ADDIS ABABA UNIVERSITY

COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES

SCHOOL OF INFORMATION SCIENCE

KNOWLEDGE SHARING FACTORS AMONG ACADEMIC STAFFS AT HIGHER EDUCATION INSTITUTIONS (HEIS): A CASE OF FEDERAL TVET INSTITUTE, ETHIOPIA

BY

MISKIR SOLOMON

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A Thesis Submitted to School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Science in Information Science

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Advisor: Temtim Asefa(PHD)

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Name and signature of Members of the Examining Board

Temtim Asefa (PhD) Advisor	_____ Signature	_____ Date
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_____(PhD) Examiner	_____ Signature	_____ Date

Declaration

This thesis has not previously been accepted for any degree and is not being concurrently submitted in candidature for any degree in any university.

I declare that the thesis is a result of my own investigation, except where otherwise stated. I have undertaken the study independently with the guidance and support of my research advisor. Other sources are acknowledged by citations giving explicit references. A list of references is appended.

Signature: _____

Miskir Solomon

This thesis has been submitted for examination with my approval as university advisor.

Advisor‟s Signature: _____

Temtim Assefa (PhD)

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Abstract

Educational institutions should recognize knowledge as a strategic resource of their core business activities. Knowledge sharing will contribute to the creation and exchange of intellectual capital that is the core business of HEIs. It is a regular practice of the HEIs, as the number of academic lectures, conferences, and publications is more than any other profession. Although knowledge sharing has significant importance for organizational success, it remains a challenging activity for many organizations. Thus, the purpose of this study was to explore the existing knowledge sharing practice among academic staff in Federal TVET Institute and explore factors that affect knowledge sharing practices among academic staff. The research used a quantitative research methodology. A questionnaire survey was used to collect data from 132 academic staffs. The data was analyzed using descriptive statistics such as frequency, percentage, mean and standard deviation as well as regression analysis and correlation coefficient.

The result of this study revealed that academic staff in federal TVET often engaged in knowledge sharing practice through sharing teaching materials, participating in seminars and workshops, discussing projects with peers within and/or outside faculty, sharing research findings, and attending university/faculty meetings. However, the academic staff did not utilize publishing books, journals, or other academic materials, participating in symposiums and public lectures, attending training programs, and participating in Web/Video Conferences to share knowledge. This research concludes that the level of KS practices in the study organization is low. This is mainly attributed to the low awareness of the Institute's management about the value of knowledge as a strategic resource of the organization. The study also identified the most important factors affecting knowledge sharing practices among academic staff. ICT infrastructure, perceived cost, attitude, self efficacy, and organizational rewards were the most influential factors for knowledge sharing practices. All factors jointly explain up to 29% of the total variance in knowledge sharing practice. However, additional factors should be explored to better improve the knowledge sharing practice in the study organization.

Keywords: Knowledge, Knowledge sharing practice, Quality education, Higher Education Institutions (HEIs)

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List of Acronyms

HEI	Higher Education Institution
FTVETI	Federal Technical Vocational and Educational Training Institute
TVET	Technical Vocational and Educational Training
KM	Knowledge Management
KMS	Knowledge Management System
KS	Knowledge Sharing
R&D	Research and Development
SPSS	Statistical Package for Social Science
SECI	Socialization, externalization, Combination, and Internalization

CHAPTER ONE

1. INTRODUCTION

This chapter gives an overview of the research area and it answers why this research is conducted. It covers the background of the study, statement of the problem, the objective of the study, research questions, and significance of the study, delimitation of the study, limitations, and organization of the study.

1.1 Background of the study

"Knowledge" as a primary commodity and a competitive advantage source, it is now seen as the engine of the world economy. Future economic success will rely on companies and organizations which effectively acquire, utilize, and exploit knowledge (Jain, Sandhu, & Sidhu, 2007). Since knowledge is the only significant economic resource, organizations were attracted by the concept of managing their knowledge to gain a competitive advantage. This process has assumed growing importance in recent years as technology has enabled the more effective collection and sharing of knowledge. Knowledge management can be characterized as a systematic and organizationally specified mechanism for managing the knowledge of organizations to acquire, organize, maintain, apply, share and renew employee tacit and explicit knowledge to enhance organizational efficiency and value creation (Davenport & Prusak, 1998). KM has currently caught the attention of many organizations. As much need for KM is getting the attention in business industries, KM in education is also getting bigger emphasis. It is very rational and fair to expect Higher Education Institutions (HEIs) to take a pragmatic approach to knowledge management strategies and a well-honed understanding of their knowledge assets for management. HEIs are crucial to the creation and distribution of knowledge-based research publications. They contribute knowledge to a range of successful and non-profit making organizations to promote creativity, socio-cultural entrepreneurship and learning through educational programs. (Ramachandran, Chong, & Wong, 2013). Various studies have stressed that HEIs are the best places to implement KM practices and to make progress in playing a dynamic role in ensuring knowledge sharing and transfer between stakeholders and facilitating their functional and operational processes(Balakrishnan & Munusam, 2019).

While many scholars articulate the need for knowledge management in HEIs, others emphasize

the strong position of knowledge sharing. Knowledge sharing can be described as the information given to help others work together to solve some issues, create new ideas and programs, or enforce policies or procedures (Cummings, 2004). According to Wang and Noe (2010), The sharing of knowledge has been recognized as a prerequisite and foundation for the success of organizational knowledge management initiatives. Since all workers often deal with k, HEIs Fare put themselves in the serious role of producing knowledge. Educational institutions should encourage processes of knowledge sharing that foster social capital and the sharing of tacit knowledge through institutions. These activities will contribute to the creation and exchange of intellectual capital that is the core business of HEIs. Knowledge sharing is regarded as an acceptable practice of the HEIs, as the number of academic lectures, conferences, and publications is more than any other profession(Saad & Haron, 2013). Higher education institutions (HEIs) need to achieve a competitive advantage because of stiff competition and demand to combat globalization. And this responsibility rests in the hands of academicians. The ability of academics to share knowledge will increase their academic performance and contribute to the intellectual capital and knowledge economy of the country. Babalhavaeji and Kermani (2011) implied that the dynamism of a modern economy demands that experts not only create knowledge rapidly but also gain and apply knowledge through Knowledge sharing.

Nonetheless, the need for knowledge sharing among their faculty members in several higher education institutions has not been seen as a way to succeed in providing knowledge to their students and society (Adamseged & Hong, 2018). Rather than focusing on the basic component that is knowledge sharing, most of them focus on systems and tools (Jain et al., 2007). Although in Ethiopian Higher Education Institutions knowledge sharing is becoming important to support the teaching-learning process and research activities, yet it is not successfully implemented (Bekele & Abebe, 2011). Knowledge sharing activities of higher education teachers are relevant because individual and collective information is the cornerstone of the teaching profession. Individually, higher education teachers may have experience in teaching or expertise that helps them support their institutions and students, but if not shared, that expertise is only worthwhile for the individual. Knowledge sharing activities of teachers may potentially have an effect on student performance, possible professional programs, education policy, collaborating organizations, and researchers. A significant step in researching knowledge sharing appears to be to learn more about

how higher education teachers share knowledge, what forms of knowledge are shared, and the powerful factors that affect their knowledge sharing. It is therefore important to establish a good knowledge-sharing culture in HEIs to improve and strengthen an individual's innovative and creative ability to respond to complex problems (Chong, Yuen, & Gan, 2014, p. 204). Lawal, Agboola, Aderibigbe, Owolabi, and Bakare (2014) discussed that universities need constant knowledge sharing behavior among the faculty members because the academic staffs are the major player in the knowledge-based society. Therefore, it would be interesting to examine the attitude, actions, and behaviors of academicians in designing knowledge management strategies in general and promoting and cultivating knowledge sharing behaviors in particular.

However, despite its advantages knowledge sharing is a challenging issue for organizations. since knowledge sharing is more of a people-process practice than a technology-driven process, the academicians' perceptions and willingness toward knowledge sharing are an important part of the process (Adamseged & Hong, 2018). Therefore, before organizations implement knowledge management initiatives, it was considered important to study, the practice of and barriers to knowledge sharing among academics in university (Sujata & Santosh, 2016). Many literatures identified individual, organization, and technology-related factors influence knowledge sharing (Sheng & Raymond, 2010). And much of the past research focuses on various issues related to knowledge sharing and knowledge management in business and industry (Sujata & Santosh, 2016). However, research in the field of knowledge sharing in universities and educational institutions is very limited (Sujata & Santosh, 2016). The difference in the working culture of departments and the context that the previous studies conducted makes the generalization of the findings difficult. Therefore, to fill this research gap, the researcher of this study found it important to initiate a study on knowledge sharing practices. Assessment of knowledge sharing practice shows the necessary changes to be followed for effective implementation of KM (Kumaravel & Vikkraman, 2018). So With the help of a survey-based methodology, the present study examines the knowledge sharing practice of among academic staffs in the federal TVET Institute. An attempt is also made to identify the different factors that may affect knowledge sharing practice in an academic environment.

1.2 Statement of the problem

Educational institutions play a key role in knowledge creation. The tacit knowledge that academic

staff creates or gains is embedded in their minds and constitutes the storehouse of an educational institution's intellectual capital. It is therefore important to establish a good knowledge-sharing culture in HEIs to improve and strengthen an individual's innovative and creative ability to respond to complex problems (Chong et al., 2014). Nonetheless, the need for knowledge sharing among their faculty members in several higher education institutions has not been seen as a way to succeed in providing knowledge to their society and often found to be inefficient (Sujata & Santosh, 2016). Knowledge sharing practices of teachers in higher education are important because individual and collective knowledge is the foundation of the teaching profession (Balakrishnan & Munusam, 2019). Knowledge sharing is vital in knowledge-based organizations. Individually teachers in higher education may gain experience of teaching or knowledge that helps them serve their institution and student. Knowledge sharing activities of teachers may potentially have an effect on student performance, possible professional programs, education policy, collaborating organizations, and researchers. A significant step in exploring knowledge sharing as a relatively new idea for higher education appears to be to learn more about how higher education teachers exchange knowledge, what forms of knowledge are shared, and the powerful factors that affect their knowledge sharing.

Federal Technical Vocational and Educational Training Institute (FTVETI) is a higher learning institution that gives training for TVET trainers and leaders around the country. Besides the normal teaching duty, every academic community member of the institute including its 15 satellite branch polytechnic colleges must participate in research and technology transfer activities. Technology transfer (TeCAT) is the process to select replicate, accumulation & transfer new technologies that contribute to the economic development of the country, mitigate regional problems, and to the enhancement of productivity and competitiveness of industries (MOE, 2008). One hundred percent copying and adapting technology that matches country context and transferring it to micro and small enterprises (MSE) has emerged as a nucleus in the technology transfer arena. Local and foreign instructors throughout their stay are required to do technology outputs which demand pragmatic demonstration of the knowledge they have possessed in some competencies. Depending on the course nature there is a possibility to present actual prototypes in which the prototypes could be new innovations or customized ones that can fit industry needs. Cognizant to this fact, there is an immense knowledge produced by the different departments. The foreign expertise that are hired to support the technology transfer process has also tried to produce many prototype artifacts

(machines) that will help the industries. As observed by the researcher of this study, there are many prototype artifacts and research outputs in each department which is not properly stored in a way accessible to potential users. However not all these research outcomes and both tacit and explicit knowledge which is gained while making those Technology transfer projects are not shared among academics. Most HEIs assume that every academics they use would have the sense to share knowledge (Fauzi, Nya-Ling, Thursamy, & Ojo, 2019b). But, there is no evidence that academic staff at the federal TVET Institute are taking its usage seriously. Accordingly, Fauzi et al. (2019b) stressed numerous reasons that might obstruct the KS process among academics, so it is crucial for the stakeholders to identify those and ensure that knowledge is freely shared. Investigating a faculty member's knowledge-sharing practice will help them to perform their functions remarkably well in a better position (Adamseged & Hong, 2018). Therefore, for the success of knowledge management in higher institutions and to better understand and enhance our knowledge in this area, studies articulate the need to study the practice of and barriers to knowledge sharing among academic staff (Sujata & Santosh, 2016). This motivates the researcher of this study and justifies the need for the study.

Supporting the above scenarios very few studies try to investigate knowledge sharing practice among academic staff and point out the factors that affect knowledge sharing practice. The factors that encourage or discourage knowledge sharing behavior are poorly understood (Bock, Zmud, Kim, & Lee, 2005). Many of the literature categorized the factors into groups: individual, organizational, and technological (Sujata & Santosh, 2016). However, most of the factors of knowledge sharing are generally internal to the organization. Knowledge sharing was not successful in educational institutions as they are likely to alter their organizations' customs to adopt KS plans and practices (Celina, 2015). Jeyanthi and Shrivastava (2019) stress that organizations should come up with KS strategies that fit the existing organization's culture. For this reason, individual, organizational, and technological aspect is now the biggest issue in KS practices in the organizations as well in universities (Haque, Ahlan, & Razi, 2015). Moreover, individual, organizational and technological determinants for KS research as a whole in HEIs have not been given adequate emphasis in developing countries (Haque et al., 2015). Despite the significant role of individual knowledge and the necessity for this knowledge to be shared effectively, relatively very few researches are conducted in Ethiopian higher education institution's

perspective and how academics in their work settings share this knowledge. A study conducted by Bekele and Abebe (2011) examined knowledge sharing among nine public Higher Education Institutions in Ethiopia. The study revealed the sharing practices concerning personal, technical, organizational factors. However, respondents were selected only from IT-related Departments (Bekele & Abebe, 2011). Generally, previous studies are restricted to some academic disciplines and departments only. This makes the generalization of the studies difficult. Therefore, additional research is required to investigate knowledge sharing practice in higher institutions by including a sample population from different departments. Here this study is not arguing that there is a difference between faculties in knowledge sharing but, believes it will be best to include samples from different disciplines. In addition, studies carried out in other countries cannot be generalizable to the Ethiopian context because of differences in cultural settings and technological developments. Thus, this research will fill the identified knowledge gap in the current literature. This study will also identify factors that affect knowledge sharing practice of academicians in the Federal TVET Institute. Therefore, the study will address the following research questions:

1.3 Research questions

- How academics within Federal TVET Institute share knowledge?
- What are the factors that affect knowledge sharing among academics within Federal TVET Institute?

1.4 General objective

The main objective of this study is to understand the existing knowledge sharing practice among academic staff and to identify influencing factors in Federal TVET Institute.

1.5 Specific objectives

1. To discover the knowledge sharing activities used among academics staff in Federal TVET Institute.
2. To discover the understanding of academics regarding different factors of knowledge sharing in federal TVET institutes.
3. To identify the most significant factors that affect knowledge sharing practices among academics within Federal TVET Institute.

1.6 Significance of the Study

This study is about exploring the current knowledge sharing practice and point out significant factors that affect the practice of knowledge sharing among academics in the federal TVET institute. By answering the research questions this study draws several practical and theoretical contributions. Practically by uncovering the perceptions and attitudes of faculty toward sharing knowledge will assist in understanding what academic institutions must be aware of to establish an Organizational culture that generates new knowledge by institutionalizing the knowledge-sharing process. Therefore the findings of this study will provide insight into knowledge-sharing by faculty and make substantive suggestions for designing and developing, campus-wide knowledge sharing strategies. Additionally, it also serves as important evidence for HEI administrators, policymakers, Lecturers, academicians, and researchers to plan and make interventions to improve knowledge sharing practice in Ethiopian higher education institutions.

Theoretically, this study expanded previous research by outlining a set of wider individual, organizational, and technological elements that are likely to affect KS practice among academics in the HEI context. Besides, this study would be a worthy contribution to the existing literature on knowledge sharing in general and the knowledge sharing behavior of academicians, particularly in the Ethiopian HEIs context. Finally, this study will also serve as guidelines and reference material for future researchers and students interested in carrying out more research in this area.

1.7 Scope and Limitations of the Study

The scope of the study was limited to exploring knowledge sharing practices of academic staffs of Federal TVET institute. Only the main campus and satellite institutes exist in Addis Ababa are included in the study. This study also emphasizes academic staff since they are expected to share knowledge in their daily works. The targeted participants are full time Ethiopian and non-Ethiopian academicians from all departments in the institute. This will enable to assess the existing practices and problems of knowledge sharing in different working cultures and discipline. The study explores existing knowledge sharing practices, factors that affect knowledge sharing practices of the academic staff. In this study individual, organizational and technological factors affecting knowledge sharing practice among academicians are investigated. As the researchers thought this research would be more representative if it were conducted widely by including other

different satellite institutes found in different regions of Ethiopia. But due to time, labor, and money constraints, the study is limited to the main campus and satellite TVET colleges found in Addis Ababa.

1.8 Organization of the Study

The research paper consists of five chapters.

Chapter 1: Has introduced the study and explained the problem. Further, it is a section that points out the study's research questions, objectives, significance, scope, and limitation.

Chapter 2: This Chapter of the thesis discusses the theoretical aspects of knowledge sharing (KS) in general. Also explores previous studies conducted in knowledge sharing in a higher education institution setting. The subsequent chapter reviews the literature of factors affecting knowledge sharing behavior, barriers inhibit knowledge sharing, faculty characteristics, and knowledge sharing in an academic environment, and knowledge sharing motivation.also, it resents the research framework.

Chapter 3: The Research design and methodology chapter outline the research process. It includes research design, selection of samples, and instrumentation. This chapter also describes the data collection and recording, data processing, and analysis procedures.

Chapter 4: The fourth chapter presents the study findings, analysis, and presentation of the results both graphical and descriptive manners.

Chapter 5: The last chapter concludes the entire research activities and reconciles it with the objectives of this study by ending with essential conclusions and necessary recommendations on knowledge sharing practice among academicians towards knowledge sharing. From the findings, the author makes some reflections and recommendations for the policy planners at Federal TVET institute as well as suggestions for future studies. Finally, the annex part contains the questionnaire and the references.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Introduction

This Chapter of the thesis presents the literature review from knowledge sharing perspectives and discusses the theoretical foundations of this study. Conceptual arguments relating to data, information, and knowledge are also presented. The literature review analyses the gaps that exist in the literature as well as outlines the practices, challenges, and enablers of knowledge sharing in higher education institution context. A variety of authors have reported on the concept of knowledge and knowledge sharing in organizations as well as in educational settings. A review of related literature with critiques is also resented. The chapter ends by presenting the conceptual framework of the study drawn from the reviewed literature.

2.2 The Concepts Data, Information, Knowledge

The need of managing knowledge in the current competitive world has been mentioned by many pieces of literature. Concerning this understanding the Concept of knowledge and it is a role in human life is also critical for all of us. Without the determination of what knowledge is we can't speak about knowledge sharing and knowledge transfer processes. To take advantage of knowledge, organizations must understand how knowledge is created, shared, and used. In the KM domain, it is also essential to distinguish between data, information, and knowledge, terms that have significant and discrete meanings. These terms have been defined by various scholars and scientists in different kinds of literature. In the work of Davenport and Prusak (1998) data is stated as a set of discrete objective facts about an event or a process which have little use by themselves. Pearlson and Saunders (2013), state that Data are specific, objective facts or observations standing alone; such facts have no intrinsic meaning, but can be easily captured, transmitted, and stored electronically. Typical examples of data include statistics, list of items and names and addresses (Davenport & Prusak, 1998). They are numerical quantities or other attributes derived from observation, experiment, or calculation without any context. Whereas information is a collection of data and associated explanations, interpretations, and other textual material concerning a particular object, event, or process (Davenport & Prusak, 1998). When data is organized in a logical, cohesive format for a specific purpose, it becomes information(Pearlson & Saunders,

2013). Nonaka (1994) in his article defined information as “a flow of meaningful messages”. Unlike data, information informs receivers and impacts on their judgment and behavior (Davenport & Prusak, 1998). When information is analyzed, processed, and placed in context, it becomes knowledge. This has been reflected in the definition of knowledge as information possessed in the mind of individuals(Alavi & Leidner, 2001).

The most common definition of knowledge is, Nonaka and akeuchi (1995) stated knowledge as “a dynamic human process of justifying personal belief toward the truth”. Wiig (1999), the most often-cited writers on KM, defines knowledge as a set of truths and beliefs, perspectives and concepts, judgments and expectations, methodologies, and know-how. Knowledge originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms (Davenport & Prusak, 1998). Awad and Ghaziri (2004) defined knowledge as: “a higher level of abstraction that resides in people’s minds and includes perceptions, skills, training, common sense, and experience”. Nonaka and akeuchi (1995) made three important observations that firstly, knowledge, unlike information is about beliefs and commitment. Knowledge is a function of a particular stance, perspective, or intention. Secondly, knowledge is about action. It is always knowledge to some end. Lastly, knowledge is content-specific and relational. This means that knowledge is often intangible and cannot be measured. It can however be shared, and it relates to some action. Pearlson and Saunders (2013) further differentiated this three terms in detail and shown in (Table 2.1).

Table 2.1 The difference between Data, Information, and Knowledge

Data	Information	Knowledge
Simple observations or objective facts of the world: • Context-free • Easily captured • Easily structured • Compact, quantifiable • Has no intrinsic meaning	Data with relevance and purpose: • Specific context • Needs consensus on meaning • Human mediation necessary • Often garbled in transmission • Must be considered within the context that it is received and used	Valuable information that was synthesized and contextualized to provide value: • Hard to capture electronically • Hard to structure Often tacit • Hard to transfer • Highly personal to the source • Richer, deeper and more valuable than information

(Source: Pearlson and Saunders, 2006)

2.3 Types of Knowledge

Various kinds of knowledge have been distinguished and described within previous literature, it is important to realize the common categories. For example, Christensen et al., (2007) described four kinds of knowledge, i.e. object-based knowledge, know-how knowledge, professional knowledge, and coordinating knowledge. Pearlson and Saunders (2013) made a distinction between procedural knowledge, which referred to skills and the ability to perform a task, and declarative knowledge, which referred to the beliefs that existed with regard to the relationships between variables. Often, researchers make a distinction between relational (know-with), causal (know-why), and conditional (know-when) forms of knowledge (Nolan Norton Institute, 1991). Further, knowledge has been divided into individual, group, and organizational knowledge (Nonaka, 1994). However, the kinds of knowledge that are most often referred to be explicit and tacit forms, as such, this distinction will be a focus within this study. Despite the common taxonomies in the literature, other classifications of knowledge with their definition and examples have also been presented in the work of Alavi and Leidner (2001), see Table 2.2

Table 2.2. Knowledge Taxonomies and Examples

Table 2. Knowledge Taxonomies and Examples		
Knowledge Types	**Definitions**	**Examples**
Tacit Cognitive tacit: Technical tacit:	Knowledge is rooted in actions, experience, and involvement in specific context Mental models Know-how applicable to specific work	Best means of dealing with specific customer Individual.s belief on cause-effect relationships Surgery skills
Explicit	Articulated, generalized knowledge	Knowledge of major customers in a region
Individual	Created by and inherent in the individual	Insights gained from completed project
Social	Created by and inherent in collective actions of a group	Norms for inter-group communication
Declarative	Know-about	What drug is appropriate for an illness
Procedural	Know-how	How to administer a particular drug
Causal	Know-why	Understanding why the drug works
Conditional	Know-when	Understanding when to prescribe the drug
Relational	Know-with	Understanding how the drug interacts with other drugs
Pragmatic	Useful knowledge for an organization	Best practices, business frameworks, project experiences, engineering drawings, market reports

(Source: Alavi and Leidner, 2001, p.113)

2.3.1 Explicit and Tacit Knowledge

In the knowledge management literature, a classification of explicit and tacit knowledge has played an important role. According to Nonaka and akeuchi, (1995) Explicit knowledge is the kind of knowledge readily transmitted between individuals formally and systematically in the organizations. Krogh, Nonaka, and Rechsteiner (2012) also described explicit knowledge as formalized written knowledge, which could be easily articulated and shared between individuals through mediums such as manuals, textbooks, or scientific formulas. Since it is easy to embed in policies, rules, regulations, and procedures, it is commonly found within the working environment (Nonaka & Toyama, 2005). By using ICT systems early KM research mostly focused on making

explicit knowledge accessible through the use of databases in digitized format (Krogh et al., 2012). However, other authors considered that its simple nature and lack of know-how and embedded experience make explicit knowledge less important to organizations.

In contrast, the term tacit knowledge refers to knowledge matters that are subjective, personal, and intangible (Nonaka, 1994). Krogh et al. (2012)defined tacit knowledge as being rooted in the actions and experiences that relate to an individual. For Nonaka, Krogh, and Voelpel (2006), tacit knowledge can be explained as consisting of two main elements, i.e. technical elements and cognitive elements. Technical elements of tacit knowledge are those where personal, informal skills are applied within a particular context, such as craft skills and know-how. Cognitive elements of tacit knowledge are those where paradigms, beliefs, values, or the mental model of a person have a bearing. It can be developed by conversation, social interaction, job training, and workshops. For any organization, tacit knowledge is essential for undertaking the tasks of an organization and getting things done well, thus competitive advantage can be gained through the presence of tacit knowledge. However, According to Botha, Kourie, and Snyman (2008), since tacit knowledge is based in the human mind, it is complex and difficult to communicate or transfer easily and it's also difficult to codify this type of knowledge using KMS and IT applications.
Although the nature of both explicit and tacit knowledge is still intensely debated, Krogh et al. (2012) suggested that the two types of knowledge are complementary to each other, and both are crucial to knowledge creation. It would be difficult to have an understanding of explicit knowledge without a certain amount of tacit knowledge. As adopted Ivantsova and Sivén (2016) the work of Dalkir (2010) or Adhikari (2010), the 'iceberg' metaphor explained it well (see figure 1).

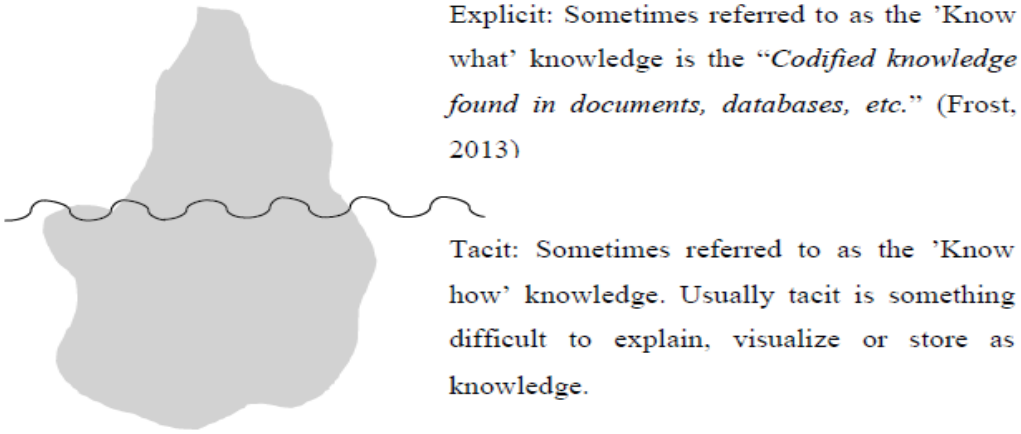

FIGURE 1 : The 'iceberg' metaphor explaining difference in explicit and tacit knowledge

2.3.2 Individual, group, and organizational knowledge

Knowledge is a critical factor affecting an organization's ability to remain competitive. Based on the type of knowledge that exists in an organization, knowledge can also be individual, group, and organizational knowledge (Bollinger & Smith, 2001). Knowledge is not merely considered as know-how that exists with the individual's mind instead it also exists at the group and organizational levels (Nonaka & akeuchi, 1995). Individual knowledge includes the abilities of the individual to judge different situations and draw distinctions within a context or theory, or both, which creates the individual knowledge (Nonaka & akeuchi, 1995). As individual knowledge is related to a person, it is therefore influenced by individual behavior. The knowledge of individual members needs to be shared and legitimized through integrating interactions and IT before it becomes group knowledge. Davenport and Prusak (1998) described organizational knowledge in their words: *"It originates and is applied in the minds of knowers"*. Organizational knowledge resides in a collective mind that is formed through interaction, perception, and shared meanings. In addition to this, organizational knowledge is shared and analyzed in the organization (Beard, 2011). The information creation process assists companies to increase integrated information internally and turn knowledge into operational activities, boost efficiency, and generate corporate value (Lin, 2007). The creation of a KS culture ensures that knowledge through trust and communication is constantly created and communicated.

Additionally, organizational knowledge flows inside the organization as new methods and perspectives are tested and shared. The process of knowledge formation helps companies to

reinforce internally embedded knowledge and transform knowledge into operational activities to increase productivity and build organizational value (Lin, 2007). Creating a KS culture ensures the continual creation and sharing of knowledge through an environment of trust and dialogue in organizations (McInerney, 2002). Thus, learning in organizations takes place at the individual, group, and organizational levels, so that they all store stocks of knowledge that are moved and developed through dynamic knowledge flows between the different levels of the organization (Nonaka, 1994).

Effective KM requires the consideration of both tacit and explicit knowledge (Wang & Noe, 2010). It was argued by Nonaka et al. (2006) that personal knowledge may become knowledgeable of the organization by a process of interaction between explicit and tacit knowledge through four ways, i.e. socialization, externalization, combination, and internalization (SECI). A model of these four ways of knowledge transfer can be seen in (figure 2). One of the most influential and generally accepted models of knowledge formation and categorization in the field of knowledge management is the Nonaka SECI model (Krogh et al., 2012). Nonaka indicates that knowledge is frequently created following conversion and sharing, as illustrated in the SECI model in Figure 2. The paradigm indicates that tacit to tacit knowledge conversion is characterized by socialization, where interactions and behaviors are exchanged by social and informal activities. Externalization is the method of converting knowledge embedded in people's heads into a coded form (explicit) using mediums such as IT. When integrating several sources of coding knowledge to form systemic knowledge, the process of transformation is called a combination. The last stage of knowledge transformation is called internalization; it happens when a person applies coded data (explicit) to work activities to build know-how (tacit).

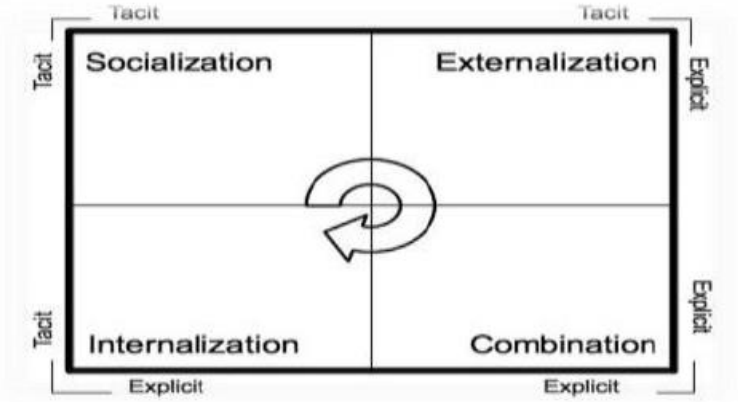

Figure 2: SECI model. Modified from and Von Krogh, Nonaka & Rechsteiner, (2012)

2.4Technical Vocational Education and Training in Ethiopia

Economic studies claim that sustainable economic development can only be achieved by using all types of resources, including human resources, effectively. Human resources are endowed with the ability to blend and transform all other economic resources into valuable products and services that can meet human needs and desires. Technical Vocational Education and Training (TVET) plays a key role in the growth of human resources and in improving the formation of human capital. It offers technical and non-technical training related to the job to make people ready for paid jobs or self-employment (Kebede, 2010). According to the definition by the International Labor Organization (ILO), TVET refers to "aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding, and knowledge relating to occupants in various sectors of economic and social life"(ILO, 2001). In addition to technical knowledge and ability, "softer" skills-communication, negotiation, and teamwork-are increasingly emphasized. Bateman et al. (2012) argued that TVET plays important roles, for example, in supplying the skills required by businesses and across national economies; promoting pathways to youth employment; enhancing mobility between jobs for experienced workers; and promoting the creation of new skills and helping workers to be prepared to adapt or step forward in their profession.

The Ethiopian Government has mandated the technical and vocational education and training (TVET) system with the responsibility for the preparation of skilled labor and the provision of entrepreneurial skills at different levels. Students who have completed Grade 10 in the Ethiopian education system can enter either TVET programs or academic streams (Preparatory College, i.e. Grades 11 & 12) based on their success in general secondary education. It is currently engaged in intense expansion and restructuring work in the sector, with the goal of improving both quality and enrolment in the TVET sector. According to MOE (2008), this helps minimize poverty and social and economic change by helping to improve demand-driven, high quality technical and training, access to all economic sectors, at all levels and to all people in need of skill-building. The ultimate aim of the national TVET strategy is to create a trained, motivated, adaptable, and innovative workforce in Ethiopia(MOE, 2008). Competency-based training (CBT) ensures that the TVET system in Ethiopia is better equipped to meet the skills needs of employers and the labor market (MOE, 2008). In CBT, the results to be obtained are clearly defined in such a way that

learners know exactly what they need to be able to do, teachers know what preparation or learning needs to be provided, and organizations know the skills needed of their employees(Kebede, 2010). The focus of competency-based training is on "doing" rather than just "knowing"(Singh & Tolessa, 2019).

The sub-sector is waiting for many challenges in view of those achievements and the determination and efforts of the Government. Trainers will face a lot of difficulties in producing professional trainees. This may be due to their limited knowledge of what trainees should achieve, including the effects and predefined criteria. However, the actual training tools, materials, actual workplace, and qualified trainers can help meet the actual job specifications(Fikru, 2016). UNESCO stresses the importance of reinforcing the ties between training and the labor market as part of the systemic development of education systems(Krishnan & Shaorshadze, 2013). The key obstacles in the cooperation of TVET and the industry were the lack of initiative by institutions from TVET and the weak response from the industry(Singh & Tolessa, 2019). The TVET strategy papers agree that one of the hurdles in Ethiopia's expansion of TVET is teachers' shortage. The efficiency of the TVET teacher pool is compromised due to the poor prestige of this career (MOE, 2008). At the higher TVET stages, there are unique restrictions on the availability of TVET instructors. The following method is currently used to classify and train TVET instructors in Ethiopia. Students who complete and evaluate TVET level 4 have the option of additional pedagogical training. They are eligible to teach TVET levels 1 and 2 after completing this instruction. These teachers are known as C level teachers. After qualifying as a Level C Instructor, a person can go to the special teacher institute like the Federal TVET institute that is the case institute of this study, for three to four years to be a B-Level Instructor. The highest teacher level is A, and these teachers are trained in any level of teaching. Obviously, it should be in the overall strategy for improving TVET education in Ethiopia to overcome these constraints (Krishnan & Shaorshadze, 2013). Kebede (2010) emphasized that it is extremely necessary to continuously update TVET teacher education. Also added that the system goals are achieved and skills transfer and new technology applications can only be made possible if TVET teachers and trainers are knowledgeable and responsible(Kebede, 2010).In recognition of this federal TVET institute is established to upgrade TVET instructor's skills and knowledge to their specific field of study.

The TVET system serves as a possible means of transfer of technology through the production of work standards, accreditation of skills, job evaluation and accreditation, the formation and reinforcement of the curriculum development system(Kebede, 2010). Among the aims stated on the strategy, making TVET Institutions as a center of technology capability accumulation & transfer (TeCAT) is the major task given for all TEVT institutes in the country. TeCAT is the process to select replicate, accumulation & transfer new technologies that contribute to the economic development of the country, mitigate regional problems, and to the enhancement of productivity and competitiveness of industries (MOE, 2008). One hundred percent copying and adapting technology that matches country context and transferring it to micro and small enterprises (MSE) has emerged as a nucleus in the technology transfer arena. Teachers and students throughout their college stay are required to do technology outputs which demand pragmatic demonstration of the knowledge they have possessed in some competencies. Depending on the course nature there is a possibility to present actual prototypes in which the prototypes could be new innovations or customized ones that can fit industry needs. Cognizant to this fact, there is an immense knowledge produced by the different colleges. In higher academia when there ever there are innovations, inventions, and findings; the scientific community will have exposures through the different publications, conferences, and seminars that enable knowledge is shared among different stakeholders, academicians, and scientific community. However, coming to TVET settings, there is less experience in knowledge capturing, describing, distributing, and preserving digital data. Which results in duplication of works and improper utilization of knowledge. Thus this gaps should be filled by conductiing a stydy in different part of the region and in diffrent TVET institutes.

2.5 Knowledge sharing in general

Literature is full of definitions and concept explanations for knowledge sharing. it continues to be a much-debated topic among academics and practitioners depending on the context and perspective it is used in (Wang & Noe, 2010). To support and create a common understanding Very few of them are used for this thesis. Ipe (2003) defined knowledge sharing as a natural act of making knowledge available to others within the organization by an individual while there is no pressure to do so. According to him knowledge sharing between individuals is the process by which knowledge possessed by one individual is converted into a form that can be understood and

used by others. It involves the willing exchange of information by a person to a kind of information that can be understood, absorbed, and used by others. Knowledge sharing has also been defined as team members sharing task-relevant ideas, information, and suggestions with each other (Srivastava et al.,2006). Knowledge sharing in the context of work is described as the exchange or dissemination of explicit or tacit data, ideas, experiences, or technology between individuals or groups of employees (Wang & Noe, 2010). Yi (2009) described knowledge sharing at work as a set of behaviors that involves the sharing of one employee's work-related knowledge with another employee with the aim of achieving organizational goals. Ramayah, Yeap, and Ignatius (2014) added that knowledge sharing focuses on the know-how type of knowledge to help others and solve problems within the organization. GAGNÉ (2009) defined knowledge sharing as the process of mutually exchanging knowledge and jointly creating new knowledge. it can occur through communications and networking with other experts, or documenting, organizing, and capturing knowledge for others (Nassuora, 2011). From an academic perspective, knowledge sharing can be defined as "being aware of knowledge needs and making knowledge available to others by constructing a technical and systematic infrastructure" (Kim & Ju, 2008). This knowledge sharing definition is used in this study. Overall, in all the definitions we can see that the process of knowledge sharing is a voluntary action that underlines the importance of human capital and the social interactions between the individuals. Through the process, it also leads to the creation of new knowledge.

In general, knowledge could be classified as explicit or tacit knowledge according to the degree of whether people could share easily with another. Explicit knowledge typically refers to the knowledge that could be easily expressed by words or documents. Such knowledge can be shared in form of data, specification, and manuals, audio, and video, images. In contrast, tacit knowledge is obscure and not easily, clear, and fully expressed. Such knowledge could be shared only by way of learning by doing or close interaction between people (Wang & Noe, 2010). Explicit knowledge sharing is a bit easier since it is an informal and systematic language that can be shared in the form of data and showed that ICT makes this process easy these days. The intervention of information technology (IT) is inevitably important as a tool for a successful knowledge management implementation. However, ICT functions as a platform for knowledge sharing are by itself insufficient to encourage knowledge sharing. Brazelton and Gorry (2003) had also exposed the

idea that technology alone may not effectively encourage knowledge-sharing activities. had supported the importance of the existing relationship between communicating parties as a formula to shape technological-enabled-knowledge activities.

Knowledge has become increasingly critical for organizations in terms of gaining a competitive advantage as they strive to compete in the knowledge-based era. To gain this edge, organizations elect to utilize available tools and strategies to systematically manage, store and disseminate organizational knowledge (Wang & Noe, 2010). Knowledge sharing offers institutions the potential for increased productivity as well as retention of intellectual capital, even after employees leave the organization, leading to value-added (Lin, 2007). He also states that knowledge sharing can help employees to get a new understanding of their jobs and bring personal recognition within the department. Knowledge sharing includes people willing to communicate actively with colleagues (donate knowledge), and actively consults with colleagues to learn from them (collect knowledge). As a result, interest in KM has become a strategic agenda item for public and private sector leaders and managers (Manus, Ragab, Arisha, & Mulhall, 2016).

In order to gain the desired benefit from KM programs, senior management must consistently aim to encourage knowledge-sharing behavior and institute the appropriate culture needed for such activity (Riege, 2005). As the sharing process involves more than just collecting data and information, generally, the value of knowledge expanded when it is shared. Therefore, if managed properly, knowledge sharing can greatly improve work-quality and decision- making skills, problem-solving efficiency as well as competency that will benefit the organization at large (Yang, 2007). Eriksson and Dickson (2000) concluded four preliminary elements for knowledge sharing: (1) shared knowledge creation process: the process of creating and distributing knowledge; (2) IT (information technology) infrastructure: the system and tools that support information dissemination; (3) catalysts: media that facilitate and promote knowledge sharing; (4) values, standard and procedure: social and cultural values that influence personal mindset. Knowledge sharing is considered a key enabler for knowledge management, supply and demand are the two aspects of knowledge sharing. Mansingh, Bryson, and Reichgelt (2009) describe them as, the supply side concerned with encouraging workers to share their knowledge and support both employees and employers. The demand side addresses the conduct of knowledge sharing among

employees and knowledge acquisition by the employer to improve organizational knowledge. Knowledge sharing depends on the habit and willingness of the knowledge worker to seek out and be receptive to these knowledge sources. The right culture, incentives, and so on must therefore be present.

2.6 Knowledge sharing practice in Higher Education Institutions

In several organizations, knowledge is an important component because it enhances the quality of its workers as well as enhances the operational efficiency (Antonova, Csepregi & Marchev, 2011). In an academic environment, particularly, in Higher education institutions (HEIs), sharing of knowledge is the most important component, because all staffs are often dealing with the knowledge (Trehan & Kushwaha, 2012). Compared to other organizations, the use of knowledge as input as well as output put HEIs in unique and distinctive settings. HEIs are knowledge organizations with tacit and explicit knowledge inserted in people and processes (Fauzi, Tan, Thurasamy, & Ojo, 2019). studies point out that HEIs are in the business of both generating and disseminating knowledge (Osama, Ramzi, & Tillal, 2018a). There are different levels and capacities in higher learning institutions that are required to generate and consume knowledge, directly or indirectly. Fullwood, Rowley, and Delbridge (2013) split HEIs knowledge into academic knowledge which is related to the basic purpose of teaching-learning and organizational knowledge dealing with the functioning of the institution. Created and consumed by faculty, students, administration, and researchers. In this environment, Academicians are actively involved in knowledge creation, assimilation, and dissemination. (Charles & Nawe , 2015). Effective knowledge sharing in HEIs thus plays a critical role, where maximizing the intellectual capital allows them to compete in the global market (Fullwood et al., 2013). Many authors have acknowledged that knowledge sharing is academic institutions' natural activity. Tan (2016) in his paper describes HEIs as a platform for academics to share ideas and insights. Al-Alawi, Al-Marzooqi, and Mohammed (2007) mentioned that "the higher learning institutions are no longer just providing knowledge to the students, but also manage and blend the existing knowledge as references for the next generation" (p.1).

Pircher and Pausits (2010) opined that The modernization of higher education has forced the institutions to store, manage and use existing information and knowledge stores in a better way to

meet new accountability, effectiveness, and efficiency requirements. In this respect, Knowledge management is gaining wider acceptance in the field of education. The information generated, stored, and communicated by each of the agents contribute to the effectiveness of the whole system (Rowley, 2000). In this respect, a knowledge repository is used as a diagnostic tool to allow universities to map the existing skills and experience with current needs to fill any gaps or deficiencies in the institution's knowledge base (Keramati & Azadeh, 2007).

However, research has often indicated Managing academics' knowledge to the benefit of all can be even a greater challenge to any academic institution (Celina, 2015). sharing knowledge and expertise among faculty members is increasingly becoming essential and demanded by university officials (Kim & Ju, 2008). Studies conducted in higher educational institutions have shown that knowledge sharing activities in the academic environment encountered similar barriers as in the business environment. For instance, there seems to be a missing culture of sharing, as most activities are individualistic and limited to the internal peer group (Basu & Sengupta, 2007). Most academics are well educated and specialists in their field and the main way that knowledge dwells in their mind to be known to others is for them to share. The difficulty of the situation is when academics do not disclose it for various reasons, including human, organizational, and technological factors (Riege, 2005). Celina (2015) mentioned some facts from different researches. The fact that academics appear to be independent, individualistic, and autonomous while keeping an impartial distance from their peers' work, emphasis on individual academic objectives and academic accomplishments rather than common organizational goals, inherent individualism and exclusivity, inhibits the exchange of knowledge, ideas, and resources, and there is less willingness to share, in an academic environment, individuals prefer viewing information or data offer by others rather than contributing (Celina, 2015).

HEIs are centers of knowledge that can excel through the existence of knowledge sharing initiative, especially among lecturers which take the form of discussions, conferences, or publications (Cheng, Ho, & Lau, 2009). However, the knowledge sharing initiative might not materialize if the culture of sharing is not instilled (Cheng et al., 2009). Hence, the management of HEIs needs to plan the knowledge-sharing initiative to encourage the practice At the same time, the initiative has to be in parallel with the mission of the HEIs in ways such as increasing the performance,

increasing competitiveness, and improving educational services and fulfilling the industry's peripheral needs (Kumar & Rose, 2012). Tangaraja, Mohd Rasdi, Ismail, and Abu Samah (2015) suggested that higher learning institutions should emphasize trust, provide rewards, developed a culture of sharing, equip their departments with a quality KM system, encourage openness in communication, and provide regular face to face interactive communication among members to elicit and encourage KS. Besides that, the knowledge sharing initiative can also overcome the problem of lost knowledge due to retirement and transfer (Goh & Sandhu, 2013) of lecturers, besides supporting the formation of the repository. Alsuraihi, Yaghi, and Nassuora (2016) suggested that the universities are amenable to produce, handle and disseminate knowledge in various organizations, communities, and therefore universities should promote the knowledge sharing process between the different academic members. They found that successful knowledge sharing among academics is extremely necessary for universities and the academics feel very strongly about the importance of knowledge sharing practices among academics. Serious steps, either at a personal or management level, should be taken to ensure the productivity of academics in delivering the best results. One of the best interventions is to create awareness and motivate academicians to participate in knowledge sharing practices either through formal or informal methods(Fauzi et al., 2019).

2.7 Knowledge sharing among academics in HEIs

Higher learning institutions exchange information and expertise within the institution among the academic community to nourish its core responsibilities (Charles & Nawe , 2015) . Academics are seen to be an ideal group of people that would willingly share and transfer knowledge with other academics, either in the same field or in a cross-disciplinary field, who can create ideas and generate more new knowledge for their stakeholders in their day to day activities (Fauzi, Nya-Ling, Thursamy, & Ojo, 2019a). Effective knowledge sharing among academics is essential for Institutions of Higher Learning. The sharing in an educational system ensures that academic staff is updated from time to time with the latest knowledge. In the context knowledge sharing among academics in higher learning institutions has been developing over the last decade (Osama et al., 2018a). Celina (2015) pointed out activates of academicians, Training and preparation of students, according to the latest performance standards of certain professions, Conducting scientific research, Preparing teaching staff to deliver training to supplement the knowledge of professional,

and Developing and disseminating technological progress are the major activities included in his article (Celina, 2015). Within these activities, the need to share knowledge is not just desirable but essential for a knowledge-based organization wanting to compete effectively in the global marketplace. According to Jain et al. (2007) "In an educational setup, effective knowledge sharing ensures that academics can realize and develop their potential to the fullest" (p.23).

Although knowledge sharing is important and could generate numerous benefits to academics, it is one of the main problems and challenges. The success of knowledge sharing efforts is almost depending on the individual willingness to share. Unfortunately, many higher education institutions have not embraced the need for knowledge sharing among its faculty members as an inevitable endeavor to their survivability (Adamseged & Hong, 2018). If academics are not willing to share knowledge across the institution, the effort of knowledge management will fail because knowledge sharing is more of a people-process practice than a technology-driven process (Bello & Oyekunle, 2014). Omotayo (2015) argues that for organizations to manage knowledge efficiently, attention must be given to three key components - people, processes, and technology. the essence, to ensure the organization's success, emphasis should be to connect people, processes, and technology for the purpose of leveraging knowledge (Adamseged & Hong, 2018).

Knowledge sharing behaviors can be promoted by motivating individuals to engage in such behaviors (Osama et al., 2018a). Academic perception itself is the primary problem of KS in HEI where the knowledge they have is perceived to belong only to them. Instead of belonging to a team or university resources, scholars consider knowledge to be their intangible assets. (Fauzi et al., 2018). It is obvious when academics possess unique and specific knowledge it will result in refusal of sharing (Ramayah, Yeap, & Ignatius, 2013). Lack of systems and policies to protect their intellectual assets (Kim & Ju, 2008), the individualistic nature of academics and research, the complexity of academic, and loyalty to the discipline rather than the organization (Fullwood et al., 2013). The competitive nature of academia and the need for an ongoing publication to be considered employable and The tension between giving substantial commitment towards organizational excellence and individual achievement are factors inhibiting the sharing of knowledge among academics within Academics, as the main character in the KS process should be encouraged and should be made to realize that KS is not only a matter of individual but as part

of the country's goal to achieve excellence and maintain its economy (Fauzi et al., 2018). higher education faculty members need to be holistically prepared, ready, and willing to disseminate knowledge sufficiently (Adamseged & Hong, 2018). How well these faculty members are capable, competent, and proficient in the performance of their duties is important not only to the institutions in which they work but also to the global community (Adamseged & Hong, 2018). However, if faculty members do not perform accordingly, the image of the institution becomes tarnished. Hence, higher education institutions are ought to pull their resources in terms of human expertise, skills, and competencies as a means of improving academic excellence, innovation in research, and critical engagement with society (Adamseged & Hong, 2018). These issues would form the basis for this study to explore and describe in-depth, the most important factors that would help the academicians to share their knowledge among them in the institute.

2.8 Knowledge sharing practices among academics in HEIs

Knowledge sharing activities are meant to provide platforms for knowledge sharing which can be done internally and externally within Higher Education Institutions (HEIs) (Fauzi et al., 2018). Krishnasamy and Nair (2004) found that research, active networking, social gatherings of staff, seminars or conferences, and meetings were among the top five preferable methods used by academia in the process of knowledge creation and knowledge sharing. Goh and Sandhu (2013) articulated university administrators to place greater emphasis on encouraging academics to share their knowledge in activities and events may include organizing training, gatherings, workshop, and internal sharing of research results to build up their sharing attitudes. Nooshinfard and Anaraki (2014)in their research on KS in schools in Singapore found that KS by teachers occurs through casual meetings, online communications, peer coaching, and interactive workshops. Another research found that KS takes place on an 'informal basis' through face to face communication and collaborative workgroups (Jain et al., 2007). As an organization, higher education institutions should use every means to get knowledge from their staff in different ways. Although each way has its advantages and disadvantages, an organization can use them simultaneously to stimulate holistic and effective ways of knowledge sharing. If an organization uses a single or few ways of KS, it may ignore some people. In short, an organization that uses different ways of KS may be advantageous as it benefits from tacit and explicit knowledge of its employees sufficiently (Adamseged & Hong, 2018). Nassuora (2011) summarizes knowledge sharing practices as shown

in Table 2.3.

Knowledge sharing Activity	
1. Publishing books, journals, or other academic materials	8. Sharing research findings
2. Sharing articles in books, journals, or magazines	9. Attending/participating in meetings in (university /faculty / group SIG)
3. Sharing of experience in seminars, workshops,	10. Attending /participating in colloquium or brown bag sessions
4. Attending /participating in Web/Video Conferences	11. Sharing teaching materials
5. Discussing projects with peers within and/or outside the organization	12. Attending briefings with peers with state or, federals agencies
6. Presenting in symposiums, Public lectures, and conferences	13. Reviewing and updating all courses and programs
7. Attending training programs	

Table 2.3 Knowledge sharing activities adapted from (Nassuora, 2011)

2.9 Knowledge sharing technologies

With the coming of Information and Communication Technology, it has made knowledge sharing easier among the academic staff. This was supported internet is a powerful and efficient tool for sharing, searching, retrieving, and disseminating information among academic staff. According to Seonghee and Boryung (2008), information and communication technology of knowledge sharing and distribution, such as the existence of intranet in the academic institution will help to promote knowledge sharing (Riege, 2005). Without technology, most knowledge sharing practices would be less effective and technology can help to create, capture, organize, access, and use the intellectual assets of the organization (Coakes, 2006). It is important to remember that it is a vital enabler but should never alone be the primary driver of knowledge management or sharing initiative (Coakes, 2006). Traditionally the benefits of technology have been seen in transferring explicit knowledge but advances in technology are enabling more and more sharing of tacit knowledge. A number of information technology mechanisms were used to facilitate smooth knowledge sharing. That includes online channels, websites, discussion forums, Wikis, and email (Adamseged & Hong, 2018).

According to Wang and Noe (2010), currently more or less any technology that can be used to

support knowledge creation, transfer, or codification defines itself as knowledge management technology. The organization needs to integrate an infrastructure that supports various types of knowledge transfer (Riege, 2005). Knowledge sharing technologies are summed up in figure 5 (Nassuora, 2011). Some specific investigations on the used technologies for sharing among academic staff will be of relevance to this study.

Knowledge Sharing technologies	Authors, Year
Email	(Hwang & Kim, 2007; Rusli & Mohd, 2007; Burns, 2007; Osunade et al. ,2007; Ting & Majid, 2007; Thakur, 2007; Abdullah et al., 2006)
World-Wide-web (Internet)	(Burns, 2007; Osunade et al., 2007; Leeuwen & Fridqvist , 2002; Kim & Lee, 2006; Riege, 2005; Kamal et al., 2007; Ting & Majid, 2007; Van & Fridqvist, 2002; Fengjie et al., 2004; Minna & Pekka, 2007; Parirokh et al., 2006)
Database Management Technologies	(Coakes, 2006; Park et al., 2004; Kim & Lee, 2006)
Content Management Systems	(Coakes, 2006; Park et al., 2004; Tsui, 2005; Gartner, 2006a; Logan, 2006a; Ting & Majid, 2007)
Decision Support Systems	(Park et al., 2004; Thakur, 2007)
Groupware Software	(Riege, 2005; Park et al., 2004; Sahibuddin et al., 2006; Han & Anantatmula, 2006)
Business Intelligence Technologies	(Riege, 2005; Tsui, 2005)
Collaboration Tools	(Coakes, 2006; Rasmus, 2003; Kim & Lee, 2006; Gartner, 2006a; Tsui, 2005)
Discussion Groups	(Kim & Lee, 2006; Logan, 2006b
Online Discussion Forum	(Ting & Majid, 2007; Thakur, 2007)
Video Conferencing	(Ting & Majid, 2007; Osunade et al., 2007; Han & Anantatmula, 2006)
Web Conferencing	(Thakur,2007; Abdullah et al., 2006; Han & Anantatmula, 2006)
Shared Space Collaboration Tool	(Ting & Majid, 2007)
Enterprise Information Portal	(Ting & Majid, 2007; Chaudhry, 2005; Abdullah et al., 2006)
Document Management System	(Ting & Majid, 2007; Abdullah et al., 2006; Sahibuddin et al., 2006).
Data Warehousing	(Ting & Majid, 2007)
Search Engine	(Ting & Majid, 2007; Osunade et al., 2007; Abdullah et al., 2006)
Taxonomy Generator	(Ting & Majid, 2007)
Enterprise Resource Planning	(Ting & Majid, 2007)
learning Management System	(Ting & Majid, 2007; Burns, 2007)
Customer Relationship Management System	(Ting & Majid, 2007)
Mobile Technologies	(Ting & Majid, 2007; Rusli & Mohd, 2007; Burns, 2007; Ting & Majid , 2007; Han & Anantatmula, 2006)
Short Messaging Service (SMS)	(Rusli & Mohd, 2007; Osunade et al., 2007; Thakur, 2007)
Audio and video messages	(Thakur, 2007)
Mobile Computing	(Rusli & Mohd, 2007)
Communities of Practice (CoP)	(Rusli & Mohd, 2007)
Virtual Teamwork	(Derballa & Pousttchi, 2004)
Lessons Learned Database	(Derballa & Pousttchi, 2004)
Virtual / Augmented Reality	(Derballa & Pousttchi, 2004)
Multimedia technologies	(Burns, 2007)
Virtual Learning Environments	(Burns, 2007)
Networked Learning	(Hodgson & Reynolds, 2005)
Digital Repositories (DR)	(Doctor, 2006)
Learning Object Repositories	(Doctor, 2006)
Blogs	(Osunade et al , 2007)
Online Communities	(Osunade et al., 2007; Kamal et al., 2007)
Mailing Lists	(Osunade at al., 2007)
Online Databases	(Osunade at al., 2007)
Storytelling	(Kamal et al., 2007)
Online Chat (ICQ, MSN, Messngwe, etc.)	(Ting & Majid , 2007)
Face-To-Face	(Ting & Majid , 2007)
Intranet	(Van & Fridqvist, 2002; Thakur, 2007; Chaudhry, 2005; Kim & Lee, 2006; Riege, 2005; Sahibuddin et al., 2006; Han & Anantatmula, 2006)
Extranet	(Thakur, 2007)
Intelligent Agent	(Abdullah et al., 2006; Sahibuddin et al., 2006).
Expert Finder	(Derball & Pousttchi, 2004)
Information Retrieval Technique	(Sahibuddin et al., 2006).
Data Mining Tools	(Sahibuddin et al., 2006).
Relational and Object Database system	(Sahibuddin et al., 2006).

Figure 3: Technologies for knowledge sharing (Nassuora, 2011)

2.10 Factors Affecting Knowledge Sharing practice of Academics in HEIs

Earlier studies on knowledge sharing in HEIs had studied factors that influenced, impeded, and contributed towards the knowledge sharing among academic members (Fullwood et al., 2013; Seonghee & Boryung, 2008). And also presented models and frameworks used to study influential factors. If these factors are not handled properly, they turn out to hamper knowledge sharing practices. Fullwood et al. (2013) discussed some of the factors that might be expected to impact KS activities in universities and noted that studying these factors in the context of different HEIs is recommended and it could be central for KS. This study describes some KS factor within the

context of HEIs. Different authors present the factors in different themes and dimensions.

Seonghee and Boryung (2008) studied Six crucial factors for KS among faculty members in an HEI in South Korea. The factors were relational dimension factors (Perception, Trust, Openness in Communication, and Collaboration) and structural dimension factors (Reward Systems and Communication Channel based on IT Infrastructure). They found out that Perception and Reward Systems had significant positive effects on faculty knowledge-sharing. But respondents do not consider other factors such as Trust, Openness in Communication, Collaboration, and Communication Channels based on IT Infrastructure to be the main factors. These factors do not have a statistically significant effect on faculty knowledge-sharing (Seonghee & Boryung , 2008). On the other hand Tan (2016) in his study to enhances knowledge sharing and research collaboration among academics. The findings revealed that academic staffs' knowledge sharing is influenced by openness in communication, collaboration, and trust. Also, organizational rewards, organizational culture, knowledge sharing system quality, and face-to-face interactive communication is strongly influenced by knowledge sharing.

Osama, Ramzi, and Tillal (2018b)in their Systematic Review of Knowledge Sharing in Higher Education Institutions present a classification of KS determinants into four areas: individual, organizational, technological, and cultural. The paper highlighted Trust and motivations emerged from the literature as critical antecedents, which can have a direct effect on academics' knowledge sharing behavior. Also indicated that organizational culture is critical to promote knowledge sharing among academic staff. They also suggest that it is important to supplement positive culture with other behavioral elements like motivations and use of the right technology as communication channels. Accordingly, Hooff, Schouten, and Simonovski (2012) by adapting the theory of reasoned action they examined the role of motivation that consists of intrinsic motivators (commitment; enjoyment in helping others) and extrinsic motivators (reputation; organizational rewards) to determine and explain the behavior of Malaysian academics in sharing knowledge. In addition, the findings revealed that intrinsic motivators are more influential than extrinsic motivators.

Sohail and Daud (2009) examined the factors and barriers that contribute to successful knowledge sharing among the university teaching staff such as factors as the nature of knowledge, working

culture, staff attitudes, motivation to share, and opportunities to share are found as factors to knowledge sharing.

Bulan and Sensuse (2012) proposed a model for knowledge sharing among academic staff in universities. The factors that influence knowledge sharing are grouped as individual, organizational, and technical themes. Individual (Awareness, Trust, Personality, Motivation, Pleasure of sharing, Self-efficacy, Willingness to share, Job satisfaction), organization (Organization policy, Organization structure, Organization culture, Management support, Reward system, Leadership, Work process, Office layout), and technology (IT application, IT infrastructure, IT use). By applying empirical study they validated the model. They added that the model can improve the performance of the university by employing effective knowledge sharing mechanisms among academic staff (Bulan & Sensuse, 2012).

2.11 Review of Related Literature

Minwalkule and Assefa (2018) investigated factors affecting University-Industry knowledge sharing practices in the case of Addis Ababa University College of Veterinary Medicine. A cross-sectional mixed research approach was taken as a methodology. The study found that the top five KS practices AAUCVM academicians often used to interact with the stakeholder industry were joint publications, training company employees, contract research, joint research, and participation in professional membership. Besides, the result of the study revealed that individual factors (willingness, trust, motivation to share knowledge and awareness of KS as duties), organizational factors (periodic plan for sharing knowledge), and technological factors (availability of up-to-date ICT infrastructure and updated website for sharing knowledge) were identified as having a significant impact on knowledge sharing practices. The study, therefore, recommended that the College should work on these significant factors to improve knowledge sharing between the College and industry players. However, this finding of this study is not generalizable to knowledge sharing among staff in higher institutions. This research was focused on a single college of Addis Ababa University with a small sample size. Also, it didn't consider the perspectives of the industry stakeholders.

Hashim, Judi, and Wook (2017) identified factors influencing knowledge sharing among TVET instructors Educators within Hulu Langat District and has proposed a framework for knowledge sharing. The study is supported by a survey methodology. The findings demonstrate the success

of knowledge sharing involving non-technical approaches, namely individual factors (awareness and trust), organization factors (organization culture, organization structure, top management support, rewards and recognition, shared goal and vision), content factors (Subject matter), and cooperation factors (structure of corporation process, a communication network). In addition, the technological approach is the technology element (ICT infrastructure, an archive of learning objects, social networking sites). This found that individual factors in TVET institutions has no impact on knowledge sharing activity. One potential explanation for this finding is that the success of a project or mission relies on the organization's environment as a whole and not individually.

Ramayah et al. (2013) identified the factors that drive knowledge sharing among academics in higher learning institutions in Malaysia, based on the Theory of Reasoned Action, and collected data from 447 academics in 10 public universities scattered across the country. The results from the Partial Less Squares study showed that extrinsic motivation, reciprocal relationships, self-esteem, and subjective norms are critical determinants of the academician's attitude to knowledge sharing. This attitude, in turn, will largely decide whether or not the academic engage in knowledge sharing behaviors. In addition to having a positive effect on attitudes, a sense of self-worth also had a positive impact on the subjective norm of knowledge sharing. As a consequence, these subjective norms affect the conduct of knowledge sharing. Besides, perceived behavioral influence and organizational environment have been described as having a direct effect on knowledge sharing behaviors.

Jolaee, Nor, Khani, and Yusoff (2014) conducted a study examining the factors that might influence Knowledge sharing intention among academic staff. The findings indicated that attitude was positively and significantly related to knowledge sharing intention. However, subjective norms and trust did not significantly affect knowledge sharing intention. Among other factors, only social networks and self-efficacy significantly affect knowledge sharing.

Bekele and Abebe (2011) conducted a study on awareness and practice of knowledge sharing among higher learning institutions in Ethiopia, as well as the extent of organizational and infrastructural support. The study sampled nine public universities and only focused on academic staff in the various IT Departments of Ethiopian public higher learning institutions and they

observed that they understand the importance of knowledge sharing and practice. Further, they revealed that even if they have developed fairly advanced (for beginners) intra-institution and inter-institution network infrastructure, the universities do not seem to make efforts to update the ICT infrastructure which helps for knowledge sharing. The video conferencing facilities set up in the various higher learning institutions are not put into full usage partly because of the limited bandwidth and partly because of a lack of adequate preparation on the part of the institutions. Among the additional factors noted as barriers to knowledge sharing is the unavailability of knowledge sharing platforms (software tools, knowledge-base resources, experience sharing conversational space, structured team-based collaboration framework), and lack of knowledge sharing policies, strategies, and programs. The paper also makes recommendations on strategies and mechanisms that need to be devised to overcome knowledge sharing barriers and promote effective utilization of ICT for knowledge exchange (Bekele & Abebe, 2011).

2.12 Development of the Research Model for Knowledge Sharing

Based on the literature reviewed, the study recognizes the existence of different influences on academic staff's knowledge sharing activities. Due to the availability of different factors in literature, it is not easy to access all of these factors in one study. Thus this study only selected factors that are highly tested in business organizations but not much in academic contexts. These factors are categorized as individual, organizational, and technical factors. To meet the objectives of the study, the following research model was proposed (see Fig. 5).

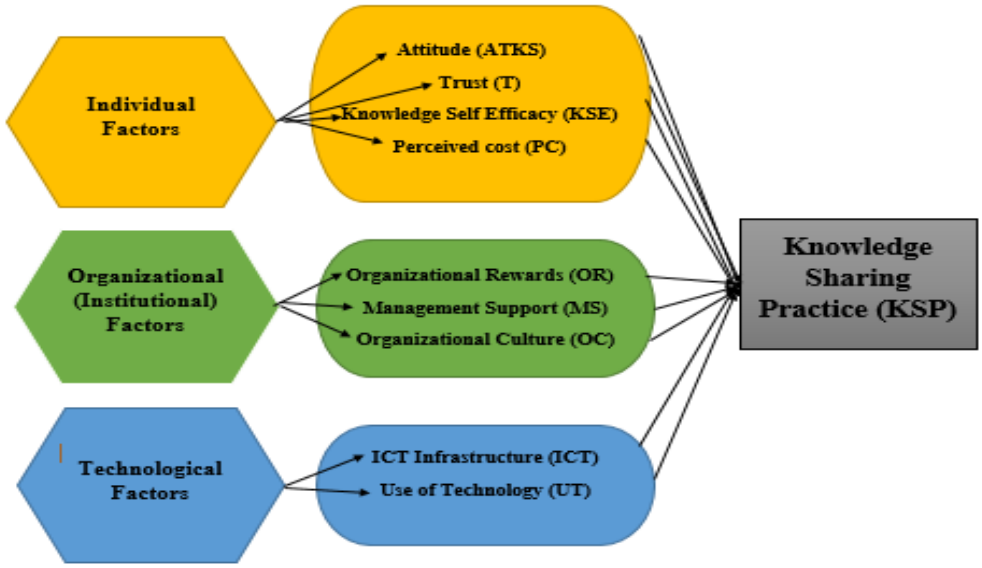

FIGURE *4: Research Model for knowledge sharing among academic staff*

2.12.1 Individual Factors

Individual factors are individually driven consideration. In other words, it is a knowledge sharing attitude that is important to decide whether to share or not to share knowledge with others. In this study, the individual refers to the academic staff who are knowledge creators and users in HEIs. Individual factors considered in this study included: attitude towards Knowledge Sharing (AKS), trust, perceived cost, subjective norms and self efficacy based on the theory of planned behavior. The reason for including these factors is that the factors are highly used and tested in business organizations but not much tested in academic settings.

Attitude towards Knowledge Sharing (AKS)

The TRA and TPB theory has been used to investigate the influence of attitude towards knowledge sharing and Studies have shown that a positive attitude leads to a positive intention to share knowledge (Chedid, Caldeira, Alvelos, & Teixeira, 2019). According to Wang and Noe (2010), attitude is a "learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object". According to (Sheng Wang & Raymond A. Noe) the attitude towards KS refers to the individual's opinion that conducting KS is good or bad; that he is in favor of or against KS. Higher attitudinal disposition towards knowledge sharing was found to increase knowledge sharing Fullwood et al. (2013) identify that in general, members of HEIs have positive attitudes towards knowledge sharing and they have to consider as an important factors when hiring academics.

H1: Individual positive attitude influences knowledge sharing practice among academic staff.

Trust (T)

Trust, defined as "the willingness of a party to be vulnerable to the actions of another party, with the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party appears to be an important antecedent of knowledge sharing "(Liao, Chang, Cheng, & Kuo, 2004). In academia, trust is even more needed because everything is related to intellectual property. Gururajan and Fink (2010) have found that a lack of trust among academics in educational institutions has held back knowledge sharing

practices. It has been proven that there will be no successful sharing of knowledge when academics do not trust senior colleagues with their knowledge. Literature suggests that trust is the dimension that is most studied in knowledge sharing(Wang & Noe, 2010). The true potential of academia, along with engagement, collaboration, and interpersonal relationships, can not be enhanced by the lack of trust. (Jolaee et al., 2014). A study by Kim and Ju (2008) on the attitude towards knowledge sharing in academic institutions in Korea found that trust was not directly correlated to knowledge sharing among academics. On the other hand, Previous study results show that trust affects knowledge sharing in HEIs and an integral part of the knowledge-sharing process (Chedid et al., 2019). Lin (2007) has found that trust is positively correlated with tacit knowledge sharing. In this study, trust refers to a person's reliance on sharing educational knowledge and scientific knowledge with others from the same faculty or with other faculty.

H2: Trust among academic staff has an influence on knowledge sharing practice.

Self-Efficacy (SE)

Self-efficacy of knowledge is about how they feel in there to share knowledge with others (Bandura, 1998). When individuals believe in their intrinsic understanding to solve work-related issues and take the initiative to provide such knowledge, they are said to have self-efficacy of knowledge. Many studies have investigated the role of self-efficacy in sharing knowledge. Lin (2007) reported clear associations between self-efficacy and both the donation and collection of knowledge. In their study Hsu, Ju, Yen, and Chang (2007) concluded that self-efficacy is an important predictor of actions in knowledge sharing. They also reported that persons with high self-efficacy will be more likely to perform similar activities than those with low self-efficacy (Hsu et al., 2007). The Kankanhalli, Tan, and Wei (2005) research examined factors affecting contributions to repositories of electronic knowledge; self-efficacy was significantly associated positively. Self-efficacy is therefore an essential factor that defines the academics' knowledge sharing activities.

H3: Knowledge self-efficacy has a positive influence on knowledge sharing practice among academic staff.

Perceived cost (PC)

Fauzi et al. (2019a) refer perceived cost as to academics perceiving knowledge sharing as having a cost implication to their academic work. Either in terms of endangering self-interest (e.g. job security, organizational reputation, and rewards), possible abuse of information by the user (e.g. knowledge application incompetence), and cost of opportunity (e.g. time and effort) and giving away power which can not be taken back or regulated (Riege, 2005). Individuals may therefore rationalize that the cost of sharing their knowledge outweighs the potential benefits for doing so. Therefore, as the perceived cost of knowledge sharing rises, the probability of knowledge being shared willingly should be decreased. It is the perception of some academics that knowledge is an asset that can be easily stolen or plagiarized. Meanwhile, the perceived costs are significant but are negatively linked to the intention to share information with academics (Fauzi et al., 2019b). This variable has not been widely tested in the academic environment. Therefore, this variable is included in the model to understand whether academics perceived that sharing would cost them in terms of these factors.

H4: Perceived cost has an influence on knowledge sharing practice among academic staff.

2.12.2 Organizational Factors

An analysis of the relevant literature shows a major impact of organizational or institutional factors on knowledge sharing activities. A lot of organizational factors also affect the knowledge-sharing activities of academics employed in higher education institutions. These variables included in this analysis are discussed hereafter.

Organizational Rewards (OR)

Kuvaas (2008) found that the relationship between organizational incentive systems and knowledge-sharing activity has been positive. As illustrated in the literature (Buch et al., 2015), an attractive incentive is important to promote knowledge sharing in organizations. In other words, an incentive scheme should be structured in such a way as to promote knowledge sharing among staff members. If the organization provides the employee's rewards or incentives in numerous ways, then employees typically become motivated and work better (Haque, Ahlan, Razi, & Subiyakto, 2016). Oliver and Reddy Kandadi (2006) also felt that indirect rewards such as

appreciation and recognition played a greater role in knowledge sharing than monetary incentives do.

H5: Organizational Rewards have a positive influence on knowledge sharing among academic staff.

Management Support (MS)

Several studies have reported that management support in HEIs significantly affects knowledge sharing more than any other variable (Chedid et al., 2019). Academics will have more motivation when management is directly involved in KS activities. They will be more willing to share when they know that the top management supports their acts in KS completely (Fauzi et al., 2019a). Management support in regard to superior's attitude, training, and sanctions, found a significant effect on knowledge sharing. Top management in HEIs should have a mechanism to encourage academics to share ideas, must be committed to invest in training and development activities and they should encourage KS through seminar and research publication(Vij & Farooq, 2014). In HEIs, management support would seem to be as direct involvement of management in HEIs knowledge programs and activities(Fauzi et al., 2019a).

H6: Management Support has a positive influence on knowledge sharing among academic staff.

Organizational Culture (OC)

Organizational culture is an aggregate of common attitudes, values, and beliefs that govern how people in organizations conduct themselves (Areekkuzhiyil, 2016). These common beliefs have a significant impact on the people in the company and control how they dress, behave, and do their work. Thus the knowledge sharing between staff members depends largely on the culture in which they work (Neches et al., 2010). Foss, Husted, and Michailova (2010) added that organizational practices play an important role in employee information sharing. The organizational culture would have a huge effect on the sense of the knowledge sharing activity of teachers working in the higher education field. Kim and Ju (2008) argued that the mix of faculty and academic professional culture impacts the exchange of knowledge in HEIs. Variances in knowledge sharing behaviors may be predicted, depending on the existence of the cultural component practiced within an organization (Ardichvili, Maurer, Li, Wentling, & Stuedemann, 2006). Therefore, cultural characteristics in HEIs should be given close consideration when designing successful academic

KS initiatives. (Riege, 2005). The characteristics of organizational culture that have been described as important in the development of knowledge sharing actions within an organization include being open to collaboration, reuse of best practices, and being creative by taking knowledge sharing as a routine activity (Areekkuzhiyil, 2016).

H7: Organizational culture has a positive influence on knowledge sharing among academic staff.

2.12.3 Technological Factors

In a technology-based world, technical forces have a major role to play in the personal and professional lives of individuals. In the case of knowledge sharing activities, technological advancement and the use of information technology would promote even further. The technical factors examined for their effects on the academics' knowledge sharing practices are listed below.

ICT Facilities (IF)

Knowledge sharing is supported by information communication technology and the provision of ICT infrastructure in organizations is expected. ICT facilities referred to the availability of IT facilities within the organization (Tohidinia & Mosakhani, 2010). Kanaan, Masa'deh, and Gharibeh (2013) stated ICT can be used effectively to promote the codification, incorporation, and dissemination of organizational information. He also stated that the implementation of technology had a positive effect on information sharing. ICT technologies such as email, internet, online databases, electronic archives, groupware, personal websites or blogs, virtual communities, video conferencing, and social networking, i.e. Facebook, Twitter, and other social and professional networks played a major role in the exchange of academic information (Haque et al., 2016). Often people are willing to share knowledge but because of the lack of facilities, they cannot do so (Babalhavaeji & Kermani, 2011). Thus ICT tools improve academic performance for KS operation and its implementation is very critical for institutional success (Haque et al., 2016).

H8: ICT Facilities have a positive influence on knowledge sharing among academic staff.

Use of Technology (UT)

Getting ICT facilities is important but it is not a sufficient condition for information sharing. Due to IT literacy problems, reluctance towards using IT resources has been described as an obstacle

to academic knowledge sharing (Haque et al., 2016). In other words, the ability to use technology in the process of information sharing will encourage employees to share information but the inability to use technology will de-motivate employees to share knowledge. The use of technology showed a positive impact on the sharing of knowledge (Tohidinia & Mosakhani, 2010). Kanaan et al. (2013) also found ICT use is the most important dimension of knowledge sharing enablers that influence knowledge sharing (Kanaan et al., 2013). Academics that use the ICT platforms and the social media network are well aware of the functional utility of these knowledge-sharing technical instruments.

H9: Use of Technology has a positive influence on knowledge sharing among academic staff.

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter provides an insight into the research process, how the research questions posed in the thesis are addressed. It outlines the reason for the selection of research designs as well as the method of data collection and analysis. This section also helps our readers to assess the overall validity of the study.

3.2 Research Design

The selection of a particular research method is essential for the success of each study (Saunders, Lewis, & Thornhill, 2009). According to Kumar (2011), a research design is a procedural plan to answer the question accurately and appropriately. It depends on the purpose of the study, the collection method and the type of data to be obtained(Andrew, Salamonson, Everett, Halcomb, & Davidson, 2011). However, the choice of suitable research methodology is not an easy task due to the availability of various tools, techniques, and procedures (Saunders et al., 2009). Quantitative and qualitative research methods are two different approaches to conducting research.

A quantitative approach is used in research methods to test hypotheses, quantify variables numerically, classify factors, and consider the best predictors of outcomes. Collis and Hussey (2014) note that quantitative approaches require a deductive approach where the current theory will direct the study. Established theory contributes to the creation of research ideas, followed by data collection and reports. Quantitative research approaches typically include the use of statistical tests to draw concrete conclusions (Adams, Khan, Raeside, & White, 2007). Some of the traditional techniques used in quantitative research include the use of surveys and experimental approaches (Collis & Hussey, 2014). As Gupta (2005) stated, if the answer to the research problem lies at present, a survey approach should be implemented. The survey method was often used by researchers because of its cost-effectiveness, its ability to address 'what? 'Questions and their potential to generalize from a small sample of a large population (Saunders et al., 2009). Collis and Hussey (2014) have described two forms of surveys: descriptive and analytical.

Although a descriptive survey is used to provide a reliable representation of the social problem at one time or multiple times, an empirical survey aims to compare the relationship between variables (Collis & Hussey, 2014). Most descriptive analysis will be used to measure the number of occurrences of the target variables and to determine the maximum, minimum, mean, and standard deviations.

This study was conducted to explore Knowledge Sharing Activity and related factors among academic staff at the federal TVET Institute. Based on the above topic, the researcher followed a quantitative survey approach. The answer to the problem lies in the present and the time constraints and availability of resources are the reasons for such a decision. Because of the difficulty of directly observing the phenomena of knowledge sharing, this study was intended to collect primary data from the sample using a questionnaire and then analyze and interpret the data collected to obtain real insight about the population. The questionnaire survey method is chosen because it is practical, cost-effective, and less expensive, and offers greater privacy and confidentiality. The data obtained will be analyzed using the Statistical Package for Social Science (SPSS). The study, therefore, provides a quantitative overview of individual and organizational knowledge sharing activities among academics. An increasing list of related studies have used the survey method to research knowledge sharing activities and factors influencing knowledge sharing among academic staff in HEIs (Fullwood et al., 2013; Jolaee et al., 2014; Lawal et al., 2014).

3.3 Study Area

Federal Technical Vocational and Educational Training Institute (FTVETI) were established in 2011 following the proclamation No.619/2010 and regulation No.245/2011 as one of the higher institutes of the country. It is found in Addis Ababa. Currently, it is the only TVET institute to train TVET trainers, leaders, and industry technicians. The institute gives training for TVET trainers and leaders in regular, summer, and satellite programs in 25 Bachelors and 7 master's fields. To broaden the fields of studies and to enrich teachers in their region, In addition to the main camps, the institute also gives training in 15 selected satellite Polytechnic Colleges around the country. Additionally gives training for industry technicians in short and long terms extension (weekend and night program) to fulfill the growing needs of industries.

The institute's mission is A) to produce competent, innovative, and resourceful TVET Teachers and leaders through the provision of quality short term and long term program and quality of instructions; B) Carry out quality technology and research through active involvement of Technical Vocational and Educational Training teachers, leaders and stakeholders in support of the MSEs; C) Ensure quality and sustainable institutional development; D) Provide demand-driven community and consultancy service and E) Ensure continuous engagement with industry in the development of technicians and foreign institutions. The institute's community is a combination of administrative staffs, students that are employed TVET teachers and leaders around the country that are selected to upgrade their educational status, local Higher institute Instructors, and foreign expertise (http://www.ftti.edu.et).

3.4 The population of the Study

According to Banerjee and Chaudhury (2010), the population is the total group from which certain information is required to be determined. Fraenkel, Wallen, and Hyun (2012) clarified that the population consists of all the members of a social group who are of interest to the researcher. The Institute has a total of 334 staff, according to Federal TVET human resource office data in June 2019. Of these, 185 were administrative support personnel, 149 were the academic staff. Since the purpose of this research is to explore the knowledge sharing practice of academicians, the study population consisted of only 149 academic staff from the five faculties of the institute. The decision was taken early on to limit the research to a very diverse community of academic staff. Academic staffs are knowledgeable professionals who might be ideally positioned to provide a picture of the status of KS from a faculty perspective.

3.5 Sampling Technique and Sample Size

According to Fraenkel et al. (2012), a sample is a representative portion of the population. Singh and Masuku (2014) point out that sampling is essential to an accurate explanation of the characteristics of the population in survey research. Collis and Hussey (2014) indicated that the sample size ought to be large enough to resolve the study problem and to represent the whole population. The researcher should ensure an appropriate representation of the population to generalize the empirical results. Determination of the sample size is the technique of selecting the

number of observations to include in a sample. There are several approaches to sample size determinations. These include using a census for small populations, imitating a sample size of similar studies, using published tables, and also applying formulas to calculate a sample size (Singh & Masuku, 2014).

The academic staff population at the institute consists of 5 different faculties (1) faculty of electrical/electronics and ICT, (2) faculty of civil technology, (3) faculty of mechanical technology, (4) faculty of garment and apparel fashion, and (5) faculty of Language, Entrepreneurship, and Pedagogy) with 149 members as a whole. Due to the manageability of the total population and the need to get a better understanding of knowledge sharing practice in each faculty this study adopted the census method. Pedersen and MacEvoy (2011) define census as population sampling, used for small populations, where every number of the targeted population is inserted into the study as subject matter. Singh and Masuku (2014) claimed that while cost considerations make this impractical for large populations, a census is more feasible for up to 200 or less small populations. It also removes the sampling error and provides data on all population individuals (Singh & Masuku, 2014). The researcher of this study thinks that as an insider to the institute it will be easy to reach respondents. Therefore, 149 is used as a sample size in this analysis so generalizations can be made justifiably to represent the total population. Table 3.1 shows the Target population and sample size used for this study.

Types of respondents	**Target population**	**Samples**	**Sampling techniques**	**Data gathering instruments**
Ethiopian Academic staffs in the main campus	149	149	census	Questionnaires
Total	149			

Table 3.1 Target population and Sample size

3.6 Instruments of Data Collection

Since the study used a survey approach, questionnaires were the only tool used to obtain first-hand data. Primary data are measurements observed and recorded as part of an original study (Gupta, 2005). To collect a substantial number of the required primary data over a short time and to enable respondents to provide a free and honest answer without any discomfort, the researcher selected a

self-directed questionnaire containing closed-ended questions. The respondents tick the category in the closed question which best defines the answer from the respondent (Kumar, 2011). The need to use the questionnaire as an instrument for data collection is related to the extremely limited time available to conduct data collection, the need to preserve the respondents' anonymity, and the need to obtain as large sample as possible.

The data was obtained from respondents who are academic staff members of the Federal TVET Institute. The Academic Knowledge Sharing Practice and some of the key factors affecting Knowledge Sharing mentioned in Chapter 2 have been included in the research model. Based on the review, the researcher created a questionnaire. The data collection methods used in this research are presented in Appendix 1: Questionnaire for academic staff.

3.6.1 Questionnaire design

For this study, a questionnaire with 2 sections was developed on which the respondents were asked to provide their honest perception on their knowledge sharing practice in the institute The questions reflect the research objectives and research questions of this investigation. Data on the major research areas determined by the research questions and the research objectives were collected. The questionnaire developed uses items adapted from the previous studies themselves (Areekkuzhiyil, 2016). (Fauzi et al., 2019a; Nassuora, 2011), as shown in table 3.3. The measurement for each theoretical construct and the number of items in the model is described briefly in Table 3.4.

The first part (Question 1-6) of the questionnaire gathers data about the background information of the respondent. It gathers information about the gender, age, Academic Rank, work experience, nationality, and faculty of the respondents.

The second part of the questionnaire is divided into two sections which hold the major constructs of the study. The first section is used to collect Knowledge Sharing Practice (KSP) of academics with 12 statements which was adopted from Nassuora (2011). This sections are measured using a five-point Likert-type scale (ranging from 5 = always, 4 = often, 3 = sometimes, 2 = rarely and 1 = never).

Table 3:2 Constructs and No. of Items

Sl. No	*Dimension*	*No. of Items*	*source*	*Category*
1	Knowledge Sharing Practice (KSP)	12	Nassuora (2011)	Knowledge Sharing
2	Attitude towards Knowledge Sharing(ATKS)	3	Fauzi et al. (2019)	Individual Factors
3	Trust (T)	4	Santhose (2018)	
4	Knowledge Self Efficacy (KSE)	4	Santhose (2018)	
5	Perceived cost (PC)	6	Fauzi et al. (2019)	
6	Organizational Rewards(OR)	5	Fauzi et al. (2019)	Organizational
7	Organizational Culture (OC)	6	Santhose (2018)	
8	Management Support to Share	6	Santhose (2018)	
9	ICT and Infrastructure (ICT)	6	Santhose (2018)	Technological Factors
10	Use of Technology (UT)	4	Areekkuzhiyil (2016)	
	Total	56		

The second section of part two deals with items that are used to collect information about the selected factors of knowledge sharing which consists of individual, organizational and technological factors. Individual Factors (Attitude, Trust, Self Efficacy and Perceived cost), Organizational Factors (Organizational Rewards, Organizational Culture, and Management Support), and Technological Factors (ICT Infrastructure and Use of Technology). The statements are adopted from (Fauzi et al., 2019a). These sections are measured using a five-point Likert scale (ranging from 5- Strongly Agree, 4- Agree 3- Undecided 2- Disagree 1- Strongly Disagree). Likert-Scales are widely used in the social sciences, marketing, business, and medicine, to gather information about people's attitudes, emotions, opinions, personalities, and descriptions of their environment (Gliem & Gliem, 2003).

3.7 Procedures of Data Collection

The process of data collection is self-administered. The letter of cooperation from Addis Ababa University helped the researcher to conduct the research smoothly. The researcher visited all departments in each faculty several times and inform them about the aim of the research and asked

their willingness to participate in the survey. Their positive response helped to distribute printed and electronic format of the questionnaires to respondents (academic staff) from all faculties in the main campus in Addis Ababa. For unavailable staff members, the researcher also received phone and email addresses from department heads and tried to communicate with the remaining academic staff. By designing an easy fillable questionnaire in PDF format the researcher of the study distributed it using email and telegram. But due to the presence of COVID 19 and the unavailability of an internet connection, the process didn't go as expected. The questionnaires were distributed and collected from 03 May to 30 August 2020. It took almost 4 months. A total of 142 questionnaires were distributed and 130 were returned but only 124 appropriately filled and used for the study.

3.8 Reliability

The goal of reliability is to ensure that, if the analysis follows exactly the same technique used in the earlier study and conducts the same test case over and over again, the latter researcher will arrive at the same result (Yin, 2009). In Likert-type scales, it is necessary to measure Cronbach's alpha coefficient for testing internal consistency or reliability (Han & Anantatmula, 2007). According to them the acceptable values of alpha value is 0.7. The low value of alpha (<0.70) indicates poor inter-relatedness between items and a high value of alpha (> 0.95) may suggest consistency among scale items. Also, most research recommended using a value of alpha >=0.7. For this study, the alpha value >=0.7 was considered as acceptable as some authors consider items whose Alpha coefficient is 0.7 and above as reliable (Han & Anantatmula, 2007). The overall reliability of the data collection instrument is .855 which is above the minimum accepted threshold value of 0.7. This implies that the data collection instruments are valid to be used for data analysis (see Table 3.1).

Reliability Statistics

Cronbach's Alpha	N of Items
.855	67

Table 3.2 Cronbach's Alpha value of the instrument used

3.9 Methods of Data Analysis

Statistical methods, both descriptive statistics, and inferential ones were used to represent the

results. Thus, to describe the data collected, the mean, standard deviation, frequency distribution, and percentage were used. The ideal mean value ranges from 0-1.49 as "never", 1.50-2.49 as "rarely", 2.50-3.49 as "often", 3.50-4.49 as "sometimes" and 4.50-5.00 as "always" for things with a 5-point-Likert form that asked respondents how often they participated in KS activities. Similarly, the ideal mean value ranges as 0-1.49 as "strongly disagree," 1.50-2.49 as "disagree," 2.50-3.49 as "neutral," 3.50-4.49 as "agree" and 4.50-5.00 as "strongly agree" for items with a 5-point-Likert form that asked respondents about their level of agreement on the factor affecting KS practices among academics. Also, to predict the statistical impact and relations between variables, linear regression was used. The p-value is either < 0.05 or > 0.05. If it is below 0.05, the results and associations are statistically significant. If the p-value is greater than 0.05, the results and associations are not statistically significant. Usage of the Statistical Package for Social Science (SPSS-version 23.0) to analyze all quantitative data.

3.10 Ethical Considerations

The researcher attempts to consider ethical issues explain the real objective of the research to the respondents i.e. department heads. Respondents also were told about the goal and significance of the research and why their contribution was essential for the study. Clearly stated that any responses given would be treated with confidentiality throughout the research process and following it.

CHAPTER FOUR

4. DATA ANALYSIS AND DISCUSSION OF FINDINGS

Data analysis is a critical task in research as we use it to transform the raw data into meaningful information. This chapter of the thesis deals with the analysis and interpretation of the data. From the distributed 135 questionnaires 132 questionnaires were properly filled and returned. Descriptive statistics that have been generated from 132 academicians working in Federal TVET institute were presented. Frequency, percentage, means, and the standard deviation is used for discussion of the collected data. Since one of the objectives of the study is to identify and analyze the factors affecting the knowledge-sharing practices of academicians, the results of correlation and linear regression were also presented. To analyze the quantitative data SPSS version 25 was used as a data analysis tool.

4.1 Profile of the Respondents

The table portrayed below (Table 1) displays the frequency counts for selected variables (gender, age, years of experience, academic rank, and their respective faculty) collected from those who participated in the Knowledge Sharing Survey. The survey population has representative respondents from both gender groups. Most of the respondents for the present research are male 107 (81.1%) and the remaining are female 25(18.9%). The age group of most of the respondents for the present research is between 31- 40 which is 80(60.6 %). respondents with age group 41-50 come next with 26(19.7 %). respondents with age group 20–30 which are 16 (12.1%) and respondents with age group Above 50 are 10(7.6 %) hold the position respectively. Concerning the level of education respondents with experience 11-15 years, 49(37.1 %) take the first place. Respondents accounted for 6-10 years of experience 48(36.4 %) comes next. respondents with Less than 6 years experience 14(10.6 %), respondents with 16-20 years of experience 14(10.6 %), and respondents with More than 20 years of experience 8(6.1 %) years consecutively represents the respondent profiles. As for academic ranking, Lecturers made up the majority of the population with 116(87.9 %). Assistant Professors 9(6.8 %) holds the next population ranking and Assistant Lecturer occupies the lowest share being 7(5.3 %) of the total share.

Finally, With regard to their respective academic faculty of the respondents 36(27.3 %), were from Civil technology faculty, 28(21.2 %) were from Electrical/ICT faculty, 33(25.0 %) were from TPLM, ELH, and MBS faculty, 22(16.7 %) were from Mechanical technology faculty, and 13(9.8 %) were from Garment and apparel fashion faculty.

Basic profile statistics of the surveyed academicians.			
Item	**Catagory**	**Count**	**Percent**
Gender	Male	107	81.1 %
	Female	25	18.9 %
Age Group	20–30	16	12.1 %
	31-40	80	60.6 %
	41-50	26	19.7 %
	Above 50	10	7.6 %
Work Experience	Less than 6 years	14	10.6 %
	6-10 years	48	36.4 %
	11-15 years	49	37.1 %
	16-20 years	13	9.8 %
	More than 20 years	8	6.1 %
Academic Rank	Assistant Lecturer	7	5.3 %
	Lecturer	116	87.9 %
	Assistant Professor	9	6.8 %
Faculty	ELECTRICAL/ELECTRONICS AND ICT	28	21.2 %
	CIVIL TECHNOLOGY	36	27.3 %
	MECHANICAL TECHNOLOGY	22	16.7 %
	GARMENT AND APPAREL FASHION	13	9.8 %
	TPLM, ELH, AND MBS	33	25.0 %

Table 4.1 Basic profile statistics of the survey, 2018

4.2 Knowledge sharing practice

One of the objectives of this study is to discover the knowledge sharing activities used among academics within Federal TVET Institute. The analysis in this section follows a descriptive approach by using the output from the SPSS Version 25 statistical software to show respondents responses on the 12-items Dependent Variable, as shown in table 4.2, academics were asked How frequently they engaged in the knowledge sharing activities among academicians. In this regard, 55 (41.7%) of the academics always participate in Sharing teaching materials with a mean value of 4.08 holds the first rank. 50 (37.9%) of the academics Often share knowledge by Attending meetings in faculty and institute as a whole.acadmics also sometimes engage in knowledge sharing through discussing projects with peers 45 (34.1%), attending training programs73 (55.3%), participating in symposiums and public lectures 65 (49.2%), sharing research findings 36 (27.3%) and participating in brown bag sessions 72 (54.5%). On the other hand, 38 (28.8%) and 45 (34.1%) of the academicians stated that they were rarely engaged in KS activities through Sharing articles in books or journals and Sharing of experience in seminars and workshops. The most least and never used knowledge sharing practice of academics in Federal TVET with 65 (49.2%), 77 (58.3%) and 47 (35.6%) respectively are Publishing books or journals, participating in Video Conferences sessions, and presenting in symposiums and conferences.

Table 4.2 Knowledge sharing practice

NO.	Items	Never	Rarely	Sometimes	Often	Always
1	Publishing books, journals, or other academic materials	65 (49.2%)	37 (28.0%)	21 (15.9%)	9 (6.8%)	____
2	Sharing articles in books, journals, or magazines	16 (12.1%)	38 (28.8%)	31 (23.5%)	35 (26.5%)	12 (9.1%)
3	Sharing of experience in seminars, workshops,	15 (11.4%)	45 (34.1%)	19 (14.4%)	26 (19.7%)	27 (20.5%)
4	Attending /participating in Web/Video Conferences	77 (58.3%)	26 (19.7%)	26 (19.7%)	3 (2.3%)	____
5	Discussing projects with peers within and/or outside faculity	7 (5.3%)	19 (14.4%)	45 (34.1%)	38 (28.8%)	23 (17.4%)
6	Presenting in symposiums, Public lectures, and conferences	47 (35.6%)	40 (30.3%)	37 (28.0%)	7 (5.3%)	1 (0.8%)
7	Attending training programs	1 (0.8%)	41(31.1%)	73 (55.3%)	17 (12.9%)	____
8	Attending/ participating in symposiums and Public lectures	14 (10.6%)	48 (36.4%)	65 (49.2%)	5 (3.8%)	____
9	Sharing research findings	5 (3.8%)	29 (22.0%)	36 (27.3%)	31 (23.5%)	31 (23.5%)
10	Attending/participating in meetings in (university /faculty / group	3 (2.3%)	35 (26.5%)	____	50 (37.9%)	44 (33.3%)
11	Attending /participating in colloquium or brown bag sessions	18 (13.6%)	17 (12.9%)	72 (54.5%)	25 (18.9%)	____
12	Sharing teaching materials	____	7(5.3%)	31 (23.5%)	39 (29.5%)	55 (41.7%)

Source: Computed from Primary Data

4.3 Factors Affecting Knowledge sharing practices among Academic Staffs

In an attempt to investigate the main factors affecting knowledge sharing practice among academic staff, the survey questionnaires were used and grouped into individual, organizational and technological factors. Accordingly, the following findings were obtained and presented below.

4.3.1 Individual Factors

The success of knowledge sharing depends on the individual knowledge sharing behavior which can be influenced by different factors. Lawal et al. (2014) discussed that universities need constant knowledge sharing behavior among the faculty members because the academic staffs are the major player in the knowledge-based society. Therefore, it would be interesting to examine the attitude and behaviors of academicians Identifying these factors help to have a better knowledge sharing practice in designing knowledge sharing strategies in general and promoting and cultivating knowledge sharing behaviors in particular.

Attitude towards Knowledge Sharing (AKS)

Individual attitude to knowledge sharing is measured by different indicators as shown in Table 4.3. In the first place is "I consider that the sharing of knowledge and experience promotes the creation of new knowledge" with the mean value of 4.83. In the second place is "Sharing knowledge with my institution colleagues is important to me" with the mean value of 4.58. In the last place is "Sharing knowledge with my colleagues at the institution is an experience that pleases me" with the mean value of 4.26. This makes the mean for attitude 4.56 in total.

Table 4.3 Attitude towards Knowledge Sharing (AKS)

Statements	Mean	Std. Deviation
Sharing knowledge with my institution colleagues is important to me	4.58	0.567
Sharing knowledge with my colleagues at the institution is an experience that pleases me	4.26	0.547
I consider that the sharing of knowledge and experience promotes the creation of new knowledge	4.83	0.465
Total Mean	4.56	0.526

Trust(T)

Table 4.4 lists the various aspects of trust that influence individual knowledge sharing behavior. "I believe that sharing my knowledge improves my expertise" with the mean value of 4.42, "I believe that sharing knowledge between faculties also improves the institution as a whole" with the mean value of 4.30, and"I trust my colleagues" with the mean value of 4.28 and "I believe in the expertise of my colleagues" with the mean value of 4.24 holds their position respectively. This makes the mean for Trust 4.31 in total.

Table 4.4 Trust on Knowledge sharing

Statements	Mean	Std. Deviation
I trust my colleagues	4.28	1.00
I believe in the expertise of my colleagues	4.24	0.62
I believe that sharing my knowledge improves my expertise	4.42	0.72
I believe that sharing knowledge between faculties also improves the institution as a whole	4.30	0.63
Total Mean	4.31	0.74

Self-Efficacy(SE)

Self-efficacy influences knowledge sharing in different ways (see Table 4.5). Firstly, with the mean value of 4.58 is " I have the confidence in my abilities to provide knowledge to my department colleagues that they feel useful" Secondly, with the mean value of 4.20 is " Sharing my knowledge will help my department achieve its performance objectives" Thirdly, " I have the experience needed to provide valuable Knowledge to my department colleagues " with a mean value of 4.17. Ultimately " Sharing my knowledge will contribute to the creation of new opportunities for the Institution " with the mean value of 4.05. The overall mean for knowledge Self-Efficacy is 4.25.

Table 4.5 Self-efficacy on Knowledge sharing

Statements	Mean	Std. Deviation
I have the confidence in my abilities to provide knowledge to my department colleagues that they feel useful	4.58	0.57
I have the experience needed to provide valuable Knowledge to my department colleagues	4.17	0.72
Sharing my knowledge will help my department achieve its performance objectives	4.20	0.58
Sharing my knowledge will contribute to the creation of new opportunities for the Institution	4.05	0.66
Total Mean	4.25	0.63

Perceived cost (PC)

The mean table above (Table 4.6) lists the different facets of Perceived cost in the behavior of individual knowledge sharing. The statements "Credit will be given to my colleagues with the

knowledge I voluntarily share with them " with the mean value of 3.80, "I would have to give much effort when I willingly share knowledge " with the mean value of 3.77, "The knowledge that I share might be misused by my academic members for their benefits " and "I may be blamed if my academic members make mistakes using the knowledge that I shared " with the mean value of 2.59 holds the place from one up to three. The remaining is held by "Sharing knowledge voluntarily will reduce my chances of being successful in this institution " with the mean value of 2.10 and "Time is wasted if I share knowledge with my academic members " with the mean value of 1.74. This makes the mean overall for Perceived cost knowledge 2.77.

Table 4.6 Perceived cost

Statements	Mean	Std. Deviation
Credit will be given to my colleagues with the knowledge I voluntarily share with them	3.80	0.89
Time is wasted if I share knowledge with my academic members	1.74	0.61
The knowledge that I share might be misused by my academic members for their benefits	2.59	0.72
Sharing knowledge voluntarily will reduce my chances of being successful in this institution	2.10	0.86
I may be blamed if my academic members make mistakes using the knowledge that I shared	2.59	1.20
I would have to give much effort when I willingly share knowledge	3.77	0.76
Total Mean	2.77	0.84

Generally,table 4.11displays the descriptive analysis for all individual factors mentioned above indicate that Attitude (mean = 4.6, Std. Dev. =.315) is the most important factor that affect knowledge sharing practices followed by Trust (mean = 4.31, Std. Dev. = .68), Self Efficacy (mean = 4.25, Std. Dev. = .47) , and Perceived cost (mean = 2.76, Std. Dev. = . 43).

Table 4.7 Total Individual Factors mean

Individual Factors	Mean	Std. Deviation
Attitude	4.56	0.32
Trust	4.31	0.60
Self Efficacy	4.25	0.47
Perceived cost	2.77	0.44
Total Mean	3.90	0.46

4.3.2 Organizational Factors

The success of knowledge sharing also depends on multiple organizational factors that can be influenced by different dimensions. Therefore, it would be interesting to examine these different dimensions of organizational factors.

Organizational Rewards (OR)

The different dimensions of organizational incentives that affect knowledge sharing activities are indicated in Table 4.12. First is " My institution provides financial support for research activities "with a mean value of 3.96. Secondly, the mean value of 3.81 is " Sharing my knowledge with other colleagues in this institution is recognized and appreciated well " Thirdly, the mean value of 3.38 is " Knowledge sharing enhances job security in our Institute ". "My institution provides travel grants, to attend seminar, conference, workshop. study in the fourth position," with a mean value of 2.72 and "In my institution management evaluates individual performance and provide incentive-based on knowledge sharing " with a mean value of 2.72 holds the last position in the list. This as a whole constitutes the mean for Organizational Rewards that is 3.2803.

Table 4.8 Perception of Organizational Reward

Statements	Mean	Std. Deviation
Sharing my knowledge with other colleagues in this institution is recognized and appreciated well	3.82	0.82
My institution provides financial support for research activities	3.97	0.84
My institution provides travel grants, to attend seminar, conference, workshop	2.73	0.99
In my institution management evaluates individual performance and provide incentive-based on knowledge sharing	2.50	0.75
Knowledge sharing enhances job security in our Institute	3.39	0.92
Total Mean	3.28	0.86

Organizational Culture (OC)

The mean table (Table 4:14) above lists the different sides of organizational culture in the knowledge sharing practices among academics in the institute. First is "Management encourages

members of the faculty to publish papers and articles in reputed journals," with a mean value of 4.10. Second, the mean value of 4.03 is " Colleagues give positive feedback on regular basis in my institution " Thirdly, the mean of 3.91 is " Sharing knowledge is a routine task in our institution " Fourth is " My institution coordinates teamwork through various academic committees," with a mean value of 3.90. The fifth position is " In my institution best practices are re-used " with a mean value of 2.91. Finally, " Experts and specialists are invited to the institution to develop the knowledge of the faculty members," with a mean value of 2.73. the overall constructs make the mean or organizational culture which is 3.60.

Table 4.9 Perception of Organizational culture

Statements	Mean	Std. Deviation
My institution stimulates people to share knowledge	4.10	0.62
Sharing knowledge is a routine task in our institution	3.91	1.14
Experts and specialists are invited to the institution to develop the knowledge of the faculty members.	2.73	0.87
My institution coordinates teamwork through various academic committees	3.91	0.59
Colleagues give positive feedback on regular basis in my institution	4.03	0.66
In my institution best practices are re-used	2.91	0.87
Total Mean	3.60	0.79

Management Support (MS)

The mean table(4:15) above lists the different sides of Management Support in the knowledge sharing practices among academics in the institute. “The members in my department support knowledge sharing” with the mean value of 4.29, “My superior supports knowledge and technical information sharing” with the mean value of 3.76, “Management encourages the faculty members to publish papers and articles in reputed journals” with the mean value of 3.29, and “Management is committed to invest in Training and Development activities and Infrastructure development”

with the mean value of 2.86 holds their score respectively in the category. Thus the overall mean of Management Support becomes 3.53.

Table 4.10 Management Support

Statements	Mean	Std. Deviation
My superior supports knowledge and technical information sharing	3.76	0.83
Management encourages the faculty members to publish papers and articles in reputed journals	3.48	1.02
Management is committed to invest in Training and Development activities and Infrastructure development	2.86	0.85
Exchange of knowledge is encouraged through seminar, conference, workshop	3.29	0.66
The members in my department support knowledge sharing	4.29	0.81
Total Mean	3.53	0.83

Generally, table 4.19 displays the descriptive analysis for all Organizational Factors mentioned above indicate that Organizational Culture (mean = 3.60, Std. Dev. = .37) is the highst mean in the organizationa factors knowledge sharing practices followed by Management Support (mean = 3.53, Std. Dev. = .54) , and Organizational Rewards (mean = 3.28, Std. Dev. = .41).

Table 4.11 Total Organizational Factors mean

Organizational Factors	Mean	Std. Deviation
Organizational Rewards	3.28	0.41
Organizational Culture	3.60	0.37
Management Support	3.53	0.54
Total Mean	3.61	0.48

4.3.3 Technological Factors

The success of knowledge sharing also depends on technological factors that can be influenced by different issues. Therefore, it would be interesting to examine these different dimensions of technological factors.

ICT Facilities (IF)

The mean table above lists the different sides of ICT Facilities in the knowledge sharing practices among academics in the institute. “My institution has a common platform to share knowledge between the faculties, i.e., intranet, Internet, Wi-Fi., etc.” with the mean value of 4.28, “My institution has an e-library facility to develop the knowledge of the faculties” with the mean value of 4.02, “Messages from principal are shared through e-mail, SMS, a website” with the mean value of 3.93, “In my institution Teaching – Learning is ICT enabled My institution encourages online courses, access to books, journals” with the mean value of 2.65, “Database of good work practices, skills of experts are uploaded ” with the mean value of 1.99, and “My institution has a repository in which course materials, annual reports, multimedia materials are kept” with the mean value of 1.84, holds their score respectively in the category. Thus the overall mean of ICT Facilities becomes 3.12.

Table 4.12 ICT Facilities

Statements	Mean	Std. Deviation
My institution has a common platform to share knowledge between the faculties, i.e., intranet, Internet, Wi-Fi., etc.	4.28	0.83
My institution has an e-library facility to develop the knowledge of the faculties	4.02	0.90
In my institution Teaching – Learning is ICT enabled My institution encourages online courses, access to books, journals	2.65	0.96
Database of good work practices, skills of experts are uploaded	1.99	0.80
My institution has a repository in which course materials, annual reports, multimedia materials are kept	1.84	0.78
Messages from principal are shared through e-mail, SMS, website	3.93	0.62
Total Mean	3.12	0.82

Use of Technology (UT)

The mean table above (Table 4.13) lists the different sides Use of Technology in the knowledge sharing practices among academics in the institute. First is " Social media usage and sharing is part of my everyday activity " with a mean value of 4.35. Second, the mean value of 4.23 is I have

increased my “networks” by sharing knowledge through web tools and technology " Thirdly, the mean of 3.61 is " I have increased my “networks” by sharing knowledge through web tools and technology " and in the bottom, Fourth is " I am sharing my experience, videos, lectures, and knowledge through web tools," with a mean value of 3.59. the overall constructs make the mean for Use of Technology which is 3.95.

Table 4.14 Use of Technology

Statements	Mean	Std. Deviation
I am using web tools (e.g YouTube, telegram, google meet) for academic purpose	4.23	0.43
I am sharing my experience, videos, lectures, and knowledge through web tools	3.59	0.96
I have increased my “networks” by sharing knowledge through web tools and technology	3.61	0.98
Social media usage and knowledge sharing is part of my everyday activity	4.35	0.91
Total Mean	3.95	0.82

Generally, the descriptive analysis for all Technological Factors mentioned above indicates that ICT and Infrastructure (mean = 3.12, Std. Dev. =..37) is the highest mean in the Technological Factors and Technology Use (mean = 3.95, Std. Dev. = .63) is the second in the list.

Table 4.15 Total Technological Factors

Technological Factors	Mean	Std. Deviation
ICT and Infrastructure	3.12	0.37
Technology Use	3.95	0.63
Total Mean	3.53	0.50

4.4 Regression analysis

Multiple regression analysis is a statistical technique for finding the best relationship between a dependent variable and selected independent variables (Field, 2005). it is used to identify the strength of the effect that the independent variable(s) have on a dependent variable. That is,

regression analysis helps us to understand how much the dependent variable will change when we change one or more independent variables. Dhakal (2019) discussed some points that a valid fit multiple regression model should fulfill. The dependent variable should be measured on a continuous scale (i.e., it is either an interval or ratio variable), there must be two or more independent variables, which can be either continuous (i.e., an interval or ratio variable) or categorical (i.e., an ordinal or nominal variable), linear relationship between the dependent variable and each of the independent variables must exist, and data must not show multicollinearity (Dhakal, 2019). Before we conduct multiple regression, we should check whether there is a linear relationship in the data. All the 9 variables were entered into Simple linear regression analysis individually for the purpose to measure to what extent there is a linear relationship between each dependent and independent variable.

The table below (Table 4.18) shows the result of the Correlation of each independent variable with the dependent variable understudied. The result of correlation analysis shows that except for two variables (Organizational Rewards, and Organizational Culture) all independent variables were significantly correlated with the dependent variable which is knowledge sharing practice in this study. It indicates that individual **Attitude**($r=\mathbf{0.293}$, $p<0.01$), **Self Efficacy**($r=\mathbf{0.420}$, $p<0.01$), **Management Support**($r=\mathbf{0.211}$, $p<0.01$), **Trust**($r=\mathbf{0.201}$, $p<0.05$), **Perceived cost** ($r=\mathbf{-0.192}$, $p<0.05$), **ICT and Infrastructure**($r=\mathbf{-0.146}$, $p<0.05$) and **Technology Use**($r=\mathbf{0.192}$, $p<0.05$), have shown significant correlations with knowledge-sharing practice. The technological factor **ICT Infrastructure and Perceived cost were negatively correlated with the dependent variable.**

Table 4.16Correlation of each independent variable with the dependent variable

No.	Dependent variables	Correlation Coefficients	Sig.
1	**Attitude**	**0.293**	**0.000**
2	**Trust**	**0.201**	**0.010**
3	**Self Efficacy**	**0.420**	**0.000**
4	**Perceived cost**	**-0.192**	**0.014**
5	**Organizational Rewards**	**-0.142**	**0.052**
6	**Organizational Culture**	**0.085**	**0.166**
7	**Management Support**	**0.211**	**0.007**
8	**ICT and Infrastructure**	**-0.146**	**0.048**
9	**Technology Use**	**0.192**	**0.014**

After getting the significant correlation between the independent and dependent variables, a Multiple Linear Regression (MLR) analysis was performed to determine the contribution of the 10 independent variables on the single dependent variable, which is the knowledge-sharing practice. The model summary table (table 4.19) below shows the effect of the ten independent variables on the dependent variable with the Enter method. Overall, the ten variables explain 29 percent of the variation on the dependent variables.

Table 4.19 Model Summary 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.586[a]	0.344	0.290	0.59906

a. Predictors: (Constant), Organizational Rewards, ICT and Infrastructure, Attitude, Trust, Self Efficacy, Management Support, Perceived cost, Technology Use
b. Dependent Variable: User_resistance

Table 4.17 Model Summary

A stronger model is a model with a small number of independent variables as it reduces efforts of intervention to be made by the management to improve the knowledge sharing practices. To make the model stronger with smaller independent variables involved, some of the independent

variables were removed and multiple regression was executed again. The result we found is almost the same effect on the dependent variable but with a diminished number of variables. The output table(4.19) shows the model summary and overall fit statistics. We find that the adjusted R^2 of our model is 0.290 which means that the linear regression explains 29% of the variance in the dependent variable which in this case is the Knowledge Sharing practice can be explained using the variation in the total independent variables included in the model. This also implies that about 71 % of the variation/change is explained by other factors that need further research to identify those factors.

4.4.1 Statistical significance of the model

Table 4.20 Model Summary 2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.577[a]	.333	.290	.59910

a. Predictors: (Constant), ICT Infrastructure, Organizational Rewards, Attitude, Management Support, Self Efficacy, Perceived cost

Table 4.18 revised Model Summary

The acceptability of the model has also checked with ANOVA and the model is acceptable and statistically significant at 95% level of confidence. The ANOVA table below indicates the model fitness. It shows the F ratio which is a result obtained by dividing the regression value by residual value. This value is statistically significant with [F (8, 123) = 7.677, p < .0001] (See Table 4.19). In other words, the selected independent variables are good predictors of the dependent variable knowledge-sharing practice.

Table 4.20 Model fitness - ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.043	8	2.755	7.677	.000[b]
	Residual	44.147	123	.359		
	Total	66.190	131			

a. Dependent Variable: Knowledge Sharing Practices

b. Predictors: (Constant), ICT and Infrastructure, Organizational Rewards, Attitude, Management Support, Self Efficacy, Perceived cost

Table 4.19 Model fitness - ANOVAa

4.4.2 Statistical significance of the independent variables

The usefulness of these tests of significance is to investigate if each explanatory variable needs to be in the model. It is also necessary to examine which of the independent variables have more influence on the dependent variable. The standardized column shows the converted value of each independent variable on the same scale so that we can compare them (Tabachnick & Fidell, 2013). Part correlation coefficients indicate the unique contribution of each of the independent variables to R square (Tabachnick & Fidell, 2013). If this variable is dropped, the value of R square will also drop. Standardized beta coefficients measure both the unique contribution and the interaction effect of the one independent variable with another independent variable.

The Adjusted R Square is 0.29 which indicates that 29.0% of the variance in knowledge sharing quality was explained by the independent variables (ICT Infrastructure, Attitude, Perceived cost, Self Efficacy, and Organizational Rewards). The most important significant contributor is ICT Infrastructure which is significant at $P<0.01$ and negatively influencing it by (21.9%). followed by Perceived cost (19.3 %), Attitude (17.6 %), Self Efficacy (16.7%) make a positive significant contribution to the practice of knowledge sharing at $P<0.05$. Organizational Rewards has also a negative influence on knowledge sharing practice and contributed (15.9%). On the other hand, the other three variables Management Support did not make a significant contribution to knowledge sharing practice. Their statistical significance is above 0.05($p < 0.05$). for detail see coefficients (in table 4.27)

Table 4.20: Unique contribution of each independent variables on the variation of dependent variables

	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
Model	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	-2.75	1.62		-1.70	0.09	-5.96	0.46					
Attitude	0.50	0.21	0.22	2.39	0.02	0.09	0.90	0.29	0.21	0.18	0.65	1.55
Self Efficacy	0.41	0.18	0.27	2.27	0.03	0.05	0.77	0.42	0.20	0.17	0.37	2.69
Perceived cost	0.58	0.22	0.36	2.63	0.01	0.14	1.01	-0.19	0.23	0.19	0.30	3.37
Organizational Rewards	-0.30	0.14	-0.17	-2.15	0.03	-0.58	-0.02	-0.14	-0.19	-0.16	0.85	1.18
Management Support	0.28	0.16	0.21	1.76	0.08	-0.03	0.59	0.21	0.16	0.13	0.38	2.65
ICT Infrastructure	-0.49	0.16	-0.25	-2.97	0.00	-0.81	-0.16	-0.15	-0.26	-0.22	0.75	1.33

a. Dependent Variable: Knowledge Sharing Practices

The information in (Table 21) above also allows us to check for multicollinearity. Multicollinearity is an issue to be addressed well in linear regression. A common rule of thumb: for any predictor VIF > 10 should be examined for possible multicollinearity problem (Dhakal, 2016). In our multiple linear regression model. VIF should be < 10 (or Tolerance > 0.1) for all variables, which they are.

The hypothesis attitude has a positive influence on knowledge sharing practice is accepted. It explains about 21.9% of the variation on the dependent variable with a statistical significance of $p < 0.05$. The hypothesis of self-efficacy has a positive influence on knowledge sharing practice is accepted. It explains about 27.4% of the variation on the dependent variable with a statistical significance of $p < 0.05$. The hypothesis that Perceived cost has a positive influence on knowledge sharing practice is accepted. It explains about 35.5% of the variation on the dependent variable with a statistical significance of $p < 0.05$. The hypothesis organizational rewards influence knowledge sharing practice is accepted. It explains about 17.2% of the variation on the dependent variable with a statistical significance of $p < 0.05$. The hypothesis ICT Infrastructure influences

knowledge sharing practice is accepted. It explains about 25.3% of the variation on the dependent variable with a statistical significance of $p < 0.05$. Other hypotheses H2: Trust, H6: Management Support, H7: Organizational culture, and H9: Use of Technology was not statistical significance and therefore they are rejected. This implies that they do not have the influence to share the behavior of academic members to engage in knowledge sharing practices.

4.5 Discussion of Findings

The main objective of this study is to explore the existing Knowledge sharing practice among academic staff in Federal TVET Institute and to understand the possible significant factors affecting knowledge sharing practice among academics. Concerning the objective, the following questions were answered in the study.

- How academics within Federal TVET Institute share knowledge?

Knowledge sharing activities are meant to provide platforms for knowledge sharing which can be done internally and externally within Institutions of Higher educations. Since HEIs are actively pursuing these activities, all academics should use these opportunities to enhance their commitment towards attending, participating, and give critiques for their contribution to the body of knowledge. knowledge in academic perspective among colleagues can be shared and communicated through Web/Video conferences, symposiums and public lectures, training programs, meetings in (university/faculty/group SIG), brown bag sessions. The result of this study revealed that academic staff in federal TVET often engaged in knowledge sharing practice through Sharing teaching materials, experience in seminars and workshops, discussing projects with peers within and/or outside faculty, sharing research findings, and attending university /faculty meetings. The result of this study is, somehow similar to, Nassuora (2011) and Bekele and Abebe (2011) except publishing books, journals, or other academic materials, participating in symposiums and Public lectures, attending training programs, attending /participating in Web/Video conferences, and sharing of experience in seminars, workshops which are rarely practiced and never practiced and that is contrary to (Nassuora, 2011; Sujata & Santosh, 2016), where publishing was most preferred knowledge sharing mechanism.

- What are the factors that affect knowledge sharing among academics within Federal TVET Institute?

Here the study surveyed academics perception regarding different factores of knowledge sharing in federal TVET institute and identied the most significant factors that affect knowledge sharing practices among academics within Federal TVET Institute.

The success of knowledge sharing depends on the sum of several factors. Earlier studies on knowledge sharing in HEIs had studied individual, organizational, and technological factors that influenced, impeded, and contributed towards the knowledge sharing practices.

Lawal et al. (2014) discussed that universities need constant knowledge sharing behavior among the faculty members because the academic staffs are the major player in the knowledge-based society. Therefore, it would be interesting to examine the attitude and behaviors of academicians Identifying these factors help to have a better knowledge sharing practice in designing knowledge sharing strategies in general and promoting and cultivating knowledge sharing behaviors in particular. If these factors are not handled properly, they turn out to hamper knowledge sharing practices. Fullwood et al. (2013) discussed that of the factors that might be expected to impact KS activities in universities and noted that studying these factors in the context of different HEIs is recommended and it could be central for KS.

Accordingly, this study surveyed the perception of academics regarding different individual, organizational, and technological aspects of knowledge sharing among academic staff in federal TVET institutes. Most of the respondents have shown a high degree of attitude about knowledge sharing benefits and a high degree of trust is also considered in that academics trust colleagues and believe in their expertise. Academics are also motivated to share knowledge by both extrinsic and intrinsic motivators. Reputation, enjoyment in helping others, and reciprocity are the most mentioned motivators.respondents have also shown a strong self efficacy in that most of the respondents are confident in their abilities and believes that their knowledge will help their department achieve its performance. Concerning the perceived cost to share knowledge, respondents differ in their responses. Most of the respondents think that by willingly sharing to colleges they will get credit but they also think that it costs them much effort. But the majority of them don't think the time is wasted if they share knowledge with academic members and do not think. Some of them fear that their knowledge might be misused by other academic members for their own benefits and some also fear their shared knowledge will be mistakenly used by others. Generally, from the individual factors Attitude (mean = 4.6) holds the highest score for this study followed by Trust (mean = 4.31), Self Efficacy (mean = 4.25), and Perceived cost (mean = 2.76).

With regard to organizational factors, the majority of the respondents were asked their level of agreement about management support, organizational reward, and the culture of the institute regarding knowledge sharing. Respondents feel that the institution stimulates people to share knowledge and provides financial support for research activities. They also felt that travel grants to attend seminar, conference, workshop, system of evaluating individual performance and providing incentives based on knowledge sharing is lacking. The respondents also reflect that there is a good culture of knowledge sharing in the College. Knowledge sharing is a routine task in the institute because teaching is simply a knowledge sharing activities. The researchers believe that the small number of academics and the narrowness of the institute environment helped them to get better social interaction Other researchers also confirmed that organization culture in one of the factors that encourage people to engage in knowledge sharing activities in the workplace (Neches et al., 2010; Foss, Husted, and Michailova, 2010). Respondents also confirm that the management of the Institute encourages them to publish papers and articles in reputed journals. On the other hand, management is not committed to allocate resources for training and development activities and infrastructure development. Generally, organizational culture (mean = 3.60), has the highest mean among organizational factors to promote knowledge sharing practices and then followed by management support (mean = 3.53), and organizational rewards (mean = 3.28).

Nooshinfard and Anaraki (2014)) found that the availability and usability of technology have a significant influence on KS. With regard to technological factors; ICT infrastructure and technology usage has been studied by many knowledge sharing literature and found a significant positive and negative relationship with knowledge sharing (Fauzi et al., 2019b; Sujata & Santosh, 2016). Most of the respondents in this study assure that there is the availability of internet and intranet connection in the Institut and email has also been used as a communication medium. However, a lack of a repository system and unavailability of online access to books, journals in the institution are points highly addressed by the respondents. One of the unexpected findings of the study is related to the use of technology and the majority of the respondents are moderately using technologies for knowledge sharing including social media, video technologies, and web tools. It is the highest mean in the technological factors with a mean value of 3.95 followed by ICT infrastructure with a mean value of 3.12.

Finally, the main objective of this study is to find the most significant factors out of the above-mentioned dimensions of knowledge sharing. After running a multiple regression analysis, from the 12 inserted variables in the model, only 5 independent variables successfully predict the knowledge sharing practice of academics which is the dependent variable of the study. The model is statistically significant with [F (8, 123) = 7.677, p < .0001]. However, the five independent variables together only explained 29% of the variance in the dependent variable which is in this case the Knowledge sharing practice. Thus the remaining 71 % of the variation is explained by other factors that need further research to identify those factors.

The most important significant contributor is ICT Infrastructure which is significant at P<0.01. Kanaan et al. (2013) stated that even if technology alone does not make that much contribution to knowledge sharing, the implementation of ICT infrastructure had a positive effect on knowledge sharing practice. The second significant positive factor of the study is Perceived cost which is contrary to the finding of Fauzi et al. (2019b) which found perceived costs significant but negatively linked to knowledge sharing with academics (Fauzi et al., 2019b). Attitude is the third significant factor which contributes (17.6 %) variance on the dependent variable. This is similar to Jolaee et al. (2014), he also found out attitude was positively and significantly predicted knowledge sharing among academics. The fourth statistically significant factor in the model is self efficacy (16.7%) which made a positive significant contribution to the practice of knowledge sharing at P<0.05. This is the same finding as to the previous study (Jolaee et al., 2014). The last significant factor in this study is organizational rewards that influence knowledge sharing practice and contributed (15.9%). However, it has a negative effect. On the other hand, the other three variables Management Support did not make a significant contribution to knowledge sharing practice. Their statistical significance is above 0.05(p < 0.05). in other literature, a positive significant influence of subjective norm and top management was found (Jolaee et al., 2014; Wu & Zhu, 2012).

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Academic knowledge sharing mechanisms that are gained from the literature were used as a theoretical lens to investigate the knowledge sharing practice in the Federal TVET institute. The result of this study revealed that academic staff in federal TVET often engaged in knowledge sharing practice through sharing teaching materials, participating in seminars and workshops, discussing projects with peers within and/or outside faculty, sharing research findings, and attending university /faculty meetings. However, the academic staff did not utilize publishing books, journals, or other academic materials, participating in symposiums and public lectures, attending training programs and, attending /participating in Web/Video Conferences to share knowledge.

9 independent variables that are gained from different knowledge-sharing literature in the context of higher education are categorized as individual, organizational and technological factors. Generally, for individual factors, the following mean was gained from the sample of 132 respondents, attitude (4.6), trust (4.31), self Efficacy (4.25), and Perceived cost (2.76). The variables are ordered in their mean value. For organizational factors, organizational culture has the highest mean (mean = 3.60) followed by management support (3.53), and organizational rewards (3.28). and for all technological factors, the mean is (3.12). There are also some barriers found concerning perceived cost, some of the academic staff fear that their knowledge might be misused by academic members for their own benefits and some also fear their shared knowledge will be mistakenly used by others. Besides, lack of travel grants to attend a seminar, lack of a system to evaluating individual performance to providing incentive or reward, low participation of experts and specialists to develop the organizational knowledge like policies and regulations. Top management is not committed to invest in training and development activities and infrastructure development and, database of good work practices, and unavailability of online access to books and, journals.

The study also identified the most important factors affecting knowledge sharing practices among academic staff. According to the results of the regression analysis, ICT Infrastructure (-21.9 %),

Perceived cost (19.3 %), Attitude (17.6 %), Self Efficacy (16.7%) Organizational Rewards (15.9%) were the most influential factors for knowledge sharing practices. All factors jointly explain up to 29% of the total variance in knowledge sharing practice. The model is statistically significant with [$F(8, 123) = 7.677$, $p < .0001$].

Therefore the findings of this study will provide practical insight into knowledge-sharing by faculty and make substantive suggestions for designing and developing, campus-wide knowledge sharing strategies. Additionally, its also serves as important evidence for HEI administrators, policymakers, Lecturers, academicians, and researchers to plan and make interventions to improve knowledge sharing practice in Ethiopian higher education institutions. Theoretically, this study expanded previous research by outlining a set of individual, organizational, and technological elements that are likely to affect KS practice among academics in the HEI context. Besides, this study would be a worthy contribution to the existing literature on knowledge sharing in general and the knowledge sharing behavior of academicians, particularly in the Ethiopian HEIs context

5.2 Recommendation

This research reveals that knowledge sharing is affected by individual, organizational and technical factors. Accordingly, the management of the Institute must be aware of the different factors when they undertake interventions to improve the knowledge sharing practice of the Institute.

Recommendation for managers

- In order to improve knowledge sharing, managers should organize more training programs that improve the academic staff knowledge management awareness and skills.
- It is proposed that a performance appraisal framework be set up to monitor the knowledge sharing activity of individual faculties on a regular basis and recognize them with rewards and recognition.
- Managers should promote a knowledge sharing culture that values knowledge sharing as a routine activity of the Institute and promotes trust between faculties..
- The Institute should develop a knowledge repository or portals to store research results, educational resources, and, best practice. These resources can be used by other colleges and universities.
- Managers should encourage the exchange of information through conferences, research,

seminars, journals, meetings, and public lectures. To promote the acquisition of international experiences and knowledge, the Institute should arrange scholarship, opportunities

For Individual Faculty members

- Faculties should be aware of the value of knowledge and engaged in knowledge sharing activities to improve the quality of education in the Institute.
- are assessed based on individual knowledge and the identification of knowledge they need, the upgrading of abilities, and the advancement of their know-how to build value and achieve academic success are very significant. It is recommended that field knowledge be built through workshops, seminars, and conferences.
- Faculty members should participate in team teaching and peer reinforcement to learn from each other and consequently develop the overall organizational knowledge.
- Participation in group project activities will develop a social relationship among faculty members and create a shared understanding of the organization goals and vision
- Participation in the COP is highly recommended as an important means of professional growth among faculty members

5.3 Limitations of the study

Several limitations were drawn from this research study. First, this study was limited to one academic institute. Thus, the data collected from these institutions would limit the generalizability of the results achieved. Second, the methodology used was a survey method using a questionnaire as a data collection tool. A method that uses multiple data collection instruments might provide a more in-depth understanding of the knowledge sharing practice of the Institute.

5.4 Future research directions

Since this study is conducted in one academic setting it is also better to understand how such aspects of knowledge sharing influence various cultures, it would be important to replicate this study in other HEIs. This research reflects only the views of the academic faculty members, future research should also explore the perspectives of senior managers and support staff in Ethiopia's HEIs. Third, since this study only predicts 29% of the variance on the dependent variable. Future research can also consider other factors to improve the model's predictive power.

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APPENDIX

Appendix A: Survey Questionnaire

ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF INFORMATION SCIENCE
Survey Questionnaire to be filled by Academician's

Dear respondents

This questionnaire is a survey instrument of a thesis written **on "Knowledge Sharing Practice and Associated factors among academic staffs at Higher Education Institutions (HEIs): A Case Study of Federal TEVET institute, Ethiopia"** in partial fulfillment of the requirement for the degree of master in Information Science at Addis Ababa University. The main objective of this questionnaire is to collect primary data on the current practices and challenges of knowledge sharing in the Federal TEVET institute. I humbly request your cooperation in completing this questionnaire for the above-mentioned purpose. Please remember that you do not need to write your name on the questionnaire. What is needed is to read the questions carefully and put a tick mark (√) or encircle inside the box provided. To make this questioner valid and helpful for the study, try to answer all the questions. If you have any question regarding the questionnaire you can contact the researcher through this phone number @ **09**

Miskir Solomon,
Instructor, Federal TVET institute
Email- miskirsoll@gmail.com

Thank you in advance for your cooperation!

Part One: Respondent's profile and background information: Please tick the appropriate box with (√) for your response to each of the questions.

- Q1. Gender

1. Female ☐
2. Male ☐

- Q2. Your Age Group

1. 20 – 30 ☐
2. 31 – 40 ☐
3. 41 – 50 ☐
4. Above 50 ☐

- Q3. Your Academic Rank

1. Assistant Lecturer ☐
3. Assistant Professor ☐

2.Lecturer ☐ 4. Associate Professor ☐ 5. Professor ☐

- Q4. Your Experience in higher learning institutions

1. Less than 6 years ☐ 3. 11-15 years ☐ 5. More than 20 years

2. 6-10 years ☐ 4. 16-20 years ☐

- Q5. Your Nationality

1. Ethiopian ☐
2. Foreigner ☐

- Q5. Please select your faculty here _

1. FACULTY OF ELECTRICAL/ELECTRONICS AND ICT
2. FACULTY OF CIVIL TECHNOLOGY
3. FACULTY OF MECHANICAL TECHNOLOGY
4. FACULTY OF GARMENT AND APPAREL FASHION
5. FACULTY OF TPLM, ELH, AND MBS

Part Two: The following items are used to collect your observation and believes about **knowledge sharing practice** at your institute.

	Item No	**How frequently engaged in the following knowledge sharing activities among academicians (Please put "X" on your choice.**	**Always**	**Often**	**Sometimes**	**Rarely**	**Never**
Knowledge Sharing Practice (KSP)	1	Publishing books, journals, or other academic materials	5	4	3	2	1
	2	Sharing articles in books, journals, or magazines	5	4	3	2	1
	3	Sharing of experience in seminars, workshops,	5	4	3	2	1
	4	Attending /participating in Web/Video Conferences	5	4	3	2	1
	5	Discussing projects with peers within and/or outside organization	5	4	3	2	1
	6	Presenting in symposiums, Public lectures, and conferences	5	4	3	2	1
	7	Attending training programs	5	4	3	2	1
	8	Attending/ participating in symposiums and Public lectures	5	4	3	2	1
	9	Sharing research findings	5	4	3	2	1
	10	Attending/participating in meetings in (university /faculty / group	5	4	3	2	1
	11	Attending /participating in colloquium or brown bag sessions	5	4	3	2	1
	12	Sharing teaching materials	5	4	3	2	1

		Factors Affecting Knowledge sharing practices among academics	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Attitude (ATKS)	1	Sharing knowledge with my institution colleagues is important to me	5	4	3	2	1
	2	Sharing knowledge with my colleagues at the institution is an experience that pleases me	5	4	3	2	1
	3	I consider that the sharing of knowledge and experience promotes the creation of new knowledge	5	4	3	2	1
Trust (T)	1	I trust my colleagues	5	4	3	2	1
	2	I believe in the expertise of my colleagues	5	4	3	2	1
	3	I believe that sharing my knowledge improves my expertise	5	4	3	2	1
	4	I believe that sharing knowledge between faculties also improves the institution as a whole	5	4	3	2	1
Knowledge Self Efficacy (KSE)	1	I have the confidence in my abilities to provide knowledge to my department colleagues that they feel useful	5	4	3	2	1
	2	I have the experience needed to provide valuable Knowledge to my department colleagues	5	4	3	2	1
	3	Sharing my knowledge will help my department achieve its performance objectives	5	4	3	2	1
	4	Sharing my knowledge will contribute to the creation of new opportunities for the Institution	5	4	3	2	1
Perceived cost (PC)	1	Credit will be given to my colleagues with the knowledge I voluntarily share with them	5	4	3	2	1
	2	Time is wasted if I share knowledge with my academic members	5	4	3	2	1
	3	The knowledge that I share might be misused by my academic members for their own benefits	5	4	3	2	1
	4	Sharing knowledge voluntarily will reduce my chances of being successful in this institution	5	4	3	2	1
	5	I may be blamed if my academic members make mistakes using the knowledge that I shared	5	4	3	2	1
	6	I would have to give much effort when I willingly share knowledge	5	4	3	2	1
	4	I actively participate in communities of practice (COP)	5	4	3	2	1
Organizational Rewards	1	Sharing my knowledge with other colleagues in this institution is recognized and appreciated well	5	4	3	2	1
	2	My institution provides financial support for research activities and sabbatical leave for Ph.D. work.	5	4	3	2	1

(OR)	3	My institution provides travel grants, O. D to attend seminar, conference, workshop	5	4	3	2	1
	4	In my institution management evaluates individual performance and provide incentives based on knowledge sharing	5	4	3	2	1
	5	Knowledge sharing enhances job security in our Institute	5	4	3	2	1
Organizational Culture (OC)	1	My institution stimulates people to share knowledge	5	4	3	2	1
	2	Sharing knowledge is a routine task in our institution	5	4	3	2	1
	3	Experts and specialists are invited to the institution to develop the knowledge of the faculty members.	5	4	3	2	1
	4	My institution coordinates teamwork through various academic committees	5	4	3	2	1
	5	Colleagues give positive feedback on regular basis in my institution	5	4	3	2	1
	6	In my institution best practices are re-used	5	4	3	2	1
Management Support (MS)	1	My superior supports knowledge and technical information sharing	5	4	3	2	1
	2	Management encourages the faculty members to publish papers and articles in reputed journals	5	4	3	2	1
	3	Management is committed to invest in Training and Development activities and Infrastructure	5	4	3	2	1
	4	Exchange of knowledge is encouraged through seminar, conference, workshop	5	4	3	2	1
	5	Members in my department support knowledge sharing	5	4	3	2	1
ICT and Infrastructure (ICT)	1	My institution has a common platform to share knowledge between the faculties, i.e., intranet,	5	4	3	2	1
	2	My institution has an e-library facility to develop the knowledge of the faculties	5	4	3	2	1
	3	In my institution Teaching – Learning is ICT enabled My institution encourages online courses, access to books, journals	5	4	3	2	1
	4	Database of good work practices, skills of experts are uploaded	5	4	3	2	1
	5	My institution has a repository in which course materials,annual reports , multimedia materials are kept	5	4	3	2	1

	6	Messages from principal are shared through e-mail, SMS, website	5	4	3	2	1
Use of Technology (UT)	1	I am using web 2.0 tools (e.g YouTube, Flickr, telegram, google meet) for academic purpose	5	4	3	2	1
	2	I am sharing my experience, videos, lectures, and knowledge through web 2.0 tools	5	4	3	2	1
	3	I have increased my „networks" by sharing knowledge through web 2.0 tools and technology	5	4	3	2	1
	4	Social media usage is part of my everyday activity	5	4	3	2	1