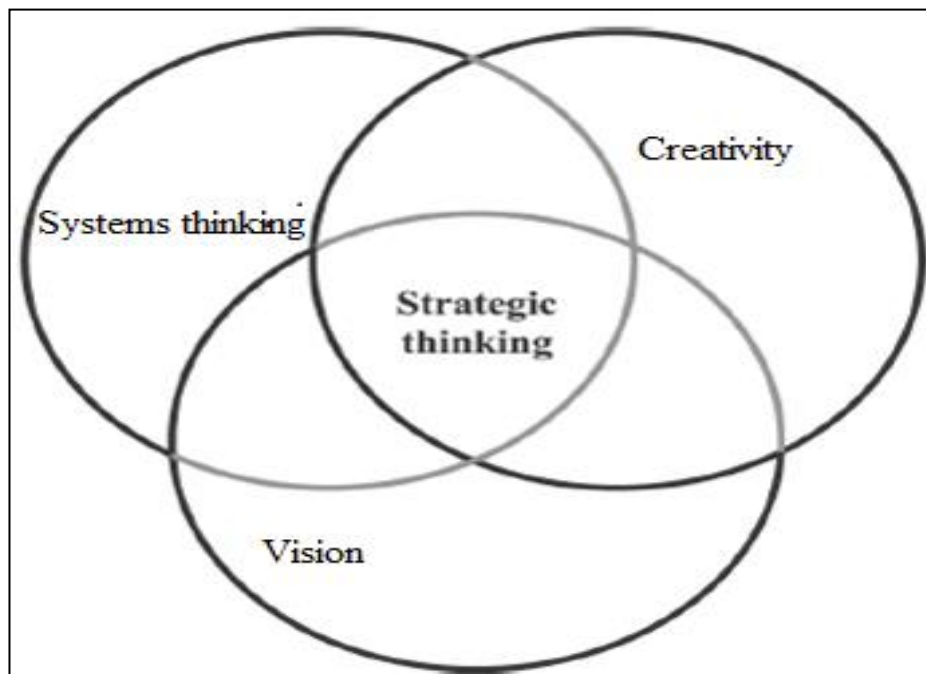


Figure 2.5: Elements of Strategic Thinking

Source: (Bonn, 2005:340)

Bonn (2005) further suggests that for us to clearly understand and manipulate strategic thinking competence one must bear in mind the following factors: the characteristics of the individual thinker, the dynamics that take place within a group or the individual and the organisation context where the strategic thinking takes place.

Mintzberg (2004) presents strategic thinking as *seeing*, a combination of numerous perspectives, which perceive the issues in the organisation from different points of views. Seeing above implies getting the big picture of the organisation while seeing below implies getting to experience issues from close quarters through inductive thinking from close relations.

Seeing ahead- this implies seeing the future of the firm in terms of the organisation's vision it is about the expected future by constructing a framework out of the experiences of the past. Seeing behind, involves the understanding the roots of today in the past. This involves the evaluation of the underlying issues. Seeing beside involves lateral thinking, challenging conventional wisdom (what-if?). Seeing beyond involve using the creative forces in an individual and therefore inventing the world that does not exist by putting the ideas into the context. Therefore, seeing it through means understanding things deeper as presented.

Figure 2.6 presents the all strategic thinking model consisting all the Mintzberg's *seeing* perceived at once. In some situation, seeing beyond is predominant, in some other situation predominant is seeing above, but they could be taken into consideration as many components as shown in the concepts.

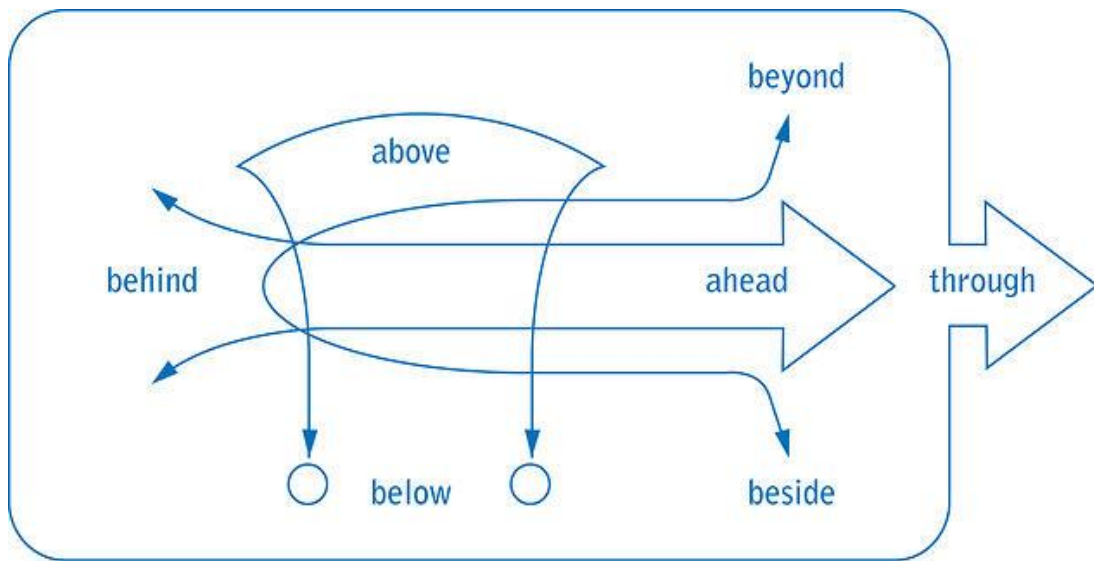


Figure 2.6: Strategic Thinking as Seeing

Source: Mintzberg, (2004)

Liedtka (1998) defines strategic thinking as comprising five elements: systems perspective, strategic intent focus, intelligent opportunism, thinking in time and hypothesis driven thinking. Systems perspective implies that a strategic thinker has a mental model of the complete system of value creation from beginning to end, and understands the interdependencies within the value chain. Intent-focused thinking implies a perspective, which conveys a sense of destiny, direction and discovery. Intelligent opportunism has the essence of openness to new experience, which allows one to take advantage of alternative strategies that may emerge as more relevant to a rapidly changing business environment. Thinking in time implies making a connection between the past with the present and linking this to the future. Hypothesis driven approach embraces hypothesis generation and testing as a core activity of the manager (Figure 2.7).

Liedtka (1998) states that, taken together, these five elements describe a strategic thinker with a broad field view that sees the whole and the connections between its

pieces, both across the four vertical levels of strategy and the horizontal element of the organisation.

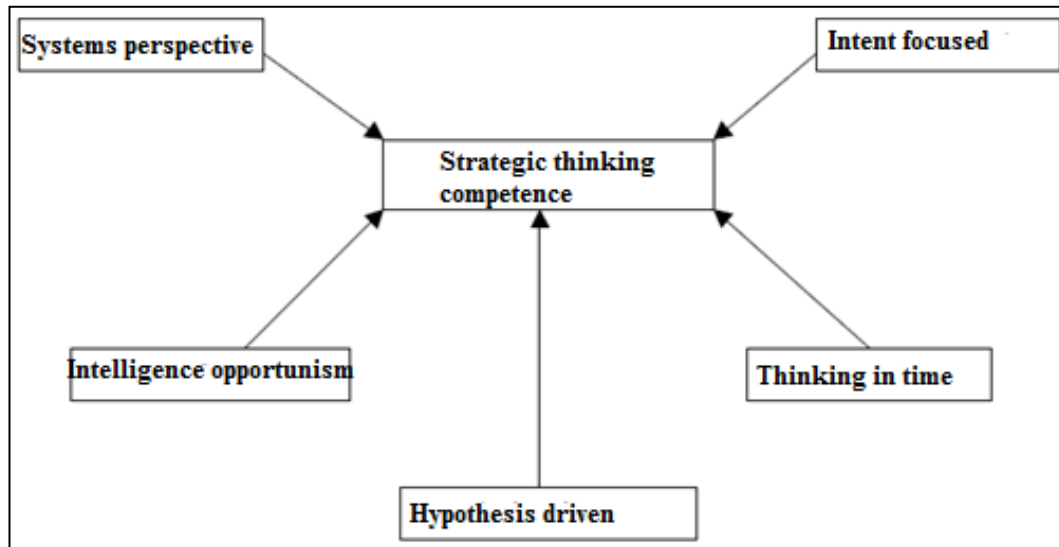


Figure 2.7: Liedtka Strategic Thinking Model

Source: (Liedtka, 1998: 122)

2.5 Conclusions on the Theoretical Review of Literature

The theories on strategic thinking see strategic thinking as a mental, cognitive activity in which the managers visualise the future of the organisations. Mintzberg (1994; 2004) Bonn (2005) and Liedtka (1998) all focus on the end result of strategic thinking as the visualisation of the organisations long term perspective, appreciation of the organisations' value chain and tangible results.

Both Nonaka and Takeuchi (1995) and Argote and Ingram (2000) models on knowledge transfer presuppose that knowledge is an exclusively a human activity. Both models recognize the tacit and explicit knowledge typologies, which are held by the individual members of the organisation, the processes in the organisation and tools set in place to manage the knowledge. The transfer of knowledge also involves shift

or flow of knowledge from one entity that possess the knowledge to another that requires that specific knowledge.

Argote and Ingram (2000) model does not seem to have a very clear framework of how knowledge moves and is transformed within the organisation; although the concept of knowledge reservoirs is valuable in explaining the knowledge resources in the organisation. The theoretical frameworks presented provide a clear understanding that the strategic thinking capability is both a cognitive (scientific) involving inductive /deductive realm of reasoning as well as a creative process. Thinking is done in the minds of the individual and then transcends the boundaries of the organisation.

This research favours the framework of strategic thinking by Bonn (2005) (Figure 2.4) in which strategic thinking is seen as comprising three elements; creativity, vision and systems thinking. This is because of its simplicity and therefore ability to have a simple measure of strategic thinking competence.

This study looks at Nonaka's model as a pragmatic and simple tool to understand the main knowledge transfer processes in any organisation. Nonaka and Toyama (2003) and Nonaka (2014) emphasise on the enabling contextual factors that facilitate knowledge creation and transfer. Knowledge vision, the knowledge strategy, the other enabler was system; this constitutes the networking communities, conversion and transfer system as well as the knowledge base. The fourth enabler was the structure of the knowledge.

This study views strategic thinking competence as the capacity of the managers or employees to ‘see’ holistically the organisations future state. This is seen to be important because it leads to the perceived best or ‘fit’ strategies being formulated by the organisation. Liedtka’s model of strategic thinking forms an elaborate framework through which strategic thinking competence of both the individuals and the organisation can be assessed.

Therefore the researcher favours the model for its simplicity and wholesomeness. Nonaka and Toyama’s (2003), Nonaka and Takeuchi (1995) and Nonaka (2014) SECI model of knowledge transfer envisages a perpetual creation, harnessing and transmittal of knowledge within an organisation. This is consistent with the ISO 9001-2008 quality management systems, which aims at having the best practices and procedures (knowledge) documented and practiced for producing the desired results.

Strategic thinking competence is a core competence that the managers ought to possess (Bonn, 2005). This is because the managers are expected to create value for the organisations as well as guide the organisations. Managers of newly created positions are expected to exercise greater strategic thinking competence capabilities since new positions require greater envisioning and creativity.

Decentralisation also poses a challenge to strategic thinking competence capability by managers since it requires efficient management of knowledge resources both vertically and horizontally. Efficient knowledge transfer is a requirement to the managers at the devolved levels to be able to develop effective strategic thinking competence skills.

The ISO 9001-2008 provides an effective platform through which explicit knowledge is created and made available to managers. However it is also an important tool for managing tacit knowledge that is created and possessed by the managers. The managers through the experiences and intuition get to know what processes work and what does not. This knowledge needs to circulate around the organisation in order to improve not only the processes and amount of knowledge but also the degree of strategic thinking competence individual managers.

2.6 Empirical Review of Literature

In a literature review of articles in four databases (EBSCO, Emerald, ISIS web of science and ProQuest) covering a period between January 1985 and August 2010 Pinho *et al.* (2012), found that the major barriers and facilitators to knowledge management processes cited in literature were; technology, socio-organisational processes and individual employees characteristics. They found that although technology was perceived to be the major impediment to knowledge transfer, socio-organisational processes like culture, the network structures and individual members' willingness to share knowledge were key determinants to knowledge transfer.

Similarly, Sandhu *et al.* (2010) carried out a study on the knowledge sharing in the public sector in Malaysia; the study focused on 320 public service executives from the headquarters of ICU (a non-technical department); Prime Minister's department at Putrajaya, an administrative capital and PWD, the technical arm of the government in Kuala Lumpur. The study found that much of the public sector did not have a knowledge transfer strategy. The study further found that most of the public sector

employees had a self-serving bias in relation to knowledge sharing. This implied that they hoarded knowledge rather than share with others. The most critical barriers to knowledge sharing were cited to be: lack of IT support systems, lack of reward and recognition for knowledge sharing and lack of interpersonal skills for knowledge sharing.

Monnavarian and Kasaei (2007) in a study to identify the prevalence and nature of knowledge transfer in ministry of labour in Iran found that knowledge transfer was way below the optimum levels to be effective. The study concluded that most of the communication and information functions in the public sector were top-down and too slow to meet employee knowledge needs downstream. They concluded that it takes too much time for information to filter down through every level of the organisation. The study argued that effective top-down and bottom-up communication is very important in making existing knowledge profitable to the organisation. Inefficient knowledge can significantly slow organisational processes, which was argued to be very detrimental to the organisation performance.

The study concluded that the ministry of labour in Iran had an effective structure that would support effective knowledge transfer through having necessary technology in place. However the human component was not effective for facilitation of knowledge transfer. The employees' culture and their willing the employees to implement the desired knowledge transfer as well as organisation context which was necessary for knowledge transfer was also a key determinant in the organisation's knowledge transfer strategies (Monnavarian and Kasaei, 2007).

Kang and Hau (2014) carried out a study to explore the antecedents' effect on knowledge transfer using social capital and social networks theories on employees of research and development groups in five South Korean firms. The study found that absorptive capacity that is the willingness of the individual to assimilate new knowledge played a significant role in knowledge transfer. The study also found that the younger new employees were more likely to seek and adopt new knowledge better than the older employees in the firms.

The study concludes also that network centrality in the structural dimension had a moderating effect on the knowledge transfer. The network centrality offered the employees a wide pool from which to get new knowledge from, furthermore the more centrally located the sources of the knowledge were the more likelihood there were of the perceived credibility as compared with sources low network centrality. An effective central knowledge management system was important in order to have effective knowledge transfer system.

Syed-Ikhsan and Rowland (2004) investigated and examined the availability of knowledge management strategy in the Ministry of Entrepreneur Development of Malaysia. They also examined perceptions on the benefits, problems, responsibilities and technological aspects that are entailed in managing knowledge in an organisation as well as the relationship between organisational elements and the performance of knowledge transfer. The study was conducted on the 221 employees of the ministry of entrepreneurship head offices in Kuala Lumpur in Malaysia as well as the regional and state offices. The study revealed that the Ministry did not have any specific KM

strategy. However, it showed that knowledge management in the ministry was hierarchical with and was available and embedded in the Ministry's procedures and policies, Job Manual Procedure, ISO 9002, Desk File, work flow and databases. The study also found out that the knowledge assets available to the organisation have a direct strong linkage with the ability of the organisation to perform knowledge transfer. Other pertinent conclusions were that most of the employees still felt that the head of the Ministry or the heads of the divisions/units were the ones who were responsible for managing knowledge in the Ministry.

Constanzo and Tzoumpa (2008) emphasise the need for the middle managers of the firm playing a mediating role in the knowledge transfer in a firm. The creation, transfer and implementation of knowledge in any organisation are the status of information and documents. The study also found that if certain items of information and documents are restricted to certain levels of employee, it prevents the flow of knowledge across the organisation. The major method used in knowledge transfer is the training given to the employee either internally or externally.

A study by Oliva (2014) on 265 companies in Brazil to find out the barriers to knowledge management found that the main barriers are; lack of interest by the employees, inefficient communication, lack of culture of sharing, lack of competence of staff and lack of incentives to share knowledge. Petruzzelli *et al.* (2010) in a research on the knowledge transfer in the universities concluded that increase in the explorative speed of knowledge had a less positive impact on the knowledge transfer capacity of the of the organisation since the organisation is less able to consolidate the and implement the new knowledge that is acquired.

Martin-Perez *et al.* (2012) carried out a study in 105 non-profit organisations in Spain providing services to people with disabilities. The study focused on organisations registered in Castilla y Leon region. The research employed postal survey; the study found that knowledge transfer among the employees was perceived very important for team-based organisation activities performance to provide quality services.

Further, the extrinsic and extrinsic rewards are important to increase the individual members' willingness to share their knowledge with their colleagues especially the tacit knowledge. The intrinsic rewards have a higher influence on the individuals knowledge transfer. The managers are expected to design mechanisms to convert tacit knowledge into explicit knowledge to ensure that the organisations memory is retained to sustain the organisations' reforms and efficiency even when the critical employees exit.

Ding *et al.* (2013) did a study on companies in north-west China on 517 managers with MBA qualifications; the study was aimed at identifying the effectiveness of internal knowledge transfer and whether they induce knowledge spillovers among firms. The study found that firms can gain persistent competitive advantage when they manage to both facilitate internal knowledge transfer and block external knowledge spillovers. Codification strategy has a negative effect from knowledge spillovers as well as internal knowledge transfer while rich-media strategy has a positive effect on the internal knowledge transfer and no significant effect on the knowledge spillovers.

This implies that the codification strategy restrains knowledge spillovers which have a negative effect on the organisations competitive position while promoting effective internal knowledge transfer.

Monnavarian *et al.* (2011) in a study among 196 employees of different branches of Benetton located in Tehran in Iran found that creativity, and attention to the present and the future had the biggest impact on the strategic thinking capability of the managers in Benetton. This study's findings had the implication that the more knowledge resources the managers have in their organisations the better they excelled at the strategic thinking competence. Other factors which were also found to have an impact on strategic thinking competence of the managers included; the structures of the organisation, incentives by the management, awareness of the situation all of which are directly affected by the knowledge management processes.

Mungai (2014) carried out a study on the management of tacit knowledge in Kenya public sector institutions. The study was done in Kenya Institute of Public Policy and Research Analysis (KIPPRA), among 60 employees ranging from top management to the researchers. The study found that KIPPRA valued knowledge as an asset that would facilitate achievement of the organisation objectives. Both tacit and explicit knowledge resources were available; however no real effort had been made to establish an institutionalised system for capturing, codifying, storing and transferring rich tacit knowledge available among the employees.

The study further found that the culture among the employees did not facilitate effective knowledge transfer; for instance there was knowledge hoarding and lack of

trust that was detrimental to knowledge transfer. KIPPRA did not provide the employees with the incentives to facilitate and encourage knowledge creation and transfer. Tacit knowledge transfer was not effectively carried out in KIPPRA because of ineffective structures and non-supportive knowledge transfer culture to enable socialisation and externalisation phase envisaged in SECI (Nonaka 2014) framework. This finding supports the hypothesis that knowledge transfer structures and knowledge transfer culture are a challenge faced in knowledge transfer in the public sector.

This is consistent with findings by Maalu and Dosho (2016) on the knowledge management and organisation change in 39 commercial banks in Kenya. They found that commercial banks used both proactive and moderate knowledge management strategies; these were consistent with the rapid changes in innovation and development of new products seen in the banking sector in Kenya. The study also found that the banks also applied a range of information management tools with robust applications that generated useful knowledge. However despite the big investment in technology, the organisations knowledge transfer structures were weak. The knowledge culture among the employees was also noted to be weak.

Mosoti and Masheka (2010) conducted a study focused on the knowledge transfer management practices (KMP) in organisations in Nairobi, Kenya. Their motivation was to find out if knowledge management has been implemented. They established that most of the challenges experienced by organisations in Nairobi are how to create and implement KMP as part of organisational culture, organisational strategy and organisational leadership.

They established that 45 organisations representing 65 percent said they experience significant resistance when implementing knowledge management practices. The study recommended that effective knowledge transfer strategy was necessary. In a similar study in Kenya, Mosoti and Masheka (2010) found that most of the challenges faced by organisations in Nairobi were how to create and implement knowledge management practices (KMP) as part of organisational culture, organisational strategy and organisational leadership. Most organisations said that they used technology (web, internet, telephone) and that there was need for a synergy with other enabler factors (organisational culture, organisational strategy and organisational leadership).

According to the research, the interviewed managers (31.4 per cent) believed that IT infrastructure is the most important infrastructure for facilitating knowledge transfer. The managers believed that corporate culture infrastructure (29.1 per cent) and human resources infrastructure (22.1 per cent) were considered the second and the third most important infrastructures for facilitating knowledge management.

The study recommended that the organisations should manage knowledge creation by ensuring both vertical and horizontal structures in organisational leadership optimise knowledge transfer. The study also recommended that all profit and non-profit organisations should seek the best ways to capture and transfer both tacit and explicit knowledge. Using effective appraisal performance and measurement, utilization of both monetary and non-monetary incentives to both motivate workers in production of new knowledge was also advocated. Reinforcement of the creation of knowledge by integrating effective leadership, strategy and culture in their organisations was also observed to be critical. The study concluded that information technology (IT) is not a

substitute to knowledge management systems although it can assist teams to share experiences online in order to build and share tacit information and help those people who need to share knowledge to find each other.

These studies have the implication that knowledge creation is not the main challenge affecting organisation knowledge management in Kenya institutions, including the MOE and other public institutions. The major challenge was taking the knowledge that the organisation had to where it was needed. The key issue was the institutional based factors that affected knowledge transfer like: access, structure and culture.

Cheruiyot *et al.* (2012) carried out a study to find out the institutionalization of knowledge management in manufacturing enterprises in Kenya. The study conducted research on 3 manufacturing firms in the city of Nairobi. For each of the firms, 20 respondents were selected from among the heads and deputy heads of department.

The companies in the study were selected on the basis that they had done well in the company of the year awards (COYA) from 2007-2010. This study established that a majority of the respondents understood knowledge management as a mechanism of developing and utilizing knowledge to increase organisational performance and to meet strategic goals.

They gave two versions of their understanding of knowledge management. First, that it is the development and utilization of knowledge to increase organisational performance and to meet strategic goals and second, that it is creating, sustaining, sharing and making the best use of available knowledge to enhance organisational

performance. Most organisations had not yet developed a knowledge management policy. The descriptive review revealed that most of the respondents did not recognize knowledge as an important asset in the organisation; this implying that the organisation did not consider knowledge as a priority. Overall, the study demonstrated that there are two critical factors that influence institutionalization of knowledge management. These factors are organisational practices and technological infrastructure.

The predictors under organisational factors were: evaluation and compensation for contribution to organisation knowledge, explicit recognition and reward system, environment to share ideas, experiences, successes and failures, ways to link knowledge to financial results or performance. The study also found that allocation of resources towards efforts that measurably increase knowledge base, management awareness and promotion, climate of openness, teamwork and trust exists among employees, tacit knowledge is valued and transferred by use of community of practice, effective internal procedures for best practices transfer, encouragement of employees to use knowledge repositories of best practice, formalization of the process of transfer of lessons learned, recognition of knowledge as a key element in strategic planning exercises and encouraging knowledge sharing among employees.

Ondari-Okemwa and Smith (2009) carried out a study in 2009 to find out the role of knowledge management in enhancing government service-delivery in Kenya public service sector. Apart from the actual field study, the study looked at the literature on the subject between 2006 and 2009. The study found that knowledge management had not been fully integrated in the Kenya civil service. The study found that the Kenya civil service being steeped in bureaucracy offered very few incentives that would

encourage the civil servants to generate new knowledge distribute and share the knowledge that is held by the organisation.

Ondari-Okemwa and Smith (2009) argue that the majority of the civil servants were career servants who would not have the capacity to appreciate and envisage the potential of knowledge management and the benefits of knowledge leveraging. Further the study found that many of the employees in the civil service were wary of transferring knowledge because they had the perception that by hoarding knowledge they increase their value, worth and competitiveness. Among the major impediments cited as hindering generation and sharing of knowledge included: excessive bureaucracy, lack of the incentives by the top management to share knowledge, absent knowledge creation structures, cultural barriers and technological inadequacies.

Owino *et al.* (2011) carried out a study on the private and public universities in Kenya on ISO 9001-2001 and ISO 9001-2008 and ISO 9001-2001 implementation. This study used a descriptive survey design and was done between May 2010 and November 2010. It collected data from 127 lecturers and 502 students from 4 Kenyan universities. The study found that ISO implementation did not effectively improve the efficiency of delivery of quality education. ISO implementation was not effective since it did not adequately engage all the stakeholders in order to create effective tacit and explicit knowledge transfer.

A study by Lin and Wu (2005) in Taiwan sought to explore the interrelationships between knowledge management and ISO 9001-2000. The study sampled 10 ISO

90001-2000 certified companies in Taiwan. Twenty (20) experts from knowledge management and ISO 90001- 2000 were selected.

The study found that ISO 9000 process-based activities facilitate knowledge flow; the managers interviewed considered most of these activities (63.9 percent) to be beneficial for explicit knowledge flow. It is reasonable since the organisations that effectively utilize ISO 9000 have developed a documentation system; knowledge documentation analysis structures, and records knowledge. It is a key manifestation of knowledge and provides a way for the successful distribution of knowledge. Further the study found that, knowledge flow within other activities (36.1 percent) is usually informally structured and relies on social networking in which employees and management share tacit knowledge.

Lin and Wu (2005) sought to explore the interrelationships between knowledge management and ISO 9001-2000 in Taiwan. The study found that ISO 9000 process-based activities facilitate knowledge flow; since the organisations that effectively utilize ISO 9000 have developed a documentation system knowledge documentation analyzes, structures, and records knowledge.

The study concluded that ISO 9001:2000 activities is a facilitator to explicit knowledge management, in addition ISO 9001: 2000 was found to be an enabler of tacit knowledge transfer in organisations since that provide person-to-person contacts tend to promote such tacit knowledge flow.

2.7 Conclusions on the Empirical Review of Literature

Studies on the knowledge in the public sector in Kenya concluded that knowledge management had not been institutionalized. The knowledge resources; both the tacit and explicit were available; however the Kenyan public sector had not put in place knowledge management strategies and structures. The civil servants prevailing culture did not support knowledge transfer. The public sector did not provide incentives to its employees to create and transfer knowledge. Public sector institutions had not yet invested in knowledge management strategies and tools and also had not provided the supporting structure for knowledge transfer; incentives for knowledge transfer were also non-existent.

Research done in Malaysia by Sadhu *et al.* (2010) and Syed-Ikhsan and Rowland (2004), revealed that unlike in Kenya and African in general that had not yet embraced and implemented the knowledge management concept in the public sector Malaysia public sector had done a well developed knowledge management system. However they still faced challenges similar to Kenya's though theirs were more to do with effective implementation of the knowledge management systems. The challenges included ineffective structures as well as lack of widespread appropriate supporting knowledge transfer culture. Similar findings were realized in Taiwan in a study by Lin and Wu (2005) and Spain in a study by Martin-Perez *et al.* (2012).

These studies also validate the knowledge creation and transfer (SECI) theory by Nonaka. The knowledge transfer structures provide the enabling context for socialization to take place. It provides the right environment in which the individuals share what they know (tacit knowledge) with other members of the organisation. The

knowledge transfer structures also provide repositories from where knowledge could be codified into an accessible format, explicit knowledge that could be accessed on and used throughout the organisation.

The knowledge that is created and stored needs to be linked with the existing organisation procedures and processes. The empirical research found that organisations that had implemented ISO 9001 standards found that ISO 9001 provided a platform that enabled the knowledge created to be combined and integrated with the existing ones. Its aim is to create workable procedures and processes enabling the organisation to up with a practical implementation and transfer of new knowledge.

The knowledge transfer culture provided an enabling environment that provides internalization of knowledge into a way of doing things for the organisation. It provides an environment for sustenance of continuous improvement, creativity and innovation. By providing the employees with right incentives the organisation was expected to continue in the ever self transcending knowledge spiral giving the organisation the cutting edge; the competitive advantage. The studies affirmed that managing the knowledge as a critical resource in an organisation effectively is a major determinant of organisation effectiveness; strategic thinking competence was identified as the most important dimension in an organisation's results.

2.8 Conceptual Framework

Mugenda (2008) defines conceptual framework as a concise description of the phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study. According to Young (2009), conceptual framework is a

diagrammatical representation that shows the relationship between dependent variable and independent variables.

The conceptual framework provides the model upon which the research is based. This is based on the findings from the review of literature. The study's independent variables are the knowledge transfer structures, access to knowledge resources, knowledge transfer culture and implementation of ISO 9001-2008. These independent variables are an enabler facilitating strategic thinking competence in the managers.

Figure 2.8 presents the above.

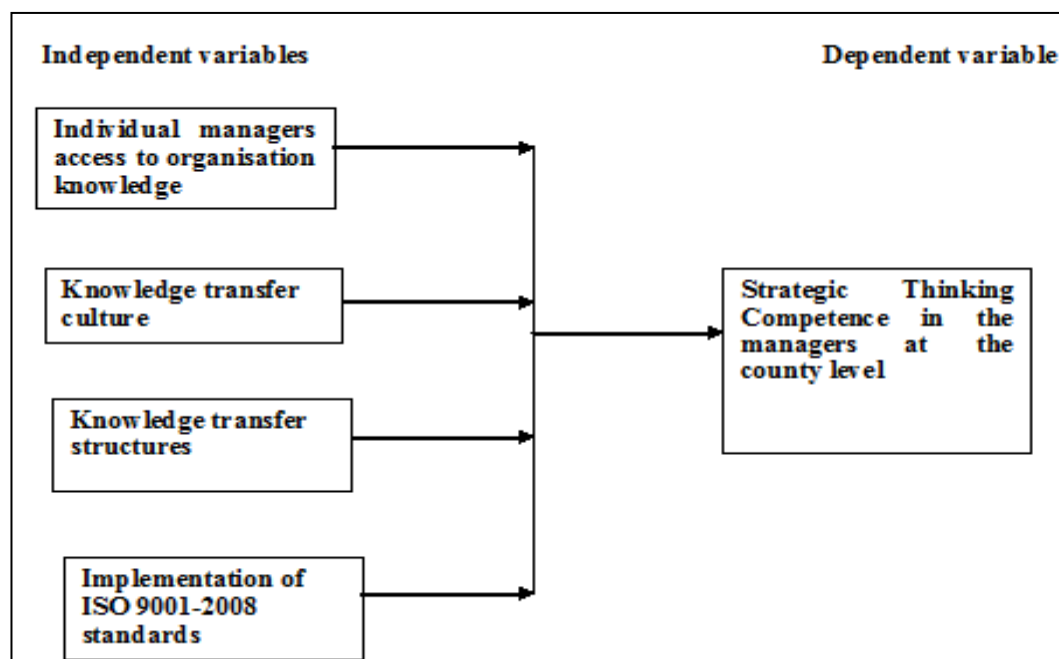


Figure 2.8: The Conceptual Framework

2.9 Research Gaps

Knowledge management has been cited as a critical resource for effective management of 21st century public sector organisations. It contributes to strategic thinking competence of the managers. However studies on public sector in Kenya have shown

that public sector has not institutionalised and formalised knowledge management- knowledge creation and transfer have not been prioritised and formalised. The key questions that needed answers in this study are: where is the organisation knowledge in MOE located? Who is the custodian of that knowledge? How do we ensure that the knowledge reaches the users that need it? The answers to these questions would result in a framework for knowledge transfer in public sector.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Paradigm

Research paradigms assist a researcher to establish the type of methodology suitable for the study. Therefore, a selection of paradigm has consequences on the selection of research methodology. According to Collis & Hussey (2007), a paradigm is the progress of scientific practice based on people's philosophies and assumptions about the world and the nature of knowledge. This research used positivist (quantitative) paradigm.

The positivist paradigm is based on the assumption that social reality is independent of us and exists regardless of whether we are aware of it. This paradigm consists of establishing causal relationships between the variables by establishing causal laws and linking them to a deductive or integrated theory. The advantage of positivist research is that it can identify the precise relationships between chosen variables. Using analytical techniques, the aim is to make generalizable statements applicable to real life situations (Cavana & Sekaran, 2010).

3.2 Research Design

Donaldson *et al.* (2009), note that a research design is the structure of the research, it is the “glue” that holds all the elements in a research project together. This research used descriptive design. Descriptive studies can yield rich data that lead to important recommendations. Descriptive research describes natural or man-made phenomena that are of interest to policy makers. This design describes the relationships that exist between the independent and dependent variables (Kothari, 2004). The descriptive function of research is heavily dependent on instrumentation for measurement and

observation (Borg & Gall, 1989). The study was therefore meant to describe the effect of the independent variables; the effect of access to organisation knowledge resources, effect of the knowledge transfer structures and knowledge transfer culture as well as effect of ISO9001-2008 system on the strategic thinking competence.

3.2.1 Area of the Study

The target population was County Education Directors, County Quality Assurance and Standards Officers, County Director of Early Childhood Education, County Officer in charge of audit services and County Adult and Continuing Education Officers. These managers are responsible for the overall strategic direction of the devolved County Education structures.

3.2.2 Population of the Study

The research studied the managers of county level, in MOE in Kenya. The study put its focus on the top managers at the county level heading the major sections: general administration, quality assurance and standards, audit, adult education and early childhood development (ECD (see Table 3.1).

Table 3.1: Population Size: County Education Managers

S/N	Manager	Number per county	Number
1	County director of education	1	47
2	County Quality assurance and standards officer	1	47
3	County Audit section officer	1	47
4	County Early childhood education (ECD) director	1	47
5	County Adult and continuing education officer	1	47
6	County education board members	12	564
Total			799

Source: MOE (2015)

3.2.3 Sample and Sampling Techniques

3.2.3.1 Sample Size Determination

The researcher established a sample size of 104 from the population in Figure 3.1. The researcher used the sample size determination table (Bartlett *et al.*, 2001) to determine sample size of the managers.

Table 3.2: Table for Determining Sample Size for Continuous Data

	Continuous Data margin of error = .03		
Population Size	Alpha = .10 T = 1.65	Alpha = .05 T = 1.96	Alpha = .01 T = 2.58
100	46	55	68
200	59	75	102
300	65	85	123
400	69	92	137
500	72	96	147
600	73	100	155
700	75	102	161
800	76	104	166
900	76	105	170
1000	77	106	173

Source: Bartlett *et al.* (2001)

Using the formula in Table 3.2, the research established a sample size of 104 employees (confidence interval of 95 %; alpha = 0.5, t = 1.96).

3.2.3.2 Sampling Techniques

Multi level sampling was used to obtain the sample; first the simple random sampling was done to obtain 15 counties in which the study was done. Then stratified sampling was done for each of the categories of management in each county. This was aimed at achieving the desired representation of the various sub groups within the population (Mugenda and Mugenda, 2003). The basis for the strata was the categories of the managers of the county education sector.

Table 3.3: Sample Allocation to the Strata

S/No	Manager	Number per county	Total population	Sample size
1	County director of education	1	47	15
2	County Quality assurance and standards officers	1	47	15
3	County Audit section officer	1	47	15
4	County Early childhood education (ECD) director	1	47	15
5	County Adult and continuing education officer	1	47	15
6	County education board members	12	564	30
Total			799	105

Source: MOE (2013)

3.3 Data Collection Tools

Ingram (2000) posits knowledge transfer can be measured via identification of the changes in the performance of the recipient of the knowledge. Therefore the research tools were designed to measure strategic thinking attributed to the knowledge transfer. According to Bonn (2005) strategic thinking competence is measured by the

individual's creativity, vision and systems thinking. Using Bonn (2005) framework, the researcher created a data collection tool to measure the knowledge transfer on strategic thinking dimensions- individuals' creativity, vision and systems thinking.

The questionnaire consisted of six sections that the research used to get the respondents opinions, and characteristics. The questionnaires gave the respondents greater chance of expressing their views, ideas, opinions, suggestions and specific responses (Kombo and Tromp, 2006). Questionnaires also can be made to cover a wide range of issues that the research seeks to address.

Likert scales were used in this study. This is recommended because the data collection tool helped the respondents to respond more easily, accumulate and summarize responses more efficiently. The Likert scale communicates interval properties to respondents, and therefore produces data that can be related to an interval scale. Respondents were required to indicate a degree of agreement or disagreement within a series of statements about the stimulus objects. With a Likert scale generally the level of agreement or disagreement is measured. It is considered symmetric or "balanced" because there are equal numbers of positive and negative positions.

3.4 Data Analysis

The study primarily used quantitative data analysis since the main instrument of the study generated quantitative data. This yielded descriptive statistics, which was in form of frequencies and percentages of the responses for Likert scale questions. Data

collected was coded and analyzed using Statistical Package for Social Sciences (SPSS) version 18 and Microsoft excel.

The study used Multiple Linear Regression model to test the relationship between dependent and independent variables of the study. According to Leedy and Ormrod (2005), Multiple Regression Analysis is a descriptive statistical tool used in three situations, namely: to predict values for a criterion variable from the values of several predictor variables; in order to control variables to evaluate the contribution of other variables better, and to test and explain causal relationships.

Multiple linear regression analysis was suited to this study because it assesses the magnitude of each independent variable on the dependent variable. The ANOVA test was also used to test the significance of the overall model at 95% level of significance. Simultaneous estimation method was applied. According to Hair *et al.* (2010) simultaneous regression estimation technique involves entering all the independent variables concurrently. This technique was chosen because one is able to include all the independent variables in the analysis.

The research model was derived from the theoretical model of knowledge transfer framework (Nonaka, 2014; Nonaka and Toyama, 2003; Nonaka and Takeuchi, 1995) this hypothesizes that there is a direct positive association between strategic thinking competence and knowledge transfer. The following were the hypotheses that the regression model sought to test.

- H1 Individual managers' access to knowledge resources plays an enabling role in building strategic thinking competence in county managers of education.

H2 Knowledge transfer structures contribute to strategic thinking competence of the managers.

H3 Organisational culture enables strategic thinking competence of managers.

H4 Knowledge transferred via the implementation of ISO 9001-2008 standards in facilitates strategic thinking competence of the managers.

The overall model for strategic thinking competence was expressed in the following equation:

Equation 3.1: A Multiple Linear Regression Model

The multiple linear regression model for the study was as follows;

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y = Strategic Thinking Competence (STC) of the county level managers

α_0 = Y- intercept for Knowledge Transfer variables: This refers to the value of the knowledge transfer variables when the value of the strategic thinking competence is at zero.

X_1 = Managers access to the organisation knowledge resources (OKR)

X_2 = The organisations knowledge transfer structures (KTS)

X_3 = The organisations knowledge transfer culture (KTC)

X_4 = ISO 9001-2008 implementation (ISO)

β_1 = Regression coefficient of managers access to organisation knowledge resources

β_2 = Regression coefficient of knowledge transfer structures

β_3 = regression coefficient of knowledge transfer culture

β_4 = Regression coefficient of the ISO 9001-2008 implementation

For β_1 ... to... β_4 , the regression coefficients represents the amount of change in the dependent variable for a one-unit change in these independent variables.

ε = Error term: The error term in the models refers to the extent to which the independent variables (managers access to the knowledge resources, organisation knowledge transfer culture, organisation knowledge transfer structures and knowledge transferred via implementation of ISO9001-2008) does not explain the variation in the strategic thinking competence (dependent variable).

3.5 Validity and Reliability of the Data Collection Instruments

Reliability is the consistency of a set of measurement items while validity indicates that the instrument is testing what it should (Hair *et al.*, 2010; Kombo, 2004) A measure is considered reliable if a person's score on the same test given twice is similar.

Reliability is not measured, it is estimated. Reliability does not, however, imply validity because while a scale may be measuring something consistently, it may not necessarily be what it is supposed to be measuring. The researcher used the most common internal consistency measure known as Cronbach's alpha (α). It indicates the extent to which a set of test items can be treated as measuring a single latent variable (Hair *et al.*, 2010). The recommended value of 0.7 will be used as a cut-off of reliabilities.

Cronbach's alpha is a general form of the Kuder-Richardson (K-R) 20 formulas used to access internal consistency of an instrument based on split-half reliabilities of data from all possible halves of the instrument. It reduces time required to compute a reliability coefficient in other methods (Mugenda & Mugenda, 2003).

The Kuder-Richardson (K-R) 20 is based on the following formula:

$$KR20 = \frac{K(S^2 - \sum s^2)}{(S^2)(K-1)}$$

$$(S^2)(K-1)$$

KR20 = Reliability coefficient of internal consistency

K = Number of item used to measure the concept

S² = Variance of all score

s² = Variance of individual items

3.6 Ethical Issues

The research addressed the ethical issues through seeking for authorisations and permits from the relevant authorities before conducting the actual field research. The research also sought to uphold high degree of ethical and moral conduct while in the field. These included ethical communicating clearly the aim and purpose of the investigation to the respondents, being honest and establishing a rapport with them. The researcher did not influence the respondents or compel them to participate in the research. The data collected was treated confidentially and used for the purpose intended.

CHAPTER FOUR

DATA PRESENTATION AND INTERPRETATION

4.1 Introduction

In this chapter the researcher analyses the data that was collected using the research instruments in chapter three. The data collected was mostly quantitative in nature. The study treated the consolidation of responses 1 and 2 on the Likert scale as affirmative response supporting the argument. The consolidation of the responses 3, 4 and 5 on the Likert scale were deemed to be weak and therefore not supporting the proposed line of argument.

The study sought to answer the following research questions:

- (i) Does the individual managers' access to knowledge resources play an enabling role in building strategic thinking competence in county managers of education?
- (ii) What is the contribution of knowledge transfer structures on the strategic thinking competence of the managers?
- (iii) What is the role of organisational culture on the strategic thinking competence skills of managers?
- (iv) What is the role of knowledge transferred via the implementation of ISO 9001-2008 standards in facilitating the strategic thinking competence of the managers?

4.2 Response Rate

Out of the 104 questionnaires administered, 100 were filled and returned, which represents 96.15% response rate. This response rate was considered very good to make conclusions for the study. Mugenda and Mugenda (2003) observe that a 50% response rate is adequate, 60% good and above, while 70% rated, very good.

This collaborates with Bailey (2000) assertion that a response rate of 50% is adequate, while a response rate greater than 70% is very good. The recorded high response rate can be attributed to the data collection procedures, where the researcher pre-notified the potential participants of the intended survey, utilized a self administered questionnaire where the respondents completed and these were picked shortly after and made follow up calls to clarify queries as well as prompt the respondents to fill the questionnaires.

4.3 Reliability Analysis

The reliability of an instrument refers to its ability to produce consistent and stable measurements. Hair *et al.* (2010) explain that reliability can be seen from two sides: reliability (the extent of accuracy) and unreliability (the extent of inaccuracy). The most common reliability coefficient is the Cronbach's alpha, which estimates internal consistency by determining how all items on a test relate to all other items and to the total test - internal coherence of data.

The reliability is expressed as a coefficient between 0 and 1.00. The higher the coefficient, the more reliable is the test. In this study to ensure the reliability of the instrument Cronbach's Alpha was used. Cronbach Alpha value is widely used to verify the reliability of the construct. Therefore, Cronbach Alpha was used to test the reliability of the proposed constructs (Table 4.1).

The reliability tests findings indicated that access to the knowledge resources had a coefficient of 0.904; knowledge transfer structures had a coefficient of 0.903,

knowledge transfer culture at 0.898 and knowledge transferred via the implementation of ISO 9001 -2008 at 0.869. All constructs depicted that the value of Cronbach's Alpha are above the suggested value of 0.7 thus the study was reliable (Hair *et al.*, 2010).

Table 4.1: Reliability Test of Constructs

Knowledge transfer components	Reliability Cronbach's Alpha	Comments
Access to knowledge resources	0.904	Accepted
Knowledge transfer culture	0.903	Accepted
Knowledge transfer structures	0.898	Accepted
Knowledge contributed via ISO 9001-2008 standards implementation	0.869	Accepted

4.4 Respondents Profile

The first section of each questionnaire was the biographical information of the respondent. This section was important to establish the competency of the respondent in providing information that would be valid for this study. This information was useful for the purposes of follow-ups with managers to clarify certain issues.

4.4.1 Education/Training Levels of the Respondents

Level of education and work experience in each organisation was also investigated since the researcher has reported them to be related to organisational knowledge acquisition and retention. Respondents with higher levels of educational qualifications are presumed to be competent and appreciative of studies that are undertaken in their organisation. They are aware of the benefits which may accrue if they participate diligently in such studies. Against this backdrop the present researcher wanted to

ascertain the highest level of education attained by each respondent. The results of this finding are shown in Table 4.2.

The frequency distribution of respondents (Table 4.2) revealed that 45 (44.6%) have Bachelor's degree, 31 (30.7%) are Masters Degree holders, 19 (18.8 %) have diploma. Certificate holders accounted for 6 (5.9 %). Professionals responding to a questionnaire have true information in spite of their roles in the organisation. The study observed that there were 18.8 % of the managers who held diploma and 5.9% who held certificate qualifications did not hold key positions of management, for instance the county directors of education or quality assurance and standards officers. These lower qualifications were occupied by a few members of county education board in a few areas. Majority of the respondents had masters and bachelors degree.

Table 4.2: Qualifications of the Respondents

S/No	Qualification	Frequency	Percent
1	Masters	31	30.7
2	Basic Degree	45	44.6
3	Diploma	19	18.8
4	Certificate	6	5.9
	Total	101	100.0

4.4.2 Work Experience in the Organisation

The level of education coupled with the experience attained by individuals made the respondents assume the role of key informants providing aggregate information or organisational properties rather than personal attitudes and behaviour. This would help in determining the knowledge accumulated about the organisation and its culture. The

longevity of service of the participant managers is represented as follows: No respondent had worked for less than 5 years, 3 (3.0%) had worked for between 5-10 years, 11 (27.7%) for 11-15 years, and 70 (69.3%) of the respondents had worked for above 15 years.

Table 4.3: Work Experience

S/NO	Ages	Frequency	Percent
1	5-10 Years	3	3.0
2	11-15 Years	28	27.7
3	Above 15 Years	70	69.3
	Total	101	100.0

4.5 Access to Organisation Knowledge Resources

The researcher sought to find out the level of access to the various knowledge resources in MOE, and the extent to which access to these knowledge resources facilitated the development of the strategic thinking competence in the managers. According to Uriarte (2008) Argote and Ingram (2000) knowledge resources exists in form of documents held by the organisations, the know how in the people's heads, the websites of the organisations, the databases among other resources.

Table 4.4: Contribution of the Knowledge Resources in the Organisation

Knowledge resource dimensions	5	4	3	2	1	Key
Manuals, guidelines and other documents issued by the ministry and kept by the office	0	3.0	29.7	57.4	9.9	1- never 2- rarely 3- occasionally 4- frequently 5- very frequently
Consultations with other knowledgeable officers with a wide knowledge	22.8	61.4	8.8	3.0	4.0	
Individual officers computers	19.8	59.4	11.9	.0	8.9	
MOE website, databases and other electronic resources	3.0	22.8	27.7	43.5	3.0	

The study consequently sought to find out the contribution of access to the various knowledge resources on the strategic thinking competence of the managers at the county level of education management (Table 4.4).

Consultations with other colleagues who were knowledgeable was found to contribute significantly to the individual managers strategic thinking competence i.e. 84.2% of the respondents affirmed that the consultations with others as very frequently (5) and frequently (4) contributing to their strategic thinking competence. This is in line with Uriarte (2008) contention that most of the knowledge resources is in the minds of the individuals and can be tapped for use by others. But the main question that remains is to whether the knowledge from the minds of the knowledgeable individuals can be relied upon as accurate and dependable.

The MOE databases and electronic resources were also found to have a minimal contribution on their strategic thinking competence; with only 25.6% of the respondents affirming that they had very frequently (5) and frequently (4) access to the electronic resources having an influence on their strategic thinking competence (Table 4.4).

Access to the manuals and other physical documents issued by MOE was found to have little contribution on the strategic thinking competence of the managers. Only 3% of the respondents reported that the manuals and documents issued very frequently (5) and frequently (4) had effect on their strategic thinking competence. This finding meant that the majority of the managers did not heavily rely on the physical documents

and manuals since most of these documents were deemed obsolete and not updated on the current issues and advances in the education sector.

The majority of the respondents 79.2% however reported that they very frequently (5) and frequently (4) accessed most of their knowledge on their personal computers. The individuals' computers served as treasure troves in which they stored documents they made in the past and other electronic correspondence and downloads. The challenge with this form of knowledge resources in the personal computers was that it was not linked with others in the same organisation for sharing and transfer purposes and being able to be verified and authenticated.

The study also sought to establish the contribution of access to the various knowledge resources on the strategic thinking competence. The majority of the respondents (97.1%) felt that access to knowledge did not help very frequently (5) and frequently (4) to update the managers on the current trends in and outside the organisation (Table 4.5), however majority of the respondents (94.1%) felt that access to the knowledge helped them very frequently (5) and frequently (4) to remain focused on achievement of the objectives of the organisation, most of the respondents (94.1%) also felt that access to the organisation knowledge enabled them to have a clear understanding of all the components of the organisation (Table 4.5). This is consistent with the elements of the strategic thinking of systems thinking (Liedtka, 1998). Only 43.5% of the respondents felt that access to knowledge resources helped them to predict the likely scenarios in the formulation and implementation of strategies in the organisations (Table 4.5).

Table 4.5: Effects of Access to Knowledge Resources in MOE

Knowledge resources dimension	5	4	3	2	1	Key
It helps me to come up to be updated on the current trends in and outside the organisation.	1	2	14.9	27.6	54.5	1- never 2- rarely
It helps me to remain focused on the achievements of the vision	62.3	31.7	3	2	1	3- occasionally 4- frequently
It helps to get understanding of the whole organisation	73.3	20.7	1	3	2	5- very frequently
It helps me to make possible predictions of the likely scenarios in the implementation of strategies	12.9	30.7	31.7	14.8	9.9	

Table 4. 6: Impediments to Access to the Knowledge Resources in the MOE

Impediments to knowledge resources	5	4	3	2	1	Key
Lack of access to the information in the data bases	1.0	25.8	51.5	15.8	5.9	1- never 2- rarely
Some seniors withhold some information that is critical to my operations	2.0	1.0	8.9	21.8	66.3	3- occasionally 4- frequently
Knowledge resources are too scattered to make any meaningful contribution	45.5	38.6	12.9	3.0	0	5- very frequently
There are technological challenges in accessing the knowledge	49.5	34.5	11.0	5.0	1.0	

Among the major factors that were said to impede access to the knowledge resources in MOE (Table 4.6) was the fact that 84.1% of the respondents very frequently (5) and frequently (4), felt that the knowledge sources were too scattered. About 84% of the managers reported that they very frequently (5) and frequently (4) had technological challenges in accessing the knowledge, since most of the knowledge resources in the organisation were of digital nature. This was because some of the managers were not proficient in use of ICT resources. This was coupled with limited or lack of access to important information resources in MOE databases (73.2%).

The withholding of critical information by the senior managers was not a major impediment very frequently (5) and frequently (4); with only 3% of the respondents reported they had challenges to access to knowledge resources.

4.6 Knowledge Transfer Structures to Strategic Thinking Competence

The study sought to find out the structures that the organisation had that could ensure successful knowledge transfer. Some are default structures while others were a deliberate organisation effort to structure knowledge transfer.

Table 4.7 shows the structures that had been put in place to manage knowledge transfer. On the usage of the identified knowledge transfer structures in the organisation, majority of the respondents (87.1%) reported very frequent (5) and frequent (4) use of the website and various web based tools. This was particularly explained by the decision for MOE to conduct most of their internal correspondence online and via electronic mail and post critical information in its website (Table 4.7).

The use of internal databases, data management and retrieval systems was noted to be low with 31.7% of the respondents reported that they very frequently and frequently had regular access to knowledge databases of MOE (Table 4.7).

In a number of cases the respondents reported the existence of Education Management Information System (EMIS); a database software that was to facilitate collection of education data, analysis and generation of reports which would provide valuable data and information to managers. The system was to be hosted by the head offices of MOE with the devolved levels and with a synch capability to provide real time access to

data; however the researcher found out the efficacy of those claims could not be verified since on seeking access to data, only obsolete unsupported data could be accessed.

Social media formed another structure that though informal and was there by default rather than design was highly utilised for knowledge transfer with 83.2% of the respondents very frequently (5) and frequently (4) reporting its use (Table 4.7). The common social media used were the instant messaging platform commonly referred to as 'Whatsapp', with some of the managers forming 'Whatsapp' groups to share documents, information and opinions rapidly. The other social media used were the Facebook and the Twitter.

The study also investigated the use of formal structures of knowledge transfer; formal training sessions, seminars and workshops and seminars, were reported to have low usage, with only 8.9% of the respondents reported that they very frequently (5) and frequently (4) had trainings and workshops which would facilitate knowledge transfer (Table 4.7).

The communities of peers/ communities of practice were also reported to have a low usage; only 8.9% of the respondents very frequently (5) and frequently (4) reported that they belonged to any community of practice (Table 4.7). This finding was not surprising since the bulk of the managers of the education sector did not have any formal and informal avenues where they could exchange their views about their work.

Table 4.7: Structural Elements of Knowledge Transfer

Knowledge transfer structures in use	5	4	3	2	1	Key
websites and web-based tools including blogs	40.6	46.5	6.9	1.0	5.0	1- never 2- rarely
databases and data management and retrieval systems	12.9	18.8	15.8	31.7	20.8	3- occasionally 4- frequently
social media	37.7	45.5	7.9	2.0	6.9	5- very frequently
training sessions ,seminars and workshops	2.0	6.9	8.9	40.6	41.6	
communities of peers /communities of practice	3.0	5.9	28.7	39.6	22.8	

The research sought to find out the contribution of the knowledge transfer structures in MOE in facilitating strategic thinking competence. The database and data management and retrieval systems, websites and web-based tools including blogs and social media were found to be ineffective structures in the knowledge transfer: for database and data management tools only 10% very frequently (5) and frequently (4) reported high rate of contribution to strategic thinking competence.

On social media as structures for knowledge transfer, it was found to have a low rate of contribution; only 4.4% had reported very frequently (5) and frequently (4) reported a high rate of contribution (Table 4.8). This is seen from the point that though social media forms a wonderful platform for transfer of mainly tacit knowledge between the various managers, it does not in itself facilitate transfer of tacit knowledge that is a prerequisite to strategic thinking competence.

The social media is however viewed as complementary tool to assist in the knowledge transfer process by providing a platform for socialisation in the SECI process (Nonaka,

2014), it also provides the facilitating context ‘Ba’ and the ‘Phronesis’ within which the knowledge is transformed and transferred (Nonaka, 2014). Websites and web based tools also were reported to have a low rate of contribution with only 12.9% of the respondents in agreement that contribution the websites and web tools very frequently (5) and frequently (4) contributed to the strategic thinking competence (Table 4.8).

Use of communities of practice was noted to be a structure with the highest contribution to strategic thinking competence 63.01% of the respondents reported very frequently (5) and frequently (4) reporting that communities of practice had a contribution to their strategic thinking competence (Table 4.8). This is despite the fact that communities of practice were not widely applied as a structure of knowledge transfer (Table 4.7).

Table 4.8: Contribution of Knowledge Transfer Structures

Knowledge Transfer Structures	5	4	3	2	1	Key
Communities of peers/ communities of practice	9.6	53.5	4.0	31.0	2	1- never 2- rarely 3- occasionally 4- frequently 5- very frequently
Databases and data management and retrieval systems	1.0	9.9	4.0	36.6	48.5	
Social media	1.0	3.4	43.6	38.7	13.3	
Training sessions, seminars and workshops	10.9	49.7	29.5	6.6	3.3	
Websites and web-based tools including blogs	1.0	12.9	47.5	30.6	8.0	

About 60.6% of the respondents very frequently (5) and frequently (4) confirmed that training sessions and seminars as a knowledge transfer structure contributed to their

strategic thinking competence (Table 4.8). This is despite the findings that training sessions and seminars as a knowledge transfer structure was low in usage (Table 4.7). These findings are consistent with Peterson (2012), that workshops and training formed an important tool for dissemination of knowledge within public sector organisations.

4.7 Contribution of the Knowledge Transfer Culture on Strategic Thinking Competence

The study sought to identify the organisation knowledge transfer culture dimensions prevailing in the organisation. The organisation had a weak level of trust culture with only 17.7% of the respondents very frequently and frequently felt that MOE had a culture of trust among the employees to be able to support knowledge transfer needed for strategic thinking competence. They believed that the current environment in the organisation did not foster an enabling culture that allowed the individuals to share what they know with others.

The study however found that the majority of the employees valued knowledge and went out to seek it. About 80.2% of the respondents very frequently (5) and frequently (4) agreed that they valued knowledge and had in the past actively sought to find it, this was in line with the assertion that knowledge was the most important resource that the managers needed in their work (Table 4.9).

The study further found that the level of the senior management support for their juniors to transfer knowledge by providing incentives was low only 27.7% of the respondents very frequently (5) and frequently (4) felt that their senior managers

provided incentives that would ensure that knowledge transfer from one individual to another and the organisation took place (Table 4.9).

Majority of the employees felt that the senior management did not very frequently (5) and frequently (4) value the input of the lower levels in decision making only 16.8% of the respondents agreed that their input was valued and their input taken in higher level decisions (Table 4.9).

The respondents felt that the organisation did not attach a lot of value to knowledge creation and dissemination. This is line with Nonaka and Toyama (2003) assertion that knowledge is created in the minds of the people and these skilled and knowledgeable people are the key agents of knowledge organisation far above the digital repositories and the technology for handling knowledge.

Table 4.9: Knowledge Transfer Culture Dimensions in MOE

Knowledge transfer structure dimensions	5	4	3	2	1	Key
Employees expertise , efforts and contributions to create and disseminate knowledge are appreciated by the organisation	7.9	19.8	10.9	39.6	21.8	1- never 2- rarely 3- occasionally 4- frequently
The senior management supports the lower levels when suggesting the alternative perspectives to include in the management processes	2.0	14.8	34.7	31.7	16.8	5- very frequently
The senior management provides incentives/ motivation to the employees to transfer knowledge	2.0	6.9	15.9	36.6	38.6	
The employees value knowledge and actively seek to find and disseminate it	29.7	50.5	12.9	4.0	3.0	

There is environment of trust in MOE for employees to freely share out what they know in order to make better strategic decisions	1.0	17.7	14.9	51.5	14.9	
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The research sought to find out the effect of the knowledge transfer culture on the managers strategic thinking capabilities. The majority of the respondents (49.5%) very frequently (5) and frequently (4) associated the knowledge transfer as facilitating agent to build the learning culture that involves the individuals making improvements on whatever processes they undertook; they felt that found it to have an effect on the strategic thinking competence capability of the managers (Table 4.10).

The level of trust among the employees also had a major effect on the strategic thinking competence; 49.6% of the respondents very frequently (5) and frequently (4) reported that the trust culture contribution on strategic thinking competence (Table 4.10).

Table 4.10: Effect of Knowledge Transfer Culture on Strategic Thinking Competence

Knowledge transfer culture dimensions	1	2	3	4	5	Key 1- never 2- rarely 3- occasionally 4- frequently 5- very frequently
Learning from doing and what others know enables me to think strategically	10.9	38.6	37.7	8.9	3.9	
The level of trust culture among the employees	9.9	39.7	36.6	10.9	2.9	
Training induction and personal development programs enable me to acquire at the culture of transferring knowledge within the organisation	3.0	31.7	50.5	14.9	0.0	
Management motivation /rewards to encourages knowledge transfer among the	39.7	42.5	15.8	1.0	1.0	

employees enabling me to think strategically						
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The study found that only 33.7% of the respondents responded that the training and management programs that the organisation had put in place to facilitate knowledge transfer very frequently (5) and frequently (4) enabled the employees to acquire the strategic thinking competence (Table 4.10). 82.2% of the respondents very frequently and frequently felt that the management motivation and rewards contributed to the strategic thinking competence in the managers (Table 4.10).

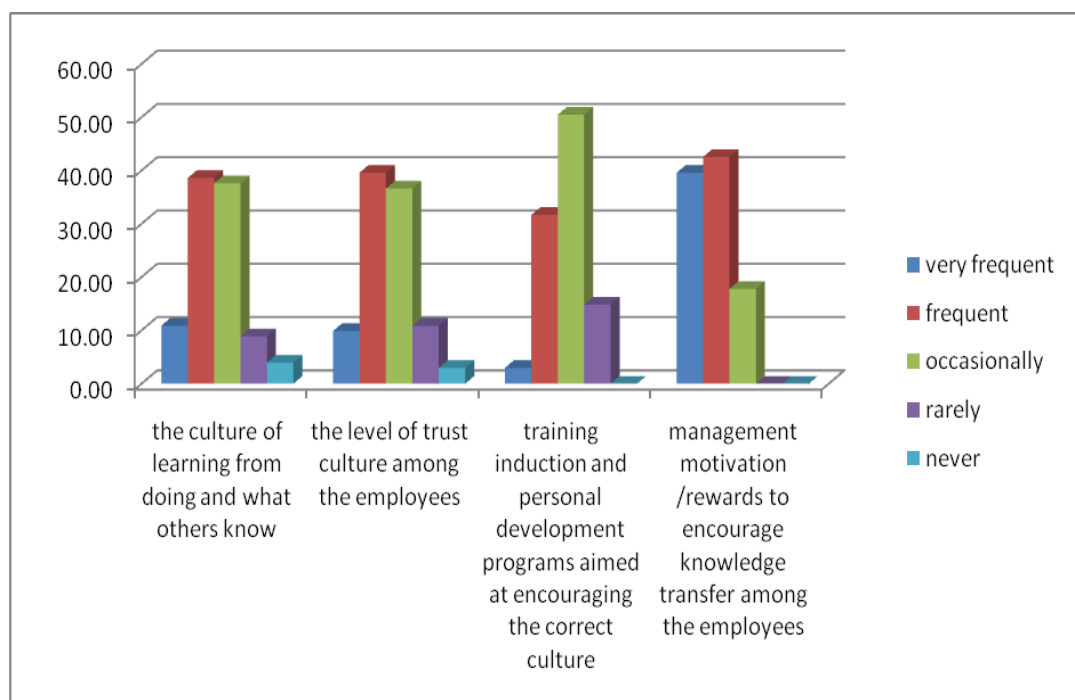


Figure 4.1: Contribution of Knowledge Transfer Culture on Strategic Thinking Competence

The study found that, the hoarding of knowledge was noted to be a common place practice with 60% of the respondents claiming the respondents conceding that hoarding of knowledge was to a significant extent rampant (Figure 4.2). Among the

reasons advanced to justify the hoarding was perception that having knowledge that others did not have gave them the edge, credibility and authority over others.

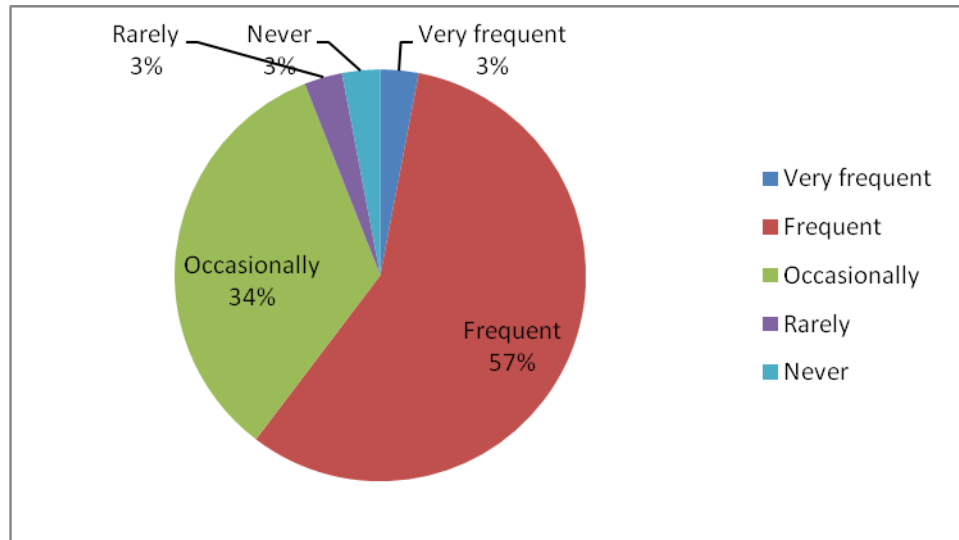


Figure 4.2: Extent of the Knowledge Hoarding Culture in the MOE

4.8 Effect of ISO 9001-2008 Systems on Knowledge Transfer

The Ministry of Education was ISO 9001- 2008 certified. The research sought to find out the facilitating role played by the implementation of ISO 9001 – 2008 procedures on knowledge transfer in the county level of government.

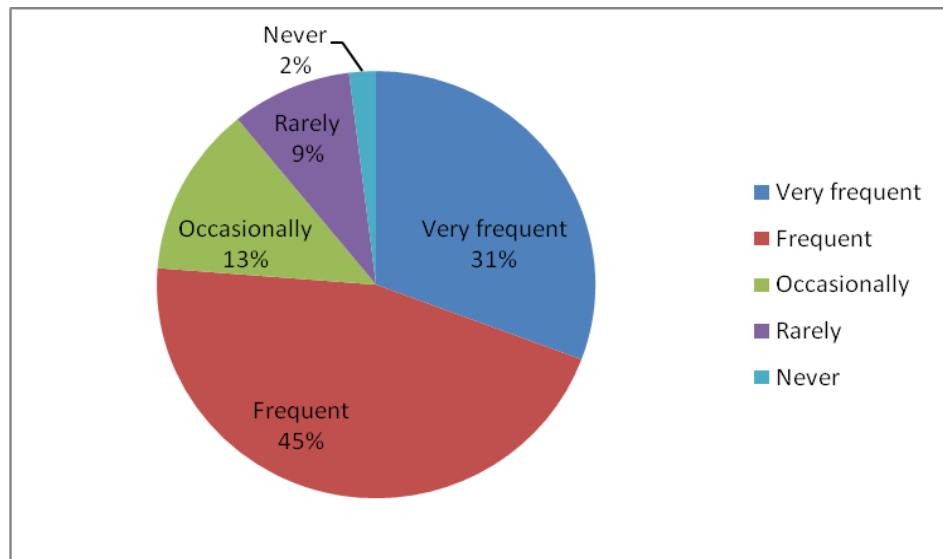


Figure 4.3: Extent to which the Respondents follow ISO 9001-2008 Procedures in MOE

The majority of the respondents (76%) (Figure 4.3) were conversant with ISO 9001-2008 in the Ministry of Education (Figure 4.3); they were aware though in varying degrees the contents and the documentation of ISO 9001-2008 certification standards. According to Lee and Yu (2011), ISO guidelines and procedures form a very important basis for knowledge crystallisation in an organisation. An organisation that successfully implements ISO 9001-2008 is able to create a system for managing the knowledge flows within the organisation.

The relatively high rate of conversance with ISO 9001-2008 documentation could be explained that the most of the employees in the sample were senior officials who had a long experience in MOE, however surprisingly 11% still did not have a good understanding of ISO 9001-2000 documentation. To the researcher's opinion this was above the acceptable levels.

The study further sought to link ISO 9001-2008 implementation to the strategic thinking competence of the managers. Only 26.6% of the respondents contended that ISO 9001-2008 implementation was very frequently and frequently effective in the consolidation of the important knowledge resources needed by the managers in an organisation (Table 4.11). Many of the respondents felt that due to the rapid nature of the changes in MOE, the quality manuals issued never changed in tandem with the changes in the organisation environment and therefore were in most cases not trusted to be relied on.

The majority of the respondents (65.3%) felt that ISO 9001-2008 implementation transferred to them knowledge that helped them very frequently and frequently to be focused on the elements of the organisation that were important for its success this is line with the elements of strategic thinking competence component of strategic intent focus (Liedtka, 1998).

Only 20.8% of the respondents very frequently (5) and frequently (4) felt that ISO 9001-2008 implementation enabled their creativity and innovation (Table 4.11); this implied that the knowledge transferred via the implementation of ISO 9001-2008 standards did not significantly contribute to their strategic thinking competence. The majority of the managers (82.2%) of the respondents very frequently and frequently felt that implementation of ISO 9001-2008 enabled them to thoroughly understand the components of the organisation. (Table 4.11); this is in line with the strategic thinking competence element of systems approach (Liedtka 1998).

Table 4.11: Contribution of Implementation of ISO 9001-2008 Standards on Strategic Thinking Competence of the Managers

Contribution of ISO 9001-2008	5	4	3	2	1	Key
ISO 9001-2008 enables the organisation to consolidate all the important knowledge resources for better strategic decisions	6.9	19.7	5.0	46.5	21.8	1- never 2- rarely
ISO 9001 -2008 implementation provides knowledge that helps me to remain focused on what aspects of the organisation are important	33.7	31.6	7.0	17.8	9.9	3- occasionally 4- frequently 5- very frequently
ISO 9001-2008 implementation enables me get knowledge to create strategies that are innovative in solving organisations problems	6.9	13.9	5.0	52.4	21.8	
ISO 9001-2008 helps me to thoroughly understand the components of the entire organisation better	38.6	43.6	4.0	12.8	5.0	
ISO 9001-2008 standards implementation assists me to formulate more focused strategies to deal with future	35.6	40.6	3.0	8.9	11.9	

The majority of the respondents (76.4%) concurred that implementation of ISO 9001-2008 standards implementation very frequently and frequently enabled them to be able to better deal with the future, being able to decide the possible scenarios in the implementation of the strategy (Table 4.11), this resonates well with hypothesis driven thinking element of strategic thinking competence (Liedtka 1998).

4.9 Strategic Thinking Competence and Testing of Significant Relationships

The dependent variable for this study was the Strategic Thinking Competence and therefore this study sought to test the influence of the various identified independent

variable of this dependent variable. However, the study sought to assess if Multi-collinearity existed between either of the dependent variables.

4.9.1 Multi-Collinearity Diagnostics Testing

Multi-collinearity exists when two or more variables are highly correlated with each other (Trochim, 2006). Roux (2006) believes that proper multi-collinearity diagnostics are necessary since highly correlated variables designed to test different concepts usually measure the same theoretical concepts. Multi-collinearity diagnostics analysis facilitates the identification of measuring items or variables that have a high correlation among themselves. When multi-collinearity exists within the data set, it can negatively affect the parameters of measurement, especially in a multiple regression model, and hence produce a misleading result (Campbell and Fiske, 2009). During multi-collinearity diagnostics analysis, a tolerance value of less than 0.1 indicates a serious collinearity problem. In addition, when the Variance Inflated Factor (VIF) values are greater than 10, then there is cause for concern (Field, 2009). Table 4.12 indicates the results of the multi-collinearity diagnostics analysis test performed for the study variables.

Table 4.12: Results of the Multi-Collinearity Diagnostics

Dependent variable: Strategic thinking competence (STC) Independent variables		
	Tolerance values	VIF
Organisation Knowledge Resources	0.736	1.359
Knowledge Transfer Structures	0.406	2.463

Knowledge Transfer Culture	0.490	2.042
ISO 9001-2008 Implementation	0.630	1.587

The findings in Table 4.12 show tolerance values varying from 0.406 to 0.736 for all the independent variables, which are all higher than the acceptable limit of 0.1. In addition, VIF values for all the variables were less than 10. This means that the variables are not highly correlated among themselves; hence the data set is free from multi-collinearity problems.

4.9.2 Preliminary Tests for Regression Model

The regression model suggests that strategic thinking competence of the managers (dependent variable) is influenced by the knowledge transfer components: individual managers' access to knowledge resources, knowledge transfer culture, knowledge transfer structures and knowledge transferred via the implementation of ISO 9001-2008 process. The overall model for the study was expressed in the following equation:

4.9.2.1 Regression Model Summary

Table 4.13 depicts the Multiple Regression model summary showing the R^2 , Adjusted R^2 and Standard Error of Estimate. The Coefficient of Determination (R^2) and Correlation Coefficient (R) show the degree of association between independent variable components and Strategic Thinking Competencies of the managers (dependent variable).

Table 4.13: Regression Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of estimate
Dependent variable: Strategic Thinking Competence (STC)	0.804(a)	0.646	0.643	0.52187

(a) Predictors (Constant):

Independent variables: Organisation knowledge resources (OKR), knowledge transfer culture (KTC), knowledge transfer structures (KTS), ISO 9001-2008 implementation (ISO)

As can be seen in Table 4.13, about 64.6% of variance (R^2) in Strategic Thinking Competence can be explained by the four main independent variables, which significantly predicted the dependent variable; Strategic Thinking Competence. The resultant output had an adjusted R^2 of 0.643 ($p < 0.05$) and yielded four critical variables contributing significantly to explaining the variance in overall Strategic Thinking Competence of the county level managers.

4.9.2.2 Testing of the Significance of the Model

The ANOVA test shown in Table 4.14 was used to test the significance of the model and to test the existence of variable variations within the model.

Table 4.14: ANOVA Test

Model		Sum of Squares	df	F	Sig.
1	Regression	5771.900	6	2.552	.039

	Residual	1206.000	32		
	Total	6977.900	38		

(a) Predictors: Organisation knowledge resources (OKR), knowledge transfer culture (KTC), knowledge transfer structures (KTS), ISO 9001-2008 implementation (ISO)

The results of the ANOVA test show a F-statistic of 2.552 which was significant at 0.05 ($p < 0.05$). This implied that the predictors which were the independent variables had a significant effect on the strategic thinking competence of the managers. This further means that the model adopted in the study was significant and the variables tested fitted well in the model.

4.9.2.3 Multiple Linear Regression Analysis and Significant Relationships

The study sought to assess the effect of the various independent variables on the dependent variable. To achieve this, a multiple linear regression analysis was performed to test and explain the casual relationships between variables. The multiple linear regression model was composed of both the dependent and independent variables. The dependent variable of the study was Strategic Thinking Competence while the independent variables were; Organisation knowledge resources (OKR), knowledge transfer culture (KTC), knowledge transfer structures (KTS) and ISO 9001-2008 implementation (ISO). The relationship of these variables is depicted in Equation 4.1.

Equation 4.1: A Multiple Linear Regression Model

The multiple linear regression model for the study was as follows;

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y = Strategic Thinking Competence (STC) of the county level managers

α_0 = Y- intercept for Knowledge Transfer variables: This refers to the value of the knowledge transfer variables when the value of the strategic thinking competence is at zero.

X_1 = Managers access to the organisation knowledge resources (OKR)

X_2 = The organisations knowledge transfer structures (KTS)

X_3 = The organisations knowledge transfer culture (KTC)

X_4 = ISO 9001-2008 implementation (ISO)

β_1 ... to... β_4 are regression coefficients, which represents the amount of change in the dependent variable for a one-unit change in these independent variables.

ε = Error term.

The significant variables were therefore extracted by applying the T-test to the independent variables at 0.05 (5%) level of significance.

Table 4.15: Results of the Multiple Linear Regression Analysis

Dependent variable: Strategic Thinking Competence ($R^2 = 0.646$)				Deductions
Independent variables	Beta	T-values	Sig. (p)	
Organisation knowledge resources (OKR)	0.212	6.136	0.006*	Supported
Knowledge Transfer Structures (KTS)	0.125	2.925	0.014*	Supported
Knowledge Transfer Culture (KTC)	0.221	4.711	0.044**	Supported

ISO 9001-2008 Implementation (ISO)	0.269	6.474	0.002*	Supported
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* $p < 0.001$ ** $p < 0.05$

As can be seen in Table 4.15, about 64.6 per cent of the variance (R^2) in Strategic Thinking Competence can be explained by the variances in the independent variables. Evidence was found of statistically significant relationships ($p < 0.001$ and $p < 0.05$) between the all the independent variables. In addition, there is evidence that the T-values exceed critical value, that is, $T \geq 1.96$ at $p < 0.05$ significance level for; Organisation knowledge resources (OKR), knowledge transfer culture (KTC), knowledge transfer structures (KTS), ISO 9001-2008 implementation (ISO) (independent variables).

This means that all the interacting factors in the regression model Equation 4.1 above apply and directly influence the Strategic Thinking Competence of the managers. Therefore, in order to enhance and boast Strategic Thinking Competence of the managers, there is needs to put more emphasis in addressing issues related to the four factors namely; Organisation knowledge resources, knowledge transfer culture, knowledge transfer structures and ISO 9001-2008 implementation since they were found to have a great influence on Strategic Thinking Competence of the managers.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

This chapter gives a summary of all the findings done with the objectives of the study and the research questions as the units of the analysis. The data analysed was

correlated to both the theoretical and the empirical literature that the study was anchored to. The summary of the findings was used to make conclusions on each of the research questions.

5.2 Answers to Research Questions

5.2.1 What is the Contribution of Access to Knowledge Resources to the Strategic Thinking Competence?

This sought to find out how access to knowledge resources in the organisation contributed to their strategic thinking competence. The research found out that there was a significant relationship between accesses to the knowledge resources in the organisation on the strategic thinking competence of the managers (sect. 4.5).

This is in line with Syed-Ikhsan and Rowland's (2004) argument that availability of the rich knowledge assets in an organisation was a strong determinant in the strategic thinking competence in the organisations. Further it was also consistent with Kaulkarni and Freeze (2006) argument that the knowledge awareness and the constant reference to the knowledge resources increased the employees' strategic thinking competence and the skill in the areas, which they operate in. Most of MOE knowledge resources were in electronic format. This is consistent with arguments of Storga *et al.* (2013) that in many organisations knowledge transfer among the members is predominantly through use of communication technologies such as email lists, news/web portals, and organisation electronic based discussions.

The study also found that knowledge from consultations with other individuals was the most accessible knowledge resources in the organisation. Most of the managers

relied heavily on the knowledge in others through consultations. This was not sustainable since that knowledge could not be assured to be regular and that knowledge could not be interrogated to ascertain its accuracy. This tacit knowledge could be of much use if there was a system for documentation and sharing the members' know-how and to ensure that such knowledge could be harnessed and exploited.

The Ministry of Education websites, which was the most, used to access the electronic resources faced challenges. This is because of lack of access to it by most of the managers due to lack of supporting ICT infrastructure. The websites and portals were inadequate to meet the knowledge needs of the managers. Furthermore most of the managers did not have access to the databases and portals that would contain critical resources necessary for development of their strategic thinking competence. This corresponds with Cheruiyot *et al.* (2012) findings who concluded that the knowledge infrastructure was important in the manufacturing firms in Kenya since it enabled knowledge access and transfer; facilitating the ease of knowledge use and reuse in the organisations.

Access to the physical documents was limited, the important documents like policy statements, annual reports, were not readily available. Updating both the physical documents and electronic documents in tandem with the changes that occurred in MOE was a major factor in enhancing the strategic thinking competence of the managers. Fragmentation of the knowledge resources as one of the major impediments to access to the knowledge resources; this created knowledge silos, which were a major bottleneck in knowledge transfer.

5.2.2 What is the Contribution of Knowledge Transfer Structures to the Strategic Thinking Competence of the Managers?

The study found that the knowledge transfer structures contributed to the strategic thinking competence of the managers (sect. 4.6). The knowledge transfer structures were found to support the systems thinking of the managers. These findings correspond to the findings of Mosoti and Masheka (2010) that the organisations operating in Nairobi did not have an effective knowledge transfer structure, which according to them hindered the strategic thinking competence of the managers in the organisations. This further reinforces Ondari- Okemwa and Smith (2009) and Monnavarian and Kasaei (2007) assertion that absence of, and weak knowledge creation and transfer structures was a major impediment to the knowledge transfer in the organisations in the public sector and hence affected the managers' strategic thinking competence.

Durmusoglu *et al.* (2014) also argue that good organisation system and appropriate organisation culture have a positive effect on the knowledge transfer and application by the individuals in an organisation. The study found on the organisation structures deployed to facilitate knowledge transfer; the websites and internet based resources were highly utilised by the majority of the respondents. This surprisingly high level of usage could partly be explained by MOE decision to conduct much of its correspondence online. Many of the respondents reportedly were driven to use the electronic based knowledge by the need rather than choice. However the rate of usage of knowledge data bases in MOE by the managers was noted to be low. The knowledge

transferred using the websites and the database was however established to have a very high value on the managers' strategic thinking competence.

Social media as a structure for knowledge transfer was utilised by a large majority of the managers. However, the social media use mostly came by default rather than by design. It was seen to have been embraced by most of the managers particularly to supplement the other mainstream structures put in place by MOE, which were perceived to be ineffective. The social media was however a low contribution had on the strategic thinking competence of the managers. This is consistent with Uriarte (2005) argument that groupware or tools that facilitate the collaborative tools that provide avenues for knowledge to be transferred across the members of the organisation.

These finding corresponds to Cheruiyot, Jagongo and Owino (2012) argument that social media although prevalent in usage among the Kenya employees, it had a low contribution as a structure of supporting knowledge transfer. This was explained by the fact social media mainly dealt with tacit (personal) and not organisational knowledge. However the social media could be harnessed to enable the transformation of tacit knowledge into explicit knowledge. Further, the social media can be utilised as the enabling context in which knowledge transformation can take place in the SECI cycle (Nonaka and Takeuchi, 1995; Nonaka and Toyama, 2003; Nonaka, 2014).

The communities of practice/peers as structures for knowledge transfer were largely absent in MOE; this is consistent with Peterson (2012) who found that the public-broadcasting corporations in southern Africa did not have communities of practice in

place. The respondents however felt that knowledge transferred using the communities of practice was very effective in creation of strategic thinking competence in the managers. The workshops and seminars though recognised as an important tool for knowledge transfer; they were not utilised for that purpose.

5.2.3 What is the Contribution of Organisational Knowledge Transfer Culture on the Strategic Thinking Skills of Managers?

The study found that MOE did not have an established knowledge transfer culture to facilitate strategic thinking competence in the managers at the county level (sect. 4.7). This was consistent with Ondari-Okemwa and Smith (2009) findings that the Kenya public sector employees did not have the appropriate knowledge transfer culture. Since the highest proportion of the knowledge in the organisation was found in the minds of the people, it is imperative that the organisation culture needs to have a culture of trust that would facilitate the exchange of the knowledge between the people in the organisation.

The study found that MOE had a weak trust culture that is a major prerequisite to the organisation knowledge transfer majority of the respondents believed that the organisation did not provide an enabling environment culture that allowed the individuals to share what they knew. This finding resonates with, Peterson (2012) who in a study of public broadcasting corporations in southern Africa found that the employees were unwilling to share their knowledge with their colleagues and worse with their seniors. The major reasons for lack of sharing cited were lack of trust, fear, culture of secrecy, employee attitude and organisation politics.

However majority of the respondents valued knowledge and had in the past actively sought find it. the research findings did not agree with Ondari- Okemwa and Smith (2009) assertion that the majority of the civil servants were career civil servants who would not have the capacity to appreciate and envisage the potential of knowledge management Further the study found out that the provision of motivation and incentives to the subordinates to create and share knowledge by the top management was low.

The study also found that the incentives and motivation offered by the top managers for the individuals to transfer knowledge was weak. Incentives are seen an important facilitator for the transfer of knowledge. Durmusoglu *et al.* (2014) concluded that Individuals in an organisation were motivated to transfer knowledge based on whether they felt that the organisation provided adequate incentives to do so. Similar line of argument was pursued by Karkoulia *et al.* (2013).

The value that the organisation attached to the individuals innovation and creativity was also seen to be low. Bonn (2005) posited that knowledge creation and innovation in the managers is an important prerequisite to their strategic thinking competence, this could only be supported by the individual managers having the appropriate learning culture. The learning culture was also noted to be weak. The individuals in the organisation were expected to continuously improve by learning from what they did and also to learn from the others' experiences.

The majority of the respondents felt that their contribution to create and disseminate knowledge was not valued. These findings confirm the arguments of Cheruiyot, Jagongo and Owino (2012) that the majority of the individuals in organisations understood knowledge to be an important enabler of the strategic thinking competence of the managers.

The majority of the respondents viewed the knowledge transfer as facilitating a culture of learning through taking note what others are doing and works and also the individuals' experience of what would work or not work in the specific contexts. The respondents viewed the trust culture having a major impact on their strategic thinking competence.

On the programs that had been put in place to inculcate the desired knowledge transfer culture training, mentoring and the professional development programs were effective motivation, rewards and recognition schemes were also noted to be highly effective in creating strategic thinking via the knowledge transferred.

The finding confirms Ondari- Okemwa and Smith (2009) findings that the lack of incentives to the employees to transfer and create knowledge played a role in the in the knowledge transfer in the public sector.

5.2.4 What Role Does the Knowledge Transferred via the Implementation of ISO 9001-2008 Standards in Facilitating the Strategic Thinking Competence of the Managers?

The study found out that the knowledge transferred via the implementation of ISO 9001-2008 had a consolidating effect on the strategic thinking competence of the managers. (sect. 4.8). It not only enabled the managers to have a systems thinking approach to their organisations but also to get the focus on their organisation attainment of their core objectives. This is in line with the strategic thinking theoretical of Bonn (2005) and Liedtka (1998). The findings corroborate Lin and Wu (2005) findings that the ISO9001-2008 is a key enabler of the knowledge transfer.

The study found that the majority of the respondents were conversant with ISO 9001-2008 certification standards in MOE. Majority of the respondents felt that the implementation of ISO9001-2008 standards was important to consolidate important knowledge resources needed by the managers in the organisation since it enabled the individual managers to focus on the elements, procedures and processes in the whole of the organisation that are critical for its success.

This finding is consistent with Lin and Wu (2005) arguments that the implementation of ISO 9001-2008 facilitated the flow of the knowledge in the organisations where it is implemented; consolidating both the tacit knowledge and the explicit knowledge within the organisation. This is because ISO 9001-2008 implementation enables the development of an effective documentation system in an organisation. However the majority of the respondents felt that ISO 9001-2008 implementation transferred

knowledge to them that that helped them to focus on the elements of the organisation that were important for its success.

The study found that the knowledge transferred via the implementation of ISO 9001-2008 did not contribute to the creativity, which are key elements of the strategic thinking competence. This was due to the conception that the organisation was undergoing rapid transformations and changes and these changes were not adequately covered in the quality manuals issued.

The knowledge transferred via the implementation of ISO 9001-2008 standards however enabled the respondents to decide the possible future scenarios in the implementation of the strategies in the organisation. Further the implementation of the ISO9001-2008 enabled the managers to be able to fully understand the components of the organisation. This enabled the individuals to be able to develop the systems thinking competence, which is an important component of strategic thinking (Liedtka, 1998).

Choo and Alvarenga Neto (2010) argue that the enabling context for creation and transfer was critical; ISO 9001-2008 was expected to provide the enabling context in which knowledge from both the internal and the external would be consolidated to enable effective strategic thinking competence. The ISO 9001-2008 implementation was however seen as having knowledge that was not current to meet the specific needs of the managers, the generic quality policy documents were not current and were therefore found unsuitable for use in the current case of the new structures in the counties.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 Strategic Thinking Competence

Bonn (2005) models the strategic thinking competence as an integration of three key elements, the individual's vision, the creativity and systems thinking (Figure 2.8). The study's findings not only confirmed the validity of this model as a basis of modelling strategic thinking competence but also supported the view that the knowledge transfer contributed to the development of strategic thinking competence by affecting the individual elements of strategic thinking competence: systems thinking, creativity and vision.

The knowledge transfer structures played the role of enabling the individuals to develop systems thinking ability as well as developing and clarifying the vision of the individual about the organisation (sect. 5.2.2), (Figure 6.1.). The findings established that knowledge transfer culture played the role of facilitating both the systems thinking and the creativity of the individual managers (sect. 5.2.3) (Figure 6.1).

The ISO 9001-2008 was found to be significant in integration of the knowledge resources in the organisation enabling the creation of systems capability as well as the vision of the entire organisation (sect. 5.2.4) (Figure 6.1).

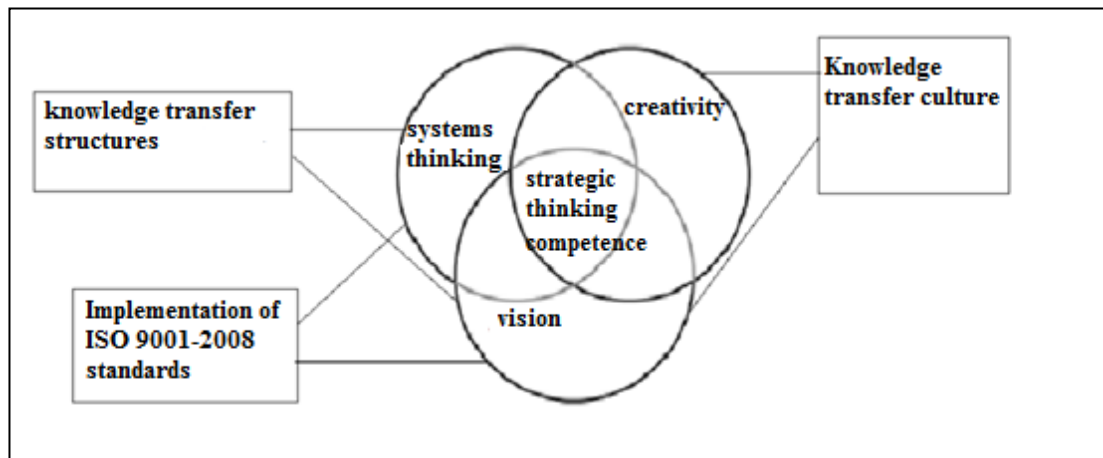


Figure 6.1: Contribution of the Knowledge Transfer to Strategic Thinking Competence

Adapted from Bonn (2005)

6.1.2 Knowledge Transfer

Nonaka and Toyama (2003) argue that the creation and transfer of knowledge in an organisation follows a definite cycle through the stages of socialisation, externalisation, combination and the internalisation (Figure 2.4). They also argue that the knowledge creation and transfer takes place in an organisation's enabling environment or context they called 'ba' a Japanese term referring to the 'context'. The study found that the knowledge transfer elements provided the enabling context, which facilitated knowledge transfer to the individuals and the organisation. This is consistent with Tuomi (1999) and Choo and Neto (2010).

The study theorised that the knowledge transfer structures provided the context in which socialisation took place in the organisation, among the knowledge transfer structures which were found to be utilised were; communities of practice, the social media, the workshops, seminars and other forms of organisation formal training and development programs (Figure 6.2).

Access to the organisation knowledge resources provided the context in which externalisation of the organisation knowledge took place. Access to and creation of the physical documents (for instance manuals, guidelines , circulars) as well as electronic documents provided the individuals provides the individuals with tools with which to share with others and the organisation any new knowledge (Figure 6.2).

The implementation of the ISO9001-2008 standards provides the context through which the combination takes place. The study concluded that the ISO 9001- 2008 standards implementation enabled the interrogation of the organisation processes and the knowledge workers; enabling the linkages between the individual managers and all the components, with this refined knowledge manifesting in form of quality manuals (Figure 6.2).

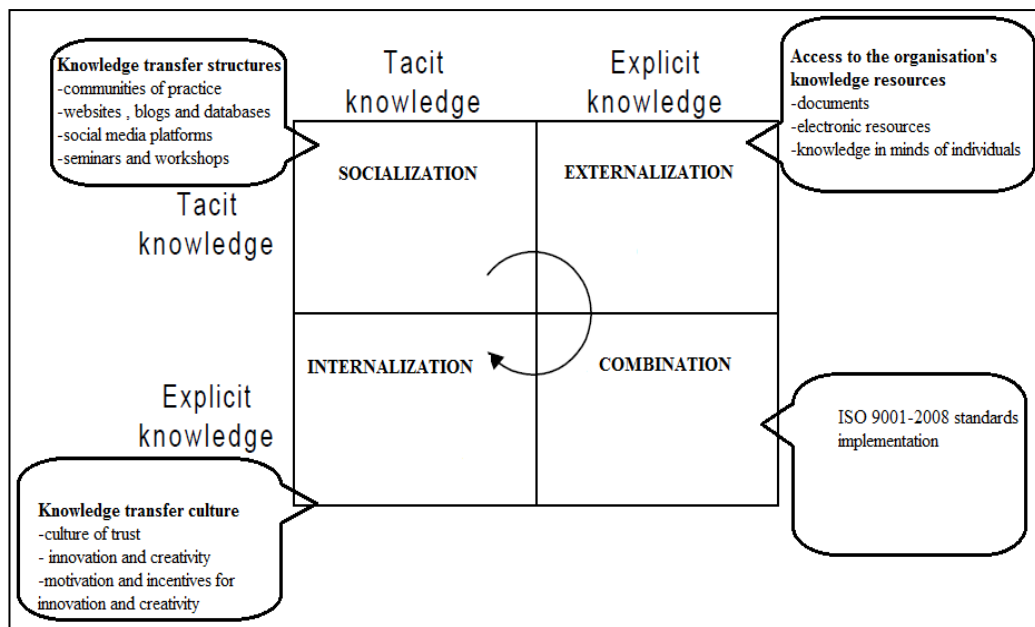


Figure 6.2: SECI Knowledge Transfer Framework of MOE

Adapted from Nonaka and Toyama (2014)

The study found that the knowledge transfer culture provided the context in which the internalisation takes place. The knowledge transfer culture was found to be predicted by; trust culture of the members of the organisation, the incentives and motivation offered by the organisation to the individuals to create and transfer knowledge and the value that the individuals attached to the knowledge (Figure 6.2).

6.1.3 A Unified Model of Elements of Knowledge Transfer on Strategic Thinking Competence

The overall findings of the research showing the relationships between the factors of knowledge transfer on the strategic thinking competence are summarised in a unified model represented in Figure 6.3. Using the combined theoretical frameworks of the SECI model of knowledge creation and transfer (Nonaka, 2014; Nonaka and Toyama, 2003; Nonaka and Takeuchi, 1995), a practical model for understanding the contribution of the knowledge transfer on the strategic thinking competence is designed.

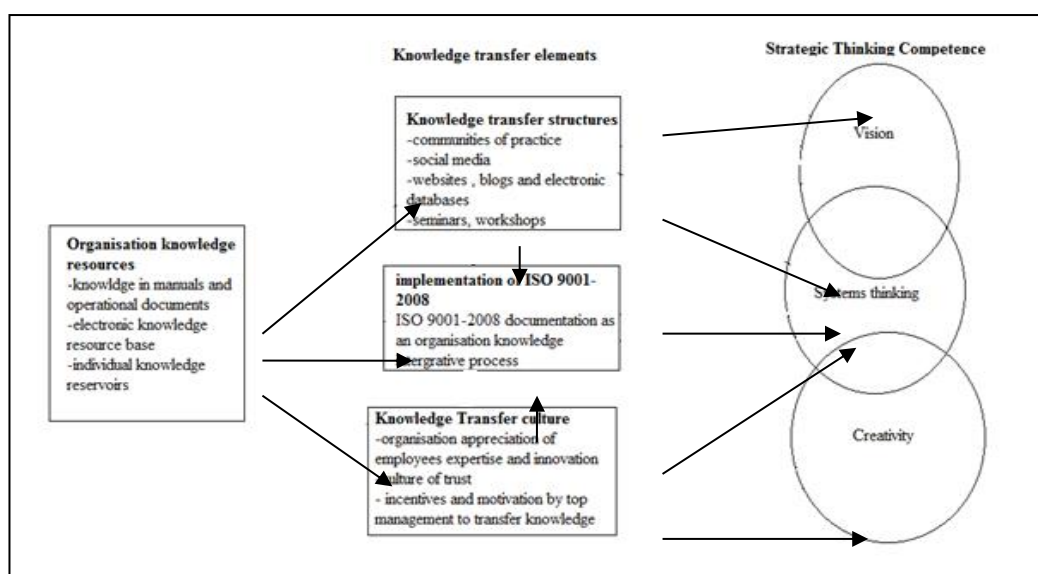


Figure 6.3: The Unified Model of the Contribution of Knowledge Transfer to the Strategic Thinking Competence in the MOE

The study's theoretical contribution was formulation of a unified framework (Figure 6.3) that combines the knowledge transfer frameworks; represented by Nonaka (2014), Nonaka and Toyama (2003) and Nonaka and Takeuchi (1995) with the strategic thinking competence; seen through Bonn (2005) framework. This framework forms the foundation which public sector organisations can use to manage their knowledge for enhancing strategic thinking competence of their managers.

6.2 Limitations of the Study

The major limitation of this study was that the study was based on the opinions of the respondents. This had a major risk of the respondents giving non-credible information and also withholding critical information. Some of the knowledge resources held by the members of the organisation is deemed to be confidential in nature, protected and therefore not to be shared out to any unauthorised persons.

The research countered these challenges by ensuring that the respondents were credible; being managers who had served MOE for more than ten years and having more than a basic degree in their academic qualification (Table 4.2 and 4.3); made their responses have more credibility. The research was only interested to find out only the nature of knowledge transfers and nothing to do with the nature and substance of knowledge itself.

6.3 Recommendations

The study justifies the fact that the managers of new structures created in the public sector require knowledge resources transferred to be able to develop in them strategic

thinking competencies. The knowledge transfer plays a key role in facilitating the strategic thinking competencies of the managers. Specifically the study recommends:

- (i) The Ministry of Education to establish knowledge repositories that should be accessible to the managers, these are in form of databases and libraries of key documents both in the physical and the digital format.
- (ii) The websites and the databases should be made rich with content and made accessible to all the managers.
- (iii) The Ministry of Education should establish a system for capturing the tacit knowledge held in the minds of the managers. This will make sure that the lessons learnt by others are captured, and accessed and verified by others in the organisation.
- (iv) The Ministry of Education should set up communities of practice to ensure that they enable transfer of the relevant knowledge within the organisation takes place.
- (v) The Ministry of Education should organise regular trainings and workshops/seminars to disseminate knowledge within the organisation.
- (vi) The Ministry of Education should encourage the members to have culture of trust culture, through mentorship programs and by ensuring that the members of the organisation are offered the right support.
- (vii) The organisation should support the innovation and creativity through providing motivation and recognition for the innovations and creativity.
- (viii) The Ministry of Education should re-look at ISO 9001-2008 certification processes to ensure that all the major activities of the organisation are updated

on the manuals and that continuous evaluation takes place to ensure compliance to ISO9001-2008.

6.4 Recommendations for Further Research

The research was limited in scope and focused on the internal knowledge transfer in the public sector, this is despite the fact that knowledge transferred from both the internal and the external sources is important in facilitating the strategic thinking competence of the managers. The study also appreciates that strategic thinking competence is a meta-competency from where the other competencies in organisations emanate from.

A study on the external knowledge transfers would be important so as to create a working framework within which the internal and internal knowledge transfers can be modelled. This would build on the foundations of this current study to come up with a holistic picture. The researcher is cognisance to the complex knowledge management processes which are evident in a large organisation that is undergoing transition particularly so for a large complex organisation like the Ministry of Education.

More studies need to be carried out to document in MOE particularly with the increased utilisation of ICT on the social media on its effect on the innovation and creativity.

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APPENDICES

Appendix I: Questionnaire

The purpose of this questionnaire is to collect data to be used in a study on: **“The role of knowledge transfer in building strategic thinking competencies for emerging positions in public sector, a case of county managers in education, Kenya”**. I kindly request you to provide me with the information. The information you give will be treated confidentially and for the purpose of this study only. You are not required to give your name. Thank you. For further information you can get in touch with me on: bengisamuel@gmail.com.

Part One: Bio Data

a. Name of the county _____

b. Department _____

c. Qualifications

a. PhD ☐

b. Masters ☐

c. Bachelors degree ☐

d. Diploma ☐

e. Certificate ☐

d.Experience

a. 0- 4 years ☐

b. 5-10 years ☐

c. 11-15 years ☐

d. Above 15 years ☐

Part Two: Knowledge Base

1. To what extent do the knowledge sources in the MOE provide you with the relevant information resources for making strategic decisions?

Source Of Knowledge	Frequency Of Usage					Key
	1	2	3	4	5	
MOE database, website and other electronic resources						1- never 2- rarely 3- occasionally 4- frequently 5- very frequently
Individual officers computers						
Manuals, guidelines and other documents issued by the ministry and kept by the office						
Consultations with knowledgeable individuals within the department who have wider experience						

2. To what extent does accessibility to the knowledge resources affect the strategic your thinking competence?

	Influence of availability of knowledge					Key
	1	2	3	4	5	
It helps to get understanding of the whole organisation						1- never 2- rarely 3- occasionally 4- frequently 5- very frequently
It helps me to remain focused on the achievements of the vision						
It helps to come up with creative and innovative solutions						
It helps me to come up to be updated on the current trends in and outside the organisation.						
It helps me to make possible predictions of the likely scenarios in the implementation of strategies						

3. What are some of the constraints that prevent access to knowledge resources by the managers in the MOE

	Contribution of Access to information					Key
	1	2	3	4	5	
Lack of access to information in the databases						1- never

Some seniors hold to critical knowledge that is critical to my operations						2- rarely 3- occasionally 4- frequently 5- very frequently
The knowledge resources are too scattered to make any meaningful contribution						
There are technology based challenges in accessing the knowledge resources in the organisation.						

Part Three: Knowledge Transfer Structures

1. To what extent are the knowledge transfer structures deployed in the organisation?

	Level of deployment of Knowledge transfer techniques					Key
	1	2	3	4	5	
Communities of practice/communities of peers						1- never 2- rarely 3- occasionally 4- frequently 5- very frequently
Training sessions and seminars						
Social media						
Databases and data management and retrieval systems						
Websites and web tools including blogs						

2. To what extent does the current knowledge transfer structures facilitate the strategic thinking competence in the managers

	Level to which Knowledge transfer techniques facilitate strategic thinking					Key
	1	2	3	4	5	
Communities of practice/communities of peers						1- never 2- rarely 3- occasionally 4- frequently 5- very frequently
Training sessions and seminars						
Social media						
Databases and data management and retrieval systems						
Websites and web tools including blogs						

Part Four: Knowledge Culture

1. What is the prevailing culture of knowledge transfer in the organisation.(tick the most appropriate response)

	Prevailing Knowledge transfer culture dimensions					Key
	1	2	3	4	5	

Employees' expertise, contribution and effort to create and transfer knowledge are appreciated by the organisation						1- never 2- rarely 3- occasionally 4- frequently 5- very frequently
The senior managers support lower level employees when suggesting alternative perspectives to be incorporated in the processes						
The senior management provides incentives / motivation to the employees to transfer knowledge.						
The employees value knowledge and actively seek to find and disseminate it						
The environment of the education sector helps employees trust others to share with others what they know to make better strategic decisions						

2. How much does the knowledge transfer culture affect the strategic thinking competence?

	Contribution of Knowledge transfer culture dimensions on strategic thinking					Key 1- never 2- rarely 3- occasionally 4- frequently 5- very frequently
Knowledge transfer culture dimensions contributions to the strategic thinking competence	1	2	3	4	5	
The management motivation /rewards to encourage the knowledge transfer among the employees						
Training, induction and development programs aimed at encouraging the correct culture						
The level of trust among the employees						
The culture of learning from doing and what the others know.						

3. To what extent do people hoard knowledge in the organisation?

1- Never

2- Rarely

3- Occasionally

4- Frequently

5- Very frequently

Part five: Effect of the knowledge transferred via implementation of ISO 9001-2008 on strategic thinking

1. How often do you follow the ISO 9001-2008 procedures in your department? (tick the most appropriate)

1- Never

2- Rarely

3- Occasionally

4- Frequently

5- Very frequently

2. To what extent do you follow the rules, processes and procedures as prescribed in ISO 9001 documents to structure your day to day work?

1- Never

2- Rarely

3- Occasionally

4- Frequently

5- Very frequently

3. Please tick the most appropriate answers from the choices given about how ISO 9001-2008 implementation affects your strategic thinking competence

	Effect of Components of implementation of ISO 9001-
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	2008 on the strategic thinking competence					Key 1- never 2- rarely 3- occasionally 4- frequently 5- very frequently
	1	2	3	4	5	
The ISO 9001-2008 implementation assists me to formulate more focused strategies in dealing with future situations						
the ISO 9001-2008 implementation helps me to thoroughly understand the components of Research Clearance: Kenya National Council for Science for Science and Technology the organisation better						
The ISO 9001-2008 implementation documentation assists me to remain focused on what aspects are important to the organisation as a whole						
The ISO 9001-2008 documents enable me to create strategies that innovatively seek to solve problems						
The ISO 9001-2008 documents assists me to understand the current forces currently at play in the organisation						
The ISO 9001-2008 documents consolidates other knowledge that assists in making better strategic decisions						

Appendix II: Clearance for Research

THE OPEN UNIVERSITY OF TANZANIA

DIRECTORATE OF RESEARCH, PUBLICATIONS, AND POSTGRADUATE STUDIES

P.O. Box 23409 Fax: 255-22-2668759 Dar es Salaam, Tanzania,
<http://www.out.ac.tz>



Tel: 255-22-2666752/2668445 ext.2101
 Fax: 255-22-2668759,
 E-mail: drpc@out.ac.tz

01/09/2014

Ministry of education, science and technology
 P.o box 30400
 Nairobi, Kenya

RE: RESEARCH CLEARANCE

The Open University of Tanzania was established by an act of Parliament no. 17 of 1992. The act became operational on the 1st March 1993 by public notes No. 55 in the official Gazette. Act number 7 of 1992 has now been replaced by the Open University of Tanzania charter which is in line the university act of 2005. The charter became operational on 1st January 2007. One of the mission objectives of the university is to generate and apply knowledge through research. For this reason staff and students undertake research activities from time to time.

To facilitate the research function, the vice chancellor of the Open University of Tanzania was empowered to issue a research clearance to both staff and students of the university on behalf of the government of Tanzania and the Tanzania Commission of Science and Technology.

The purpose of this letter is to introduce to you Mr **Bengi Samuel Gitonga**, Reg No HD/B/648/ K.10 who is a PhD student at the Open University of Tanzania. By this letter, Mr Bengi Samuel Gitonga has been granted clearance to conduct research in Kenya. The title of his research is "The role of knowledge Transfer in building strategic thinking competencies for emerging positions in the public sector. A case of county managers in education, Kenya". The research will be conducted in the ministry of education, science and technology

The period which this permission has been granted is from 01/09/ 2014 to 01/11/2014.

In case you need any further information, please contact:
 The Deputy Vice Chancellor (Academic); The Open University of Tanzania; P.O. Box 23409; Dar Es Salaam. Tel: 022-2-2668820

We thank you in advance for your cooperation and facilitation of this research activity.
 Yours sincerely,

Prof Shaban Mbogo

For: VICE CHANCELLOR

THE OPEN UNIVERSITY OF TANZANIA

Appendix III: Research Clearance: Kenya National Council for Science for Science and Technology

THIS IS TO CERTIFY THAT:

MR. SAMUEL GITONGA BENGI

of the OPEN UNIVERSITY of TANZANIA,

28-90100 Machakos, has been permitted

to conduct research in All Counties

on the topic: THE ROLE OF KNOWLEDGE

TRANSFER IN BUILDING STRATEGIC

THINKING COMPETENCIES FOR

EMERGING POSITIONS IN PUBLIC

SECTOR: A CASE OF COUNTY

EDUCATION MANAGERS IN KENYA.

for the period ending:

31st December, 2015

Applicant's

Signature

Permit No : NACOSTI/P/14/6835/3217

Date Of Issue : 25th September, 2014

Fee Received :Ksh 2,000

Secretary

National Commission for Science,

Technology & Innovation