ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS SCHOOL OF COMMERCE

DEPARTMENT OF HUMAN RESOURCE MANAGEMENT

Knowledge Management Practices and Its Effects on Organizational Innovation with Mediating Effect of Intellectual Capital: Case of Ethiopian Civil Service University (ECSU)

By

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Declaration

This thesis is my original work and has not been submitted or presented for a degree or other award in any other university. No parts of this thesis should be reproduced without the authority of the author and all of the materials used in this study have been duly acknowledged.

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List of Acronyms

CoPs:	Communities' of Practices
ECSU:	Ethiopian Civil Service University
IC:	Intellectual Capital
ICT:	Information Communication Technology
KA:	Knowledge Application
KAQ:	Knowledge Acquisition
KBV:	Knowledge Based View
KM:	Knowledge Management
KMP:	Knowledge Management Practices
KS:	Knowledge Sharing
OI:	Organizational Innovation
RBV:	Resource Based View
TQM:	Total Quality Management

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Abstract

In today's knowledge based economy, organizations are expected to manage their knowledge in scientific and well organized way in order to sustain their competitive advantages since knowledge based view theory identified knowledge as what organizations dominate in their business life. The purpose of study was aimed to examine the practices of KM and its effects on organizational innovation with a mediating role of intellectual capital in Ethiopian Civil Service University (ECSU).To achieve the purpose, the study employed explanatory cross-sectional survey research design and adopted mixed research approach by focusing on all academic staffs of ECSU with a sample of 150 staffs. Quantitative and qualitative data collected through questionnaire and interview was analyzed in descriptive and inferential statistics and SPSS 24 versions was used for descriptive analysis while Smart PLS 3.0 was used inferential statistics. Bootstrapping was used to see the significance level of effects as well as for qualitative data thematic analysis was used. The findings of the study established as there is a great gap in practicing KM (knowledge acquisition, sharing and application), there is no KM policies and procedures, knowledge sharing and knowledge application have a significant direct effects on organizational innovation and intellectual capital has a significant mediating effect on innovation. The management of the university can used these findings to develop KM policies and procedures, facilitate KM practices by using various mechanisms and the university should establish a system of reward management to motivate innovative staffs as well as it should have a mechanism to retain the knowledge from staffs who leave the university.

Key words: *Knowledge Management, Knowledge Acquisition, Knowledge Sharing, Knowledge Application, Intellectual Capital, Innovation*

CHAPER ONE: INTRODUCTION

1.1 Background of the Study

The concept of innovation was introduced by Schumber for a first time in 1934 and the term the term “innovation” explained as the change and renewal of product and process in organization that do not necessarily invent from new scientific discovery but may occur from the integration of already existing technologies and their application in a new context. Organizational innovation is a multidimensional concept that relates to different parts and operations of an organization which ensures the organization’s competitive advantage even if the nature of the activities in each innovation type is different and requires diverse strategies (Hana 2013). According to Damanpou (1991) and Gopalakrishnan and Damanpour (1997) as cited in Burcu and Ceyda (2018); there are three pairs of organizational innovation, which are administrative and technical, product and process, and radical and incremental in which each of them requires their own strategies.

Thus, in today’s knowledge-based economy and complex competitive environment, organizational innovation is considered as one of the key and main advantages of any organization and, in order to survive in such dynamic and highly competitive environment, all organizations required to be innovative to ensure their sustainable competitive advantages and to save them from any spoil (Nouri et al. 2017).

Moreover, innovation assist organizations to get better performance through the development of new knowledge and effective KM practices which in turn create more complicated organization’s internal process and structure that may help the organization to produce an acceptable products and services which match the current market (Plessis 2007). However, organizational innovation is not a simple task and it is a challenging issue for organizations since it can be affected by different factors like management style and leadership, organizational structure, knowledge management practices, technology, corporate strategy, organizational culture, employees and innovation process (Singhet al. 2011).

From the above basic factors, the ability of organization to manage and develop knowledge management (KM) systems is generally believed as the key activity that encourages innovation since it promotes and enhances activities that help to create and improve the organization’s

overall processes (Singh et al.2011). According to Plessis (2007) organizational innovation most depends upon knowledge and to bring innovation, organizations must identify knowledge capability, and their prosperity, since the most purpose of KM is bringing organizational innovation that ensures sustainable organization's competitive advantage (Parlby and Taylor 2000).KM also set a floor for innovation through creating a conducive culture of knowledge creation, sharing and application that promotes the activities of the organization, and the process of innovation is based on organization's knowledge specially on tacit knowledge which is a unique competency of the organization that help the organization to ensure its competitive advantages (Kumar et al. 2000).

Thus, in today's volatile and competitive environment, KM is an increasingly serious element for sustainable competitive advantage and it also provides long-term benefits for organizations. KM involves strategy-oriented inspiration and enhancement of knowledge workers in developing, promoting and using of their ability in understanding and interpreting the available knowledge and information from different sources of information in achieving organizational goals (Gloet and Terziovski 2004). So, KM is a management function that involves in knowledge sharing and provides easy access to knowledge, know-how, experience, and expertise (Darroch and McNaughton 2002) as cited in Burcu and Ceyda (2018). According to Parlby and Taylor (2000) KM is a business process which involves in creating of new knowledge and ensuring the usage of knowledge within organization whenever it is necessary. It is process that facilitates another important process in organizations, namely innovation process (Darroch and McNaughton 2002). As explained by Huang and Li (2009), Argote et al. (2003), an effective KM can raise the amount of knowledge required for the employees of the organization in order to increase the speedy transmission of knowledge in the organization and thus, KM has a considerable effect on changing power of knowledge into innovation processes. And many scholars have argued that effective KM leads to organizational innovation (Huang and Li2009; Darroch and McNaughton2002; Lin and Lee2005; Plessis 2007).

Moreover, KM is a process which involves in knowledge acquisition, sharing and application in the functional areas of an organization that can create situations to raise the initiation of organizational members to participate in innovative activities (Darroch and McNaughton 2002). For instance, Knowledge sharing can endorse strong interactions in the organization, which supports innovativeness of the organization. When knowledge is applied or/and acquired by

organizations, organizational learning takes place and it promotes openness to innovation or innovativeness (Nonaka and Takeuchi 1995). Thus, effective and well organized KM increases the stock of knowledge inside an organization that develops intellectual capital that support innovation and increases the innovativeness, and the overall improvement in organizational performance. Intellectual capital plays a crucial role in promoting innovation and to ensure sustainable competitive advantages of the organization (Lev2000; Subramaniam and Youndt 2005). Additionally, KM practices have effects on the intellectual capital (human, structural and relational capital) of the organization as all KM activities those involves to capture, gain, sharing and applying of knowledge have a great influence on intellectual capital which in turn enhancing the innovative capacity of the organization (Hussinki et al. 2017).

So, as evidenced by Messa and Testa (2004) firms must have developed the receptors that acquire external knowledge and this activity is strongly related to the innovation capacity of the organization. They also said that through benchmarking, firms can gain explicit and tacit knowledge from external sources and these external sources of knowledge can be integrated with the organizational internal explicit and tacit knowledge. In order to get sustainable competitive advantage organizations should constantly learn from outside sources, and through appropriate knowledge acquisition, sharing and application organizations can bring the innovation (Ju et al. 2006). Thus, organizations are expected to develop such channels within the organizations through which employees share their knowledge with one another to build intellectual capital and to promote the entire innovation.

As stated by Dev Raj Adhikari (2010), KM in educational institutions is a logical and structured process that involves in creating and sharing of information and choosing, compressing and utilizing both explicit and tacit knowledge to make distinctive value that can be used to develop intellectual capital and teaching-learning environment of the institutions.KM also helps universities to improve their capacity in gathering and sharing information and knowledge and to apply their knowledge in problem solving activities and to support the research and continual improvement of their work. Therefore, academic knowledge is the primary purpose of universities since universities are considered as a center for knowledge production, storage, dissemination and authorization and also serve as the main instruments of society for the

constant achievement of knowledge and a suitable environment for the application of KM principles and methods (Mikulecký and Lodhi 2010).

However, developing countries are far behind in research, understanding and actual implementation of effective KM practices and the representation of universities from Sub-Saharan Africa including Ethiopia are limited in the knowledge creation and sharing process as indicated in projects of World Bank conducted by King (2002). This is true for Ethiopian public universities in general and for Ethiopian Civil Service University in particular and the purpose of the study was emphasized on examining the effects of KM practices on organizational innovation and the mediating effects of intellectual capital (IC) on the relationship between KM and organizational innovation by emphasizing on Ethiopian Civil Service University (ECSU).

1.2 Problem Statement

In today's knowledge based economy, the world become a full of complexity that puts both public and private organizations in challenge in terms of growth and excellence and the ability to manage knowledge is grow as a fundamental instrument of competition. So, in order to remain competitive and to survive in complex and dynamic world, knowledge has to be scientifically managed for ensuring sustainable organizational innovation through integrated KM strategy (Holsapple and Jones2011).

Thus, the application of integrated KM systems and practices can assist universities to develop and update modern educational content, foster and influence the effectiveness of scientific research and innovation and also help to match educational objects to the specific features of individual learners (Tikhomirova et al. 2010). At the same time, it can ensure continuous learning by creating conducive organizational culture that build intellectual capital and encourages innovation at the organization and individual level (Petrides and Nguyen 2006). It also enhances cooperation among university's community and creates innovative environments that efficiently support the cross-organizational learning and knowledge-sharing processes (Arntzen et al. 2009).

However, in university KM is the major challenge that faced to researchers and practitioners on how to manage organizational knowledge assets effectively (Shahzad et al. 2016) as KM strategies adopted by universities are either inadequate or inconsistent (Fullwood and Rowley

2017). As seen from various previous researches like Muqadas et al. (2017) and Ahmad et al. (2015), especially in developing countries, universities are generally characterized by individualistic culture, rigid organizational structure, lack of leadership participation in KM activities, lack of integrated KM strategy, little awareness about benefits of KM and non-existence of standardized incentive system

This is true for Ethiopian public universities in general and for Ethiopian Civil Service University (ECSU) in particular, even if ECSU is continuing to invest on KM infrastructures like ICT infrastructure, internet connectivity, databases. But there is lack of integrated formal strategy that provide an appropriate framework to ensure maximum utilization of available knowledge and intellectual capital in gaining competitive advantage of the university and also to increase and foster innovation as observed by researcher and also as discussed with some university's academic staffs and a team established in assessing KM system to build knowledge center. In consequence, the university has losing knowledge from experienced academic staffs (local and foreigners) as they leaving the university. This loss of knowledge through staff exiting or retiring will also reduce university's ability to initiates and improves its innovation that helps the university to capture and reuse its relevant knowledge.

Thus, lack of integrated KM strategy and innovative organizational culture becomes a challenge for the development of the ECSU KM and innovation. Thus, the university is not able to efficiently acquire, share, and apply appropriate knowledge for the development of the university and its community's creativity due to the absence of an integrated KM strategy and innovative organization culture. As the manifestations of the problems, the researcher observed as there is limitation in awareness on the concept and strategy of KM and its benefits among the community of the university, lack of motivating creative and innovative staffs, poor leadership that is not able to create suitable environment for academic staffs to engage in Knowledge creation and sharing activities, lack of responsible bodies to acquire, retain and apply knowledge, luck of conducive environment and rewards that motivate academics to share knowledge among the university's community, high concern on ICT infrastructure and low concern for staffs who are the source and user of knowledge.

As seen from literatures concerning KM, some studies were conducted by Fanos, Ermias, and Dirk Hoekstra (2012) on 'Innovative Approaches of Knowledge Management in Agriculture:

Case of IPMS- Ethiopia'; Yeshiareg and Worku (2015); on 'Knowledge Management Practices on Product Improvement for Dire Dawa National and Ture Cement Factories in Ethiopia; Gizew (2017), Garfield and Million(2015), Haftamu, Rahel and Worku (2013), Takele (2018), Rahel and Ermias (2011) on practices of KM and its enabler. However, most of them were emphasized on assessment of employees understanding /perception on KM, others on knowledge sharing which is one element of KM and the rest were emphasized on factors of KM and none of the studies were touch the KM and its effects on organizational innovation and most of them were in other industries rather than education industries. Therefore, the researcher understand as there is a knowledge gap in the area of KM in Ethiopian Civil Service University and initiated to conduct the study to fill this gap in the existing literature and to provide empirical evidence on how KM influence innovation and the mediating effect between KM and innovation in ECSU.

1.3 Research Questions

Research quetions are general questions that need to be answered by the researcher to solve or investigate solutions for the problem identified.So, in the study the researcher had addressed the following general research questions**:**

1. What seem the current practices of KM and innovation in ECSU?
2. How does a knowledge acquisition (KAQ) practice influence the innovation of ECSU?
3. To what extent knowledge sharing (KS) practices influence the innovation of ECSU?
4. How knowledge application (KA) practice does affects the innovation of ECSU?
5. How does intellectual capital mediate the relationship between KM practices and innovation?

1.4 Objective of the Study

Research objectives describe concisely what the research is trying to achieve and it summarizes the accomplishments a researcher wishes to achieve through the study and it provides a direction to the study. Accordingly, this study has two research objectives the general and specific objectives that has showed where the researcher wants to go.

1.4.1 General Objective

The general objective of this study was to examine the practices of KM and its effect on organizational innovation in Ethiopian Civil Service University.

1.4.2 Specific Objectives of the study

The specific objectives of the study were;

- ✓ to assess the current practices of KM and innovation in Ethiopian Civil Service University (ECSU).
- ✓ to examine the effect of knowledge acquisition on university's innovation.
- ✓ to explain the effect of Knowledge sharing on university's innovation.
- ✓ to determine the effect of knowledge application on selected university's innovation.
- ✓ to examine the mediating effect of intellectual capital on the relationship between KM practices and innovation.

1.5 Significance of the Study

The significance of conducting a study on KM practices in Civil Service University is very crucial and timely to contribute for the knowledge gap being observed regarding KM and its influence on university's innovation since the results of this study initiate the top managers of the university to give attention on how to establish an integrated strategy and knowledge centers to encourage effective KM and innovation. The study also provided an input for policy makers to consider KM issues in policy making process for both public and private universities. Finally, the results of this study have used as a reference for future researchers of the area.

1.6 Scope of the Study

The scope of a study involves on explaining the degree to which the research area is explored in the study and it specifies the parameters those operated in the study. Conceptually the study was emphasized on three constructs which includes knowledge management practices (knowledge acquisition, sharing, application and retention) which was based on the definition Gold et al.(2001) of KM process, organizational innovation (administrative and technical innovations) which was taken from the components of innovation used by Ngoc -Tan, and Gregar (2018)and intellectual capital(human capital, structural capital and relational capital) which was taken from the definition of intellectual capital by Li and Chang (2010).Geographically the study was conducted in Ethiopian Civil Service University (ECSU) with special emphasis of academic staffs to get relevant data through cross-sectional survey.

1.7 Limitation of the Study

Limitation is any constraints that hinder the interpretation and the outcomes of the study. The study sought to examined KM practices and its effect on organizational innovation with a mediating role of intellectual capital and in carrying out the study the researcher encountered a challenge to conduct a face to face interview with proposed participants of the university due to

absence of the expected managers in their office due to the problem of Corona virus and this challenge was mitigated by conducting email interviews. The researcher also experienced to review adequate empirical literatures on specific area especially in our country and in universities and this difficulty was mitigated by using the studies conducted in other developing countries and other sectors.

1.8 Definition of Key Terms

Table 1.1 Definitions of Key Terms

Key Terms and Phrases	Operational Definitions
Knowledge	Know-how, insights and understanding that individuals have about something and it includes both tacit and explicit knowledge(Davenport and Prusak1998).
Tacit Knowledge	A unique and core competency, skills, experience, understanding and insights that exist in the minds of academic staffs (Horvath, 2001).
Explicit Knowledge	Knowledge that has been written down, articulated, processed, codified or recorded, archived/documented and protected by the university (Yeh 2011).
Knowledge Management (KM)	A process that involves in knowledge acquisition, conversion, retention and application of knowledge to maximize the utilization of university's intellectual asset (Gold et al 2001).
Knowledge Acquisition	Process of gaining knowledge from university's internal and external sources and structuring and organizing knowledge in understandable way (Gold et al.2001).
Knowledge Sharing	A process where university communities interact with knowledgeable individuals or groups to exchange new and existing knowledge and share their experiences through different knowledge sharing mechanisms(Gold et al.2001).
Organizational Innovation	Using of new idea or knowledge in providing service, in improving administrative and technical process and activities that make value to meet and satisfy the needs and expectations of customers(Tastan and Davoudi 2015).
Intellectual capital	The intangible value of organization that covering its people, relationship and structural capital (Luiza 2016).

1.9 Organization of the Paper

The thesis was organized in to five chapters in which chapter one which consists the introductory part of the study namely: background of the study, statement of the problem, research questions and objectives, research hypothesis, scope of the study, significance of the study, operational definition of key terms and structure of the thesis and chapter two was focused on review of related literature with great emphasis of organizational innovation and its concepts, KM and its concepts. Additionally, chapter three was emphasized on research design and methodology of the study. Chapter four focused on data presentation, analysis and interpretation part of the thesis and finally chapter five was focused on summary of findings, conclusions and recommendations of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

This chapter gives further details about concepts of KM and reviews of some research studies and published literature on KM and organizational innovation and the chapter focused on concepts of organizational innovation, knowledge and KM, KM processes, KM strategies and techniques for KM, practices of KM in public universities, and effects of KM on organizational innovation, intellectual capital and the conceptual framework and the hypothesis of the study also included in this chapter.

2.1 Theoretical Literature Review

2.1.1 Knowledge Management (KM) and its Concepts

As understood from different literatures, it is difficult to reach on universally accepted and concise definition of KM and generally accepted standard of KM framework that specifies the scope, boundaries and activities associated with KM (Marin et al 2007).

In 1990s and recently since 2000 onwards KM is generally used as a process of transforming information and intellectual assets of the organization in to value-adding activities by making knowledge accessible to take action when users need it. It is also seen as key to generate innovative ideas and the real focus of KM is providing a framework in which the organization views knowledge processes and all business processes, that includes knowledge creation, dissemination and application of knowledge towards organizational development and existence (Dhamdhere 2015).

Accordingly, in today's dynamic and competitive environment, knowledge management is an increasingly critical element to ensure sustainable competitive advantage and it provides long-term benefits for organizations and it is also an achieving of organizational goals by using strategy-driven motivation and facilitation of knowledge-workers in order to develop, enhance and use their capability to interpret data and information through available sources of data, experience, skills, personality and feelings in a process of giving meaning to these data and information to boost organizational innovation (Gloet and Terziovski, 2004). So, KM is a management an activity that emphasized on knowledge sharing and provides easy access to

knowledge, know-how, experience, and expertise (Darroch and McNaughton2002; Miller1999) as cited in Burcu and Ceyda (2018). According to Parlby and Taylor (2000). KM is a business process which involves in creating of new knowledge and ensuring the usage of knowledge within organization whenever it is necessary. KM is process that accelerates the other important process of the organizations that is the innovation process (Darroch and McNaughton 2002).

As seen from previous works of Huang and Li (2009); Argote et al. (2003), effective KM can increase the quantity of knowledge required for the members of organization that enable the rapid diffusion of knowledge within the organization. Hence, KM has a significant effect on the alteration of the influence of knowledge into innovation processes (And many scholars have argued that effective KM leads to organizational innovation (Huang andLi2009; Darroch and McNaughton 2002; Lin and Lee 2005; Plessis 2007; Nonaka and Takeuchi 1995).KM is also an important activity of any organization as it involves in managing an intellectual capital of organization for gaining a sustainable competitive edge in the age of tough competition and it refers to the full utilization of information and knowledge in their explicit and tacit forms (Gupta, et al. 2007).

According to Malhotra and Segars (2001) KM has described as the methodology, instrument and technique required to acquire, convert and disseminating knowledge within an organization. Thus; an efficient and effective use of knowledge through KM enhances an organization's competitive advantage, as effective use of organization's knowledge assets and resources supports essential operations and innovative activities in response to the demands of fast changing environment (Kipley et al. 2008; Mohamed et al. 2009; Sandhawalia and Dalcher 2011).

Consequently; in this study the working definitions of KM is taken from the definition of Segars (2001) and Gold et al. (2001) those have seen KM as a tool that used in the processes of knowledge acquisition, dissemination/sharing and application.

2.1.2 KM Processes and Its Elements

According to Alaviet al. (2001) and Bhatt (2005) the processes of KM gives a clear understanding about the way in which organizations generate new knowledge, sustain the available knowledge and disposed the "old" knowledge and it can be undertaken in diverse contexts and differs from organization to organization based on the organization's knowledge

management focus. For instance, Grover and Davenport (2001) see KM processes as knowledge generation, codification and transfer. Skyrme (2002) on the other hand classifies KM process as knowledge creation, transfer, assembly, integration and exploitation. Moreover, Daghfous (2003) also categorizes the KM process as knowledge acquisition, knowledge sharing and utilization. Bhatt also (2001) categorized KM processes as knowledge creation, validation, presentation, distribution, and application. Gold et al. (2001) classify the KM processes into knowledge acquisition, dissemination and application. Thus, the elements of KM process for the study was based on the classification of Gold et al. (2001) which is focused on knowledge acquisition, dissemination/sharing, and application.

Knowledge Acquisition

Knowledge acquisition is the most and vital process of KM and it is one of the most complex and expensive processes (Obeidat et al. 2016). It is the process which involves in creating and developing of new ideas, knowledge, and skills to increase the currently existing stock of organizational knowledge as evidenced by Choo (2003), Holsapple and Singh (2001). As stated by Feliciano (2007); knowledge acquisition is the process which is involved in extracting of knowledge from experts and structuring and organizing of that knowledge in a readable and easily accessible form. Knowledge acquisition is the process of developing and obtaining insights, skills and relationships either from internal or from external sources in order to create useful knowledge in the organization (Frost 2014).

Thus, organizations can acquire knowledge internally by tapping into the knowledge of its staff, learning from experiences and implementing continuous process improvements (Nemani 2010) and in universities, trust, willingness, openness, communication and collaboration predict successful knowledge acquisition (Dei Johnson2017). In this study knowledge acquisition can be seen from university's ability and willingness to search and acquire knowledge from its internal and external sources via different mechanisms as knowledge acquisition is an important activity in knowledge management process of the university.

Knowledge Sharing

According to Gharakhani and Mousakhani (2012, Knowledge sharing is an organizational belief, behavior, culture or network, that shows the exchange of knowledge, skills and experience among staffs and departments of the organization. It can also be defined as an instrument that facilitates dissemination of knowledge within the organization (Yang et al.2005). So, knowledge

sharing process has a greater importance in universities in promoting research collaboration among academic staffs (Tan and Md Noor 2013).As stated by Tseng (2010) it is a social process where individuals interact with different knowledgeable and experienced individuals or groups in order to create new knowledge which improve the quality and quantity of both tacit and explicit knowledge of the organization.

Moreover, as stated by Chen and Huang (2009), Knowledge sharing is an organizational activity that desires collective knowledge, skills and expertise, and distribution of knowledge crosswise the organizational parts. It comprises the exchange of employee knowledge, experiences, and skills throughout the organization and the whole firm to build new mental models (Lin 2007). The members of organization can simply reach the knowledge by sharing knowledge among themselves and/or across diverse units, which decrease the amount of time and investment needed to collect information. Thus, through reduction of time and investment for collecting information and building new mental models, organizations can transfer their valuable resources to innovation processes. Additionally, sharing and exchanging of knowledge can cause high level of participation in learning new knowledge, which are essential for the development innovative ideas and a knowledge-sharing process is positively associated with innovation (Chen and Huang 2009).

Thus, from a university perspective, group interactions, lectures, workshops, seminars, meetings and conferences are common platforms where tacit knowledge, experience, skills, know-how are shared among members of the university and the researcher has seen the knowledge sharing process by assessing the participation of academic staffs in the above knowledge sharing mechanisms.

Knowledge Application

According Zaim (2013); knowledge application involves in the process of using knowledge that has been acquired by the organization. It is the process of KM that involves in integrating and changing of acquired and created knowledge into products, processes, and services of the organization in order to sustain its competitive advantage (Bhatt, 2001; Daghfous 2003). Knowledge application is not depends only on the users' capacity to acquire and assimilate knowledge, but also on the ability of the organization to be aware of the value of new knowledge and use it since effective utilization of knowledge will result in competitive advantage, improve

efficiency and reduce costs by promoting organizational innovation. Most of the researchers have stated that, knowledge application process is denoted as actual utilization of the knowledge in developing new and improved services, management systems, techniques and procedures based on changes in customers' needs and preferences (Asoh et al., 2007; Zaim 2010; McInerney and Koenig 2011).

From academic perspectives, knowledge application refers to the university's ability in actually using and sharing of the captured and created knowledge through different techniques like: internal newsletters, circulars, knowledge sharing boards, technical conferences and seminars, communities of practices, mentoring and coaching, etc. in order to sustain organizational innovation and performance of organization (Karadsheh et al. 2009).So, the researcher has examine the practice of knowledge application of the selected university in line with the stated knowledge application mechanisms.

2.1.3 Strategies/Techniques of Knowledge Management (KM)

The systematic approaches and methodologies which were needed by the organization to follow in management of its knowledge assets is KM strategy as described by (Shannak et al. 2017). Thus; there are some common strategies/techniques used by different organizations as a means to manage and safeguarding knowledge and these include: e-learning (Dei Johnson2017), communities of practice, mentorship, coaching; and storytelling (Kingston2012).

Electronic Learning (e-learning)

E-learning is the use of electronic media and ICT in education centers to facilitate knowledge sharing and it uses the internet technologies to bring a broad collection of solutions that help to enhance knowledge sharing and innovation of the organization (Ruiz et al. 2006). Additionally, Itmazi (2011) stated as, e-learning is the utilization of new technologies and the internet to improve the quality of learning through facilitating the accessibility of resources and services as well as to promote the sharing of knowledge and group effort among staffs. It is an education and knowledge sharing technique which based on modern methods of communication system, including the use of computers and its networks, various audio-visual materials, search engines, electronic libraries and websites, which help to accomplish the exchange of knowledge in the classroom or at a distance (IEDHE 2012) as cited in Dei Johnson (2017).

So, as understood from literatures, in modern universities those compute in today's dynamic environment the use of e-learning is a very central as it simplifies knowledge sharing and make it easily accessible for needy individuals and/or groups as they required.

Communities of Practices (CoPs)

Theorists Jean Lave and Etienme who discussed about the idea of legitimate peripheral were use the tem CoPs and now a day's it become key means for facilitating and fostering of effective KM practices in universities since universities share knowledge through the establishment of CoPs to their internal and external stakeholders. It also helps as the basis for a social theory of learning and KM (Ardichvili 2008). CoPs are basically formed by people who engage in a process of collective learning in a shared area of human attempt, and it is a group of people who share a profession and a passion in doing something and learn the way how to do it more as they act together regularly (Sie and Uden 2014).

As seen from concepts of different scholars, CoPs is a knowledge sharing techniques in which a group of people like university's professional come together and interact regularly and also share their knowledge for the achievement of common goals. Thus, in this study CoPs can be seen as an important technique in sharing of knowledge among the university's community who have common interest and initiated to create, share and apply new knowledge.

Mentoring and Coaching

Mentoring engaged in a relationship between a less experienced individual (mentee) and a more experienced individual (mentor) Chigada and Ngulube(2015). In the academic environment, it is viewed as a face-to-face long-term relationship between a supervisory and experienced knowledge expert and a beginner that fosters the mentee's professional, academic, or personal development. Most of literatures argued as mentoring is the most effective way in sharing skills, know-how, experience and knowledge quickly and inspiring loyalty in new and less experienced employees to cooperate in the organization. Mentoring requires a mentor who established a good relationship with his/her mentees/protégés and assesses their needs, in consultation with other interested and appropriate parties (Donaldson et al. 2000). On the other hand, coaching is primarily related with performance and the development of definable skills and it is a corporation between a manager (coach) and an individual (coachee) who reports directly to him or her (coach) in which the coach focuses on helping the coachee (learner) to optimize his or her

potential that help to improve the coachee's performance. The most effective coaches sharing with mentors on the capability to help the learner to develop the skills of listening and observing themselves, which leads to a great deal to faster acquisition of skills and knowledge as well as for modification of behavior Clutterbuck (2001).

Thus, in university's context coaching can be undertaken between communities of university and its managers who exist in different levels of the university in order to fill the knowledge gap observed between individuals, departments and colleges through building and practicing an effective knowledge sharing culture throughout the university.

Storytelling

As stated by Liebowitz (2009), in the organization, stories are used to capture knowledge and it is routines of the past that enable employees in the present to adapt it in the new conditions. Storytelling is helpful in knowledge sharing and collaboration in the organization because it gives opportunity to listeners to ask questions, which then puts the story into their perspective (Tobin and Snyman 2008). According to Sole and Wilson (2002), storytelling is a way of sharing, sharing tacit knowledge, norms and values, developing trust and commitment in facilitating learning and generating emotional association. It also encourages people to share a broader understanding of things that might not otherwise be achieved.

As understood from reviewed literatures in terms of teaching and learning, storytelling is certainly one of the ways of transferring tacit knowledge that others can use and refer it. So, it is important to acquire tacit knowledge from those people who have seniority and who have stay with the university for long time and it is a way of capturing what is unique about an individual's experience and it is one of the prevailing forms of communication and help to get a great potential for teaching and learning. Thus, the study has seen the practices of the university and its instructors in using the above techniques in their teaching and learning process.

2.2 Organizational Innovation (OI) and its Concepts

The concept of organizational innovation refers a mechanism used by the organizations to adapt changing conditions of competition, technological advancement and market expansion by producing newer and improved products, techniques and systems. In simplest way, it is the initiation of the organization to develop new or improved products/services and its success in bringing those products/services to the market through implementation of created knowledge

(Gumusluoglu and Ilsev2009) as cited in Meheret (2016).It is also defined as the organizational capability to renovate ideas and knowledge into new products, services or processes continuously for the benefit of its stakeholders. Innovation is the process by which new ideas are captured, filtered, funded, developed, modified, clarified and eventually implemented and it is about a process of developing and implementing a new idea and knowledge (Zennouchem et al 2014).

According to Crossan and Apaydin (2010), innovation is an organizational process that involves in creating, adapting and applying of a value added, knowledge and skills in organizations to restore and expand the product, services and markets through making of new techniques of product growth and establishment of new management system. Thus, organizational innovation is an organization's activities and processes performed for creation and implementation of new knowledge in order to produce distinctive services and processes to meet the customers' needs in different ways as well as to make process, structure and technology more modernized that can help to bring prosperity among individuals, groups and the entire society. So, innovation is an intensive activity which would be organized and become the element of all organization's division and all levels of management system but not a genial thought (Sedziuviene and Vveinhardt2010).Thus, the speedy development of information and communications technologies have push many organizations to look for actively for new ways, ideas, experimentations, and creative solutions to improve their current products, processes, systems and technologies that commonly referred as organizational innovation (Tan and Nasurdin 2011).

As a result, in the last half-century, policy makers have been increasingly interested in the development of knowledge-based innovation as the driving force of economic development (Nouri et al 2017). In today's, highly complex competition and dynamic environment, innovation is considered as one of the main advantages of organization and all organizations need new and innovative ideas that save them from any familiarities and to ensure their survive (Nouri et al 2017). So, in this study organizational innovation was seen as the capability of organization to transform the captured, created and existing knowledge in to new and improved services, process and administrative system.

As evidenced by Seng et al (2011) the literature indicates the existence of at least eight dimensions of innovation: process innovation, service/product innovation, incremental

innovation, radical innovation, administrative innovation, technology innovation, market innovation and value innovation. Among abundant typologies of innovation, technical and administrative are the most dimensions of innovation which play a great role to ensure the competitive advantages of organization(Ngoc-Tan and Gregar2018) and this also supported by Damanpou (1991) and Gopalakrishnan and Damanpour (1997) as cited in Burcu and Ceyda (2018). Thus, in this study the researcher has emphasized on administrative and technical innovations to measure the practice of organizational innovation and these components are explained as follows:

2.3.1 Technical innovation

According to Liao et al. (2010), technical innovation is the component of organizational innovation which is more about adopting new ideas relating to new products or services or introduction of new elements in an organization's production process or service operations. They also believed as technical innovation is the innovation with respect to products, manufacturing and facilities. In this study this type of innovation seen as university's ability adopt new ideas, methods, techniques in its teaching, training, community service and research activities.

Generally, for this specific study organizational innovation has seen as the university's ability to create innovative organizational culture that encourage the application of new methods, techniques, ideas/knowledge and management system in line with all the university's basic activities (teaching, training, research and community services) and the researcher also used these two (administrative and technical innovation) to measure the university's innovation practice.

2.3.2 Administrative Innovation

It indicates to the new procedures, policies and organizational forms and to what extent managers use new management systems to run the organization (Nouri 2017). In the context of university, it can be measured from university's ability to search for new administrative systems, the use of new administrative systems, and the creation of new structure and relationship within the university.

2.3.3 Factors Affect Organizational Innovation

As understood from different literatures organizational innovation can be affected by various factors and some of them are: management style and leadership, Knowledge management

Organizational structure, technology, corporate strategy and others as stated by Smith et al. (2008).Even though the organizations ability to develop and manage innovation can be influenced by the above factors and others, knowledge management (KM) is a base for innovation of the organization since KM set a foundation for innovation by creating a favorable organizational culture that promotes knowledge creation, sharing and application which enhances activities that create or improve the organization's overall processes (Kumar et al., 2000). Innovation process also based on organization's ability to manage knowledge especially the tacit knowledge which is a unique competency of the organization. This view also supported by Rhodes et al., (2008) and the scholar explained knowledge as a significant asset for strategic organization to enhance innovation. Moreover, different researchers have described a significant positive correlation of KM and innovation as evidenced by María et al (2011). In this study the researcher emphasized on examining positive relationship between KM and Organizational innovation and also the effect of KM practices on organizational innovation.

2.3 Intellectual Capital and its Concepts

In today's knowledge-based view, Intellectual Capital (IC) has seen as the most significant intangible assets of the organization which is essential element in the value creation of an organization (Chen et al.2005).In currently existing dynamic and competitive environment, intellectual capital has a vital role in promoting innovation and to ensure sustainable competitive advantages of the organization (Subramaniam and Youndt 2005). As understood from previous literatures, in resource-based economy the main components of the organizational resources emphasized on labor, capital, and physical assets. However, in the era of knowledge -based view, IC has transforming from the existing traditional behavior of organization in to value added asset (Bueno et al. 2004). As stated by Sivalogathasan and Wu (2015), KM without intellectual capital may not have an effect on organization's innovation.

Thus, Intellectual capital has seen as the heart of the administrative process as it plays a key role in all administrative features to make management more strong and effective. Above all intellectual capital has developed on human knowhow, inspiration, capability, and valuable skills (Tastan and Davoudi 2015). Intellectual capital is a foundation for creativity and innovation and it is also one of the main factors for organizations' success, since it involves as the initiator and catalyst for development and achievement of the organization and this needs organization to desire in obtaining a competitive advantage to attract intellectual capital and work to develop and

maintain it in a way that differentiate it from competitors in order to ensure its survival and sustainability (Luiza 2016).

Thus, currently organizations should know their business processes, accept and adopt new strategies to economic openness and to manage the necessities of information uprising by adopting the practical methods and practices and also by concentrating on intellectual capital in their polarization, develop and sustain to possess the intangible resources (tacit knowledge) and add value than their competitors (Luiza 2016). Therefore, Knowledge is seen as the key strategic resource for organizational survival, stability, growth, and improvement as knowledge is an input for the development of organization's intellectual capital which in turn accelerates the innovative capacity of the organization (Al-Ali 2013). So, KM can help the organizations to remain competitive, by sharing of knowledge with the external partners and also to know their competitors' strategies, best practices, products and services (Attia and Salama 2018). Additionally, KM assists the organizations to acquire, interpret, and using knowledge related assets crosswise functional boundaries in order to create new knowledge and to promote innovation (Gharakhani and Mousakhani 2012; Hussinki et al. 2017).

Therefore, KM Practice is a means to boost the intellectual capital, which ensures the success of an organization and KM Processes (acquisition, sharing, and application of knowledge) have an effect on intellectual capital (Seleim and Khalil 2011). All KM activities those aimed to capture, gain, sharing and applying of knowledge have a great influence on intellectual capital and also in enhancing the innovative capacity of the organization (Hussinki et al. 2017).

In spite of the variations in the definitions of IC, most of the scholars are agreed upon the framework of IC that includes three basic elements: human capital, structural capital and relational capital (Wang et al.2016).They also stated as organizations would achieved their competitive advantage by mobilizing their intellectual capital in the form of knowledge, technological skills, experience, and strategic capabilities and it shows the valuable and unique resources competencies that give a long-term competitive advantage and superior performance to the firm by facilitating innovative organizational culture. Thus, this study was focused on three common components of IC which includes: human, structural and relational to investigate their role in a university circumstance. **Human capital** is central element that serves as a driver for other aspects of IC (structural and relational) as evidenced by Li and Chang (2010).As explained

by Hahal and Bakshi (2015) human capital is the capability of an organization to create value through the use of knowledge, experience, skills, education and the creativity of its employees.

Structural capital is an organizational infrastructure related to processes and procedures that assist employees in their work (Chahal and Bakshi 2015). It can be treated as an intangible strategic resource which form firm's competencies, culture, norms, values, databases, corporate image, and so on (Aramburu and Sáenz 2011; Zangoueinezhad and Moshabaki 2009). Whereas, relational capital is emphasized on knowledge and learning capabilities which results not only from the relationships between employees of an organization and its stakeholders, but also from other related assets of the organization like customer allegiance, brand and reputation (Agostini et al. 2017).Therefore, in this study the researcher has measured intellectual capital (IC) of university from the above three dimensions (Human, structural and relational capitals).

2.4 Theories (Models) of KM

2.4.1 Resource-Based View (theory)

In resource-based view (RBV), an organization can be supposed as a collection of resources that the management of the organization has translated into the strengths and weaknesses of the organization. This theory expressed as organizations can ensure their sustainable competitive advantages by applying their valuable assets and abilities (Grunert and Hildebrandt 2004). This view explained that, a firm's competitive advantage can be achieved in the availability of strategic resources those are able to add value, rare, costly to imitate and substitute. This theory also proposes that organizations should be successful in acquiring and managing resources those are valuable in order to be effective in their activity. In this view, organizational effectiveness is seen as the means of the organization to gain limited and valued resources and successfully integrate and manage such resources (Dess et al. 2012). This perspective classified the organizational resources as tangible and intangible resources. Intangible resources are non-physical assets that are created by organizations managers and employees which include: employee's knowledge skills, experiences, product brand names, organization's reputation, and intellectual property of the organization. However, tangible resources are physical resources that include: land, buildings, equipment, inventory and money (Jones and Hill 2009). In addition, RBV supposes as there is a resource disparity among competing organizations and strategies employed by an organization like KM can be used to build and create new resources and capabilities as well as reinforcing the accessible resources and capabilities of the organization to

enhance the unique competences and innovation of the organization (Grunert and Hildebrandt 2004).

2.4.2 Knowledge-Based View

In the knowledge-based view (KBV), innovative knowledge is what organizations want to perform more than others in a business. KBV also believes as a firm is a "distributed knowledge system" that comprises knowledgeable employees, and the role of organization is coordinating and reinforcing of the work of those employees in order to create knowledge that can add value to the organization (Feng et al. 2005).

KBV also considers knowledge as the most vital source for organizations competitive advantage (Feng et al. 2005) and it has been argued as knowledge is a critical resource of organization's strategies and the basis for competitive advantage as the combination of a bundle of knowledge rather than individual knowledge (Felin and Hesterly 2007). Besides, knowledge assists the organization in strategic development for its products and market, and provides options to achieve differentiation of products and competitive advantage over competitors.

Furthermore, KBV helps the organization to shift from market position-based competitive advantage to organization's capabilities based competitive advantage (Felin and Hesterly2007), and the orientation of organization's strategies has also shifted from position-based to capabilities-based and firms frequently absorb new knowledge in order to improve their capacities from cooperative partners through alliance. Moreover, this perspective stresses on knowledge-based competition and shows as organizations can differentiate themselves based on their KM strategies. Though individual knowledge asset is complex to gain and difficult to emulate, organizations that want to achieve the competitive advantage through KM have also practiced to combine their knowledge assets in order to create an overall KM capacity effectively.

KBV considers knowledge assets and its elements such as knowledge acquisition, conversion, transfer and application as chief resources that can be used in strategic development of products, processes and markets within knowledge intensive and innovative organizations. Besides, this value creation process needs the knowledge exists internally and utilized by employees and managers to promote innovation of the organization and to expose an organizations to technical boundaries that accelerate its innovation to absorb and deploy knowledge assets (Kinyua 2015).

Thus, for this study KBV was used as a theoretical proposition to develop the conceptual framework to examine the effect of KM on organizational innovation as this view helped as a base for variables identified in this study.

2.5 Empirical Review Literature

2.5.1 Practices of Knowledge Management (KM) in Universities

As stated by Mikulecká and Mikulecký (2000), in the universities, knowledge has been always created and universities are seen as an institution of Higher Education that designed for advanced and systematic knowledge sharing instructions and researches in several branches of learning. In universities different divisions such as libraries, knowledge centers, registry/administration, ICT directorate, colleges, institutes, faculties and/or schools and departments, all of which may be entirely may differ from each other in their operations, even though they are strive to achieve the same goals. So, universities are flexible and multi-product/service-oriented organizations taking on supplementary roles, specifically in relation to the knowledge economy and social inclusion.

KM is significant in universities more than ever before due to the increasing of dependence on knowledge for the growth of organizations and economies coupled with the information overload due to the emergency of new technologies that have made KM easier for the universities to create and share information and knowledge. Thus, Universities can benefit from KM by creating and maintaining relevant knowledge repositories, improving knowledge access, enhancing the knowledge environment and valuing knowledge (Mikulecká and Mikulecký2000).

So, the primary purpose of universities, colleges and schools is academic knowledge and from academic perspective, universities are considered as the traditional center of knowledge production, storage, dissemination and authorization (Ratcliffe-Martin et al. 2000). This is because universities usually possess a modern information infrastructure and the sharing of knowledge with others is natural for professors and teachers in general.

Moreover, universities are organizations that have an experienced staffs in all type of fields who can contribute their expertise and experience in producing and preserving knowledge and universities help as the main instruments of society for the constant achievement of knowledge in a suitable environment for the application of KM principles and methods (Pircher and Pausits 2011). Especially modern universities are business organizations with many business activities in

the "educational market" and any method of increasing their competitive advantage might be very useful and interesting for them and the application of capabilities, techniques and technologies to manage knowledge is the right approach and direction for universities (Mikulecká and Mikulecký2000).

Thus, effective KM can improve the decision-making capacities, reduced the time cycle to develop products or services like curriculum development and research works, improved over all teaching and learning activities, administrative services and reduced the operation costs the universities (Kidwell 2001). So, universities need to acquire, learn and gain knowledge not just for the enhancement of staff performance, but also for the overall performance of the universities and to improve competitive performance through innovative working environment (Galbreath 2000).

Even if, universities are increasingly involved in competition to attract the most funding and investments, the best students, and the best academic staffs, now they are facing internal knowledge loss since the current employees will be leave the universities within a short period of time. Universities those become conscious in the importance of KM are currently involved in introducing KM project to capturing knowledge which exist in the minds of people (tacit knowledge). This KM uses systematic approaches to find, understand, and use of knowledge to achieve university's objectives and also sustain their competitive advantages through innovation (Petrides and Nodine 2003).

So, academic institutions, particularly universities are seen as 'knowledge centers', where varied activities are carried out for the acquisition, sharing, retention, storage and application of knowledge and most academic staffs and researchers are essential parts of universities who play a great roles in KM activities even if another group of people are crucial for setting and implementation of 'knowledge agenda' of the university. Those people are the knowledge workers, who are working across all parts of the university in providing support to Communities of Practice (CoP), professional and inter-disciplinary groups and to individuals seeking to enhance their professional skills (Barquin 2007).

Thus, in the university context, knowledge is shared through the use of teaching-learning methodologies and the university provides an environment in which university staff develops their skills, understanding and common values. Thus, universities are responsible in creating human resources who are able to build a knowledge based society since they are the higher

learning centers of the country. Mikulecky and Mikulecka (2009) observed that, by its nature, university environment is suitable for the application of KM principles and methods because universities usually possess modern information infrastructure and sharing of knowledge and new ideas with others is the usual activity for teachers and the need of learners is to obtain knowledge from existing and accessible sources of knowledge as fast as possible.

As explained by Metaxiotis and Psarras (2013), there are three major missions of universities which are: teaching -to prepare students to become successful lifelong learners; research-to increase the limits of human knowledge and to encourage creativity and innovation; and in terms of service– to serve the communities and in leadership positions within the university and in professional organizations, and to participate in the activities that help the domestic, state, and worldwide communities. Even if universities are expected to be the center for knowledge management and being a model for others; still there is no adequate and strategic KM practices and no innovative organizational culture as seen in the literatures especially in Ethiopia context. Therefore, in this study the researcher is aimed to assess the practices of KM in line with the above concepts and realities.

2.5.2 Relationship between KM and Organizational Innovation

Knowledge is generally one of the most fundamental keys for development of organizational innovation as it promotes activities that create or improve the organizations processes (Kumar et al. 2000). Rhodes et al. (2008) also supports this belief by stating that, knowledge is a significant resource for strategic organization to enhance innovation and improve organizational performance. Many studies also have examined the positive relationship between knowledge and innovation. Majchrzak et al. (2004) also confirmed that the implementation of KM is a strategy which is used to improve organizational innovation and it is considered as the best way to foster organizational innovation.

Additionally, Yahya and Goh (2002) have explained as KM is a process of enhancing knowledge application to achieve organizational innovation and improving organization's performance, meanwhile; the innovation process involves the acquisition, dissemination, and use of new and existing knowledge. Thus, an organization's innovation is closely attached to organization's ability to utilize its knowledge resources. So, the positive relationship between KM and organizational innovation has been proved and gain popularity in literature as KM practices in

terms of knowledge acquisition, conversion, and application provides a positive contribution to the organizational innovation (Chen and Huang 2009). They also explained as an effective KM help in knowledge communication and exchange necessary information in innovation process and further enhances organizational innovation and performance through the development of new insights and capabilities. KM plays an essential role in supporting and fostering organizational innovation and it has a great role for the improvement of innovation capacity of organizations (Jyoti et al. 2013). As a result, in this study the researcher examined the relationship between KM practices (knowledge creation, conversion, storage and application) and universities innovation (service, administrative and technical innovations) by testing hypothesis after describing the existing practices.

2.5.2.1 Relationship between Knowledge Acquisition and Organizational Innovation

Knowledge acquisition is the process that made possible through the processes and activities of synthesis, refinement, integration, combination, coordination, distribution, and restructuring of knowledge that accelerate the innovativeness of the organization (Jyoti et al. 2013). It also involves in obtaining the needed knowledge from both internal and external sources that promote the creativity and innovation of the organization. As stated by King (2009) knowledge acquisition needs one to have wide access to knowledge and having knowledge-based resources that enable the capturing of new knowledge and exploiting the available knowledge to improve the innovation of organizations.

Thus, Knowledge acquisition involves in using the existing knowledge or capturing of new knowledge to enhance an organization's ability in efficiently performs its goals as well as to increase organization's learning (McElroy 2000; Lin and Lee2005). Through acquiring knowledge from both inside and/or outside the organization, each organizational member can increase his/her capacity to transform current knowledge to new knowledge and to generate new knowledge (Yli-Renko et al. 2001; Chen and Huang 2009). Then, recently obtained knowledge raises the stocks of knowledge availability and reduces doubt and opens new opportunities for utilization and exploitation of knowledge in order to promote the creation of innovative results (Gold et al. 2001; Huang and Li 2009; Argote et al. 2003). Knowledge acquisition help the organization to diagnose existing knowledge and to capture new knowledge that promote organizational innovation since innovation requires an intensive effort and experience in

recognizing existing knowledge and also to capture new one (Drucker, 1993; Fabrizio 2009).So, innovation is basically increased through knowledge acquisition since knowledge acquisition is positively related to innovation (Darroch and Mc Naughton 2002). So, the study was tested the relation between knowledge acquisition and university's innovations though administrative and technical innovations which have an influence on other types of innovation as expressed by different researchers like Ngoc-Tan and Gregar (2018).

H0= Knowledge acquisition has no a significant effects of organizational innovation.

H1= Knowledge acquisition has a significant effects of organizational innovation.

2.5.2.2 Relationship between Knowledge sharing and Organizational Innovation

The sharing of knowledge from individuals to groups or vice versa has a great contribution on increasing the understanding and skills of employees which in turn increase the innovation capacity of employees and university as knowledge is a unique resource that help organizations to ensure sustainable competitive advantages through continuous innovation. So, the researcher tested the hypothesis to confirm the relationship between knowledge sharing and innovation of university's by considering the practices of knowledge sharing in selected university.

H0= Knowledge sharing has no a significant effects of organizational innovation.

H1= Knowledge sharing has a significant effects of organizational innovation.

2.5.2.3 Relationship between Knowledge Application and Organizational Innovation

The process of knowledge application is putting and using of new and improved knowledge, ideas, techniques, methods, procedures, etc. in order to produce new and/or modified services that satisfy the ever changing needs of customers. Knowledge application is effective retrieval mechanisms that facilitate access to knowledge and it is the actual process of knowledge retrieval and knowledge dissemination (Lee and Kelkar 2013). This means that, knowledge application engages in effective retrieval mechanisms that enable members of the organizations access to relevant knowledge which promote their innovative capacities (Kamau, S.M. 2016). Thus, the improvement of academic innovation is due to the application of captured and created knowledge that will be supported among educational partners. So, this research examined the relationship between university's actual knowledge utilization/application and the improvement in university's innovation after dealing with their practices by developing the following hypothesis.

H0= Knowledge application has no a significant effects of organizational innovation.

H1= Knowledge application has a significant effects of organizational innovation.

2.5.3 Knowledge Management and Intellectual Capital

There is a strong relationship among KM practices and Intellectual Capital (Hsu and Sabherwal 2011; Wiig 1997) and KM Process is an important means to raise the intellectual capital that ensures the organizational success. Thus, all KM practices (acquisition, sharing and application of knowledge) have an influence on intellectual capital (Seleim and Khalil 2011), since the KM activities that involves in capturing, gaining, and sharing knowledge as well as its applications have a great effects on intellectual capital as evidenced by Hussinki et al. (2017). Mehralian et al. (2014) investigated as knowledge acquisition has an effect on the organization's ability to determine, organize, and obtain knowledge from external resources and which is vital to its operational success which also plays a crucial role in developing human capital. Wang et al. (2014) also believes that knowledge is the main resource that shapes the organizational ability or the knowledge-based capital. However, it is difficult for the organization to take the full advantages of the existing knowledge especially tacit knowledge in developing the intellectual capital. But the effective application of KM practices reinforces organization's learning ability at all levels by promoting human resources and individual experiences in formulating new ideas for developing and marketing of new products. Moreover, application of Knowledge diversifies and develops intellectual capital as supported by Ramadan et al. (2017). Thus, based on the above empirical findings the researcher developed the following hypothesis.

H0= KM practices (knowledge acquisition, sharing and application) have no a significant effect on intellectual capital

H1= KM practices (knowledge acquisition, sharing and application) have a significant effect on intellectual capital.

2.5.4 Intellectual Capital and Organization Innovation

According to Kamukama et al. (2011) the competitive advantage of organizations is increased from the use of scarce, intangible, and organization-unique assets and organization's current and future competitiveness as well as firm value growth are also determined by intellectual capital. As stated by Tovstiga and Tulugurova (2009) that competitive advantage is achieved by those firms that succeed in mobilizing their intellectual capital in the form of knowledge, technological

skills, experience, and strategic capabilities. Therefore, Intellectual capital shows resources and competencies which are valuable, and unique, that can gives a lasting competitive advantage and superior performance of the organization (Kamukama et al. 2010), and human capital is the human factor of the organization, which is involves in gathering the intelligence, skills, and expertise that employees use and exploit when they leave the organization and gives its distinctive feature (Bontis 2002). Intellectual capital regards what happens between the people, and how the people are associated within the organization (Halim 2010); it is also a stock of knowledge that is owned by the organization and includes information system, and explicit knowledge, product and process innovation, process optimization. Relational capital seen as an intangible asset that is based on developing, maintaining and nurturing of high-quality relationships with any organization, individual or group that influences the organization as stated by Kamukama et al. (2011).So, based on the above empirical findings the researcher developed the following hypothesis.

H0= Intellectual capital has no a significant effect on organizational innovation.

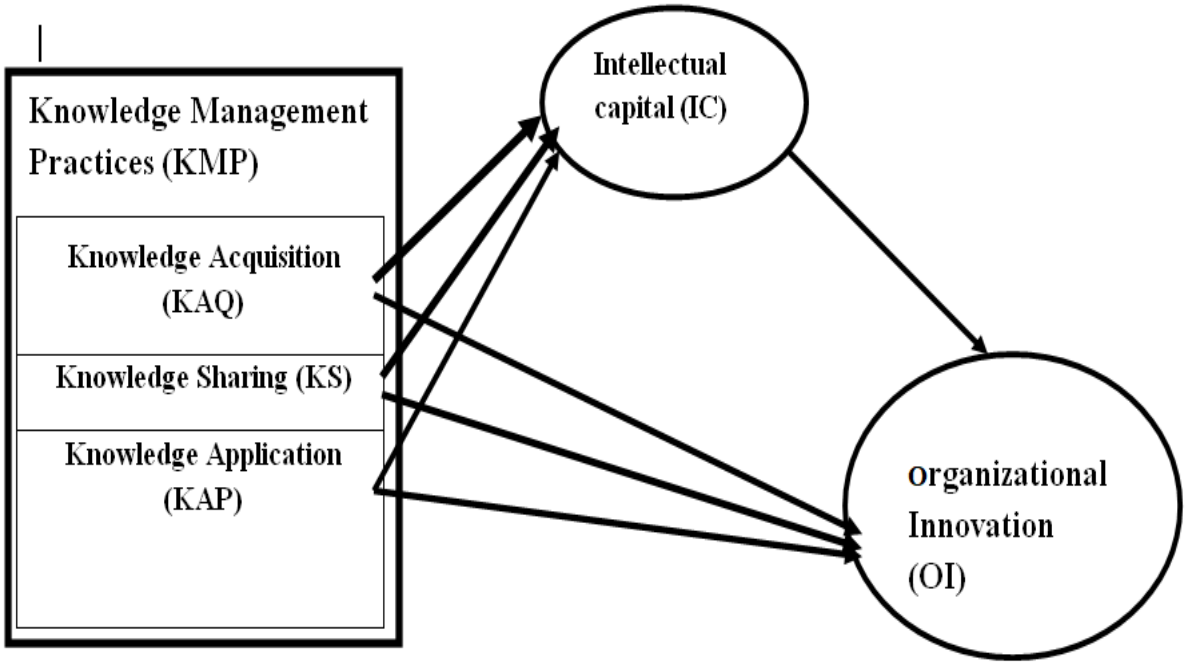
H1= Intellectual capital has a significant effect on organizational innovation.

2.6 Conceptual Framework

Conceptual framework is a researcher's rationalization on how the research problem is covered and it presents an integrated means of looking at a problem under study and shows the relationship between main constructs and it should be arranged in logical way. It makes easier for researcher to specify and define the concepts within the problem of the study (Luse, Mennecke and Townsend 2012).

Consequently, the conceptual framework of this study was focused on three basic constructs which includes KM practices, organizational innovation and intellectual capital in selected university. It framed the relationship between KM practices (KMP) (knowledge acquisition, sharing, application and retention /storage), organizational innovation (OI) and intellectual capital (IC) by clearly identifying KM practices as independent variable, organizational innovation as dependent variable and intellectual capital as a mediating variable.

Figure 2.1 Conceptual Framework



Source: Developed by Researcher Based on Reviewed Literature

2.7 Research Hypothesis

H1- KM practices have a significant effect on intellectual capital.

H2- Knowledge acquisition has a significant effect on organization's innovation.

H3-Knowledge sharing has a significant effect on organization's innovation.

H4-Knowledge application has a significant effect on organization's innovation.

H5- Intellectual capital mediates the relationship between knowledge management practices and organizational innovation.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

Introduction

Under this chapter the researcher present an overview of methodology that will be applied in the study with detail justification of the use and application of each selected methods and techniques. The chapter also described different procedures and processes employed to collect and analyze the data and explained the population as well as sampling procedures and techniques which were used for the study. Data collection instruments that were employed to gather data with the explanation of why they were considered as appropriate also discussed. Likewise, procedures and techniques of data analysis also discussed in detail.

3.1 Description of Study Area

Ethiopian Civil Service University (ECSU) was a university which was established in 1995 as College in supporting the change for Ethiopian Civil Service in the situation of the national development policies and strategies to ensure more successful, transparent, accountable and learning system. More specifically, the University aims at building the capacity of the civil service at both federal and regional levels through specialized /professional orientation /education, training, research and consultancy programs and services. The University has been established through a Council of Ministers Regulation No 3 of 1996 as an autonomous higher education institution focusing on building the capacities of the country's civil service. It is mandated to design and offer specialized under graduate and post graduate educational programs, conducts short term training, undertake research and publication activities, organize conferences and seminars and render consultancy services.

3.2 Research Design

A research design is a master plan of researcher that specifies the methods and procedures for collecting and analyzing the needed data/information for empirical research and it is aimed at answering specific research questions or testing of specific hypotheses and there are three types of research design namely: descriptive, exploratory and explanatory research designs (Robson 2002). Thus, this study adopted an explanatory and cross-sectional survey research design as suggested by Saunders et al. (2009) in order to establish causal relationship between variables on

how KM influences the innovation of Ethiopian Civil Service University (ECSU). In addition cross-sectional study seeks to measure the relationship of variables at a specified period of time to describe the occurrence of the issue and how the variables are related by gathering and analyzing of data concurrently.

3.3 Research Approach

As stated by Creswell and Garrett (2008) the design of any study starts with the selection of a topic and a research approach and they identified three main types of research approaches as qualitative, quantitative and mixed. For this study, a mixed research approach was used where the researcher had combined elements of qualitative and quantitative research approaches (use of qualitative and quantitative viewpoints, data collection methods, analysis and inference techniques, etc.) together. Mixed research approach helps a researcher to get breadth and depth understanding on the phenomenon and adds the credibility of data by neutralizing the limitations of both quantitative and qualitative data and it also provides the most reliable insight and research findings (Johnson et al.2007).

3.4 Population and Sample

3.4.1 Population of the Study

In research, population refers to an identified group of interest to the researcher and the group to which the research results would be generalized (Saunders et al.2007; Johnson and Christensen 2015). For this study the population was the academic staffs of Ethiopian Civil Service University which is a total of 240.

3.4.2 Sampling Frame

Sampling frame is list of all sampling units from which sample is drawn, thus for this study the list of all academic staffs were taken as the sampling frame of the study which has obtained from the HR directorate office.

3.4.3 Sample Size Determination

Researchers in the early 19th century strove to survey the entire population, however, researchers in the 21st century work only with a portion of the entire population (a sample) from which the researcher draws inferences about the population or generalises the result (Creswell 2014). Therefore, for this study the researcher has used the sample size determination formula which was developed by Yemane (1967) for academic staffs of the university as shown in the following

formula, 150 instructors are sampled respondents from whom the data was gathered through questionnaire for quantitative analysis.

n=N/1+N (e) 2

n=240/1+240*(0.05)2

n=150

Table 3.1 Summary of sampled respondents

Respondents	Population	Sample
Instructors	225	141
Library workers	15	9
Total	**240**	**150**

Source: University HR department

In order to undertake the qualitative analysis; data was collected through interview and the interview target groups and the number of interviewees were: Academic Vice President(1), Collage Deans(3), Directors of ICT(1),Directors of library(1) with a total of 6 interviewees. The above participants were selected since Academic vice president is responsible to establish strategic KM system and facilitate the assignment of responsible bodies for KM starting from top to department level for effective implementation of KM system and create an organizational culture that support and encourage practices of KM and innovation; Collages Deans since they have responsibility to facilitate the teaching of the collage and departments and they also serve as the knowledge creators, innovators and facilitators for sharing of knowledge through research, team teamwork, training, etc.; Library was considered as the centre of knowledge in a university and it serves as the heart for knowledge creation, processing, storage and sharing at the university. Furthermore, librarians are seen as custodians of knowledge; ICT department also provides the relevant technology and systems support needed for KM practices at the university and they serve as the technological backbone of KM at the university and Registrar is the central administrative unit of the university that coordinate almost all the activities of the universities.

3.5 Sampling Design

According to Saunders et al. (2007) there are two main sampling techniques- probability and non-probability sampling techniques. Probability sampling enhances the likelihood of accomplishing the objective of selecting elements that accurately represent the total population from which the elements will be drawn and it may consist of stratified, simple random sampling,

systematic random sampling and cluster sampling techniques. Whereas non-probability sampling is a sampling technique in which some units of the population have zero chance of selection and applied where the probability sampling cannot be accurately determined and the units are selected based on certain non-random criteria. It includes: convenience, purposive, quota and snowball sampling techniques.

Thus, for this study probability and non-probability sampling techniques were employed. From probability sampling, lottery method of simple random sampling was used to select the sampled respondents. Finally, to select the interview participants the researcher employed purposive sampling technique in order to get more detail and depth information on the phenomena from responsible bodies.

3.6 Unit of analysis

Unit of analysis describes the level at which the research is performed and which objects are researched and people or individuals are common units of analysis. Other units of analysis can be organizations, divisions, departments, etc. and generally there are four different unit of analysis which are common in the social sciences: -individuals, groups, organisations, and social artefacts (Creswell, 2007). Accordingly, the unit analysis of this study was the university/organization.

3.7 Data Sources and Types

In conducting a study a researcher needed to plan and identify in advance about the types and sources of data, data collection instruments and how to analyze the collected data, because an inappropriate sources and type of data can result with a negative impact on the results of a study and can ultimately lead to invalid findings (Cooper and Schindler 2011).

3.7.1 Primary Data

Primary data are first hand data or fresh data that the researcher collects from different respondents with regard to the inquiry by using various data gathering tools (Cooper and Schindler 2011). So, for this study primary data was collected from sampled academic staffs and managers of the university through questionnaire and interview but there is no any secondary data or documents related to KM practices and innovation of the university.

3.7.2 Secondary Data

The researcher used the selected university's KM related documents, policies, procedures and strategies to evaluate their practices and overall KM implementation.

3.8 Data Collection Instruments

3.8.1 Survey Data Collection Instrument (Questionnaire)

A questionnaire is a commonly used data gathering tool that consist a series of questions in order to get relevant information from respondents (Saunders 2007). Questionnaire can either be open-ended or closed-ended. In this study, both closed and open-ended questions are used to gather a primary data from sample academic staffs and the instrument was adapted from Nguyen Ngoc-Tan and Aleš Gregar (2018) Debowski (2006), Lawson (2003), and Marsick & Watkins (2003)**.** Closed-ended questionnaires consist of questions that restrict respondents to select or pick from a list of available or proposed choices of responses and for this study the closed-ended questions that consist of a one to five pre-coded likert scale type questions (1=strongly disagree to 5=strongly agree).In addition, the researcher was used an open-ended questions as this type of question help to avoid bias that a list of responses could have introduced; to yield rich and detailed comments and give the respondents opportunity to answer in detail and to qualify and clarify possible responses.

3.8.2 Interview Guides

Interview is a conversation which is hold among two or more individuals which involves in asking of questions by someone (interviewer) to draw facts or statements from the other person (interviewee) that is relevant to the study. It can be taken in the form of telephone, face-to-face, internet interviews and it would be conducted as structured, unstructured and semi-structured one. Accordingly, a face to face semi-structured and email interview was conducted with Academic vice president of university Director of ICT and Library, and College Deans of the selected university in order to get detail and relevant information through elaboration and probing till the information is saturated as all of them have role on KM activities practiced in the university.

3.9 Data Collection Procedures

After some modification of data gathering instruments the researcher has consult expertise and finalize the development of instruments by incorporating the comments from experts that help to test the validity. The researcher had collect data with mixed methods by using concurrent form of data collection in which both the quantitative and qualitative data was collected concurrently from respondents after confirming consent with participants.

3.10 Methods of Data Process and Analysis

In research activities data processing involved in editing, coding, and tabulation of data before the data is analyzed. The researcher undertakes editing in order to check as the data were exactly consistent entered and arranged to assist coding and tabulation process. The data was arranged in columns and rows to facilitate a basis for various statistical computations. Data analysis entails in identifying and agreeing on criteria and action, which can be used to explain what has happened and it was aimed to transform the collected data into meaningful information or to answer the research questions (Onwuegbuzie et al. 2009). As a result, that study was a mixed research in its approach and the researcher adopted explanatory cross-sectional research design and employed descriptive analysis (frequency, percentage, mean and standard deviation) to describe the practice of KM and innovation of the university and Structural Equation Modeling (SEM) which is the second generation data analysis tool in business, management, and social sciences research (Hair et al. 2014). It can be classified as covariance based structural equation modeling (CB-SEM) and partial least square structural equation modeling (PLS-SEM). SEM allows including the latent variables in analysis and it is not restricted to the relationship among observed variables and constructs like the usual data analysis tools example regression model as stated by Hatcher and Kline (2005). Thus, in this study the researcher employed PLS-SEM and used the SmartPLS3.0 and SPSS 24 version software for data analysis.

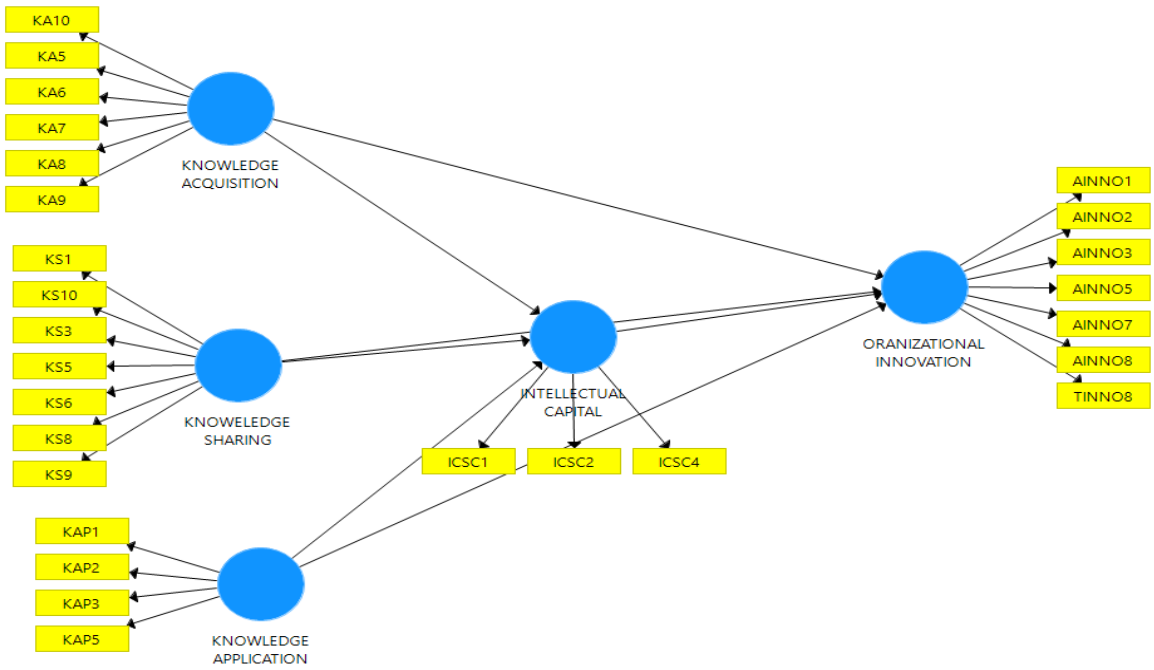
So, to evaluate the direct and indirect relationships between three constructs simultaneously, the researcher was used PLS-SEM and used bootstrapping to evaluate the significance (P-value) of the correlation (measuring model) and the regression (structural model) among constructs. In PLS-SEM the researcher has passed through two stages of analysis that encompasses measurement model specification and structural model evaluation as suggested by Ringle et.al (2018) and Wong (2013). Finally, the qualitative data was analyzed through theme analysis and the researcher used the each construct as a theme.

3.11 Model Specification

In this study the researcher used PLS-SEM and the research had passed through two steps before the assessment of the PLS-SEM model as stated by Hair et al (2014) by starting from structural model and proceeding to measuring model. In structural model the researcher illustrated the latent variables and showed their relationship to each other, while in measuring model the

researcher clearly described the relationship between proxy indicators and their respective constructs.

Figure 3.1 Working Model of the study



Source: Smart PLS result (2020)

The relationship seen on the above model was described and illustrated as follows:

Y=B0+B1X1+B2X2+B3X3+B4X4+e

Where,

Y was organizational innovation (endogenous variable)

B0 is the intercept of the model

B1 …. B3 -path coefficients of the independent variable and **B4** was path coefficient of mediating variable

X1 was knowledge acquisition items

X2 was knowledge sharing items

X3 was knowledge application items

X4 was intellectual capital (mediating variable)

e was standard error

3.12 Reliability and validity

Reliability test

Reliability estimate relates to scale's items homogeneity to which items on a test jointly measure the same construct (Henson 2001). To evaluate the reliability of the study the researcher used Composite reliability (CR) over Cronbach's alpha (CA) which was recommended as a better suitable for PLS –SEM by Hair et al. (2014) since Cronbac's alpha gives estimates of reliability based on the inter-correlation of observed indicator variables whereas PLS-SEM prioritizes indicators according to their individual reliability. Additionally, Cronbach's alpha is sensitive to quality of in the scale, and then be inclined to undervalue the internal consistency as stated by Hair et al. (2014). Thus, in testing the internal consistency the researcher found that the composite reliability of all variables were greater than the threshold (0.7) where the values above 0.7 are acceptable for exploratory researches (Hair et al 2014) and the values for all constructs in this model were in acceptable range which showed that there is better internal consistency as displayed on the table 3.1 below.

Table 3.2 Composite Reliability and validity tests

	Cronbach's Alpha	Composite Reliability	AVE
Intellectual Capital	0.856	0.911	0.78
Knowledge Sharing	0.897	0.919	0.62
Knowledge Acquisition	0.876	0.906	0.63
Knowledge Application	0.745	0.839	0.60
Organizational Innovation	0.886	0.912	0.60

Source: smart PLS result (2020)

Validity test

Validity is the basis on which the worthiness of research findings will be determined. It measures the soundness of a research and it will be applied to both the design and the methods used in research (Creswell 2014). Thus, in this study the researcher has evaluated the convergent Validity obtained by the observations of the Average Variance Extracted (AVEs) by using the Fornell and Larcke (2009) criteria, i.e., the values of the AVEs should be greater than 0.50 (AVE > 0.50) which indicates the portion of the data which is explained by each one of the constructs or latent variables respective to their groups of variables. As a result, the AVEs of all variables were greater than the expected threshold (0.5 or 50%) and all variables are positively correlated with their respective constructs and the AVE for knowledge acquisition 0.618, knowledge

sharing was 0.62, knowledge application 0.567, intellectual capital with 0.775 and organizational innovation was 0.60 factorial loads (correlations) as seen in the table 4.8 above. This implies that the model converges with satisfactory results as suggested by Hair et al. (2014).

Table 3.3 Discriminant validity

	Intellectual Capital	Knowledge Sharing	Knowledge Acquisition	Knowledge Application
Intellectual Capital	**0.880**			
Knowledge Sharing	0.699	**0.787**		
Knowledge Acquisition	0.824	0.736	**0.786**	
Knowledge Application	0.591	0.642	0.659	**0.753**
Organizational Innovation	0.611	0.637	0.541	0.276

Source: Smart PLS result (2020)

Additionally, the researcher also evaluate the Discriminant validity (DV) of the model to see the independency of variables or constructs to one another and in Smart PLS the researcher found that the values of DV for all variables were under 0.9 as suggested by Fornell and Larcker (1981), and as evidenced in table 3.2 below. The result showed that the independent variables were not dependent to one another as the values of each construct were less than **1**as seen on the above table.

3.13 Ethical Consideration

The basic principle of ethical research is to preserve and protect the human dignity and rights of all subjects involved in a research project (Leedy and Ormrod 2013). Thus, in conducting the survey and distribution of the questionnaires to sampled academic staffs the questionnaires was pretested and modify as possible. Then formal letter was obtained from AAU School of Commerce and it has communicated to selected university and informed to the respondents to confirm their voluntarily participation and get consent from them. Then the data was collected without any force and the collected data has been used only for academic purpose and kept strictly confidential.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

Introduction

This chapter presents the descriptive and inferential analysis of the collected, data and the tested hypothesis which involves on examining and testing the proposed assumptions. In addition to this it discusses the results of the study based on the theoretical and empirical literatures reviewed and in relation to objectives and basic research questions stated so far.

4.1 Response Rate of the Study

To achieve the research objectives and to get relevant answers that addressed the research questions 150 questionnaire were distributed to sampled respondents of ECSU academic staffs out of which 125(83.3%) was returned, while the rest 25(16.7%) was not returned since the staffs were not present in their office due to the problem of Corona Virus.

Table 4.1 Response Rate

Distributed Questionnaires		**Returned**		**Not returned**	
Quant	**%**	**Quant**	**%**	**Quant**	**%**
150	**100**	**125**	**83.3**	**25**	**16.7**

Source: Survey data (2020)

4.2 Demographic Profile of Respondents

Under this particular section of the study, background information of sampled respondents in terms of their sex, age, educational qualification and work experience has been analyzed and interpreted.

Table 4.2 Demographic information of respondents

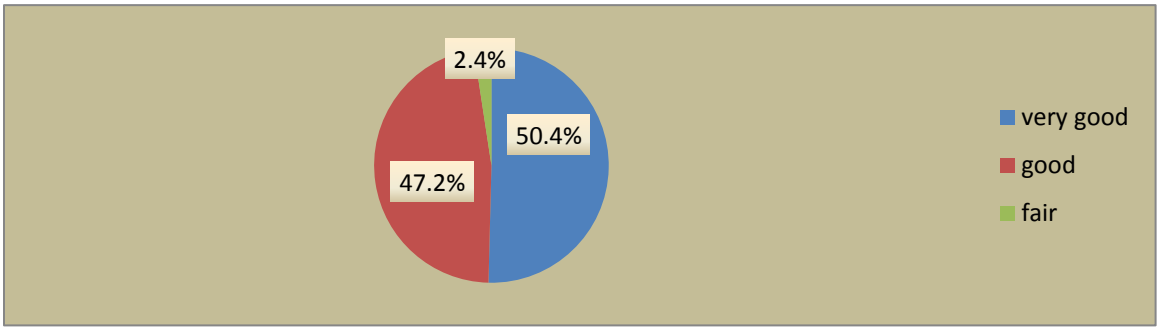
		Frequency	Percent	Cumulative Percent
Respondent's age	26-30	16	12.8	12.8
	31-35	93	74.4	87.2
	46 and above	16	12.8	100.0
Respondent’s sex	Male	115	92.0	92.0
	Female	10	8.0	100.0
Educational level	1st degree	3	2.4	2.4
	Masters Degree	100	80.0	82.4
	PhD and above	22	17.6	100.0
Years of experience	2-4	2	1.6	1.6
	5-7	48	38.4	40.0
	8-11	59	47.2	87.2
	12-16	16	12.8	100.0

Source: Survey data (2020)

As indicated in table 4.2 above, the demographic profile of respondents showed that, the proportion of male was 115 (92%) which is greater than females respondents 10(8%). To appreciate and manage knowledge effectively, universities are expected to have staff members with qualification and better educational backgrounds. As stated by Ismail and Yusof (2009), as the level of educations of members became lower, the more likely individuals are challenging to appreciate and share the knowledge. Thus, concerning the educational status, more than half (80%) of the respondents were second degree/Masters holders, about (17.6%) hold PhD degree and the rest 2.4% are bachelor degree holders. This implies that the staffs of the university are able to appreciate and manage knowledge as they have required educational qualifications and backgrounds. Regarding their work experience, about (47.2%) of the participants have 8-11years of experience, some (38.4%) of them have 5-7years of experience and the remaining 12.8%, 1.6% been failed under 12-16years and 2-4 years of experience respectively.

Generally, the findings on background information of respondents showed that, the most of academic staffs are male, most of respondents have required educational backgrounds and better years of experience that enable them to appreciate and manage the university knowledge effectively.

Figure 4.1 Level of respondent understands on KM



As seen on the pie chart 4.1 above, respondents were asked their level of understanding on knowledge management (KM) and almost half (50.4%) of them have very good understanding, about 47.2% replied good, few (2.4%) of them responded as they have fair level of understanding. This implies that most of the academic staffs have better knowhow on the concepts of KM that help them to appreciate, manage and share knowledge to each other.

4.3 Descriptive Analysis for KMP and Organizational Innovation

The first objective of the study was to assess and evaluate the practices of knowledge management (knowledge acquisition, sharing, and application) and innovation at university level and each of the elements in KM practices and innovation were assessed and described as follows.

4.3.1 Knowledge Acquisition Practices

Table 4.3 Respondents opinion on Knowledge acquisition practices of the university

	Levels of agreement						Mean	St.dv
	DA		Neutral		Agr			
Items	**Fr**	**%**	**fr**	**%**	**fr**	**%**		
University use its external knowledge in knowledge acquisition process (KAQ1)	112	89.6	10	8	3	2.4	2.00	0.55
University encourages the exchange of ideas and knowledge among its members(KAQ2)	116	92.8	2	1.6	7	5.6	1.87	0.73
University establishes mechanisms for acquiring of knowledge from d/t sources of knowledge (KAQ3)	114	91.2	4	3.2	7	5.6	2.16	0.56
University has a KM policy that promote KM practices (KAQ4)	113	90.4	11	8.8	1	0.8	2.10	0.33
University create a conducive environment for conversion of tacit knowledge to explicit knowledge (KAQ5)	98	78.4	4	3.2	23	18.4	2.40	1.16
University has an appropriate mechanisms for conversion of tacit knowledge to explicit knowledge (KAQ6)	111	88.8	8	6.4	6	4.8	2.10	0.64
University has an open communication system that facilitate knowledge acquisition (KAQ7)	108	86.4	10	8	7	5.6	1.90	0.80
university has a cooperative culture that support knowledge acquisition (KAQ8)	104	83.2	0	0	21	16.8	2.33	1.14
University benchmarks other organizations in its knowledge acquisition activity (KAQ9)	105	84	8	6.4	12	11.6	2.25	0.74
University rewards its employees who contribute in knowledge creation /acquisition (KAQ10)	114	91.2	5	4	6	4.8	1.90	0.68
Aggregate Mean and SD							**2.10**	**0.60**

Source: survey data (2020) ***Hint:*** *DA-disagree, Agr- agree, frq-frequency Strongly disagree and disagree, strongly agree and agree were merged for analysis purpose.*

Knowledge acquisition is the process of gaining or creation and development of new ideas, knowledge, and skills that add to the existing stock of organizational knowledge (Choo 2003; Holsapple and Singh 2001). It is the most activity of the university in KM practices which shows the university's ability to acquire knowledge from its internal and external sources of knowledge through different mechanisms of knowledge acquisition. Thus, regarding KAQ1, most (89.6%)

of the respondents were replied disagree, 10(8%) responded “neutral”, the rest 3 (2.4%) replied agree on the practice of the university in level of using its external knowledge sources. This shows that the university is not able to use external sources of knowledge in its knowledge acquisition process and this also supported with a mean value of 2.00 which failed in range of disagree. In relation to KAQ2, most (92.8%) of respondents were disagreed on the university’s ability to encourage the exchange of ideas and knowledge among individuals and groups, about 2 (1.6%) of them replied “neutral” for the same question, the remaining 7(5.6%) of respondents were responded agree. This indicates that the university is not working on encouraging the exchange of ideas and knowledge between its members as required as this result is supported with a mean of 1.87 which is approximately disagree.

On KAQ3, majority (91.2%) of respondents were disagree and 4(3.2%) were “neutral”, the rest 7(5.6%) of them agreed on the availability of different mechanisms in the university for acquiring knowledge from its internal and external sources of knowledge and this implies that the university is establish different mechanisms to gain knowledge from its employees, customers and others and this also evidenced by the mean of 2.16. In KAQ4 on the same table most (90.4%) of respondents were disagreed on availability of KM policy that promote KM practice, 11(8.8%) were “neutral” and the remaining 1(0.8%) respondent was disagree on the same issue. From this the researcher understood as there is no KM policy in university that helps to appreciate and manage the university’s knowledge effectively and this finding also supported with the mean of 2.10 that failed under disagree.

As far as KAQ5, majority (78.4%) replied disagree, 4(3.2%) responded “neutral” and 23(18.4%) were agreed on university’s practices in creating conducive environment for conversion of tacit knowledge to explicit knowledge. From this it is easy to understand as the university is not initiated on creating a suitable environment that help to convert the tacit knowledge which exists in its employees mind to different documented knowledge and this finding is supported with mean of 2.4. On KAQ6 majority (88.8%) replied disagree, about 8(6.4%) were “neutral”, and 6(4.8%) agreed on the availability of appropriate mechanisms for conversion of tacit knowledge to explicit knowledge. These shows as the university has no mechanisms like R&D, CoPs, that help to convert employees knowledge to documented /explicit/ knowledge and this result was supported by a mean of 2.1 that failed on level of disagree.

On the same table 4.3 above regarding KAQ7 majority (86.4%) of respondents were disagreed on university's practices in creating open communication system that facilitate knowledge acquisition, 10(8%) of them were "neutral", 7(5.6%) were agreed. This indicates as the university is not as such establish a communication system that promotes knowledge acquisition from its internal and external sources and this also supported with a mean result of 1.9 which is approximately disagree. Additionally, on KAQ8 majority (83.2%) of the respondents were disagreed on the practice of university to establish cooperative cultures that support knowledge acquisition and the remaining 21(16.8%) were agreed. This showed as the university is not able to create a cooperative culture among its members that facilitate knowledge acquisition and this is also seen in a mean result of 2.33 which was failed under disagree.

Moreover on KAQ9 the researcher was interested to understand whether the university benchmarks other organizations in its knowledge acquisition activity on the same table above, and the responses showed as large number (84%) of respondents were disagreed, 8(6.4%) were "neutral" and about 12 (9.6%) agreed. This indicates that the university is not used lessons from other universities as input on how knowledge is acquired effectively as needed and this result was supported with the mean value of 2.25 that failed under disagreed. Finally, on KAQ10 researcher was aimed to know whether the university rewards its employees who contribute in knowledge creation /acquisition and the results revealed that most (91.2%) of the respondents were disagreed, 5(4%) of them "neutral" and the remaining 6(4.6%) were agreed. This entails that the university is not able to encourage its employees by rewarding them based on their contribution in knowledge acquisition or creation and this finding is supported with a mean result of 1.9.

According to Mikulecká and Mikulecký (2000) in universities, knowledge has been always created and universities are designed for advanced instructions and research in several branches of learning. Thus, organizations are expected to acquire knowledge internally by tapping into the knowledge of its staff, learning from experiences and implementing continuous process improvements and also strive to search knowledge from external sources like customers, suppliers, partners, etc.(Nemani 2010). However, as seen from the result, the university is not initiated to acquire knowledge from its employees and from its external sources by establishing

different mechanisms and policies or procedures as supported with aggregate mean score of 2.1 and 0.6 standard deviation. Responses from interviews of different participants and open ended questions also revealed as there is a no any specified policies and procedures of KM that facilitate the knowledge acquisition practices and the response also showed that even if there is R&D, CoPs to some extent it is not aimed to encourage academic staffs to convert their tacit knowledge to explicit knowledge as well as the environment is not encourage the staffs even though there is ICT infrastructure.

4.3.2 Knowledge sharing practices

Universities have recognized that knowledge comprises a value adding, intangible resources for creating and ensuring sustainable competitive advantages (Anduvare 2015).

Table 4.4 Knowledge Sharing Practices of the University

	Levels of agreement						**Mean**	**St.dv**
	DA		**Neutral**		**Agr**			
Items	**Fr**	**%**	**Fr**	**%**	**Fr**	**%**		
University use different mechanisms of KS like internet technologies, teamwork..etc (KS1)	50	40	9	7.2	66	52.8	3.51	1.37
University make knowledge easily accessible to all levels of employees (KS2)	110	88	2	1.6	13	10.4	2.07	0.85
University has various publications to display the captured knowledge (KS3)	107	85.6	8	6.4	10	8	2.15	0.70
University has a regular meeting for the purpose of knowledge sharing among its academic staffs (KS4)	111	88.8	7	5.6	7	5.6	2.02	0.72
University used techniques like apprenticeship, mentoring and coaching in knowledge sharing process (KS5)	107	85	3	2.4	16	12	2.17	0.85
University publicized the works of innovative staffs via internet, electronic magazines, etc (KS6)	111	88.8	2	1.6	12	9.6	2. 17	0.81
University has knowledge sharing policy and procedures that promote knowledge sharing activities (KS7)	112	89.6	6	4.8	12	5.6	2.06	0.68
University used the existing virtual space like website-mail, etc. to share knowledge among its employees (KS8)	70	56	8	6.4	43	34.4	2.71	1.75
University use open communication system (KS9)	109	87.2	9	7.2	7	5.6	2.15	0.74
university has standardized process in knowledge sharing (KS10)	117	93.6	4	3.2	4	3.2	2.02	0.54
Aggregate Mean & SD							**2.19**	**0.90**

Source: survey data (2020) ***Hint:*** *DA-disagree and Agr- agree, frq-frequency*

Strongly disagree and disagree, strongly agree and agree were merged for analysis purpose

To gain an idea on the practices of knowledge sharing different questions were raised and the responses were summarized below. In table 4.4 above, on KS1, about 50(40%) respondents were

disagreed on the university's practice in using internet technologies, office automation, teamwork and joint conferences to share among its academic staffs,9(7.2%) were "neutral" and about 66(52.8%) were agreed on raised question. This showed that the university has used internet technologies, teamwork and joint conferences to share information and knowledge among academic staffs to some extent as this result was supported with a mean value of 3.51 which approaches to agree. On the same table 4.4 above, item KS2 required the opinion of respondents regarding the university's practice in making knowledge easily accessible to all levels of employees and the result revealed that the majority (88%) replied disagree, 2(1.6%) were "neutral", the rest 13 (10.4%) were agreed. From this the researcher can understood as the university is not able to easily access knowledge for its staffs as required and this result also supported with a mean of 2.07 which failed in disagree.

In KS3 the researcher was initiated to understood the availability of various publications to display the captured knowledge and the responses showed that most (85.6%) were disagreed, 8(6.4%) were "neutral" and the remaining 10(8%) replied agree. This indicates that the university has no established different publication systems to share the created knowledge and this is supported with 2.15 mean which showed disagreement of respondents.

Additionally, the researcher directed question on the availability of regular meeting for sharing of knowledge on item KS4 and the responses revealed that majority (88.8%) responded disagree,7(5.6%) "neutral", and the reaming 7(5.6%) of them agreed and this showed as the university has no regular meeting for the purpose of knowledge sharing among its academic staffs and this was supported by 2.02 mean. In KS5 the majority (85.6%) of the respondents replied disagree, about 3(2.4%) responded "neutral" and the rest 15(12%) were agree concerning the techniques used in the university like apprenticeship, mentoring and coaching in knowledge sharing process. This implies that, the university has not used the techniques to facilitate knowledge sharing practice as the mean result was 2.17 which failed under disagree.

Besides, in KS6 question was raised to know whether the university publicized the works of innovative staffs via internet, electronic magazines, etc. and the responses point out that most (88.8%) were disagreed, 2(1.6%) were "neutral", 12(9.6%) and 15(12%) were agreed and this showed as there is a limitation on sharing of the works of its innovative staffs within and out of the university and this also supported with mean of 2.17.

As far as, the availability of university's knowledge sharing policy and procedures on item KS7, 112(89.6%) of respondents replied disagree, 6(4.8%) were "neutral" and 7(5.6%) were agreed. From this the researcher can understood as the university has no formal policies and procedures that promotes sharing of knowledge as the finding supported with a mean value of 2.06. In KS8, question was raised regarding the utilization of virtual space like website, intranet, e-mail, etc. for exchanging of ideas and knowledge among its employees and more than half 70(56%) of them replied disagree, about 43(34.%) responded agree, 8(6.4%) were "neutral" and disagree with a mean of 3.47 which approaches to agree. This showed as the university has not as such used the available virtual spaces and websites to support the knowledge sharing processes. On KS9 the researcher wants to know whether the university used open communication system and the mass (87.2%) of the respondents were disagreed, 9(7.2%) of them "neutral" and the remaining 7(5.6%) were agreed. This indicates that the university has low practices in creating and using open communication system and this is supported with a mean of 2.15 which was failed under disagree.

Moreover, the researcher was interested to understand whether the university has standardized process in knowledge sharing in KS10 and the most (93.6%) of participants were disagreed, about 4(3.2%) of them replied "neutral" and the rest 4(3.2%) were agreed. This showed as the university is not to establish standardized knowledge sharing process and this was also supported with a mean result of 2.02.

As stated by Lin (2007) Knowledge sharing is an organizational practice that needs collective knowledge, skills and expertise, and distribution of knowledge crosswise the organizational parts and it involves on the exchanging of employee knowledge, experiences, and skills throughout the organization via different mechanisms to build new mental models. Conversely, the overall mean value of 2.19 and 0.9 standard deviation responses reveals as there is no knowledge sharing practice as the university is not encourage knowledge sharing processes and not able to establish mechanism and knowledge sharing policies and procedures that facilitates exchanging of skills and experiences throughout the university. Additionally, the interview and open ended questions responses support this finding as the respondents and interviewees explained that, in the university there is a huge gap on understanding on the purpose of knowledge sharing among staffs, the importance of different techniques of knowledge sharing like apprenticeship, mentoring and coaching of staffs, utilization of available virtual spaces and

meetings for knowledge sharing purpose and also displaying of innovate works via different publication methods to promote knowledge sharing in the university.

4.3.3 Knowledge Application Practices

Table 4.5 Practices of Knowledge Application

Items	Levels of agreement						Mean	St.dv
	DA		Neutral		Agr			
	Fr	%	Fr	%	Fr	%		
University used its employee's knowledge, skills, abilities in doing things like curriculum development (KAP1)	104	83.2	6	4.8	15	12	2.14	1.00
University apply the existing knowledge to ensure critical competitive needs (KAP2)	108	86.4	11	8.8	6	4.8	1.90	0.84
University used new created ideas in organizational process (KAP3)	87	69.6	12	9.6	26	20.8	2.33	1.30
University has different methods for development of knowledge and its application (KAP4)	104	83.2	8	6.4	13	10.4	2.09	1.07
University has a mechanism for filtering, cross-listing and integrating of different sources and types of knowledge (KAP5)	114	91.2	5	4	6	4.8	2.01	0.78
University apply lessons learnt for application of knowledge (KAP6)	92	73.6	6	4.8	27	21.6	2.50	1.11
University actually used the created and captured knowledge for different interventions (KAP7)	100	80	10	8	15	12	2.25	0.89
Staffs has an awareness on university's database (repositories) (KAP8)	45	0	0	80	80	64	3.73	1.35
University digital repository is accessible and easy to use (KAP9)	108	86.4	4	3.2	13	10.4	2.26	0.71
university used different techniques of knowledge application (KAP10)	91	72.8	15	12	19	15.2	2.50	1.06
Aggregate Mean and SD							**2.37**	**1.01**

Source: Survey Data (2020)

Knowledge application is based on the ability of users' that to be aware of the value of new knowledge and use it since effective utilization of knowledge will result in competitive advantage, improve efficiency and reduce costs by promoting organizational innovation(Asoh et al. 2007). Accordingly, the researcher was aimed to know the practices of knowledge application of the university. As a result, the respondents were asked whether the university used the academic staff's skills, abilities, knowledge and information in doing things like curriculum development on item KAP1 on table 4.5 above, and the mass (83.2%) were disagreed,6(4.6%) of them "neutral", and 15(12%) were agreed. This showed as the university is not able to use its staff's knowledge and experience in performing its activity like in curriculum development and this is supported with a mean of 2.14 which showed disagreement of respondents.

Under item KAP2, majority (86.4%) of the respondents replied disagree, 11(8.8%) were agreed, the rest 6(4.8 %/) agreed on whether the university apply the existing knowledge to ensure critical competitive needs. This indicates as the university is not able to use the existing knowledge to achieve its critical competitive needs as this also supported with 1.9 mean. On the same table 4.5, in item KAP3 the researcher raised a question whether the university use new created ideas in organizational process and the responses showed that more than half (63.2%) of respondents were disagreed, about 11(8.8%) were "neutral" whereas, 25(28%) of them were agreed with a mean of 2.5. This indicates that the university has not initiated to use new ideas created by its employees in its business process as needed.

On the same table 4.5 above, under KAP4 the majority (83.2%) of the respondents replied disagree, 8(6.4%) were "neutral", 13(10.4%) responded agreed on the question whether the university has different methods for its further development of knowledge and its application to new situations. This implies as the university doesn't have different methods that help for further development of knowledge and utilization of knowledge in new situations as expected and a mean result of 2.09 also support the finding.

On the same table 4.5 above, under item KAP5 the respondents were asked as the university has a mechanism for filtering, cross-listing and integrating of different sources and types of knowledge and most(91.2%) of respondents were disagreed, abut 5(4%) of them were replied "neutral" and the rest 6(4.8%) were agreed. From this the researcher can understood as the university has not establish the mechanism for filtering, cross-listing and integration of various sources and types of knowledge among its departments and colleges and this result also supported with a mean value of 2.01. On item KAP6, respondents were asked as the university used lessons learnt for application of knowledge and responses showed that the mass (84%) of the respondents were replied disagree, about 13(10.4%) of the responded "neutral" and 7(5.6%) were agreed. This implies that in the university there are no practices of using lessons learned from other as input in application of knowledge as supported with a mean score of 2.15.

Besides, in item KAP7 the researcher was interested to know as the university actually used the created and captured knowledge for different interventions and majority(80%) were disagreed, and about 10(8%) of respondents were "neutral" and the remaining 15(12%) of them agreed. This showed that the university has not tried to use the acquired knowledge for interventions as

supported with a mean value of 2.25 which failed under disagreed. On item KAP8 respondents were asked their awareness regarding university's database (repositories) and about 45(36%) were disagreed, whereas more than half (55%) of respondents were agreed. The analysis showed that the majority of the academic staffs are aware of the university's existing database (repositories) system and a mean value of 3.73 also supports the result.

Additionally, under item KAP9 respondents were asked about the accessibility of the digital repository and as it is simplicity to use and the majority (89.6%) were disagreed, 4 (3.2%) were responded "neutral", and the remaining 13(10.4%) of them were agreed and this implies as the existing digital repository is not accessible for all even if it is easy as supported by a mean value of 2.26.

Finally on item KAP10, the researcher was interested to know as the university used different techniques of knowledge application as a result mass (72.8%) of the respondents were disagreed, about 15(12%) were answered "neutral" and the rest 19(15.2%) were agreed with a mean of 2.5.This indicates that the university hasn't tried to use techniques of knowledge application like circulars and knowledge sharing boards as expected.

As explained by various researchers like McInerney and Koenig (2011), knowledge application is a process that indicates the actual utilization of the knowledge in developing new and improved services, management systems, techniques and procedures based on changes in customers' needs and preferences. In university perspective knowledge application refers to the university's ability in actually using of its captured and created knowledge through different techniques in order to sustain organizational innovation and performance of organization (Karadsheh et al. (2009). While, in this study the aggregated mean scores of 2.37 and standard deviation 1.06 showed as the university is has not practiced the application of existing knowledge through different techniques since the cumulative response showed disagreement of respondent with medium variability of responses. The interview and open ended question responses also supported the result as the participants replied, the university is not strives to use its staffs knowledge, skills and abilities for different interventions and there is a limitation in designing different formal mechanism that facilitate the application of existing knowledge especially tacit knowledge which exists in minds of the staffs and also the results of different researches in solving the existing problems of the university and the university has no any

mechanism to retain knowledge from academic staffs who leave the organization due to voluntary and non-voluntary reasons.

Furthermore, regarding practices and challenges of KM, interview participants explained as the university has no established KM policies and procedures, the university has a limitation in establishing different mechanisms to facilitate KM activities, there is no responsible body who identify the knowledge gap and work on it, no rewarding management that motivate staffs to create new knowledge and apply it, lack of responsive and participatory leadership that take a part in KM and also encourages the staffs for creativity.

4.4 Descriptive Analysis of Practices of University's Innovation

According to Crossan and Apaydin (2010), organizational innovation is an organization's activities and processes performed for creation and implementation of new knowledge in order to produce distinctive services and processes to meet the customers' needs in different ways as well as to make process, structure and technology more modernized that can help to bring prosperity among individuals, groups and the entire society and it can be seen from different perspectives.

4.4.1 Practices of Technical Innovation

From the perspectives of innovation, technical innovation is the critical component of which is more about adopting new ideas relating to new products or services or introduction of new elements in an organization's production process or service operations (Liao et al. 2010). Thus, on table 4.6 below, under TINNO1 respondents were asked as the university constantly used new technologies in performing its activities (research training, teaching) and the majority (76%) of the respondents were disagree 14(11.2%) replied "neutral" and 17(13.6%) of them agreed. This indicates as the university is not continually use new teaching and learning technologies that accelerate innovation as supported by a mean value of 2.3. Besides on item TINNO2 the researcher raised a question as the university pioneers to uses new modes of teaching and learning methods and the responses showed that, the mass (72.4%) were disagreed about 9(2.3%) replied "neutral", and the rest 23(18.4%) were agreed and this revealed out as the university is no frequently initiated to practiced new modes of teaching and learning which is supported with a mean value of 3.34.

Table 4.6: Practice of Technical Innovation

Items	Level of agreement						Mean	St.dv
	DA		Neutral		Agr			
	Fr	%	Fr	%	Fr	%		
University constantly used new technologies in performing its activities (research training, teaching) (TINNO1)	94	75.2	14	11.2	17	13.6	2.3	0.89
University pioneers to uses new modes of teaching and learning methods (TINNO2)	93	72.4	9	7.2	23	18.4	2.27	0.68
University frequently uses the senior's experience to improve its process and service(TINNO3)	107	85.6	4	3.2	14	11.2	2.1	0.98
University revised its curricula periodically (TINNO4)	17	13.6	8	6.4	100	80	3.96	1.00
Learners are contributing their knowledge in curricula development and assessment process (TINNO5)	115	92	5	4	5	4	2.04	0.57
University has well organized ICT infrastructure that promotes innovation.(TINNO6)	29	23.2	6	4.8	90	72	3.56	1.49
University changes its service and processes based on changes in customer's needs.(TINNO7)	106	84.8	3	122.4	16	12.8	2.04	0.68
Aggregated mean & SD							**2.61**	**0.90**

Source: survey data (2020) ***Hint:*** *DA-disagree and Agr- agree, f=frequency*

Strongly disagree and disagree, strongly agree and agree were merged for analysis purpose

As indicated on the same table 4.6 above, respondents were asked whether the university frequently used senior's experience to improve its process and service on item TINNO3 and the majority (85.6%) were disagreed, while 4(3.2%) were "neutral" and the rest 14 (11.2%) of them were agreed. This indicates that the university is not strives to use the existing senior staff's knowledge and skill in order to improve its services and process and the result also supported by a mean value of 2.1.

In addition, in item TINNO4 the participants were asked their level of agreement regarding the contributions of learners on curriculum development and assessment, and about 17 (13.6%) of respondents were disagreed, 8(6.4%) of them replied neutral, while most (80%) agreed on the question asked as the university revised its curricula periodically. This revealed as the university is revised its curriculum periodically as required and this result was supported with a mean value of 3.96 which is approximately failed under agree. Additionally, on item TINNO5 the respondents were asked whether the university has well organized ICT infrastructure that promotes innovation and most (92%) of the respondents responded disagree, 5(4%) of them

replied “neutral” and the remaining 5(4%) of them were replied agree. From this the researcher understood as there is no participation of learners in curriculum development and assessment as supported by a mean score of 2.04.

Moreover, on the same table above, under item TINNO6 respondents were asked their level of agreement whether the university has well organized ICT infrastructure that promotes innovation, and 29(23.2%) were disagreed, 6(4.8%) were “neutral” and the majority (72%) of them responded agree. This showed that the university has enough ICT that can promote innovation even if the university is not used appropriately for facilitating innovation as the resulted was supported with a mean value of 4.02. Lastly, on itemTINNO7, participants were asked whether the university changes its service and delivery processes based on changes in customer’s needs, and the large (84.8%) number of them were disagreed, 3(2.4%) were “neutral “and the rest 16(12.8%) were agreed. This showed as the university is not constantly identifying its customers’ needs and modifies its service and process in line with the changes in customers’ needs and this result also supported by a mean value of 2.04.

As understood from the literatures it is believed as technical innovation is the innovation with respect to products, manufacturing and it was seen as university’s ability to adopt new ideas, methods, techniques in its teaching, training, community service and research activities. Therefore, the cumulative mean scores of 2.6 and standard deviation 0.9 reveled as the university has not practiced technical innovation since the university is not initiated to improve its services and process with the help of available ICT infrastructure and its staff’s skills and knowledge.

4.4.2 Practices of Administrative Innovation

As stated by Nouri et al. (2017) administrative innovation is the main component of innovation which involves on searching and implementation of new and modified procedures, policies and organizational forms or structures and it shows the extent to which managers search and use new management systems to run the organization activities in modernized way. Based on this concept as indicated on the table 4.7 below, respondents were asked for their opinion regarding the practices of administrative innovation in the university and on item AINNO1, the majority (84%) of the respondents were disagreed on the practices of the university in nurturing of organizational culture that enhances creativity of the staffs and 5(4%) replied “neutral” whereas 15(12%) of them were agreed. This showed as the university is not working to create an

innovative organizational culture that initiates the academic staffs to create new knowledge and ideas, as the finding has also supported with a mean value of 2.06.

Table 4.7 Practices of Administrative Innovation

	Levels of Agreement							
	DA		**"neutral"**		**Agr**		**Mean**	**St.dv**
Items	**Fr**	**%**	**Fr**	**%**	**Fr**	**%**		
University nurtures a culture towards innovation that enhances creativity(AINNO1)	105	84	5	4	15	12	2.06	0.91
University creates awareness on the benefits of innovation (AINNO2)	109	87.2	7	5.6	9	7.2	2.18	0.76
University stimulates openness to innovation and minimizes resistance to change(AINNO3)	108	86.4	5	4	12	9.8	2.22	0.77
University has flexible Organizational structure (AINNO4)	109	87.2	7	5.6	9	7.2	2.12	0.78
University has less administrative procedures (AINNO5)	106	84.8	8	6.4	11	8.8	2.08	0.96
University use the existing ICT infrastructure to facilitates its internal communication (AINNO6)	97	77.6	10	8	18	14.4	2.30	1.11
University is urged to use the research findings to solve its administrative problems (AINNO7)	103	82.4	13	10.4	9	7.2	2.17	0.83
University continuously searches for new administrative systems (AINNO8)	108	86.8	7	5.6	10	8	1.98	0.84
Aggregate mean &SD							**2.14**	**0.87**

Source: survey data (2020)

Hint: *DA-disagree and Agr- agree, f=frequency strongly disagree and disagree, strongly agree and agree were merged for analysis purpose*

Under item AINNO2, the majority (87.2%) of the respondents were disagreed, about 7(5.6%) responded "neutral" and the rest 9(7.2%) were agreed on the practice of the university in creating awareness on the benefits obtained from innovation. From this the researcher understood as the university is not establish a administrative systems that help to aware its staff regarding the benefits of innovation and the result was supported with a mean value of 2.18.

As indicated on the same table 4.7, item AINNO3 asked respondents whether the university stimulates openness to minimize resistance to change in implementation of new methods, technologies, procedures, etc. and the majority (86.4%) of them were disagreed, about 5(4%) of respondents replied "neutral" while 12(9.8%). This implies that in the university there is resistance to change in implementation of new methods, techniques and procedures since there is

a limitation in creating and stimulating open communication system and this result has assisted with a mean value of 2.2.

As indicated on the same table 4.7 above, participants were asked as the university's structure is flexible on item AINNO4, and the mass (87.2%) of them were disagreed, few (5.8%) of the replied "neutral" and some (7.2%) were agreed. From this the researcher understood as the existing structure of the university is not flexible that enhance the implementation of new administrative systems and this is supported with a mean value of 2.12. Additionally, under item AINNO5 the researcher raised question as the university has less administrative procedures and the (84.8.8%) of the respondents were disagreed, 8(6.4%0 responded neutral, while about 11 - (8.8%) were agreed This implies as university has more administrative procedures that are not supported with new administrative systems and technologies as supported with a mean of 2.08.

Moreover, under AINNO6, participants were asked as the university used the ICT infrastructure to facilitate its internal processes, as a result, about 97(77.8%) were disagreed, 10 (8%) of them were replied neutral, whereas, about 18(14.4%) were agreed with a mean value of 2.30. This showed that the university is not used its well established ICT infrastructure to promote innovation practices.

On item AINNO7 respondents were asked whether the university has urged to use the research findings in solving its administrative problems, and majority (82.4%) were disagreed, 13 (10.4%) were "neutral" whereas, 9(7.2%) were agreed. This indicates as the university is not used the research results as input in solving its problems and enhancing its administrative processes as supported with a mean value of 2.17. Finally, on AINNO8, participants were asked as the university continuously searches for new administrative systems (procedures, strategies, techniques, etc,) and majority (86.8%) of the respondents were disagreed, about 13 (10.4%) were "neutral", however about 9(7.2%) and 28(22.4%) were agreed with a mean value of 2.72. From this it is possible to understand as the university is not look for new administrative systems that facilitates innovation. As seen from the aggregate mean (2.14) and standard- deviation (0.87) in the university the managers are no initiated to search and implement new methods and administrative procedures that help it to promote innovation and also to sustain competitive advantages.

Regarding innovation, the results both for technical and administrative innovations showed that there is no cooperative culture that facilitates innovation, no administrative system that encourage innovative employees and even there is no practices to use the available knowledge, skills and experiences, ICT infrastructures as supported with the responses from open-ended questions and interview as participants said that the university has not promoted and encourage professionalism and innovative employees and collaboration within the university which facilitates the utilization of available knowledge and ICT infrastructures for innovation.

4.5 Descriptive Analysis on Intellectual Capital

Table 4.8 Practices of intellectual capital

	Levels of agreement						Mean	St.dv
	DA		Neutral		Agr			
Intellectual capital	**frq**	**%**	**frq**	**%**	**frq**	**%**		
University's employees are highly skilled at their jobs(ICHC1)	29	23.2	8	6.4	88	74	3.82	1.27
University's employees are highly motivated in their work(ICHC2)	115	92.0	5	4	5	4	1.90	0.68
University frequently provides training for its employees(ICHC3)	109	87.2	8	6.4	8	6.4	2.02	0.74
University encourages collaborative and cooperative organizational culture (ICRC1)	102	81.6	7	5.6	16	13	2.23	0.89
Different units and functions within the university, understand each other (ICRC2)	118	94.4	3	2.4	4	3.2	1.93	0.64
Cooperation between the university and its external stakeholders runs smoothly(ICRC3)	110	88.0	12	9.6	3	2.4	1.98	0.64
University has efficient and effective leadership that support innovative operations(ICSC1)	109	87.2	3	2.4	13	10	2.04	0.86
University has efficient and relevant information systems to support business operations (ICSC2)	116	92.8	4	3.2	5	4	1.94	6.06
University has a great deal of useful knowledge in documents and databases(ICSC3)	91	72.8	24	19.2	10	8	2.23	0.85
In the university existing documents and solutions are easily accessible(ICSC4)	111	88.8	11	8.8	3	2.4	1.90	0.68
Aggregate Mean and SD							**2.20**	**1.33**

Source: survey data (2020)

As in the table 4.8 above, under item ICHC1,88(74%) of respondents were agreed as the staffs of the university are highly skilled, 8(6.4%) were replied "neutral" and about 29(23.2%) were

disagreed. This showed that the university has more experienced an academic staff which was supported with a mean score of 3.82 which approaches to agree. On the same table item ICHC2 most (92%) replied disagree, 5(4%) were "neutral" and the rest 5(4%) were agreed on the question stated as the staffs of the university are highly motivated in their work. From this the researcher can understood as the university staffs have no motivation in their work and this result also supported with a mean of 1.90 which failed in disagree.

In ICHC3 the researcher was initiated to understood whether the university provide training to its staffs and the responses showed that majority (87.2%) were disagreed, 8(6.4%) were "neutral" and the remaining 8(6.4%) replied agree. This indicates that the university is not capacitating its staffs by providing different training to its staffs and this is supported with 2.02 mean which showed disagreement of respondents.

Additionally, the researcher directed question as the university encourages collaborative and cooperative organizational culture on item ICRC1 and the responses revealed that majority (81.6%) responded disagree,7(5.6%) "Neutral", and the reaming 16(13%) of them agreed and this showed as the university has not strives to build a collaborative and cooperative organizational culture and this was supported by 2.23 mean. In ICRC2 most (94.4%) of the respondents replied disagree, about 3(2.4%) responded "neutral" and the rest 4(3.2%) were agree concerning different units and functions within the university well understand to each other. This implies that, the university has not different units and functions within the university, understand each other as the mean result was 1.93 which failed under disagree.

Besides, on item ICRC3 the researcher asked whether the cooperation between the university and its external stakeholders runs smoothly and the responses point out that majority (88 %) were disagreed, 12(9.6%) were "neutral", 3(2.4%) were agreed and this showed as there is a limitation on running the cooperation among university and its external stakeholders and this also supported with mean of 1.98.

As far as the availability of efficient and effective leadership that support innovative operations on item ICSC1, majority (87.2%) of respondents replied disagree, 3(2.4%) were "neutral" and 13(10%) were agreed. From this the researcher can understood as the university has no efficient and effective leadership that support innovative operations as the finding supported with a mean value of 1.9. On item ICSC2 the researcher was interested to understood as the university has

efficient and relevant information systems to support business operations and most (92.8%) of them replied disagree, about 4 (3.2%) responded "neutral" and 5(4%) were agree with a mean of 1.94 which approaches to disagree. This showed as the university has a limitation in having effective and efficient information system which supports its business operations as supported with mean score of 1.94.

On ICSC3 the researcher wants to know whether the university has a great deal of useful knowledge in documents and databases and the majority (72.8%) of the respondents were disagreed, 24(19.2%) of them "neutral" and the remaining 10(8%) were agreed. This indicates that the university has low practices in dealing with useful knowledge in documentation and data base system and this is supported with a mean of 2.23 which was failed under disagree.

Moreover, the researcher was interested to understand whether the existing documents and solutions are easily accessible in the university, on item ICSC4 and 111 (88.8%) of participants were disagreed, about 11(8.8%) of them replied "neutral" and the rest 3(2.4%) were agreed. This showed that the existing documents are not easily accessible to all of its staffs and this was also supported with a mean result of 1.90. Therefore, there is a limitation in practices of intellectual capital in the university as evidenced with the aggregate mean (2.2) and 1.33 standard deviation.

4.6 Evaluation of structural model (Inferential analysis)

In this specific section researcher evaluated the basic requirements of PLS-SEM that help to evaluate the casual related research questions in order to achieve the study objectives.

4.6.1 Evaluation of Collinearity statistics

Before proceeding to evaluate the Pearson's coefficient (R-squared) and path coefficients of the model a study based on Smart PLS requires the issue of assessing the Collinearity among predictor constructs (Sarstedt et al. 2014).

Table 4.9 Collinearity statistics (Inner model VIF Values)

	Intellectual Capital	**Knowledge Sharing**	**Knowledge Acquisition**	**Knowledge Application**	**Organizational Innovation**
Intellectual Capital					**2.650**
Knowledge Sharing	**3.114**				**3.911**
Knowledge Acquisition	**3.314**				**3.315**
Knowledge Application	**2.033**				**2.270**
Organizational Innovation					

Source: Smart PLS Result (2020)

In Smart PLS the variance inflation factor (VIF) is always greater or equal to 1 and the values that 5-10 are often regarded as indicating multi-Collinearity which indicates as the two constructs are highly correlated and it may be a problematic for prediction of a model as suggested Hair et al. (2014). Collinearity statistic measures the increase in the variance of an estimated regression coefficient when predictor constructs are correlated. Accordingly, the model found that the values of VIF is greater than 1 and less than the maximum threshold (5) for all indicators in which ranges from 2.033-3.911 as displayed in the table 4.9 above.

4.6.2 Evaluation of Path coefficients

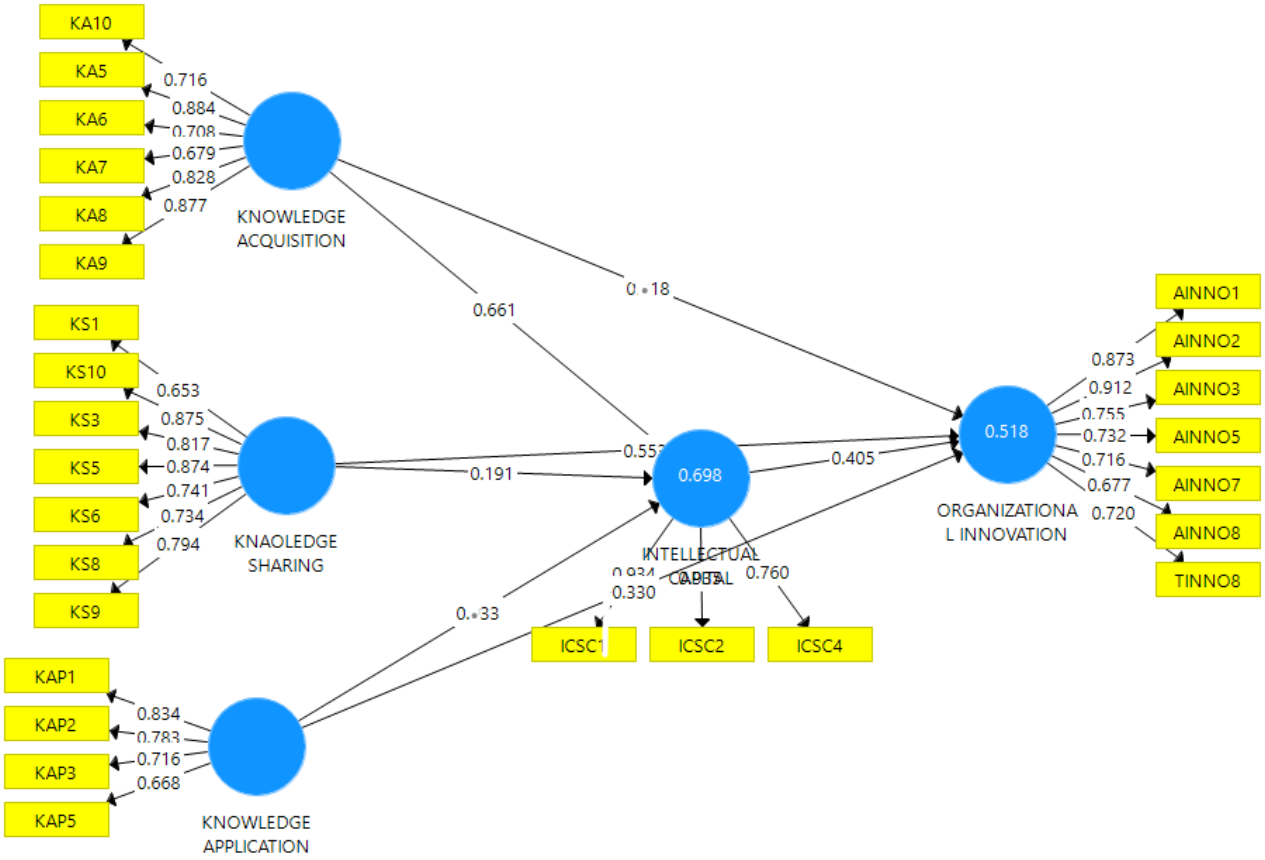
After running the PLS-Algorithm the researcher found the path coefficients that evaluate the structural model relationships and in the model the researcher has seen the relationship between independent variables and mediating variables and dependent variables based on their specific path coefficient which indicates the extent to which the independent variables affect the dependent variables. As a result, Knowledge Acquisition (KA) has 0.66 of path coefficient with intellectual capital and this showed that as KA with its indicators increased by 1 standard deviation from their average values, the intellectual capital (mediating variable) would be increased with 0.66, additionally KA has 0.18 path coefficient with organizational innovation (OI) which is the dependent variable, that implies as KA increase in 1 standard deviation on average, the OI would be improved with 0.18. Thus, knowledge acquisition has strong indirect and less direct relationship with organizational innovation.

Knowledge sharing (KS) has a path coefficient of 0.19 with intellectual capital and 0.55 with organizational innovation and this showed as KS increased by 1 standard deviation on average, the intellectual capital increased in 0.19 on average and organizational innovation also increased by 0.55 on average. So, knowledge sharing has strong direct and less indirect relationship with organizational innovation.

Knowledge application (KAP) also has a path coefficient of 0.33 with intellectual capital (mediating variable) and similar 0.33 with organizational innovation that means as KAP practices increased with 1 the intellectual capital and organizational innovation would be increased in 0.33 on average. Therefore, knowledge application has strong direct and indirect relationship with organizational innovation. Additionally, the model found that, the mediating variable (intellectual capital) has a path coefficient of 0.41 with the dependent

variable(organizational innovation) and this showed as the mediating role(intellectual capital) increased with 1 std on average, the organizational innovation would increased by 0.41.

Figure 4.2 Structural model



Source: Smart PLS (2020)

Therefore, the result of the model indicates that, Knowledge Acquisition (KA) has a strong (0.66) indirect and less (0.18) direct relationship with organizational innovation and Knowledge Sharing (KS) has strong (0.55) direct and less (0.19) indirect relationship with organizational innovation, as well as knowledge application (KAP) has a strong (0.33) direct and indirect relationship with organizational innovation. Finally, intellectual capital has a strong mediating relationship between knowledge management (KA, KS and KKAP) practices and organizational innovation as evidenced from the structural model above.

4.6.3 Coefficient Determination (R-squared) of the model

The most usual measurement of structural model is the determination of coefficient which evaluates the model's accuracy and predictive capacity and it is the variance in dependent

variable that is being explained by the independent variables which ranges from 0 to 1 as stated by Hair et al. (2014). Accordingly, in this study the model found that R-squared result for a mediating variable (intellectual capital) was 0.69 which implies that, about 69% of variance in of intellectual capital (IC) was explained by the independent variables (Knowledge acquisition, knowledge sharing and knowledge application)..

Table 4.10 R-Squared result

	R Square	R Square Adjusted
Intellectual Capital	0.698	0.690
Organizational Innovation	0.518	0.502

Source: PLS path model result (2020)

And the R-squared for endogenous variable (organizational innovation) was 0.51 which indicates that 51% of variance in organizational innovation was explained by independent variables (knowledge acquisition, and knowledge sharing and knowledge application) and also with the mediating variable (intellectual capital) as seen on table 4.10 below. This implies that KM practices (knowledge acquisition, sharing and application) have an influence on both intellectual capital and organizational innovation, that means, KM practices have both direct and indirect effects on organizational innovation.

4.6.4 Evaluation of P-values (hypothesis testing)

Table 4.11 P-value tests

Causal relations	Original Sample (O)	Sample Mean (M)	St.dev	T Statistics (|O/STDEV|)	**P Values**
Knowledge Acquisition -> Intellectual Capital	0.732	0.735	0.056	13.000	**0.000**
Knowledge Acquisition -> Organizational Innovation	0.052	0.041	0.102	0.515	**0.608**
Knowledge Sharing -> Intellectual Capital	0.071	0.069	0.080	0.888	**0.376**
Knowledge Sharing -> Organizational Innovations	0.516	0.531	0.071	7.285	**0.000**
Knowledge Application -> Intellectual Capital	0.318	0.311	0.090	3.518	**0.001**
Knowledge Application -> Organizational Innovation	0.316	0.310	0.090	3.518	**0.001**
Intellectual Capital -> Organizational Innovation	0.423	0.427	0.094	4.490	**0.000**

Source: Smart PLS result (2020)

Based on the above structural model, after running the PLS algorithm and examined the existing relationships among variables, the researcher had proceeded to run the Bootstrapping analysis which is a nonparametric procedure that help to test the statistical significance of PLS-SEM results or relationships among variables as suggested by Hair et al.(2014). Accordingly, the researcher run Bootstrapping analysis with a confidence level of 95% ($P<0.05$), and the following results were obtained.

Thus, on hypothesis 1, H1 (KM practices have a significant effect on intellectual capital(IC)),the model showed that, knowledge acquisition and knowledge application has significant effect on IC but knowledge sharing has insignificant effect on IC and H1 was accepted for knowledge acquisition and application by rejecting the H0, while for knowledge sharing H0 was accepted by rejecting H0 based on their P-value result.

regarding Hypothesis2 (H2=knowledge acquisition practices has an effect on organizational innovation), the model result showed as the knowledge acquisition and organizational innovation has an insignificant relationship since P-value(0.608) that is greater than 0.05 and then, the alternative hypothesis H1 rejected and HO was accepted, but the model found as knowledge acquisition has a significant relationship with a mediating variable (intellectual capital) as the P-value(0.000) that is less than 0.05 and this indicates that, knowledge acquisition practices has a indirect influence on organizational innovation and strong direct effect on mediating variable. As seen from the literature, newly acquired knowledge increases the stocks of knowledge availability to organizations and decreases the uncertainty and opens new opportunities for both applying and exploiting knowledge, which in turn promote the creation of innovative (Gold et al. 2001) but the model showed as knowledge acquisition has strong indirect effect on improving organizational innovation.

As regards to Hypothesis 3,(H3=Knowledge sharing has a significant effect on organizational innovation) the model found out as the relationship between knowledge sharing and innovation is significant that was evidenced with the P- value result which was 0.00 that is less than 0.05 and the null hypothesis was rejected by accepting the alternative hypothesis (H1) and knowledge sharing has less indirect effect on organizational innovation since the P-value for knowledge sharing and intellectual capital (mediating variable) is greater than 0.05.This implies as

knowledge sharing practices has a statistically significant direct effect and less indirect effect on the improvement of organizational innovation.

Besides, on Hypothesis 4 (knowledge application has an effect on organizational innovation), the model displayed that, knowledge application has a statistically significant direct effect on organizational innovation since the P-value was less than 0.05 and the alternative hypothesis was accepted by rejecting the null one. Knowledge application also has equal indirect significant influence on organizational innovation as the P-value was less than 0.05.

As stated by Kamau (2016). Knowledge application engages in effective retrieval mechanisms that enable members of the organizations access to relevant knowledge which promote their innovative capacities and the improvement of academic innovation is due to the application of captured and created knowledge that will be supported among educational partners. Similarly, the result obtained from the model indicates as knowledge application practices can directly and indirectly improve the innovation of the university

Moreover, the interview response supported as the relationship between KM and innovation should be strong even if the university is not as such practiced KM to promote innovation and participants stressed that without effective KM it is difficult to wish innovation as knowledge is a base for any innovation.

Finally, concerning Hypothesis 5, (intellectual capital has a mediating role on the relationship between KM practices and organizational innovation), the model revealed out as there was a significant mediating effect on the relationship between KM practices (knowledge acquisition, sharing and application) and organizational innovation as the result of P-value (0.000) that is less than 0.05, thus the alternative hypothesis was accepted and null hypothesis rejected. The finding also supported by the literature, as in the era of knowledge -based economy IC has transformed from the existing traditional behavior of organization in to value added asset (Bueno etal. 2004) and Knowledge management without intellectual capital may not have an effect on organization’s innovation (Sivalogathasan and Wu 2015).

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIOS AND RECOMMENDATIONS

Introduction

The main objective of this study was to assess the practices of KM and examine its effect on organizational innovation in Ethiopian Civil Service University. Based on reviewed literatures and conceptual framework objectives and basic research questions stated under chapter one of the study were developed and appropriate research methods and procedures were designed for purpose of data collection and data analysis.

To this end from total 310 academic staffs, 150 were selected through systematic random sampling technique of probability sampling so as to respond to questionnaires which encompasses mainly closed ended and some open ended questions, and some higher officials of the university (Academic Vice President, Library Director and 3 College deans) were selected purposively. Therefore, in this chapter the researcher had tried to discuss summary of findings, conclusions and recommendations in relation to the objectives of the study and previously stated research questions.

5.1 Summary of Findings

Under this particular section the researcher had summarized the major findings of the study under each variable which were analyzed and discussed in analysis part of the study.

5.1.1 Summary of Findings from Descriptive Analysis

- Concerning the practices of knowledge management, the study revealed out that:
  - ✓ Most (97.6%) of the academic staffs have better understanding on the concepts of KM that help them to appreciate, manage and share knowledge.
  - ✓ The majority(89.6%) replied as the university is not initiated to acquire knowledge from internal and external sources by establishing different mechanisms
  - ✓ There is no any specified policies and procedures of KM that facilitate the knowledge acquisition practices as evidenced by 90.4% of respondents.
  - ✓ 78.4% of respondents replied as the university is not working on create conducive environment that encourages academic staffs to convert their tacit knowledge to explicit knowledge.

- ✓ 91.2% of the respondents evidenced that the university is not able to encourage its employees by rewarding them based on their contribution in knowledge acquisition or creation
- ✓ As supported by the majority (85.6%) respondent's response, there is a huge gap on understanding of the purpose of knowledge sharing among staffs, the importance of different techniques of knowledge sharing like apprenticeship, mentoring and coaching of staffs.
- ✓ More than half (56%) of participants were responded as the university has not as such used the available virtual spaces and websites to support the knowledge sharing activities.
- ✓ Mass (87.2%) of the respondents answered as the university has low practices in creating and using open communication system to facilitate KM activities.
- ✓ Most (93.6%) of participants replied as the university couldn't established well standardized knowledge sharing processes.
- ✓ More than half (63.2%) of respondents replied as the university has not initiated to use new ideas and knowledge created by its employees for different interventions
- ✓ About 72.8% of participants responded as there is a limitation in designing different formal mechanism that facilitate the application of existing knowledge especially tacit knowledge which exists in minds of the staffs.
- ✓ The university has no any mechanism to retain and used knowledge from academic staffs who leave the organization as supported by the interview responses.

➢ Regarding Practices of Innovation the study showed that there is a gap on innovation since:-

- ✓ Majority (76%) of the respondents replied as there is no frequent utilization of senior's experience to improve the process and service of the university.
- ✓ The university is not continually use new teaching and learning technologies that accelerate innovation as evidenced with the responses of 85.6% respondents
- ✓ Even if the university is revised its curriculum periodically, there is no participation of learners in curriculum development and assessment as supported by most (92%) of respondent's response.

- ✓ Even though the university has well organized ICT infrastructure that can promotes innovation the university is not used appropriately for facilitating innovation as evidenced by the majority (72%) respondent's response.
- ✓ The mass (87.2%) of the responses showed that the existing structure of the university is not flexible that enhance the implementation of new administrative systems
- ✓ 82.4% responses also exhibited as the university is not used the research results as input in solving its problems and enhancing its administrative processes
- ✓ Majority (86.8%) of the respondents were the university is not look for new administrative systems that facilitates innovation
- ✓ 84.8.8% of the respondents were replied that, university has more administrative procedures that are not supported with new administrative systems

5.1.2 Summary of Findings from PLS-SEM model (inferential analysis)

- ✓ The values of construct validity (AVEs) for all variables were greater than expected threshold (0.50) and on average the variables are positively correlate with their respective constructs or latent variables and the model was converges with satisfactory results
- ✓ The result of Composite reliability clearly showed as there is high reliability (internal consistency) as the values of the most variables were greater than 0.9.
- ✓ The independent variables were not dependent to one another as the values of each variable was greater than 0.7 and the independent variables were free from independency and contribute to the effect of organizational innovation individually as evidenced discriminant validity.
- ✓ The model found out that Collinearity is not problematic issue for estimation of path model as the VIF values of all constructs in inner mode were ranges from 2.033 to 3.911 which is less than the maximum threshold (5).
- ✓ Regarding the path coefficient of constructs, the result of the model indicates that:
  - Knowledge Acquisition (KA) has a strong (0.66) indirect and less(0.18) direct relationship with organizational innovation,
  - Knowledge Sharing (KS) has strong (0.55) direct and less(0.19) indirect relationship with organizational innovation,

- Knowledge application (KAP) has a positive (0.33) direct and indirect relationship with organizational innovation,
- intellectual capital has a strong(0.405) mediating role between knowledge management (KA,KS and KKAP) practices and organizational innovation

✓ Concerning the significance of relationship or test of P-values (Hypothesis testing) the finding showed that:

- Hypothesis one (H1=knowledge acquisition practices has an effect on organizational innovation), knowledge acquisition has insignificant effect on organizational innovation since P-value(0.608) that is greater than 0.05 and then, the alternative hypothesis H1 rejected and H0 was accepted.
- Hypothesis two (H2=Knowledge sharing has a significant effect on organizational innovation) knowledge sharing has statistically significant effect on organizational innovation as the P- value was 0.000 that is less than 0.05 and then the null hypothesis was rejected by accepting the alternative hypothesis (H1).
- Hypothesis 3 (knowledge application has an effect on organizational innovation), knowledge application has a statistically significant effect on organizational innovation since the P-value (0.001) was less than 0.05, thus, the alternative hypothesis was accepted by rejecting the null one.
- Hypothesis 4, (intellectual capital has a mediating role on the relationship between KM practices and organizational innovation), the model revealed out as there was a statistically significant mediating effect on the relationship between KM practices (knowledge acquisition, sharing and application) and organizational innovation as the result of P-value was 0.000 which is less than 0.05, thus the alternative hypothesis was accepted and null hypothesis rejected.

✓ As far as the determination of coefficient the model found that:

- R-squared result for a mediating variable (intellectual capital) was 0.69 which implies that, about 69% of variance in of intellectual capital (IC) was explained by the independent variables (Knowledge acquisition, knowledge sharing and knowledge application).
- R-squared for endogenous variable (organizational innovation) was 0.51 which indicates that, about 51% of variance in organizational innovation was explained

by independent variables (knowledge acquisition, and knowledge sharing and knowledge application) and also with the mediating variable (intellectual capital).

5.2 Conclusions

Knowledge based view/ theory considered knowledge as assets and its elements such as knowledge acquisition, transfer and application as main resources that can be used in strategic development of products, processes and markets within knowledge intensive and innovative organizations. In this study the researcher investigated the practices of KM and its effects on organizational innovation with the mediating role of intellectual capital and based on the findings the researcher inferred some main conclusions. In order to achieve the research objectives the researcher obtained data from 125 respondents and undertaken all required data quality tests reliability, validity and collinearity through Smart PLS 3.0 software and used SPPS for descriptive analysis.

In relation to the first research question , even if most academic staffs have better understanding on concepts of KM, there is a great gap in KM practices (knowledge acquisition, knowledge sharing and application) and also in both technical and administrative innovation in Ethiopian Civil Service University as seen in descriptive analysis since the university lacks a KM policies and procedures that help to maximize the acquisition, sharing and utilization of knowledge from both internal and external sources, and there is a weakness in creating conducive environment and open communication system that promotes the flow of information and sharing of knowledge and also a deficiency in using the available resources like senior's tacit knowledge and experiences. Additionally, the existing virtual spaces and websites are not used for the purpose of knowledge acquisition, sharing and application. As well as the researcher concluded as the university couldn't establish the mechanisms and administrative systems that promote collaborative and cooperative organizational culture which enhance the creativity and innovation of staffs and the use of available knowledge and newly created knowledge and research results in order to ensure sustainable competitive advantages through technical and administrative innovation.

Besides in research question 2, 3, 4, the study examined the effects of each element of KM practices on organizational innovation, and the researcher had concluded as knowledge acquisition has statistically significant indirect effect on university's innovation while knowledge sharing and knowledge application has statistically significant direct effects on innovation.

Moreover, in research question 5, the study sought to establish the mediating effect of intellectual capital on the relationship between KM and organizational innovation and the researcher concluded that, intellectual capital significantly mediates the relationship between KM and innovation in Ethiopian Civil Service University.

Generally, even if the university has well established ICT infrastructures and highly skilled senior academic staffs there is a weakness to use the available resources for effective KM processes and for maximizing the utilization of available knowledge to promote its innovation that help to achieve the overall objective in more scientific basis. The study concluded that, KM practices have a positive effect on the innovation of the university and the relationship (effect) was influenced with the role of intellectual capital.

5.3 Recommendations

The findings of the study have important implications for the policies and practices which can be drawn to improve the KM practices of the Ethiopian Civil Service University.

To appreciate and manage knowledge, the university requires a well-established KM policies and procedures, so, it is better for the university to create a policy framework and procedures throughout the university that encouraged and promotes the academic staffs to create, acquire, share and apply knowledge in improving the existing services and administrative processes.

As seen from the finding, knowledge sharing has a positive significant effect on the innovation of the university, thus it is recommended to the management of the university to use open communication system to aware all staffs on the benefits of knowledge sharing and methods used in knowledge sharing like: mentoring and coaching, R&D, regular meetings, communities of practices, knowledge sharing boards, E-learning, internal newsletter, circulars, technical conferences and seminars, etc. which help to enhance knowledge sharing processes among its staffs by using the existing ICT infrastructures.

Additionally, knowledge application was found with a positive significant relationship with innovation, thus the university should take initiatives to pioneer and drive KM adoption and utilization by committing more financial resources for training programs that improves the capacity of its staffs to use new knowledge, methods and technologies. As well as it is advisable for the university to create a flexible and less procedural organizational structure that accelerate enhance the development of intellectual capital of the organization.

Furthermore, intellectual capital especially the structural capital has a positive significant effect on organizational innovation and the university should take initiatives to create collaborative and cooperative organizational culture by promoting the participation of learners and all stakeholders in planning and assessment of its activities.

Last but not least, even if the university has better ICT infrastructures and senior staffs the university is not able to use these resources for KM practices, so it is suggested to the management of the university to create awareness and capacitate all staffs in using ICT for KM processes, and assign more skilled ICT workers to facilitate the utilization of ICT, as well as motivate the staffs to share and contribute to the university in KM practices by rewarding more innovative staffs.

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Annex -1

Addis Ababa University School of Commerce

Questionnaire Filled by Academic Staffs of the Ethiopian Civil Service University

Dear respondents,

The questionnaire is prepared as a tool to gather relevant data for MA thesis entitled "***Knowledge Management Practices and Organizational Innovation"***. Thus, your valuable information and cooperation is very important so as to establish a clear picture of the issue under study and for its successful completion. Your participation in this study is simply a matter of chance and random. The information you provide to this study will be employed only for academic purpose and assessed by the researcher alone, so cooperate honestly with no fear, as your response kept strictly confidential and anonymous. Please try to respond to every question as per the instruction.

Thanks in advance for your relevant responses and cooperation!!

NB:✓No need to write your name

- ✓ To fill questions with choices (part I, II, III and IV), use tick mark (✓) under the number of your choice and write your answer clearly on the space provided for open ended questions.

Part I: Personal Information of Respondents

Instruction: Please indicate your answer by putting (**'✓'**) tick mark on the appropriate box of your choice as provided below for each question. If you have answer out of the alternatives provided please specify in the space blank given.

1. Your age

21 – 25 years	26 – 30 years	31 – 35 years	36 – 40 years	41 – 45 years	46 and above

2. Your Sex	Male	Female

3. Your education level

1st Degree	Masters	Ph. D and above

4. Your qualification or field of specialization_____

5. Currently what is your academic rank in your organization?

_____

6. How many years of experience do you have in total?

2 -4	5-7	8-11	12-16	17-21	More than 22

7. How would you rate your understanding about the concept of knowledge management? (Please tick appropriate box)

Excellent	Very good	Good	Fair	Poor

Part II: Questions related with Actual practices of Knowledge Management (KM)

Instruction: items in the table asks your level of agreement regarding **'**how knowledge management is practiced under each of the major elements of KM (Knowledge Acquisition, Conversion, Utilization **and protection);** accordingly, for each item put '✓' mark under the value ranged from 1**=Strongly Disagree, 2=Disagree, 3=Neutral , 4=Agree and 5=Strongly Agree.**

The following questionnaires were adapted and modified from Nguyen Ngoc-Tan, Aleš Gregar (2018) **Debowski (2006), Lawson (2003), and Marsick & Watkins (2003).**

	KM Practices of the University	Levels of agreement				
I	**Knowledge Acquisition**	**1**	**2**	**3**	**4**	**5**
1	University use its external knowledge in knowledge acquisition process (KAQ1)					
2	University encourages the exchange of ideas and knowledge among its members(KAQ2)					
3	University establishes mechanisms for acquiring of knowledge from d/t sources of knowledge (KAQ3)					
4	University has a KM policy that promote KM practices (KAQ4)					

5	University create a conducive environment for conversion of tacit knowledge to explicit knowledge (KAQ5)					
6	University has an appropriate mechanisms for conversion of tacit knowledge to explicit knowledge (KAQ6)					
7	University has an open communication system that facilitate knowledge acquisition (KAQ7)					
8	university has a cooperative culture that support knowledge acquisition (KAQ8)					
9	University benchmarks other organizations in its knowledge acquisition activity (KAQ9)					
10	University rewards its employees who contribute in knowledge creation /acquisition (KAQ10)					
II	**Knowledge Sharing**	**1**	**2**	**3**	**4**	**5**
1	University use internet technologies, office automation, teamwork and joint conferences to share among its academic staffs (KS1)					
2	University make knowledge easily accessible to all levels of employees (KS2)					
3	University has various publications to display the captured knowledge (KS3)					
4	University has a regular meeting for the purpose of knowledge sharing among its academic staffs (KS4)					
5	University used techniques like apprenticeship, mentoring and coaching in knowledge sharing process (KS5)					
6	University publicized the works of innovative staffs via internet, electronic magazines, etc (KS6)					
7	University has knowledge sharing policy and procedures that promote knowledge sharing activities (KS7)					
8	University has virtual space like website, intranet, e-mail, etc. for exchanging of ideas and knowledge among its employees (KS8)					
9	University sent reports to its staffs timely (KS9)					
10	university has standardized process in knowledge sharing (KS10)					

III	**Knowledge Application**	**1**	**2**	**3**	**4**	**5**
1	University used its employee's knowledge, skills, abilities in doing things like curriculum development (KAP1)					
2	University apply the existing knowledge to ensure critical competitive needs (KAP2)					
3	University used new created ideas in organizational process (KAP3)					
4	University has different methods for its further development of knowledge and its application to new situations (KAP4)					
5	University has a mechanism for filtering, cross-listing and integrating of different sources and types of knowledge (KAP5)					
6	University apply lessons learnt for application of knowledge (KAP6)					
7	University actually used the created and captured knowledge for different interventions (KAP7)					
8	Staffs has an awareness on university's database (repositories) (KAP8)					
9	University digital repository is accessible and easy to use (KAP9)					
10	university used different techniques like of knowledge application (KAP10)					

Part III: Questions Concerned with your level of agreement on your university's innovation practices

The questionnaires were adapted from Ngoc -Tan, and Gregar (2018)

Instruction: items in the table asks your opinion regarding **"Organizational Innovation"** For each item put **'✓'**mark for your agreement to which innovation is practiced in your university under the value ranged from 1**=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree.**

No	Dimensions of Organizational Innovation	Levels of agreement				
I	**Technical Innovation**	**1**	**2**	**3**	**4**	**5**
1	University constantly used new technologies in performing its activities (research training, teaching) (TINNO1)					
2	University pioneers to uses new modes of teaching and learning methods (TINNO2)					
3	University frequently uses the senior's experience to improve its process and service(TINNO3)					
4	University revised its curricula periodically (TINNO4)					
5	Learners are contributing their knowledge in curricula development and assessment process (TINNO5)					
6	University has well organized ICT infrastructure that promotes innovation.(TINNO6)					
7	University changes its service and processes based on changes in customer's needs.(TINNO7)					
8	University constantly used new technologies in performing its activities (research training, teaching) (TINNO1)					
II	**Administrative Innovation**	**1**	**2**	**3**	**4**	**5**
1	University nurtures a culture towards innovation that enhances creativity(AINNO1)					
2	University creates awareness on the benefits of innovation (AINNO2)					
3	University stimulates openness to innovation and minimizes resistance to change(AINNO3)					
4	University has flexible Organizational structure (AINNO4)					
5	University has less administrative procedures (AINNO5)					
6	University use the existing ICT infrastructure to facilitates its internal communication (AINNO6)					
7	University is urged to use the research findings to solve its administrative problems (AINNO7)					
8	University continuously searches for new administrative systems (AINNO8)					

Part IV: Questions related to intellectual capital of the university

Instruction: items in the table asks your opinion regarding **"intellectual capital"** For each item put **'✓'**mark for your agreement to which innovation is practiced in your university under the

value ranged from 1=**Strongly Disagree, 2=Disagree, 3=Neutral , 4=Agree and 5=Strongly Agree.**

This questionnaire is adapted from **Slaðana Cabrilo, Sven Dahms, (2018) and** Li and Chang (2010).

	Intellectual capital	**Levels of agreement**				
I	**Human Capital**	**1**	**2**	**3**	**4**	**5**
1	The university's employees are highly skilled at their jobs					
2	The university's employees are highly motivated in their work					
3	The university frequently provides training for its employees					
II	**Relational Capital (RC)**					
1	Different units and functions within the university, such as R&D, training centers, etc. understand each other well					
2	The university and its external stakeholders frequently collaborate to solve problems					
3	The cooperation between the university and its external stakeholders runs smoothly					
III	**Structural Capital (SC)**					
1	The university has efficient and relevant information systems to support business operations					
2	The university has a great deal of useful knowledge in documents and databases					
3	In the university existing documents and solutions are easily accessible					

Part V: Open-ended questions related to overall practices of knowledge management and innovation.

1. What are the strategies or techniques used in your university in knowledge management practices?

   _____

   _____

   _____.

2. What are the challenges that your university faced in knowledge management practices?

   _____

   _____

3. What suggestions you suggest to future improvement in knowledge management activities?

   _____

   _____

4. What are the challenges that your university faced in improving innovation?

   _____

   _____ _____

5. What do you recommend for your university to cope up with the challenges for effective innovation?

   _____

   _____.

THANK YOU AGAIN!!!!!

Annex II

Interview Guides for Managers of the University

1) How did knowledge management practices (KMP) is carried out in your university?
   - ✓ Is there any formal strategy that supports the KMP? If no, why? If yes, how it is practiced?
   - ✓ Are there any innovative organizational cultures that support KMP? If yes, mention pleases them.
   - ✓ What techniques of KM are adopted in your university?
2) How do you evaluate your current organizational culture in relation to effective KMP and your university's innovation? How can you improve the existing culture to create innovative organizational culture?
3) Does your university apply the created and captured knowledge, ideas, methods, etc to sustain organizational innovation?
4) What challenge you have faced in exercising and improving innovations (technical, administrative and service innovations)?
5) Do you think that KMP affect your university's innovation? How?
6) Is there anything that you suggest regarding the KMP and innovation in your university?