ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF GENERAL MANAGEMENT

FACTORS AFFECTING THE KNOWLEDGE TRANSFER: THE CASE OF ETHIO-DJIBOUTY STANDARD GUAGE RAILWAY SHARE COMPANY

BY

BROOK GERESU

Jun, 2020

ADDIS ABEBA, ETHIOPIA

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DECLARATION

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This thesis has been submitted to St. Mary's University College, School of Graduate Studies for examination with my approval as a university advisor.

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LIST OF ABBREVIATIONS/ACRONYMS

CCECC	china civil engineering construction corporation
CREC	China railway engineering corporation
EDR	Ethio-Djibouti rail way
ERC	Ethiopian Railway corporation
IS	Information System
IT	Information Technology
KM	Knowledge Management
KT	knowledge transfer
MC	Management contractor
PBO	Project Based Organization
SSA	sub Saharan Africa

ABSTRACT

Knowledge transfer has been a major concern in outsourced railway activities where new technologies and services are at stake. However the effect of knowledge transfer influencing factors on the rate of organizational knowledge transfer has never caught the required attention. As a contribution to this gap, this paper aims to investigate the effect of current knowledge transfer factors (organization related factor, vendor related factors, recipient related factors, knowledge related factors ,and relationship related factors) on overall effectiveness of project knowledge transfer. The survey was conducted in EDR organization targeting seconded staffs that are familiar with the working environment. In order to get a comprehensive data 69 employees are included in the study. The study used both primary and secondary data that were collected through a semi-structured questionnaire. Out of the 72 questionnaires that were distributed 69 questionnaires were filled and returned successfully. This represents a response rate of 95 percent. Data was analyzed using descriptive and inferential statistics. The study found that the knowledge transfer practices in the organization outsourced activities are not full-fledged; there is lack of established processes and procedures, lack of incentives to knowledge transfer initiatives and inefficient evaluation of training content and quality, limited capability of vendors to disseminate knowledge, lack of willingness and trustworthiness on vendor teams. Based on these findings, the study recommends that the company shall have a mature knowledge transfer process and procedures to support outsourced activities and the level of organizational readiness to embark on knowledge transfer in outsourced projects has to get better.

Key Words: factors, Knowledge transfer, EDR ,outsource

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

It is commonly said that knowledge is power. In organizations, this expression has become even more relevant than other social settings. Knowledge is a major factor that differentiates successful organizations from the unsuccessful ones (businesses, not-for-profit, and public enterprises). Contemporary knowledge comes in the dimensions of explicit and tacit knowledge (Nonaka, 1994; Polanyi, 1966; and Spender, 1996). Explicit knowledge is the type of knowledge that can be verbally explained, codified or written down in specified documents, while tacit knowledge as an intangible knowledge is intuitive and difficult to express and practice. The latter comes from the individual's mind and is based on life experiences, reading, learning, environment, beliefs, and other background characteristics (john O.Ekore,2013).

According to Nonaka and Takeuchi (1995) , tacit knowledge is knowledge that is non-verbalizable, intuitive and unarticulated. Spender (1996) opined that tacit knowledge could be best explained and understood as knowledge that is yet to be transformed into practice. As an individual variable, tacit knowledge is intimately tied to the knower's experience (Kidd, 1998). Scholars have already noted that knowledge is not always polarized into the explicit-tacit dichotomy but exists along a continuum of tacitness and explicitness (Kogut and Zander, 1993).

When different types of knowledge are understood, it becomes important to examine how knowledge is managed. Knowledge management is defined by Stuhlman (2012) as a conscious, hopefully consistent, strategy implementation to gather, store and retrieve knowledge and then help distribute the information to those who need it in a timely manner. It entails knowledge creation, internalization, use and transfer. It is the activity for obtaining, sustaining and growing intellectual capital in organizations (Marr and Schiuma, 2001). In the 21st century organization, knowledge management is considered essential for growth and productivity. Several studies have considered the transfer of knowledge within and between organizations and their employees but not much research has emphasized the success of such transfers (knowledge) and the possible

role of key organizational factors, especially in multinational enterprises in a developing sub-Saharan African country. Despite the huge budget that the organizations invest in knowledge management as a part of their struggle to improve product quality and ensure profitability, not much is known about the factors that improve effectiveness and affect success in the transfer of knowledge in question which are explicit and tacit (J.O.Ekore,2013).

Organizations continuously search for more effective knowledge transfer approaches in order to survive, to maintain their operations, to manage state of the art technologies and to grow in an ever-changing and competitive environment of the twenty-first century. Knowledge Transfer (KT) is an important process where an organization identifies and learns from specific knowledge which exists in another organization or in its different parts (Achara Khamaksorn, Esra Kurul and Joseph Handibry Mbatu Tah, 2016).

In studies where organizational factors have been implicated, not much focus is put on multinational enterprises in developing African economies. This necessitated the investigation of some organizational factors that have been described as enablers in the attempt to explain knowledge transfer success. Particularly, emphasis on continuous learning raises the question of how these factors can combine to influence knowledge transfer success in major MNEs .

The research reported here stems from difficulties faced by companies operating in developing countries; such like EDR, on absorbing knowledge from there outsourced operational activities as the local workforce has no experience of what is needed . The research context is the railway operation of Chinese company CCECC with Ethio-Djibouti (EDR) in Ethiopia. The research seeks to identify factors which influence individual and organizational learning in this type of context with a view to providing practical guidance to enable effective knowledge transfer.

1.2 Background of the company

1.2.2 History of Railway in Ethiopia

The Ethio – Djibouti Railway (CDE) was initially named “The Ethiopia Government Railway” during the reign of Emperor Menelik II. The emperor gave a concession to a Swiss born Alfred

llg who was by then a councilor to the Emperor, for the construction of a rail line that could run from Djibouti to Entoto (Addis Ababa) via Harar, and then to the White Nile, via Kaffa. It was then believed that the rail would fetch an access of foreign markets for gold, coffee, and ivory from the western part of Ethiopia (CDE, 2007).

Construction of the railway started at Djibouti in 1887. By 1902, the construction of the railway track reached Dire Dawa. However, it was not extended to Addis Ababa until 1917. The Construction of the railway that started at Djibouti was originally built by the French, who were involved in its management for many years. In 1981, a treaty between the governments of Ethiopia and Djibouti replaced the previous organization, the Compagnie Du Chemin de Fer Djibouti- Ethiopian at Addis Ababa, with the bi-national organizations the Chemin de Fer Djibouti- Ethiopian (CDE, 2007).

The CDE track provided freight and passenger services between Djibouti and Addis Ababa, serving intermediate locations as well. This single track has been 100 years old with a one meter gauge railway; with a total length of 781 km (681 km in Ethiopia and the remaining 100 km in the territory of Djibouti) connecting Addis Ababa to the Port of Djibouti. And it was a bilateral origination, jointly owned by the government of Ethiopia and Djibouti (CDE, 2007). .

The CDE's Track extends in a south westerly direction from the Port of Djibouti on the red sea to the city of Dire Dawa in Ethiopia, and from there to Addis Ababa, the capital city of Ethiopia which is located at the center of the country at an altitude of 8000 feet above the sea level.
(CDE, 2007).
Passenger traffic on the CDE had been steadily increasing in1970's and 1980's years. It has gone from 367,000 passengers in 1972 to 1,269,000 passengers in 1982/1983 an average annual growth of 13.2%. This growth in passenger traffic was accompanied by a corresponding increase in trip length. During the same period, however, freight traffic declined sharply from 405,000 tons in 1972 to 237,000 tons in 1982/1983 an average annual decrease of 5.5%. The rate of decline in traffic has been dramatic, but plans exist to reverse the declining role of the CDE in the Ethiopian transportation economy (CDE, 2007).

While there were considerable traffic movements by truck between Addis Ababa and the former Ethiopian port of Assab, the CDE was providing Addis Ababa's only rail connection to the Rea Sea. The vehicular route between Dire Dawa and Djibouti was almost impassable. Thus, the railway represents the principal means of transportation between Addis Ababa and the port of Djibouti.

The maximum permitted speed for auto passenger trains was 85 km/hr. For Freight trains and for standard passenger trains, it was 50km/hr. The maximum axle loading on 20kg/m rail was 14metric tons. 18 metric tons was permitted on rails of 30kg/m. the maximum bridge loading was 17 tons.

The railway line, which begins from sea level (Djibouti), gradually ascends to an altitude of 2,408m (Addis Ababa) at a maximum gradient of 2.7%. The horizontal curvature line comprises a total of 996 curves out of which 79 were very sharp with radius of less than 200m. And the Track was designed to accommodate a 14 ton axle load, with a variable loading (tonnage) characteristics corresponding to different gradients along the way. There are also 416 turnouts (switching and crossing), which were almost exclusively located at station. (CDE, 2007).

Most mechanical maintenance was undertaken at Dire Dawa, where there were locomotives and car shops with substantial numbers of personnel for heavy and light maintenance. Running repair and service facilities exist at Addis Ababa and Djibouti workshops, but have been relatively modest equipment and staffing. Fuelling stations were located at crew change points and other location. Ethiopia's scenic, archaeological, cultural, and architectural resources gave it significant potential as an international destination. The railroad trip between Dire Dawa and Addis Ababa was as considered one of the most spectacular in the world. (CDE, 2007).

But by the end of 1980s the CDEs rail operation stars to crumble because of high maintenance and operational cost , it couldn't be a choice reliable transportation .This awakens the government of Ethiopia to build another railway line or system that can cope up with the current and future economic development of the country.

1.2.3 The Beginning Of The New Railway system

After the fall of CDE, Ethiopia aggressively working on building an extensive rail network. In response to this and thus understanding the strategic importance of railway infrastructure, the Federal Democratic Republic of Ethiopia established the Ethiopian Railways Corporation (ERC) under the Ministry of Transport in November 28,2007 by regulation 141/2007 with a mandate to create a modern nationwide railway network, replacing the Franco-Ethiopian railway that is no longer in service. ERC has launched a 656 Kilometres railway network construction project that links the capital city Addis Ababa to the port of Djibouti. This railway expansion project has been inaugurated in October 5, 2016 which is constructed by two Chinese companies, China Railway Group and China Civil Engineering Construction Corporation.

The new National Railway Network of Ethiopia is considered to serve a strategic goal to allow Ethiopia a sustainable and stable economic development. The rail transport of goods appears favourable, if compared to road transport in terms of volume, costs, safety and speed of transportation for both imports and exports. The network's primary purpose is then both to connect landlocked Ethiopia to the world market by ensuring a seamless access to one or several sea ports and to include Ethiopians economically most relevant regions. The primary port for Ethiopia is Djibouti. More than 95% of Ethiopia's trade passes through Djibouti. Commodities for export are mainly produced in the southern, south-western and western parts of Ethiopia. In the National Railway Network of Ethiopia, the main line, (ERC routes 1 & parts of route 2,) runs from the Port of Djibouti into this area, where 50% of all Ethiopian cities with a population of at least 80.000 inhabitants are in immediate reach (ERC, 2018).

Apart from the main line, a number of auxiliary railways make up the planned railway network. A part of the financial budget required to construct some of the routes was considered to arrive through revenues from the ever-expanding railway network. Considered were also several extensions into neighbouring countries, in particular into Kenya, South Sudan and Sudan. At an advanced planning stage is a strategic extension into Kenya. Kenya also set up a railway network program, called the LAPSSET corridor (also known as the Lamu corridor), which foresees joining an Ethiopian rail network at the border between both countries near Moyale. That interconnection would allow Ethiopia to gain strategic access to two more ports in addition to the port of Djibouti, the ports of Lamu and Mombasa in Kenya (ERC, 2018).

This infrastructure project is expected to bring about significant improvement in facilitating Ethiopia's international trade by reducing traders' logistical cost and time of delivery. The new electric railway under construction would cut transport time from Djibouti to Modjo (a dry port city 70 kilometres away from the capital city, Addis Ababa) from the current 84 hours to just 10 hours. Cargo trains that will be operating on this rail network will have a capacity to carry some 3500 to 4000 tons of freight, with ERC anticipating 6 to 7 million tons of cargo per year in its first year of operation (ERC, 2018).

The Addis Ababa Light Rail Transit project which has a total of 34 km has been completed and began passenger operation in September 20, 2016 which is highly support the city's transport. This is a big achievement for ERC (ERC, 2018).

A 391 km long rail line from Awash to Weldiya/Hara Gebeya and 216km rail line from Weldiya/Hara Gebeya-Mekelle are currently under construction by Turkish company Yapi Merkezi and China Communications Construction Company (CCCC) respectively. These rail lines will link the central and eastern parts of the country with northern Ethiopia by connecting to the Addis Ababa-Djibouti Railway at Awash. Construction on the railway began in February 2015) with completion expected by 2018.

The trains will run on electricity. The railway is expected to have positive effects on the environment and also contribute to social development. For example, diesel-powered road transport is expected to be transferred to railway. The Ethiopian Railway Corporation has plans for several new lines including links to adjacent countries and further afield. ERC will build these in two phases. (ERC, 2018).

The ERC split up the National Railway Network of Ethiopia into eight railway routes. The railway routes as presented by the ERC are ordered for their expected economic impact, those with the highest expected economic potential having the lowest numbers and coming first:

table 2-1 planned national railway lines in Ethiopia

Route No.	Link	Status 2018	Course	Branches	Total Length
1	Addis ababa – Djibouti railway	operational	Addis Ababa/Sebeta-mojo-awash-diredawa- Djibouti		759 km
2		Planned	Modjo–Shashamane–Arba Minch–Konso–Weito	Shashamane–Hawassa Konso–Moyale	905 km
3		Planned	Addis Ababa–Ambo–Jimma–Bedele	Jimma–Guraferda–Dimma	700 km
4		Planned	Ambo–Nekemte–Asosa–Kormuk		520 km
5	Awash–Weldiya Railway Weldiya–Mekelle Railway	under construction	Awash–Kombolcha–Weldiya–Mekelle	Mekelle–Shire	757 km
6		Planned	Finote Selam–Bahir Dar–Wereta–Weldya–Weldiya–Semera–Elidar–Tadjoura		734 km
7		Planned	Wereta–Azezo–Metemma		244 km
8		Planned	Adama–Iteya–Gasera	Iteya–Asella	248 km

source: adopted from ERC (2018)

There are three interconnected railways between cities and the Ethiopian hinterland, which are foreseen to be the first railways of the National Railway Network of Ethiopia, see above. In addition, there is a light rail network. These are:

- Addis Ababa–Djibouti Railway (operational)
- Awash–Weldiya Railway (under construction)
- Weldiya–Mekelle Railway (under construction)
- Addis Ababa Light Rail (operational)

Of the around 1364 km of railways in January 2018, ~800 km were fully operational (the Addis Ababa Light Rail and the Addis Ababa–Djibouti Railway between Addis Ababa and Djibouti). Two railways are under construction, the Awash–Weldiya Railway with 392 km length, and the Weldiya–Mekelle Railway with 216 km in length. The Awash–Weldiya Railway will see first test runs on its first 270 km between Awash and Kombolcha in spring 2018. Two more railways are planned and are considered to be next in the pipeline:

- Modjo–Hawassa Railway (planned next, extension of the Ethiopian Main Line to the south with future extensions towards Kenya)
- Sebeta–Ambo Railway (planned as the first common part of both the Sebeta-Ambo-Jimma and Sebeta-Ambo-Nekemte railways with future extensions to Bedele and the border with Sudan)

1.2.4 Formation of EDR

After the construction of the Ethio-Djibouti railway line finalizes, the question was how to operate and manage the railway line.

since the line is owned by the two countries ,Ethiopia 75 % and Djibouti 25%, in 2017 it was decided to form a new entity with a new board managed by both countries jointly according to their respective shares and called it **Ethio-Djibouti standard gauge share company**. (EDR,2018)

1.3 problem statement

Railway transportation is one of the important infrastructures that are needed in the achievement of effective development; and provides an efficient, cost-effective, less land use and environmental friendly transport system which can quickly haul large volumes of goods which are not easily transported through motor vehicles for long distances. Railway transport is a widely accepted good ,reliable and cheap mode of transport. Hence Ethiopia have been engaged in the construction and operation of railway since 2005,with a huge sum of budget to facilitate the transportation of goods and people throughout the country. Of all the designed mega national

railway projects in Ethiopia only the Ethio-Djibouti railway corridor have been engaged in the operation.

The railway line is owned by the Djiboutian government and the Ethiopian government. In Ethiopia the state owned Ethiopian railway corporation represents the owner of the railway. The Ethio- Djibouti standard gauge rail transport share co. is a bi national public company headquartered in Addis Ababa and was established in 2017 to operate the railway. It is owned by the government of Ethiopia (75%) share and Djibouti(25 %) share.(EDR 2018)

Until dec,2023 all operations on the new railway will be undertaken jointly by the china railway group limited(CREC) and the china civil engineering construction corporation(CCECC). During this time ,the companies will train local employees so that they can take over railway operation at the conclusion of the initial operation period.(EDR 2018)

Offshore outsourcing of the operation activities in railway sector has been a common practice in the developing countries to gain momentum with the current competitive international market. Most of the rail network infrastructure is deployed by offshore vendors who are usually the designers and contractors of the rail way infrastructure. In this kind of environment, knowledge transfer has always been an essential subject for the rail service providers. Knowledge transfer is the process of knowledge passing from one person to another person, or from a group of people or organizations to another group of people or organizations (Lanthom Jonjoubsong, Nathaporn Thammabunwarit and Kitti Lertkamonrak 2015)

Despite the recognized benefits of knowledge transfer in outsourcing, many studies establish that knowledge transfer from one organization to another is challenging and complex in nature (Perez-Nordtvedt, Kedia, Datta, & Rasheed, 2008). For example, Kim and Chung (2003) argue that despite many of the firstly asserted knowledge transfer benefits, outsourcing does not always attain the desired results. In the same vein, Perez-Nordtvedt et al. (2008) state that knowledge transfer across organizational boundaries is often challenging and time-taking, and argue that it is vital to study the obstacles to knowledge transfer, so as to make the process more effective and efficient and the outcomes more favourable.

When outsourcing rail operation and maintenance activities, there is a risk of losing the knowledge of how to perform these activities if the out-sourced company didn't deliver the necessary knowledge to the local staffs before the contract period expired . This can be a problem if an out-sourced company lacks the required knowledge. It can also pose difficulties when changes or improvements in a system's design lead to changes in the maintenance. Knowledge transfer among people doing the outsourcing is not as direct as among people belonging to the same company. And while explicit knowledge transfer can be ensured by codifying knowledge, tacit knowledge is more difficult to transfer. Hence, the need to provide new procedures for knowledge transfer between companies. The purpose of this paper is to analyze the potential for improving inter organizational knowledge management in the operation and maintenance of railway by assessing the main factors affecting knowledge transfer and make concrete suggestions for improvements.

Thus, based on the identification of gaps in the literature and prior studies recommendations this study sets out to answer the following research questions:

1.How KT does from vendors to local staffs takes place?
2.How does the organizational factors affect KT process?
3.How does vendors affect KT process?
4.How does recipients affect KT process?
5.How does knowledge related factors affect KT process?
6.How does relationship between vendors and recipients affect KT process?

1.4 General Objective

The aim of the research is to examine knowledge transfer processes and identify the effect of key factors that significantly impact knowledge transfer success from vendors to seconded (local) staffs.

1.5 Specific Objectives

In responding to the above general objective, this research addresses the following specific objectives:

- To examine KT process and identify the effect of factors that significantly influence KT success from vendors to local staffs.
- To examine organizational factors affecting KT process.
- To examine effect of vendor related factors on KT process.
- To examine effect of recipient related factors on KT process.
- To investigate effect of knowledge related factors on KT process.
- To investigate effect of relationship related factors on KT process.

1.6 Significance of the study

This research help EDR company to build knowledge transfer more effective and successful in rail operation and maintenance services with due consideration to the fundamental factors which are identified by this survey. In support of this idea, Appleyard (1996) highlighted that, "by understanding the mechanisms and determinants of knowledge flows, company managers can influence knowledge diffusion more effectively. Acknowledging the comprehensive sets of elements that impact knowledge transfer success not simply increase the understanding of the knowledge transfer process, but also ensure effective outsourcing management by allowing practitioners to pay attention on specific ranges that are vital to the partnering. The comprehensive understanding of these main constituents is critical to the success of the knowledge transfer. Hau and Evangelista (2007) highlight, "the acquisition of both tacit and explicit knowledge across partners is still relatively unexplored and not fully understood". Similarly, Rashman and Hartley (2009) state that inter-organizational knowledge transfer and learning style "requires further conceptual development and empirical research to create a richer appreciation of how alliance learning happens".

In addition, this study contributes to the understanding of how knowledge is transferred successfully from vendors (CCECC) to EDR staffs . The value of this research is also recognized in the practical contribution to be achieved, by providing management advice to EDR which need guidance in order to improve the knowledge transfer process.

The findings of this study will be important in understanding of the factors affecting rail operation process ,hence inform the company ,EDR, on necessary correction strategies to

mitigate on their effects and also will adjust their future planning and strategy development as long as the rail operations are managed with these outsourced companies.

Moreover, in these times organizations are establishing close links and building connections with outside organizations and business partners in order to transfer new knowledge and skills and learn from the experience of others. However, knowledge transfer in outsourcing projects is a challenging process, and many organizations have not realized the expected significant benefits. Therefore, this study has a huge importance in contributing towards a better and inclusive understanding of factors affecting knowledge transfer by giving special attention to outsourced operation activities concerning railway.

1.7 Scope of the study

The scope of this study is bound to investigating influencing factors of knowledge transfer in EDR's outsourcing rail operation activities. The factors that will be emphasized include; organizational related, recipient related, knowledge related, vendor related ,relationship related.

This study focuses on knowledge transfer factors rather than perusing the entire knowledge management practice (capturing, storing and sharing). The factors of knowledge transfer are hindrances on disseminating important knowledge from vendors to EDR staffs. In other words, knowing knowledge transfer factors results helps in the assurance that knowledge has accurately moved and been absorbed. It lays the foundation for knowledge capturing, storing and sharing within the company.

This study undertakes the factors that affect knowledge transfer process from vendors (CREC) to EDR seconded staffs (client) side as ,which is only one side. Since The study considered the client as the knowledge recipient while the vendor is the knowledge source and followed the definition by (Lee, Miranda, & Kim, 2004).

Moreover, This study explored the knowledge recipient’s perspective and the results obtained from the case study might not be vendors perspective and it shall be taken under consideration .

1.8 limitation of the study

Although this research provides important insights with regard to knowledge transfer in railway outsourcing activities , there are some limitations which are worth noting for future research.

- Restricting the sample population to only in lebu station and Indode workshop centre is one of the limitation of this study which is mainly associated with time restrictions and accompanied cost consequences.
- The researcher doesn't include the vendors side perspective as it is difficult to get their willingness to be part of the research.

1.9 organization of the study

The study is divided into five chapters. Chapter one is the general introductions, which include background to the study, statement of the problem, research questions, objectives of the study, significance of the study, scope and limitations of the study, definition of key terms and organization of the study.

The second chapter presents review of the relevant literature on factors that affect knowledge transfer in outsourcing projects. The third chapter provides the methodology used in obtaining the data including research approach, research design, population and sample, data source and types, data collection procedure and data analysis.

The fourth chapter presents the analysis of data and accompanied discussions and interpretations of data. Then the fifth chapter gives the conclusion and the recommendations of the study in-line with the findings.

CHAPTER TWO

REVIEW OF THE LITERATURE

2.1 Definition of knowledge

2.1.1General overview on knowledge

The question of how knowledge should best be defined has been the subject of a lively epistemological debate (Shin, Holden and Schmidt 2001). An examination of the various perspectives on the definition of knowledge and their implications for knowledge management forms a useful starting point, enabling researchers and practitioners alike to understand the directions of knowledge management research and the approach taken in this study. First, some concepts of knowledge and how this term is distinguished from data and information are presented. At this stage, it is useful to introduce the dichotomies of tacit and explicit and individual and organizational knowledge. The theoretical approaches to knowledge transfer are then discussed, starting with an overview of several key definitions.

2.1.2 Conceptualizing knowledge

Although numerous definitions can be found in the literature, researchers seem to agree on the fact that ‘data, information and knowledge are not interchangeable concepts’ (Davenport and Prusak ,1998). Since the intention is not to give an exhaustive list, only those positions are presented which are regarded as important in understanding the approach to knowledge management in this study.

As Willke (1998), said that data can be defined as a set of objective facts. They are structured records without information of how to use them in a given context. Data consist of signs and are the raw material to be processed, but they give no hint on how to do so and are thus of limited use (Willke ,1998).). In modern organizations, data are usually stored in some sort of information technology (IT) system. As data are only raw material for the creation of information, large quantities of data without any information about their importance or irrelevance can create problems: ‘more data is not always better than less’ (Davenport and Prusak 1998).

According to Kriwet (1997) , Information can be defined as data with significance and data considered valuable by a user constitute information. Data in one context may be relevant information in another .Thus, in order to be information, data has to be provided with a meaning which is specific for and dependent on the respective system (Willke 1998).Knowledge combines various pieces of information with an interpretation and meaning (Nevis, DiBella and Gould 1995; Kriwet ,1997). It is created by the target-oriented combination of information, includes a component of subjectivity, insecurities and paradoxes and is subject to ambiguity (Wagner, 2000).

While information derives from data, knowledge derives from information (Davenport and Prusak, 1998). While information is a static concept, knowledge is constantly changing. And while information is descriptive and explicit, knowledge includes a normative component and can be explicit or tacit. In line with Plato, Nonaka and Takeuchi (1995) define knowledge as 'justified true belief'. It is created if somebody makes sense out of a new situation by holding justified beliefs. However Sveiby (2001) , defines knowledge as 'the capacity to act (which may or may not be conscious)'. What all these different approaches seem to have in common is that knowledge is located at the top of the hierarchical structure (Shin, Holden and Schmidt, 2001).

Probst, Raub and Romhardt (1999) describe the transition from data via information to knowledge as a continuum, an approach especially applicable to an investigation of knowledge transfers.

Knowledge has become an area of rising interest in organizations and a source of competitive advantage. It involves awareness or understanding on facts, information, descriptions or skills which are attained either through experience or education by perceiving, discovering, or learning.

2.1.3 Classification of knowledge

On the basis of the distinction between the different cognitive levels of data, information and knowledge, a useful dichotomy seems to be 'knowing what' and 'knowing how' while the

former refers to procedural types of knowledge (Gupta and Govindarajan, 2000; Becerra Fernandez and Sabherwal, 2001). This distinction is vital to the knowledge transfer process as it is decisive for the choice of media and storage devices. It is also important to distinguish between the necessity of 'higher-order' knowledge in contrast to mere data for managing certain organizational tasks.

Hedlund (1994) , classifications distinguish between specific and general knowledge or divide knowledge into the three aspects :

- Cognitive knowledge
- Skills
- Knowledge embodied in artifacts, e.g. products.

Cognitive knowledge comes in the form of mental constructs. It resides in the minds of people and is also denominated 'brain ware' (Bennett and Gabriel ,1999). Skills are competences and capabilities. Shin, Holden and Schmidt (2001), however, suggests that we should distinguish between a school of thought that regards knowledge as an object and (cf. Kogut and Zander 1993; McDermott and O'Dell 2001), defines knowledge as a application-related process.

There are many ways to classify knowledge according to the prior researches. However, the most popular classification is explicit and tacit knowledge .Nonaka et al. (2000), defined explicit knowledge as the knowledge that can be expressed in formal and systematic language and shared in the form of data, scientific formulae, specifications, manuals and so on. In contrast, tacit knowledge is deeply rooted in action, procedure, routines, commitment, ideals, values and emotions. And according to the ontological level of the knowledge bearer,(Hedlund ,1994), distinguishes it among the levels of individual, group, organization and inter-organizational domains.

2.1.3.1 tacit and explicit knowledge

2.1.3.1.1 Tacit Knowledge

Tacit knowledge is a kind of knowledge that is stored in the heads of people. It is usually accumulated through a variety of study and experiences. The development of tacit knowledge is

realized through the process of interaction with other people or individuals. Due to this, tacit knowledge generally grows through the practice of trial and error and the experience of success and failure. However, since tacit knowledge is built on experience and is stored in the mind of the apprehender, it needs exchange of ideas between individuals concerning a specific matter for it to be transferred properly.

According to Nonaka I. and Takeuchi H. (1995), tacit knowledge is context-specific and is difficult to formalize, record, or articulate. It includes subjective insights, instincts and inferences. As intuitive knowledge, it is difficult to communicate and articulate. Besides, since tacit knowledge is highly individualized, the degree and facility by which it can be shared depends to a great extent on the ability and willingness of the person possessing it.

The sharing of tacit knowledge is a great challenge to many organizations. Tacit knowledge can be shared and communicated through various activities and mechanisms. Activities include conversations, workshops, on-the-job training and the like. Mechanisms include, among others, the use of information technology tools such as email, groupware, instant messaging and related technologies.

2.1.3.1.2 Explicit Knowledge

According to Nonaka and Takeuchi (1995), explicit knowledge is formal and systematic knowledge that is easily communicated and shared, like a specification document. Explicit knowledge can be transferred by storing it in a storage space, like a flash drive, where the receivers can access it easily.

Likewise, explicit knowledge can be documented and recorded easily. Collecting corporate lessons learned across an organization and storing the knowledge in information technology systems can be an effective method of capturing explicit knowledge for continuity. This mainly true in the case of outsourcing, where the vendor has to leave the client after a project has ended. In this case, their knowledge needs to be in explicit format; otherwise the maintenance personnel will not be able to utilize it. In addition, even if the vendors do not leave the company right after a project has ended; there is still a risk that critical knowledge escapes the company in case the

vendors have to leave at some point. Therefore extensive documentation is required to be written in projects.

According to Marjaana Liukkonen (2014), explicit knowledge is usually transferred from project teams to maintenance teams through documentation. Because tacit knowledge transfer to maintenance personnel starts late in the project, most of the knowledge is transferred at once at the end of the project. With the pressure to finish the implementation of projects before the end of the project, writing maintenance documentation can get a low priority, which again makes it likely that the maintenance documentation will be lacking.

Table 2.2: The characteristics of tacit and explicit knowledge

Tacit Knowledge	Explicit Knowledge
Inexpressible in a codifiable form	Codifiable
Subjective	Objective
Personal	Impersonal
Context-specific	Context-independent
Difficult to share	Easy to share

Source: Adopted from Hislop (2009)

2.1.3.2 Organizational and individual knowledge

Hedlund (1994) ,distinguishes knowledge among the levels of individual, group, organization and inter-organizational domains. Individual knowledge reflects individual experience and constitutes the basis for the development of organizational knowledge. Organizational knowledge is embedded knowledge and comprises belief systems, collective memories, references and values. as (Hedlund ,1994) describes it 'resides in the relations between individuals, and is therefore more than the sum of individual knowledge bases' .The inter-organizational domain comprises suppliers and customers (Hedlund ,1994). Seen from an even broader perspective, the term 'social knowledge' addresses knowledge residing within groups of people. The tension between individual and organizational knowledge is especially critical to the firm as a knowledge integrating institution. As such, knowledge has to be managed as resource.

2.1.4 Knowledge transfer

In most of the literature, knowledge transfer is treated as a universal practice, which is transferable from one country or company to another. In organizational theory, knowledge transfer is the practical problem of transferring knowledge from one part of the organization to another. Like knowledge management, knowledge transfer seeks to organize, create, capture or distribute knowledge and ensure its availability for future users.

2.1.4.1 knowledge transfer in public organization

In an organizational context, knowledge transfer is a process through which one group (e.g. department or division) is affected by the experience of another group (e.g. department or division) since it involves two or more parties together. According to Hasan et al. (2013), transferring knowledge is thought to be an antecedent of organizational learning. But most of the authors agree that the transfer of knowledge depends on the individuals' characteristics such as experience, values, motivation, beliefs (Albino, Garavelli, & Gorgoglione, 2004).

Lam and Lambermont-Ford (2010) ,explained KT as a difficult task since the willingness of individual to share and integrate their knowledge is one of the central barriers for knowledge transfer. Wilkesmann (2011) state another important issue that social interaction and processes of personal understanding as well as sense-making are seen to play a more critical role in KT.

Oliver (2001) argued that knowledge could not be transferred intact because learning is an active process of constructing knowledge in the receiver's mind. So the best practice for firms is to develop a KT culture that reinforce the link between KT and business strategy; fit with overall organizational culture; fit with leadership; fit with human and social networks and institutionalization of learning disciplines .

But according to Seba et al.(2012) explanation the bureaucratic organizational cultures tend to mean that employees in the public sector often see knowledge management as a management responsibility and not necessarily something for which every employee should take some responsibility.

2.1.4.2 Knowledge transfer to subsidiaries

The organizational knowledge literature posits the importance of knowledge in an organization's ability to make decisions, solve problems, meet competitive challenges and ultimately be successful. Today, knowledge is shared between geographically dispersed individuals and organizations, and across cultural and national boundaries.

The content of such knowledge may be technical, procedural or strategic, may be explicit or tacit (Nonaka & Takeuchi, 1995). Organizational learning is influenced by various contexts, such as culture and history (Edmondson, 2002; Tyre & Von Hippel, 1997). The contexts constitute a complex system of knowledge, routines and other enabling conditions that drives the interpersonal organizational dynamics within and between communities of practice (Brown & Duguid, 1991; Gherardi & Nicolini, 2002). Knowledge sharing is embedded in broader organizational networks such as communities of practice. The ties among individuals within social networks can facilitate knowledge transfer and enhance the quality of information received (Cross & Cummings, 2004; Reagans & McEvily, 2003).

Wang & Noe (2008) explain Knowledge transfer involves both the sharing of knowledge by the knowledge source and acquisition and application of knowledge by the recipient .Knowledge transfer requires a co-operative and collaborative culture between source and recipient; it also facilitates knowledge transfer between developed and developing countries. The cultural differences between the parties (source, recipient) create extra problems because they make it difficult for managers to work together effectively and develop common values. For this reason, both organizational and national cultures are often referred to as a major obstacle, which has negative influences on all facets of cooperation encountered in inter-firm knowledge transfer (Mowery et al., 1996; Simonin, 1999).

2.1.4.3 Knowledge transfer at transnational level

Knowledge is transferred via channels and activities such as training and education, business networking, development of new business opportunities and exchange of ideas. Knowledge transfer at the intra and transnational organizational level requires an organization to be seen as an entity within which knowledge is created and shared. Therefore organizational practices,

human resources abilities, structure, and processes affected by local environment, and play a critical role in articulating and amplifying knowledge developed by individuals (Hong et al., 2006).

Jones (1995), says the firm can be seen as a nexus of relationships among its primary stakeholders (e.g. employees) with the objective to create value. In a fairness approach, the firm's interactions with stakeholders are based on fairness considerations. Fairness drives the process to divide the value created by the nexus of stakeholders among the different parties (Cropanzano et al., 2001). This translates into practices such as an open and honest exchange of relevant information and an inclination to resolve problems through collaboration (Bridoux & Stoelhorst, 2014; Phillips, 2003). Individuals' intent to learn often intensifies communication among organizational members which facilitates knowledge conversation and creation at the organizational level. Inter organizational trust is a critical component for knowledge acquisition as it encourages the knowledge transfer to assist the knowledge acquirer to understand the knowledge it is teaching. This promotes behaviors such as open communication and the willingness to share information (Norman, 2004).

Kim (1998), argues that a critical component developing and maintaining individual absorptive capacity is closely related to the inspiration of intent to learn. Cohen and Levinthal (1990), contend that an organization's absorptive capacity is dependent upon the learning capabilities of its individual members. Based on their explanation, the fundamental premise of the notion of absorptive capacity is that firms need prior related knowledge to evaluate and utilize outside information.

2.1.5 Purpose of outsourcing railway activities

The purpose of training and education efforts is to contribute to the enhancement of the rail sector by fostering a better match between the human resources needs to make railways a more competitive and innovative sector and the offer of skills coming out of the various research based education and training institutions. A partnership for innovation, skills development and jobs is envisaged to mobilize support and getting the different players to work together in a collective effort to spread ownership and excellence. (Global vision for railway development,2015)

Knowledge-transfer from other sectors is a key aspect for the future of rail transport in a cross-sectoral approach: even though partnerships may be assigned to a specific sector, they often work across different business sectors. Lifelong learning will be a well-accepted practice for professional development throughout a professional career. Staff will be prepared for technology transitions and involvement in professional situations with a strong interdisciplinary nature, involving technology, economics and business, people and regulatory and policy contents. Learning programs make full use of current virtual learning environments and e-learning technologies to explore networking of specialists and introduce newcomers and specialists to real operational situations.(Global vision for railway development,2015)

The following objectives can be identified:

- Forecasts of the skills that railway will need and analysis of gaps in skills,
- Enhance and expand educational access to railway courses,
- Enhance educational quality in the railway area (academic, stakeholders),
- Create mechanisms to put forward courses not offered by existing institutions,
- Develop e-learning based courses and promote the production of course materials,
- Promote Joint PhDs using bilateral and multilateral programs,
- Promote joint international MSc. programs in different rail related areas,
- Develop and deliver short training courses

2.1.6 Ethiopia-Djibouti Railway New staff Training Plan

2.1.6.1 The Main Training Frame of Addis Ababa-Djibouti Railway Employee

2.1.6.1.1 Operational level Workers' Training Plan

After recruitment of operational level Workers, their training can be carried on in following order:

I. Basic Knowledge Education: "Introduction to Railways", "Railway Labor Safety", "Ethiopia-Djibouti Labor Discipline", "Work Ethics" and other basic courses are to be instructed.

II. Post Probation: operational level workers are assigned to specific post as interns, so that they can get a clear picture of the nature and content of the job, and the knowledge and skills needed to do the job. (2 Months)

III. Professional Knowledge Education: operational level workers in various posts learn relevant professional knowledge. .

IV. Apprenticeship: When operational level workers are qualified for professional knowledge exam (score greater than or equal to 60% on the examination) in III, a master will be assigned to instruct them on the post. This marks the beginning of apprenticeship. They can learn basic working skills on the post from masters directly. Then after the practical training the trainee will take practical examination and if they score 100% they will pass to recruitment stage. (III and IV can be carried out alternatively, until the workers can put theory into practice and work on the post independently.)

2.1.6.1.2 Middle-level Personnel Training Plan

Middle-level personnel in management department of railway transportation and production, such as Transportation Department, Maintenance Department, Train Operation Depot, Rolling Stocks Depot, Dispatching Center among others, will be selected from excellent operational level workers for vacant positions, before receiving theoretic training locally. After they pass the training, they will be arranged to the relevant position probation, learning from Chinese staff on the post. After probation, given difficulty of post technical management, all local middle level staffs will be sent to China for 1 month training. Contractor middle-level workers shall provide 1 to 1 high efficient assistance during training.

2.1.6.1.3 High-level Personnel Training Plan

In principle, high-level personnel in management department of railway transportation and production, such as Transportation Department, Maintenance Department, Train Operation Depot, Rolling Stocks Depot, Dispatching Center among others, shall be elected from competent middle-level staff for vacant positions. The major training method for them shall be business practice with auxiliary theoretic training. When they are qualified after training, they will be arranged to relevant posts on probation, learning from Chinese staff directly. After probation,

they will be sent to China for theoretical training for no more than 2 months by stages and in batches. Contractor senior managers shall provide “1 to1”assistance during the training.

2.1.6.2 Staff Capacity Improvement plan

2.1.6.2.1. Staff On-Job Periodical Training Policy

For shift employees, there will be concentrate training during their spare time. The frequency should be not less than twice a month, the duration of each training should not be less than 1 hour. The main training content shall include Safety Regulation Principle and Professional Skills. For local staffs who have already been working independently, there will be off-duty training annually. The duration of off-duty training shall not be less than 30 hours per year so that the staff can make steady progress.

2.1.6.3 Capacity Assessment and Handover

2.1.6.3.1. Methods for Assessing Staff’s Professional Ability

When track train driver and locomotive driver receive training from authorized training unit and become qualified in accordance with Chinese or other international quality authority, employer shall apply to relevant authority to confirm. When staff for other posts receive training certificate from capacity building department after they pass the examination, the MC should issue approval of the certificate from an authorized training institute. Human Resource department will issue work license to them.

2.1.6.3.2. Training provider and trainers’ assessment

Contract management is responsible for preparing qualified trainers for each type of training and cultivating EDR’s future trainers among the trainee. The training provider must be currently registered with quality authority or other governing body as recognized training organization with approval to deliver training and assess competency.

2.1.6.3.3. Training materials

The contract management must develop training materials carefully which aliens with the objectives and outcomes of each training titles. Training materials include: -

- Training manuals

- PPT
- Handouts
- Practical training guides
- Training and assessment mapping
- Examination bank for each training etc

2.1.6.3.4. Post Transfer Process

After workers receive training certificate, CCECC-CREC will issue them work license, which means they can work independently. Also it indicated that the post has been handed over officially.

2.1.6.3.5. Training base

According to the contract the management contractor should establish comprehensive training bases in Ethiopia and Djibouti

2.1.7. Knowledge Transfer Process

This category characterizes the channels that are used to transfer knowledge from the vendors to the clients. The literature proposes a range of knowledge transfer processes that are used to transfer explicit and tacit knowledge from the source to the recipient. Jasimuddin (2007) employs the term 'appropriateness' to describe the "extent to which a mechanism is useful and convenient to post out the transport of knowledge". Knowledge transfer scholars identify various related approaches to classify knowledge transfer process, but the most usual method is separating the processes into structured and unstructured (Boh, 2007).

There are many structured processes in transferring knowledge from the source to the recipient (Hong & Nguyen, 2009). Easterby-Smith et al. (2008) suggest that knowledge is often transferred through documents, blueprints or electronic media that embody the knowledge transferred to the recipient organization. Dedrick, Carmel, and Kraemer (2011) argue that well-documented knowledge, such as repetitive work practice, standard guidelines of operations, precise product specifications and project plans can be transferred simply from one organization to another.

According to Slaughter and Kirsch (2006) knowledge is transferred structurally through organized training, observation of experts, tooling and formal meetings. However, Strach and Everett (2006) debate that working in the same field (i.e. learning-by-doing) yields more knowledge transfer and learning than typical classroom training. In their study of IS outsourcing, Chua and Pan (2008) highlight that seminar presentations offered by vendors to internal IS staff within the client organizations during the outsourcing projects are one of the common processes for one-to-many knowledge transfer. The study further points out that oral presentation often offers larger quantities of information and therefore are more suitable for raising awareness of a particular new topic or technology and giving a broad overview of key concepts.

Earlier inter-organizational studies have recognized the importance of utilizing unstructured processes for transferring knowledge, mainly with tacit aspect Blumenberg et al. (2009) indicates, "tacit knowledge transfer generally requires extensive personal contact and extensive socialization". With similar vein, Hoegl, Parboteeah, and Munson (2003) advocate that when individuals have unstructured and rich communication interfaces, the transferability of critical knowledge facilitated, and individuals consume less resources to acquire and utilize the required knowledge.

Social bonds have been increasingly viewed as important and effective channels for knowledge transfer (Easterby-Smith et al., 2008), especially in knowledge intensive works such as IS outsourcing (Kotlarsky & Oshri, 2005). For example, Blumenberg et al. (2009) indicate that frequent F-2-F interaction is essential for transferring technical tacit knowledge in IS outsourcing projects. In a like vein, Hansen (1999) points out that repeated interactions between people with strong ties facilitate knowledge acquisition. The findings of Carlile (2004) study propose that effective knowledge transfer needs social linkages over which individuals improve a common language, understanding, and interests.

However, there has been some debate as to whether the two modes (structured and unstructured) are substitutes or complements, but there is a general consensus that both are instrumental in transferring knowledge (Slaughter & Kirsch, 2006). Argote and Ingram (2000) note that

transferring knowledge with a combination of task and tool elements can be effectual. Other researchers observe similar findings about the usage of multiple varieties of operations. Galbraith (1990), for instance, points out that effective knowledge transfers utilize a combination of structured and unstructured processes.

2.1.7.1 Challenges of knowledge transfer in developing sub Saharan African countries

Although the international T&K transfer literature originates decades ago, studies seemingly ignore SSA. Theories that explain why the overwhelming evidence that T&K transfer in the region is low remain scarce. Considering that developing economies generally have weak institutions (Khanna & Palepu, 2006; North, 1990), the SSA perspective may contribute to an understanding of the wider developing country context and should explain why FDI enhances T&K transfer in some countries but not in others.

A developing country needs considerable effort to fully absorb and implement new T&K, because such inflows and domestic abilities to use them interact in complex ways (Pack & Saggi, 1997). SSA countries should rely on foreign T&K inflows for development (Osabutey & Debrah, 2012). On this issue, Dunning (1998) and Caves (1996) agree that what influences knowledge-intensive FDI is mainly production cost-related factors, quality and skill of professional elements of labour, competitiveness of related firms, quality of local infrastructure and institutions, and macroeconomic policies in the recipient countries

However, the problem for developing countries, such as those in SSA, is that they lack well-developed knowledge economies and cannot compete because low-cost production paradigms and high-end industries trap them (Doner, 2009). Dunning (1998) and Caves (1996) assert that the availability of knowledge-related assets such as product process, and managerial technology, influences strategic asset-seeking MNCs (Grosse, 1996), specially within markets that allow geographical distribution of such assets.

The construction industry has been the fastest growing industrial sector (Sutton & Kpentey, 2012), where foreign firms undertake the majority of large scale projects. The large numbers of small and medium-sized local construction firms have resource and capability deficiencies and are therefore often not eligible for major government contracts (Assibey-Mensah, 2009). The

majority of host country construction firms generally lack finance, equipment, human capital, and technologies to undertake complex modern projects. Governments focused primarily on infrastructure development and not on T&K transfer and capacity building. The majority of local firms are still developing and have deficiencies in the efficient application of modern T&K. Governments are responsible for a large part of construction projects; therefore, they would implement T&K transfer policies (Osabutey et al.,2014) if they understood its importance.

The above explanation significantly extends the works by Dunning (1998) and Caves (1996) that refer to quality of infrastructure and institutions, emphasizing in developing countries, effective industry and professional bodies could influence the transfer process. in addition it also contributes to the theory remarking that, even though organizations need to learn, this process has to take place within the context of institutional factors.

2.1.8 Factors affecting the knowledge transfer process in an organization

Knowledge transfer and acquisition allow client organizations to develop skills and competencies, increase value, and sustain their competitive advantage (Karlsen & Gottschalk, 2004). Literature recommended that, the success of knowledge transfer and acquisition in IS outsourcing relies on the result of four sets of factors such as, knowledge factors, client factors, vendor factors and relationship factors. In this study, the vendor is the source of knowledge and the client is the recipient of knowledge.

2.1.8.1 Organizational factors

Perrin and Rolland (2004) investigated the capacity of managing organizational networks and knowledge transfer in a global service company. They reported that despite putting mechanisms to create and transfer knowledge efficiently among professional networks, organizations still fell short of expectations because there was lack of support from top management. in this study, organizational factors refer to the collective name for organizational culture, organizational strategy, information technology, training and organizational performance as defined by Sekeran (2003). They are deliberately taken together to show their combination and individual contribution to the influence of knowledge transfer success.

According to Jo Rhodes et al. (2008), whilst knowledge transfer is a major strategy for managing contemporary organizations, the impact of the key factors influencing the rate of organization knowledge transfer is relatively unknown. The study findings indicated that out of the particular organizational factors considered, IT systems had the most significant impact on organizational knowledge transfer followed by a structured learning strategy, and an innovative organizational culture. It is also noted that personalized (tacit) knowledge transfer had a strong influence on innovative capabilities development.

Sintayew (2017) states that the major organizational factors comprise; lack of organizational readiness, undesirable organizational politics and lack of organizational culture. Mesfine (2018) also added that Organizational culture distance is a key factor which hampers knowledge transfer. The study suggests that organizational culture incompatibility, including different work behaviour, decision making process, and approaches to resolving conflicts limit the knowledge transfer from the vendors.

Swieringa and Wierdsma (1992) reported that training in related field is the most efficient way to acquire knowledge. Stewart (1994) supported this view by stating that training is the best and most effective way of capturing human wisdom. In order for organizations to increase and improve their products and services, it needs to serve as a mentor in managing the knowledge gained through training.

2.1.8.2 Vendor related Factors

The third category is related to the source of the knowledge. The two factors that are identified in this set are called source capability and source credibility. Such capability is the extent to which the receipt views the source as skilled and expert and has a rich technical and business knowledge-base (Joshi et al., 2007). Capable and committed source tends to devote time and resources to support the transfer of knowledge to the recipient (Gregory et al., 2009). Tan (2009) examined the factors affecting IS outsourcing success and identified that vendor capability is vital as a skilled vendors tend to retain excessive reservoirs of knowledge, skills and expertise. A study by Wang et al. (2007) on knowledge transfer in ERP implementation highlighted the importance of consultants' (i.e. source) capability "to offer related and needed knowledge, to mobilize various skills, and to help the client configure and derive value from the ERP package".

Source credibility is also identified to simplify knowledge transfer. Joshi et al. (2007) defined source credibility as "the extent to which a recipient perceives a source to be trustworthy and reputable". Trust is the confidence that the source' expression is dependable and that it will satisfy its duty as specified in the agreement (Timbrell et al., 2008). Lee et al. (2008) explored the effect of trust on IS outsourcing success and identified that mutual reliance simplifies knowledge transfer between vendors and clients. The reputation has been viewed as vital for knowledge transfer success because it is often used in selecting and evaluating the significance of the source of knowledge (Joshi et al., 2007). Initiating a knowledge transfer from a reliable and dependable source tend to be less challenging (Lander, Purvis, McCray, & Leigh, 2004). However, in the absence of trust, recipient perceives a source's knowledge to be less valuable and not much persuasive (Ko, Krisch, & King, 2005).

2.1.8.3 Recipient related Factors

The transfer of knowledge depends not only on the characteristics of the knowledge transferred, but also on the learning capability, absorptive capacity and motivation of the recipient of knowledge. Learning capability is the extent to which the receipt has the potential to learn and acquire new knowledge and skills proposed by the source (Tsang, 2002). Learning capability is found to improve the quantity of knowledge transferred (Narteh, 2008). If the recipient has the good learning capability and is self-motivated to gain knowledge possessed by the source, it will be well organized mentally to understand and adapt the knowledge (Easterby-Smith et al., 2008). Bandyopadhyay and Pathak (2007) discovered knowledge sharing in outsourcing projects and identified that knowledge sharing success depends on the learning capability of the recipient and the time and efforts given to gain the knowledge. Another factor that identified to impact knowledge transfer success is absorptive capacity. Absorptive capacity is defined as the ability of the recipient to distinguish the value of the new knowledge provided by the source, adapt it and apply it new and untested business situations (Schmidt, 2010). The study of Ko et al.(2005), explained how knowledge transfer success is much related to that capacity of the clients (recipient) to absorb the transferred ERP knowledge from the consultants (source) and effectively apply it to commercial ends. Zahra and George (2002), on the other hand, found that lack of absorptive capability is one of the primary factors that hamper knowledge transfer success. The underlying premise is that a recipient's stock of prior related knowledge and

experience is essential to effectively absorb and utilize external knowledge (Srivardhana and Pawlowski, 2007). An important factor that has been identified by the literature to impact knowledge transfer success is the motivation of the recipient to explore and acquire valuable knowledge (Ko et al2005). Xu and Ma (2008) investigated the key determinants of ERP implementation knowledge transfer and found that the stronger the motivation to learn, the more likely it is that individuals will attempt to master and use new external knowledge. Motivations for transferring knowledge range from extrinsic incentives such as bonuses to intrinsic motivations such as praise and public recognition (Chua & Pan, 2008).

2.1.8.4. Relationship Factors

The nature of the relationship and the interaction between individuals of the client and the vendor organizations found to impact the effectiveness and the success of knowledge transfer in IS outsourcing (Ko et al., 2005). Ranft and Lord (2002) argued that many of the knowledge transfer difficulties stems from organizational issues and human resource conflicts between the source and the recipient of knowledge. The two key factors that have been identified are: organizational distance and social ties. Organizational distance measures the degree of organizational combination between the source and the recipient of knowledge (Cummings & Teng, 2003). The knowledge transfer literature identified three main types of organizational distance, namely physical distance, organizational culture distance and national culture distance.

Geographical distance refers to the trouble, time requirement and expense of communicating and coming together face to face (Cummings & Teng, 2003). Nicholson and Sahay (2004) studied knowledge transfer in software offshore outsourcing project between a British firm and an Indian vendor and found that geographical departure negatively impacts knowledge transfer, resulting in misunderstanding. Organizational culture distance is the extent to which the source and the receipt of knowledge possess different work values, ideologies, norms and, problem-solving approaches (Ko et al., 2005). Difficulties in knowledge transfer tend to arise when there are differences in organizational culture.

National culture distance has been widely recognized as a major inhibitor for knowledge transfer between the source and the recipient in IS outsourcing, particularly when it comes to offshore outsourcing (Imsland and Sahay, 2005). National culture distance is when the source and the

recipient of knowledge, lack a shared language, ethics, views and cultural background understanding (Narteh, 2008). Goles and Chin (2005) investigated the key relationship factors that impact IS outsourcing and found that cultural background difference and language incompatibility can be a major stumbling block for outsourcing relationships in general and knowledge transfer in particular. Therefore, it can be concluded that insufficient background about one another, lack of a common language and cultural misunderstanding restricts the capacity of the client to transfer knowledge from the vendor in IS outsourcing.

Social links have received a great deal of attention in inter-organizational collaboration literature (e.g. Jasimuddin, 2007), particularly in knowledge intensive works such as IS outsourcing (e.g. (Kotlarsky & Oshri, 2005). Oshri, Kotlarsky and Willcocks (2007) conducted a qualitative case study to discover how globally dispersed information systems development work is impacted by socialization and face-to-face meetings. The study identified that face-to-face meetings allow IS professionals from the client and vendor organizations to develop interpersonal relationship and therefore share knowledge informally. Other knowledge transfer studies emphasized the importance of personal ties in facilitating the communication of no-codified knowledge. For example, Blumenberg et al. (2009) suggested that frequent face-to-face interaction is crucial for transferring technical tacit knowledge in IS outsourcing projects. However, this demands a close partnership between the client and the vendor (Goles & Chin, 2005).

2.1.8.5 Knowledge related Factors

The ease of knowledge transfer and acquisition is affected by the nature and the characteristics of the fundamental knowledge (Narteh, 2008). The knowledge management works identified several dimensions by which knowledge is described. The two most referred magnitudes are complexity and tacitness (Gosain, 2007). Knowledge complexity is stated by Simonin (1999) as “the number of interdependent routines, individuals, technologies and resources linked to a particular knowledge”. Knowledge tacitness is described by Gosain (2007) as “how easy or difficult it is to codify and articulate the information that needs to be transferred for specific knowledge”. Renzl (2008) stated that knowledge that can be articulated and codified can be documented and then transfer more easily than non-codifiable knowledge.

2.2. Hypotheses

Independent Variables: organizational related factor, vendor related factor, recipient related factor, knowledge related factor, and relationship related factor.

The following hypotheses will be tested:

1. **Null hypothesis**; there is no significant relationship between organizational related factor and knowledge transfer.

Alternative hypothesis: There is a significant relationship between the organizational related factor and knowledge transfer.

2. **Null hypothesis**: There is no significant relationship between vendor related factor and knowledge transfer.

Alternative hypothesis: There is a significant relationship between vendor related factor and knowledge transfer.

3. **Null hypothesis**: There is no significant relationship between recipient related factor and knowledge transfer.

Alternative hypothesis: There is a significant relationship between recipient related factor and knowledge transfer.

4. **Null hypothesis**: There is no significant relationship between knowledge related factor and knowledge transfer.

Alternative hypothesis: There is a significant relationship between knowledge related factor and knowledge transfer.

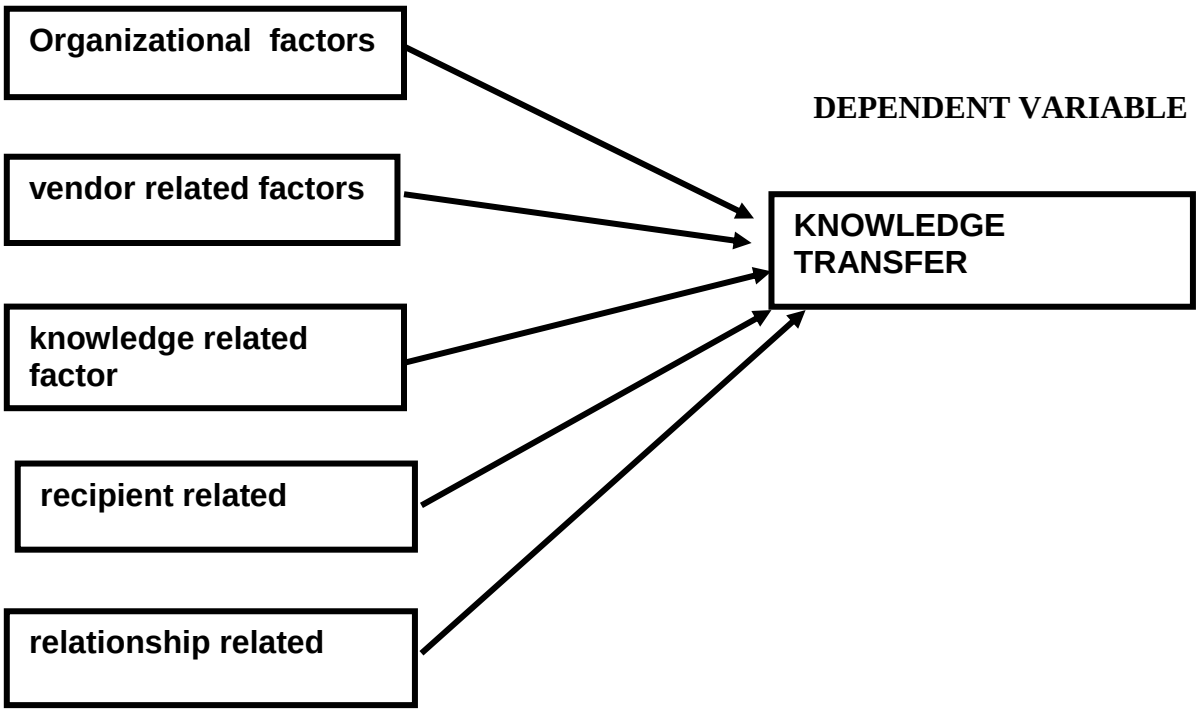
5. **Null hypothesis**: There is no significant relationship between relationship related factor and knowledge transfer.

Alternative hypothesis: There is a significant relationship between relationship related factor and knowledge transfer.

2.3. conceptual model of knowledge transfer

The conceptual framework displayed in the Fig 2.1 below, is extracted from previously discussed empirical and theoretical literatures. It illustrates the causal effect of independent variables on dependent variable.

fig.2.1 conceptual model for factors affecting KT



source ;own survey (2020)

2.4 literature gap

Literature review has exposed the existence of a gap in literature regarding factors in outsourced projects. Below are stated the main gaps identified from literature review.

The first gap in the literature is the absence of comprehensive enquiry to identify the key factors that facilitate or hinder knowledge transfer. Previous researches have focused on the type of knowledge transferred, the source itself, the recipient and the relationship between the source and the recipient. However, there are relatively few or no researches focused on organizational factors, informal contracts and lack of formalized knowledge transfer approaches. The researcher couldn't find any study that has examined all or part of these factors simultaneously in the context of outsourcing projects.

Secondly, the researcher has found that almost all of the studies on factors hindering knowledge transfer are done in the context of information systems and information technology organizations. In addition out of reviewed researches in outsourcing projects, only a few are focused on the public sector.

Another important gap identified in this review is that, to the best of the researcher's knowledge, there are no prior studies in Ethiopia context focused on factors of knowledge transfer in outsourced projects especially in railway sector

.

Therefore, this study can contribute to current theory by closing the aforementioned literature gap and provide an in-depth investigation and analysis by building on what has been done in previous studies. It also will help in exposing the current practices and factors of knowledge transfer in the railway industry.

2.5 summery

In the literature we have seen the history of Ethiopian rail industry since the start of CDEs rail construction period till the new electrified rail system is started by ERC. The literature also tried

to define what knowledge is and how it is different from data and information with an additional explanation of the classifications of knowledge; which are tacit ,explicit ,individual and organizational . The literature tries to explain the knowledge transfer process in different kinds of situation like public organization ,KT transfer to subsidiaries, KT transfer in transnational level. More importantly the literature explains why outsourcing railway activities is needed and gives a glimpse of the EDR training plan adopted by the MC(vendors).Finally after revising some prior researches on KT process ,the challenges of KT in SSA countries and the factors affecting KT in organizational level the researcher provides its own conceptual model regarding factors affecting KT process in EDR share company.

CHAPTER THREE.

RESEARCH METHODOLOGY

3.1 Research Approach

Quantitative research is used to quantify the problem by way of generating numerical data

or data that can be transformed into usable statistics. It is used to quantify attitudes, opinions, behaviors and other defined variables, and generalize results from a larger sample population (fahra di ,2009).

A quantitative research approach was employed to empirically measure the factors affecting knowledge transfer between MC and EDR local staffs. The intent was to establish and validate the factors influencing knowledge transfer and recognize obstacles in order to develop generalizations that contribute to the process.

3.2 Research Design

Explanatory research design was used in order to understand factors affecting knowledge transfer in Ethio-Djibouti rail operations. Survey method was used to assess opinions and perceptions of project employees by use of rational reasoning, where the researcher forms a research question, collects data in an investigation of the problem, makes analysis and formulates conclusions. Accordingly the data from the investigation was used to answer the initial research questions and hypothesis..

3.3 Data sources and types

This study used both primary and secondary data. Primary sources of data for this study were questionnaire & observation. The main reason the researcher intended to use questionnaires was to address the research question(s) & to obtain information regarding the factors that will affect the KT process which enables the researcher to accomplish the objective of the study. The previous studies used as references for this study questionnaire were (Gyasi, 2010; & Siaga, 2012). Accordingly, employees of EDR working in different departments of the railway transport operation and maintenance services (signaling and telecommunication, power supply, railway maintenance, transportation and operation management ,railway locomotive ,rolling stock, railway safety, internal audit, legal service ,finance department) are directly contacted by the researcher to fill the required questioners

Secondary data is usually an existing data that has been collected or gathered by other researchers or authors and accepted as valid and has a direct or an indirect link with the study conducted. Secondary data may not have been collected for the same purpose or study been

conducted. A secondary source data of the study was generated through a review of prior studies for the main purpose of comparison of the findings of this study with prior results.

3.4 Population and sample

3.4.1 Target population

A population is defined as the set of individuals, objects, or data from where a statistical sample can be drawn (Saunders et al., 2014). Population is the entire group of individuals, events or objects having a common observable characteristic (Copper & Schindler, 2014). Cooper and Schindler further add that a population is the total sum of collected units from which the researcher draws conclusions of the study.

Since the main purpose of the study is to examine the factors affecting knowledge transfer in EDR Share Company, the study targets a population of 88 employees which are involved in the knowledge transfer process. Considering time and cost constraints the target sample or respondents are selected by using convenience sampling method. Convenience sampling method is used for the study since it allows getting data by achieving the sample size in a relatively affordable and easiest way. In addition, it also facilitates the data gathering process by following limited rules to overcome the limitations of the sampling method.

3.4.2 Sampling methods and sample size

3.4.2.1 Sampling methods

Sampling is the systematic selection of research participants or individuals that the research wants to take part in the study. Sampling technique is the methods used in drawing samples from a population was driven by the objectives of a given research activity (Creswell, 2004).

The current study depend on non-probability sampling; namely, convenience sampling. Non probability sampling is a sampling technique in which some parts of the population have zero chance of selection or where the probability of selection cannot be accurately determined (Bhattacherjee, 2012). According to Kothari (2004) when the population element were selected for inclusion in the sample based on the easiest of access, it can be called convenience sampling

.This is a technique in which a sample is drawn from that part of the population that is close to hand, readily available ,or convenient.

3.4.2.2 Sample Size

As to the sample size determination, among different methods, the one which was developed by Yamane Taro (1967) provides a simplified formula to calculate a precise sample sizes with 95% confidence level and p = 0.5 is assumed for equation:

$$n=N/1+N\,(e)^{2}$$

Where: n designates the sample size of the research.

e: Designates maximum variability or margin of error 5%.

1: The probability of the event occurring.

N: Target population of the study.

When this formula is applied to the target population the sample size obtained as:

$$n = N/1+N\,(e)^{2} \qquad n = 88/1+88\,(.05)2 = \underline{\underline{72}}$$

Using this formula out of 88 target population 72 employees was selected.

3.5 Data collection procedure

Respondents were contacted with the help of a self-administered questionnaire which was delivered in person and e-mails. Questionnaires were used in this study for collecting opinions and practical experiences of employees from a range of departments including signaling and telecommunication, power supply, railway maintenance, transportation and operation management ,railway locomotive ,rolling stock, railway safety, internal audit, legal service ,finance department. This particular instrument was selected due to its efficiency of data collection, cost benefits and time limitations. The survey consisted of closed ended questions that follow a logical progression starting with simple themes and progressing to complex issues to maintain the interests of respondents.

The first page of the questionnaire explained the objectives of the study. In subsequent sections, respondents were asked to use a five-point Likert-type scale to indicate the extent to which influencing factors affect knowledge transfer in their particular environments.

3.6 Ethical consideration

The major ethical issues considered in conducting this research are:

- Informed Consent: A person knowingly, voluntarily and intelligently, and in a clear and manifest way, gives his consent.
- Do not harm: It is the professional mandate of the researcher to protect research participants and follow the guiding foundation of "do no harm" if human subjects are utilized in the study.
- Respect for anonymity: The subject's identity cannot be linked with personal responses.
- Respect for privacy: Private information such as opinions, beliefs and attitudes of individual will not be shared.
- Fabrication of data: falsifying of data would be avoided throughout the study to promote the pursuit of knowledge and truth

3.7 Validity and Reliability

A few of the survey items were adopted from previous research studies and modified to the research sample. In order to verify the content validity, subject matter managers and experts were consulted. Moreover, appropriate time schedule was selected so that all the respondents provided appropriate answers without feeling the burden of time. The kind of instrument selected in this study also provided freedom and autonomy to respondents to express their true feelings. Similarly, the sampling technique employed in this study provides respondents across the organization lots of chances to participate in this survey based on their freewill.

On the other hand, reliability refers to the degree of consistency or accuracy with which an instrument measures the attribute it is designed to measure. In this study, Cronbach‟s alpha was used to evaluate the internal consistency of the test items.

3.8 Interpretation of Reliability Outputs

Reliability tells about stability of the results that is how accurately the study or measuring has been carried out. It refers to whether a measurement instrument is able to yield consistent results each time it was applied. It is also the property of measurement device that causes it yield similar outcomes for similar inputs. In this study, Chronbach's alpha value used to measure internal consistency of the mean of the items at the time of administration of the questionnaire. Cronbach's Alpha is a reliability coefficient that indicates how well the items in a set are positively related to one another (Shuttleworth, 2015). To test the internal reliability, most researchers use Cronbach's alpha, which calculates the average of all split-half reliability coefficients. This proposal used the Cronbach's alpha for calculating whether or not the hypotheses will be accepted or rejected, and, by using this data analysis method, it will try to strengthen the internal reliability of the findings in this thesis. According to the standard set by George and Mallery (2003) the reliability test will be acceptable if it is greater than the cut-off limit of 0.70.

Table 3.1 Reliability Statistics

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.819	.834	6

Source: SPSS Output from survey result, 2020

3.9 Method of Data Analysis

In this study in order to address the research questions, objective of the study on which investigate relationship among variables the research was designed to follow a mixed method.

To this end, both qualitative and quantitative data analyses were used. Data collects by using questionnaire was analyzed through both Descriptive & inferential statistics, and conducted analysis through used of SPSS ver. 20. In related to inferential statistics to investigate the relationships between each independent & dependent variables of the study & perform significant & Hypothesis test, employed the regression analysis & Pearson correlation regarding

the independent and dependent variables relationship & ANOVA results. Measures of central tendency (mean and standard deviation) were also used to analyze the qualitative data were collected. And also, data collected from the interview and reviews of documents were interpreting qualitatively through descriptive analysis.

3.9.1 multiple regression and correlation

When there are two or more independent variables, the analysis concerning relationship is known as multiple correlations and the equation describing such relationship as the multiple regression equation. It is statistical tool that allows examining how multiple independent variables are related to a dependent variable.

Accordingly, regarding to the independent & dependent variables of the study, the model of

KT = β0+ β1OF+ β2 VF+ β3RF+ β4KF+β5RLPF + Ei

Where:-

KT= knowledge transfer factor (Dependent variable of the study)

β0 = constant or intercept

OF = Organizational factor (an independent Variables)

VF = Vendor related factor (an independent Variables)

RF = Recipient related factor (an independent Variables), and

KF = knowledge related factor (an independent Variables)

RLPF = relationship related factor (an independent Variables)

β1= the coefficients for organizational factor

β2= the coefficients for vendor related factor

β3= the coefficients for recipient related factor

β4= the coefficients for knowledge related

β5= the coefficients for relationship related

Ei = Error factor

Source: Fikru, (2012) & Zakari (2014) with modification depends on the variables of this study

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1. Introduction

This chapter presents result and discussion part of the paper. As explained in the earlier chapters, this study aimed at investigating factors affecting the knowledge transfer: the case of Ethio-Djibouti standard gauge railway Share Company. Therefore, this part of the paper tries to analyzes, summarizes and presents the result of the collected data that influence knowledge transfer.

4.2 Rates of Response

Respondents response rate refers to the proportion of questionnaires that were returned and filled during the study in relation to total number of questionnaires expected to be filled. A total of 72 questionnaires were distributed to target respondent. Out of the total 72 questionnaires, 69 questionnaires were obtained which is 95.8% response rate.

4.3. General Information about the Respondents

The first part of the questionnaire consists of general information about the respondents and it requested a limited amount of information related to personal and professional characteristics of the respondents. Demographics information of the respondents was presented by gender, age, educational level, and respondent's department. Accordingly, the following variables about respondents were summarized and described.

Table 4.3 General information about the respondents

Product Dimension	Measurement scale	N=69	100 %
Gender	Male	65	94.2
	Female	4	5.7
Age	18-30	11	15.9
	31-40	52	75.3
	41-50	6	8.7
	Above 50	-	-
Educational Level			
	Diploma	-	-
	First degree	13	18.8
	Masters or above	56	81.1
Department	railway signalling and telecom	11	15.9
	railway power supply	7	10.1
	Railway maintenance	19	27.5
	Railway transportation	11	15.9
	Railway rolling stock	12	17.4
	Railway safety	7	10.1
	Internal audit	1	1.4
	Finance	1	1.4

Source: SPSS Output from survey result, 2020

As the above table depicts, male respondent constitutes the largest portions of respondents, which is about 94% of the sample size, while female respondents covers 6% of the total. This implies that majority of the participants in the research were male.

The age of the respondents were classified in range and majority of the respondents (75%) in age group 31-40 years, (16%) in age group 18-30 and very small number of the respondents (9%) were in age group 41-50 years. educational level of the respondents were also assessed. Large number of the respondents (81%) had masters or above, and (19%) respondents had first degree education qualification.

Regarding departmental composition of respondents, 15.9% are from railway signaling and telecom, 10.1% are from railway power supply, 27.5% are from railway maintenance, 15.9% are from railway transportation & operation, 17.4% are from rolling stock, 10.1% are from railway safety, 1.4% are from internal audit and 1.4% are from finance.

4.4 Descriptive Statistics

The feedback of the respondents for the variables indicated below were measured on five point Likert scale with measurement value 1= Strongly disagree; i.e. very much dissatisfied with the case described; 2= Disagree, i.e. not satisfied with the case described; 3= Neutral, i.e., uncertain with the case described; 4= Agree, i.e., feeling all right with the case described and considered as satisfy; and 5 =strongly agree, i.e. very much supporting the case described and considered as highly satisfy. To make easy interpretation, the following ranges of values were reassigned to each scale: Less than 2.8 = Disagree, 2.9-3.2 = Neutral, Above 3.2 = Agree

4.4.1 Organization related factor

According to Sepideh Shahidi et al. (2015), successful implementation of knowledge transfer depends on organizational culture, development of suitable infrastructure, incorporate knowledge management system to organizational processes and information systems. The respondents were asked to indicate their levels of agreement. The findings are presented in the table 4.4.1 below.

Table 4.4.1 organization related factor

S.	**organization related factor**		**SD**	**D**	**N**	**A**	**SA**	**MS**	**SDV**
1	The organization have clear picture on the type of knowledge and implement the knowledge transfer strategy.	N=69	24	25	16	4	-	2.00	.90
		100	34.8	36.2	23.2	5.8	-		
2	There are established processes and clear procedures to facilitate project knowledge transfer.	N=69	22	30	14	3	-	1.97	.83
		100	31.9	43.5	20.3	4.3	-		
3	There is a reward and incentive system for knowledge transfer.	N=69	22	35	9	2	1	1.91	.83
		100	31.9	50.7	13.0	2.9	1.4		
4	Training content and quality is continuously evaluated to make sure it is both current and effective, making changes accordingly.	N=69	24	34	9	1	1	1.85	.80
		100	34.8	49.3	13.0	1.4	1.4		
5	There is a trend of letting employees talk and share ideas within the company.	N=69	32	34	3	-	-	1.57	.57
		100	46.4	49.3	4.3	-	-		
6	Opportunities are created for both formal and informal KT mechanisms.	N=69	32	27	10	32	-	1.68	.71
		100	46.4	39.1	14.5	46.4	-		
7	The senior managers support employees to provide alternative perspectives and contribute their efforts.	N=69	26	32	10	1	-	1.79	.73
		100	37.7	46.4	14.5	1.4	-		
	Valid N							1.82	0.76

Source: SPSS Output from survey result, 2020

Analyzing the data obtained from the questionnaire, table 4.4.1 reveals that the study measured organizational related factors. Concerning the organization have clear picture on the type of

knowledge and implement the knowledge transfer strategy, the survey result showed that, 35% of respondents were strongly disagreed, 36% of respondents were disagreed, 23% of respondents are neutral; while 6% respondents were agree. As a result the majority of the respondents disagreed with organization have clear picture and implement the knowledge transfer strategy.

With regard to "There are established processes and clear procedures to facilitate project knowledge transfer" The feeling of respondents indicates that 32% and 43% of respondents strongly disagree and disagrees respectively. Thus, it indicates that the organization doesn't establish clear process and procedures to facilitate project knowledge transfer.

The above table shows perception of respondents about reward and incentive system for knowledge transfer. About 32% and 50% of the respondents were strongly disagreed and disagree respectively. However, 13% respondents were neutral regarding this issue.

Analyzing the data obtained from the questionnaire concerning training content and quality is continuously evaluated to make sure it is both current and effective, making changes accordingly, the result showed that, 34% and 49% of respondents were strongly disagreed and disagreed respectively, 13% of respondents are neutral; while 2.8% respondents were agreed. As a result the majority of the respondents indicate that training content and quality is not continuously evaluated.

Organization related factor in this study comprises seven items that intended to measure the degree of knowledge transfer. It has scored 1.82 grand mean which fall in the range of below 2.8, it is considered as respondents were disagreed.

4.4.2 Vendor Related factors

The success of knowledge transfer is highly dependent on the willingness of the vendors to share their crucial knowledge. Szulanski (1996) claims that knowledge source's ability and willingness to devote time and resources to support the transfer of knowledge to the recipient is essential for successful knowledge transfer. Table 4.4.2 below illustrates the reflection of the respondents regarding vendor related factors.

Table 4.4.2 vendor related factors

S.	Vendor Related factors		SD	D	N	A	SA	MS	SDV
1	Vendors are capable of disseminating knowledge without difficulty.	N=69	14	36	15	4	-	2.13	.80
		100	20.3	52.2	21.7	5.8	-		
2	Vendors were willing and transparent so that they usually allowed access to their knowledge-base.	N=69	1	47	19	2	-	2.31	.55
		100	1.4	68.1	27.5	2.9	-		
3	Vendor's have the required capability and expertise to provide the needed knowledge.	N=69	1	44	22	2	-	2.36	.56
		100	1.4	63.8	31.9	2.9	-		
4	Vendors were reliable and trustworthy to transfer quality knowledge.	N=69	2	35	27	5	-	2.50	.67
		100	2.9	50.7	39.1	7.2	-		
	Valid N							2.32	0.64

Source: SPSS Output from survey result, 2020

Table 4.4.2 above depicts perception of respondents about vendor's capabilities of disseminating knowledge without difficulty. 21% of respondents were neutral; about 20% and 52% of the respondents were strongly disagreed and disagree respectively. This tells us vendors are not capable of disseminating knowledge without difficulty.

With regard to "Vendors were willing and transparent so that they usually allowed access to their knowledge-base." The feelings of respondents indicate that 1.4% and 68% of respondents strongly disagree and disagree respectively. Thus, it indicates that vendors are not willing and transparent to transfer knowledge.

The description presented on table 4.4.2 tells us the majority (65%) of the respondents were found vendor's doesn't have the required capability and expertise to provide the needed knowledge. The rest 31% of the respondents, however, found to be neutral regarding the

aforementioned statement, while 33% of them show their agreement with the capability and expertise of vendor.

With regard to “Vendors were reliable and trustworthy to transfer quality knowledge” the feeling of respondents indicates that 2.9% and 50.7% of customers strongly disagree and disagrees respectively. Thus, it indicates that vendors weren’t reliable and trustworthy to transfer quality knowledge.

They responded having a scored mean value of 2.32 this shows that the respondents were “disagreed” with the above listed items.

4.4.3 Recipient Related factors

The transfer of knowledge depends not only on the characteristics of the knowledge transferred, but also on the learning capability, absorptive capacity and motivation of the recipient of knowledge. Learning capability is the extent to which the receipt has the potential to learn and acquire new knowledge and skills proposed by the source (Tsang, 2002). The respondents were asked to indicate their levels of agreement. The findings are presented below in the table 4.4.3

Table 4.4.3 Recipient Related factors

S.	Recipient Related factors		SD	D	N	A	SA	MS	SDV
1	Employees have good perception about the benefits of capturing and disseminating knowledge in the company.	N=69	-	2	23	26	18	3.86	.83
		100	-	2.9	33.3	37.7	26.1		
2	Employee's roles within the project office were clear so that everybody knows the kind of knowledge needed in his work area.	N=69	-	10	35	18	6	3.28	.82
		100	-	14.5	50.7	26.1	8.7		
3	Project staffs have the desired competence to absorb new knowledge from vendors.	N=69	-	1	16	31	21	4.04	.77
		100	-	1.4	23.2	44.9	30.4		
4	Employees have the desire, commitment and intent to learn and acquire new knowledge from vendors.	N=69	-	4	32	21	12	3.59	.84
		100	-	5.8	46.4	30.4	17.4		
	Valid N							3.69	0.81

Source: SPSS Output from survey result, 2020

The description presented on table 4.4.3 tells us the majority (63%) of the respondents were found to be confident with the above statement. The rest 33% of the respondents, however, found to be neutral regarding the aforementioned statement, while 3% of them show their disagreement with employee's perception about the benefits of capturing and disseminating knowledge in the company.

With regard to "Employee's roles within the project office were clear so that everybody knows the kind of knowledge needed in his work area." the feeling of respondents indicates that 8.7% and 26% of customers strongly agree and agrees respectively. Thus, it indicates that employee's

roles within the project office were clear so that everybody knows the kind of knowledge needed in his work area.

Table 4.4.3 above depicts project staffs have the desired competence to absorb new knowledge from vendors, 23% of respondents were neutral; about 30% and 45% of the respondents were strongly agreed and agree respectively.

As it can be observed from the above table, respondents have generally developed positive perception regarding recipient related factors. It indicating that grand mean value is 3.69 which are above the cut-off point 3.2.

4.4.4 Knowledge Related factors

The nature and the characteristics of the knowledge being transferred have been recognized as important factor that impact effectiveness of knowledge transfer. There are three major factors associated with knowledge namely; tacitness, complexity and causal ambiguity (Ugur Uygur, 2013). Table 4.4.4 below illustrates the reflection of the respondents regarding the knowledge related factors.

Table 4.4.4 Knowledge Related factors

S.	Knowledge Related factors		SD	D	N	A	SA	MS	SDV
1	Some of the knowledge possessed by vendors was not complex, and thus easy to be transferred.	N=69	-	5	14	33	17	3.89	.85
		100	-	7.2	20.3	47.8	24.6		
2	Some knowledge was really simple and easy to understand only by attending seminars, workshops and trainings offered by vendors.	N=69	-	7	16	29	17	3.81	.92
		100	-	10.1	23.2	42.0	24.6		
3	On job practical trainings are directly related with the theoretical knowledge so that easy to capture.	N=69	-	12	11	29	17	3.73	1.02
		100	-	17.4	15.9	42.0	24.6		
4	The reading materials are supported with pictures, tables, graphs....so that clearly describes the subject matter.	N=69	-	2	31	23	13	3.68	.81
		100	-	2.9	44.9	33.3	18.8		
5	The knowledge is easy that the recipient doesn't need additional formal training time on subject matters.	N=69	-	1	28	33	7	3.66	.67
		100	-	1.4	40.6	47.8	10.1		
	Valid N							3.75	0.85

Source: SPSS Output from survey result, 2020

As shown in table, out of 69 respondents, 24% and 48% of the respondents agree and strongly agree respectively with knowledge possessed by vendors was not complex, and thus easy to be transferred, while 7% of the respondents were disagreed and the rest 20% of the respondents were uncertain about it.

Regarding to some knowledge was really simple and easy to understand only by attending seminars, workshops and trainings offered by vendors; the majority of respondents (68%) agreed that the knowledge transfer is really simple and easy to understand.

The respondents were asked on job practical trainings are directly related with the theoretical knowledge so that easy to capture. About 16% and 68% of the respondents selected neutral and agree respectively. However, 17% respondents were disagreeing regarding this issue. Therefore, the majority of the respondents agreed on job practical trainings are directly related with the theoretical knowledge and easy to capture.

Table 4.4.4 above depicts the reading materials are supported with pictures, tables; graphs so it clearly describes the subject matter, 45% of respondents were neutral; about 19% and 33% of the respondents were strongly agreed and agree respectively.

They responded having a scored mean value of 3.75 this shows that the respondents were "agreed". It is found that knowledge related factors are one of the major factors for knowledge transfer.

4.4.5 Relationship related factors

The nature of the relationship and the interaction between individuals of the client and the vendor organizations found to impact the effectiveness and the success of knowledge transfer (Ko et al., 2005). Table 4.4.5 below illustrates the reflection of the respondents regarding relationship related factors.

Table 4.4.5 relationship Related factors

S.	Relationship Related factors		SD	D	N	A	SA	MS	SDV
1	Working with vendors having different cultural backgrounds was a challenge.	N=69	-	6	14	34	15	3.71	.86
		100	-	8.7	20.3	49.3	21.7		
2	Language is a barrier between clients and vendors to knowledge transfer effort.	N=69	-	5	11	43	10	3.68	.75
		100	-	7.2	15.9	62.3	14.5		
3	Incompatibility with foreign vendors in work behavior and decision making process created a major problem for knowledge transfer.	N=69	1	2	19	32	15	3.91	.85
		100	1.4	2.9	27.5	46.4	21.7		
	Valid N							3.76	0.82

Source: SPSS Output from survey result, 2020

Regarding to working with vendors having different cultural backgrounds was a challenge; the majority of respondents (71%) employees are agreed that working with vendors having different cultural backgrounds was a challenge.

The respondents were asked language is a barrier between clients and vendors to knowledge transfer effort. About 14.5% and 62% of the respondents selected strongly agree and agree respectively. However, 7% respondents were disagreeing regarding this issue. Therefore, the

majority of the respondents agreed that language is a barrier between clients and vendors to knowledge transfer effort.

As shown in table, out of 69 respondents, 46% and 21% of the respondents agree and strongly agree respectively with incompatibility with foreign vendors in work behavior and decision making process created a major problem for knowledge transfer. The overall mean rating and the standard deviation of the respondents' for relationship related factors was 3.76 and .82 respectively.

4.4.6 Knowledge transfer

Knowledge transfer processes is a relationship between different stakeholders in a knowledge base institution. Table 4.4.6 below illustrates the reflection of the respondents regarding knowledge transfer.

Table 4.4.6 knowledge transfer

S.	knowledge transfer		SD	D	N	A	SA	MS	SDV
1	Knowledge is easily transferred through documents, meetings and trainings.	N=69	-	6	13	33	17	3.88	.88
		100	-	8.7	18.8	47.8	24.6		
2	On-the-job training and mentoring are more effective to capture project knowledge from vendors.	N=69	-	2	13	34	20	4.04	.77
		100	-	2.9	18.8	49.3	29.0		
3	Knowledge transfer can be enhanced through the use of a variety of social events.	N=69	-	1	12	33	23	4.13	.74
		100	-	1.4	17.4	47.8	33.3		
4	Social relationships and informal ties enabled tacit knowledge transfer.	N=69	-	5	9	33	22	4.04	.86
		100	-	7.2	13.0	47.8	31.9		
	Valid N							4.02	0.81

Source: SPSS Output from survey result, 2020

Table 4.4.6 above depicts knowledge is easily transferred through documents, meetings and trainings. 18% of respondents were strongly disagreed; about 48% and 24% of the respondents were strongly agreed and agree respectively. This tells us knowledge is easily transferred through documents, meetings and trainings.

With regard to "On-the-job training and mentoring are more effective to capture project knowledge from vendors", they responded having a scored mean value of 4.04 this shows that the respondents were "agreed" that on-the-job training and mentoring are more effective.

The description presented on table 4.4.5 tells us the majority (81%) of the respondents agreed that knowledge transfer can be enhanced through the use of a variety of social events. The rest 17% of the respondents, however, found to be neutral regarding the aforementioned statement.

The respondents were asked on social relationships and informal ties enabled tacit knowledge transfer. About 48% and 32% of the respondents selected agree and strongly agree respectively. However, 7% respondents were disagreeing regarding this issue. Therefore, the majority of the respondents agreed that social relationships and informal ties enabled tacit knowledge transfer.

4.5 Inferential Analysis

The inferential analysis section includes correlation and regression analysis to investigate factors that influence knowledge transfer.

4.5.1 Correlation Analysis

Correlation analysis is a method of statistical evaluation used to study the strength of a relationship between two, numerically measured, continuous variables (Fikre et al, 2009).

According to Mooi and Sarstedt (2011), the calculated value of the correlation coefficient ranges from -1 to 1, where -1 indicates a perfect negative relation (the relationship is perfectly linear) and 1 indicates a perfectly positive relationship.

The correlation between dependent and independent variables along with the causal effect was analyzed using Statistical Package for Social Science (SPSS). The below correlation matrix

shows correlation between variables in the questionnaire with a Pearson Correlation coefficient to show the strength of relationship among the variables considered in the questionnaire.

Table 4.5.1: Correlations

Correlations

		org	vendor	recipient	knowledge	Relationship
ORG	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	69				
VRNDOR	Pearson Correlation	.523**	1			
	Sig. (2-tailed)	.000				
	N	69	69			
RECIPIENT	Pearson Correlation	.259*	.521**	1		
	Sig. (2-tailed)	.032	.000			
	N	69	69	69		
Knowledge	Pearson Correlation	.486**	.705**	.530**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	69	69	69	69	
Relationship	Pearson Correlation	.204	.365**	-.056	.250*	1
	Sig. (2-tailed)	.093	.002	.645	.038	
	N	69	69	69	69	69

KT	Pearson Correlation	.594**	.820**	.510**	.751**	.386**
	Sig. (2-tailed)	.000	.000	.000	.000	.001
	N	69	69	69	69	69

Correlation is significant at the 0.01 level (2-tailed)

Source: SPSS Output from survey result, 2020

According to Bartz (1999), the interpretation of correlation value is as follows:-

Between 0 to .20 → Very low correlation

Between .20 to .40 → Low correlation

Between .40 to .60 → Moderate correlation

Between .60 to .80 → Strong correlation

Between .80 to 1.0 → High correlation

Based on the classification, the result in the above table is interpreted as below:-

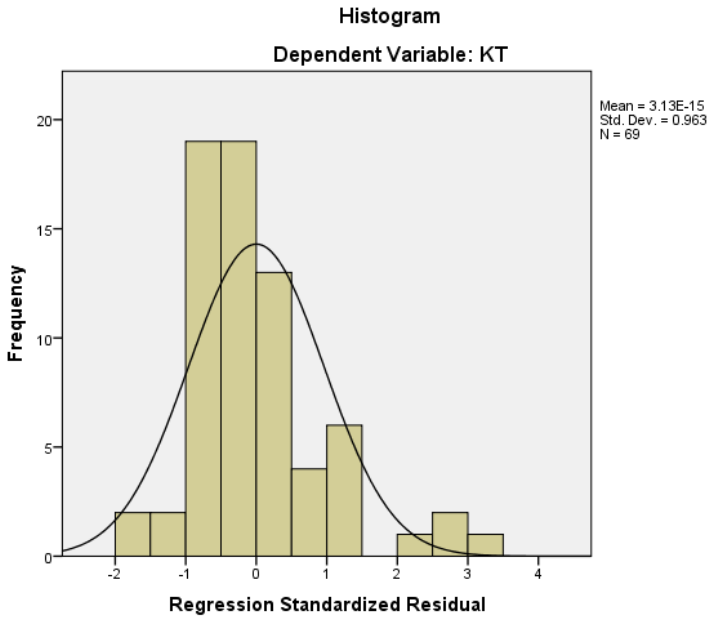
- There is moderate, positive and significant correlation between organizational related factor and knowledge transfer **(r= .594** P ≤ 0.01)**
- There is High, Positive and significant correlation between vendor related factor and knowledge transfer **(r = .820** P≤ 0.01)**
- There is moderate, positive and significant correlation between recipient related factor and knowledge transfer **(r = .510** P ≤ 0.01)**
- There is strong, positive and significant correlation between knowledge related factor and knowledge transfer **(r = .751** P ≤ 0.01)**
- There is low, positive and significant correlation between relationship related factor and knowledge transfer **(r = .386** P ≤ 0.01)**

4.5.2 Normality Test

A normal distribution is one of the importantly assumed statistical procedures. Normal distributions take the form of a symmetric bell shaped curve. The standard normal distribution is one with a mean of 0 and a standard deviation of 1 (Garson, 2012). The study employed the relevant normality tests.

As we seen in the below figure (figure 4.7.2), Bera-Jarque statistic has a P-value of 0.963 implying that the data were consistent with a normal distribution assumption and the assumptions of simple linear regression have been met and we can possibly assume that the model is accurate and can probably generalize to the population.

Graph 4.5.2 Normality Test

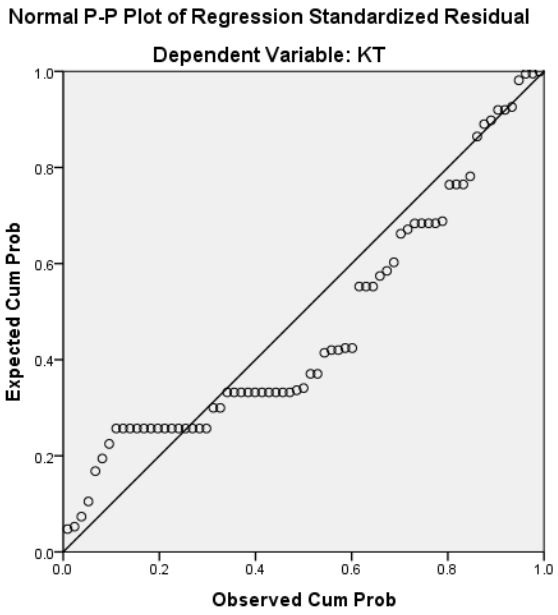


Source: SPSS Output from survey result, 2020

4.5.3 Linearity Test

Garson (2012) pointed out; simple inspection of scatter plots is a common method for determining if nonlinearity exists in a relationship. Consequently, the researcher run simple scatter plot to see if there is a linear relationship exists between the variables.

Figure 4.5.3: Normally distributed errors



Source: SPSS output (2020)

The straight line in this plot represents a normal distribution, and the points represent the observed residuals. Therefore, in a perfectly normally distributed data set, all points will lie on the line (Field, 2009).

Likewise, as we seen in the above figure (figure 4.7.3), the dots are closely plotted to the straight line, which indicate a small or no deviation from normality and there are no extreme cases observed. Therefore, the assumptions of simple linear regression have been met and we can possibly assume that the model is accurate and can probably generalize to the population.

4.5.4 Multicollinearity Test

Multicollinearity is a situation where two or more explanatory (predictor) variables in a multiple regression model are related to each other and also with the response variable. (Akimande O. et al, 2015). If there is Multicollinearity in the model, the estimated coefficients possess large standard error, which means the coefficients cannot be estimated with great precision or accuracy (Gujarati, 2009). To alleviate this problem one or more of the correlated variables must be dropped from the model. Therefore, the study checks for the presence of Multicollinearity in the

model. The collinearity statistics result for all independent variable constituents were performed on SPSS and presented as follows.

Table 4.5.4: Multicollinearity Test

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	Organization	.695	1.439
	Vendor	.382	2.621
	Recipient	.604	1.655
	Knowledge	.445	2.249
	Relationship	.779	1.284

Source: SPSS Output from survey result, 2020

The values of Variance Inflation Factor (VIF) for all independent variables or factors are less than 10 (Gareth James, 2013). Hence, there is no multi- co-linearity among independent variables. Therefore, it is possible to use correlation and multiple regressions analysis.

4.5.5 Multiple Regression Analysis

Linear regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable (Field, 2005). It includes many techniques for modelling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. More specifically, regression analysis helps one understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed.

Table 4.5.5: Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.877[a]	.769	.751	.04352

Source: SPSS Output from survey result, 2020

R – Indicates the value of the multiple correlation coefficient between the predictors and the outcome, with a range from 0 to 1, a larger value indicating a larger correlation and representing an equation that perfectly predict the observed value (Pedhazur, 1982). From the model summery (R = 0.877) indicates that the linear combination of the five independent variables strongly predict the dependent variable (knowledge transfer).

R-Squared is the proportion of variance in the dependent variable which can be explained by the independent variables. The R-squared in this study was 0.769, the weighted combination of the independent variables explained in the model summary are affect approximately 76.9% of the variance of knowledge transfer and the remaining 23.1% is by extraneous uncontrollable variables. This result also indicates that there may be other variables that could have been neglected by the current study in predicting knowledge transfer.

Table 4.5.6: Analysis of Variance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.398	5	.080	42.046	.000[b]
	Residual	.119	63	.002		
	Total	.517	68			

Source: SPSS Output from survey result, 2020

ANOVA is used to assess the statistical significance of the result by testing the Null hypothesis that multiple R in the population equals 0. (Pallant J., 2005). The model of this study hence proves to be statistically significant by showing .000 significance. The above ANOVA table shows the acceptability of the model. The p-value is less < 0.05 i.e. 0.001. From the ANOVA table it has been determined that F = 42 and Sig. is .000 which confirms that the independent variables have significant impact on knowledge transfer.

Table 4.5.7 Regression Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.002	.244		.008	.993
	Organization	.140	.056	.182	2.513	.015
	Vendor	.397	.090	.435	4.439	.000
	Recipient	.095	.074	.100	1.279	.005
	knowledge	.277	.093	.272	2.994	.004
	relationship	.100	.054	.128	1.874	.006

Source: SPSS Output from survey result, 2020

Based on these results, the regression equation that predicts knowledge transfer based on the linear combination of independent variable is:

Regression Equation

Y = a + bX1 + bX2 + bX3 + bX4…

KT = 0.002 + .182ORG + .435VEN + .100REC + .272KNOW + .128R/SHIP

Where, ORG = Organization

VEN = Vendor

REC = Recipient

KNOW = knowledge

R/SHIP = relationship

KT = knowledge transfer

Five major hypotheses were constructed in this study to test factor that effects of knowledge transfer.

Hypothesis Testing

Hypotheses # 1

H1:- organizational related factor has a positive and significant influence on knowledge transfer.

The result in the above table shows that organizational related factor has a beta coefficient of .182 with a significant value of .015. This indicates that organizational related factor makes a positive, statistically significant and unique contribution to the predication of knowledge transfer. Therefore, controlling the variance explained by all other variables in the model; organizational related factor contributes 18% to the variance explanation of the dependent variable. Thus the hypothesis is accepted.

Hypotheses # 2

H2:- vendor related factor has a positive and significant influence on knowledge transfer.

The result in the above coefficient table shows that vendor related factor has a beta coefficient of .435 with significance value of .001. This indicates that vendor related factor makes a positive, statistically significant and unique contribution to knowledge transfer. Therefore, controlling the variance explained by all other variables in the model, vendor related factor contributes 43.5% to the variance explanation of the dependent variable. Thus the hypothesis is accepted.

Hypotheses # 3

H3: - recipient related factor has positive and significant influence knowledge transfer.

As per the result in the above table, recipient related factor has beta coefficient of .100 with significance value of .001. This is an indication that recipient related factor makes a positive, statistically significant and unique contribution to the predication of knowledge transfer. Thus the hypothesis is accepted. Further controlling the variance explained by all other variables in the model, recipient related factor contributes 10% to the variance explanation of the dependent variable. Thus the hypothesis is accepted.

Hypotheses # 4

H4: knowledge related factor has positive and significant influence knowledge transfers.

As per the result in the above table, knowledge related factor has a beta coefficient of .272 with significance value of .001. This indicates that knowledge related factor makes a positive, statistically significant and unique contribution to the prediction of knowledge transfers. Further, controlling the variance explained by all other variables in the model, knowledge related factor contributes 27.2% to the variance explanation of the dependent variable. Consequently, considering the significance of knowledge related factor to knowledge transfers, H4 is accepted.

Hypotheses # 5

H5: relationship related factor has a positive and significant effect on knowledge transfer.

As per the result in the above table, relationship related factor has beta coefficient of .128 with significance value of .001. This is an indication that relationship related factor makes a positive, statistically significant and unique contribution to the predication of knowledge transfer. Further controlling the variance explained by all other variables in the model, relationship related factor contributes 12.8% to the variance explanation of the dependent variable. Thus the hypothesis is accepted.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Finding

The main purpose of the study was to analyze factors that influence knowledge transfer: the case of Ethio-Djibouti standard gauge railway Share Company.

The summary of this study is drawn from the key findings by assessing the data obtained from primary and secondary source in order to find out factors that influence knowledge transfer. Based on the major findings, presented above the following summary of findings were drawn.

The survey population comprises different department of Ethio-Djibouti standard gauge Share Company. Since it is challenging to cover all population through survey, this study has used sampling techniques to arrive at representative sample. Thus, sample of 72 respondents were randomly sampled for the survey. From that 69 of the self-administered questionnaire were filled and returned to the researcher. Data for this study was gathered through self-administered questionnaires.

As depicted in descriptive statistics, Recipient Related factors was the highest mean score of 4.04 and followed by Relationship related factors (Mean = 3.76), Knowledge Related factors (Mean = 3.75), Vendor Related factors (Mean = 2.32), and organization related factor (Mean=1.82).

Thus the two tailed Pearson correlation coefficient shows that there is a significant relationship between organization related factor, vendor related factors, recipient related factors, knowledge related factors ,and relationship related factors with knowledge transfer, and place at 5% significant level. The relationship looks like the following:-

- There is moderate, positive and significant correlation between organizational related factor and knowledge transfer **(r= .594** P ≤ 0.01)**
- There is high, positive and significant correlation between vendor related factor and knowledge transfer **(r = .820** P≤ 0.01)**

- There is moderate, positive and significant correlation between recipient related factor and knowledge transfer **(r = .510** P ≤ 0.01)**

- There is strong, positive and significant correlation between knowledge related factor and knowledge transfer **(r = .751** P ≤ 0.01)**

- There is low, positive and significant correlation between relationship related factor and knowledge transfer **(r = .386** P ≤ 0.01)**

Multiple linear regression analysis was applied to evaluate the extent of factors that influence knowledge transfer and came up with the following equation:

$$Y = a + bX1 + bX2 + bX3 + bX4 \ldots$$

$$KT = 0.002 + .182ORG + .435VEN + .100REC + .272KNOW + .128R/SHIP$$

$$R^2 = 76.9$$

The regression analysis clearly shows that 76.9% of variance in knowledge transfer is explained by organizational related factors, vendor related factors, recipient related factors, knowledge related factor, and relationship related factors.

5.2 Conclusion

Primary data was gathered by using structured questionnaire. Quantitative descriptions were applied on the data gathered to analyze the information obtained. By undertaking a detailed analysis of the situation, the following findings were obtained. Majority of the respondents indicated that:

- The knowledge transfer practices in the organization outsourced activities are not full-fledged. The major areas of findings in the current knowledge transfer practices are lack of established processes and procedures, lack of incentives to knowledge transfer initiatives and inefficient evaluation of training content and quality.
- The company is also going through lots of challenges hindering the effectiveness of knowledge transfer in the current organizational settings. The major findings comprise; lack of organizational readiness, undesirable organizational politics, national culture

differences, language barrier, and inappropriate client-vendor relationships. All of these have been deemed to bring great challenge towards EDR's knowledge transfer practice in offshore outsourced activities.

Although most of EDR seconded staffs and vendors work force are academically accomplished, the findings from this study demonstrate that the existence of a variety of aptitude factors hamper the current knowledge transfer progression. Some of the factors affecting knowledge transfer include; limited capability of vendors to disseminate knowledge, lack of willingness and trustworthiness on vendor teams.

5.3 Recommendations

This study raised a number hypotheses was designed related to the study variables. The main purpose of the study was to analyze factors that influence knowledge transfer. The study applied an explanatory study and tried to infer the findings through testing the hypotheses. And based on the conclusions drawn above the following recommendations are forwarded for the concerned bodies:-

- The company shall have a mature knowledge transfer process and procedures to support offshore outsourced projects.
- There shall be a framework for addressing incentive schemes. The use of incentive system is needed to motivate and encourage employees to share knowledge freely. Besides the current practice of giving incentives based on performance and milestone achievement, it would be advisable to offer incentives based on knowledge transfer. The incentive scheme can be either in monetary terms or non-monetary terms.
- Continuous evaluation of training contents and their quality shall be implemented in project settings by deploying system based on feedback mechanism to collect valuable information from trainees and stakeholders.

The level of organizational readiness to embark on knowledge transfer in offshore outsourced projects has to get better. Especially on devising a formalized knowledge transfer approach, developing a knowledge base for lessons learned, improving willingness and motivation, getting clear picture on the kind and depth of knowledge, and assigning core and support teams to implement knowledge transfer.

- Reducing the impact of undesirable organizational politics to enhance knowledge transfer and instilling a no-blame culture.
- Develop a mechanism to cope with the impact brought about by the difference in national culture between client teams and vendor teams.
- Put a strict requirement on the vendor team language proficiency in order to profoundly improve the effectiveness of knowledge transfer.
- Formalize all kind of relationships with vendors to avoid informal contracts and mistrusts.
- Education and experience of vendor staffs shall be assessed carefully ahead of project commencement. Besides, the performance of vendor teams shall be monitored by the top management including their capability to disseminate knowledge, willingness and trustworthiness to share quality knowledge.
- Management group of the vendors' teams has to work on the willingness of their employees to transfer quality knowledge both in training environments and on-the-job mentoring through creation of a friendly and supportive environment and nurturing group cohesiveness.

5.4. Suggestions for Further Research

In general, the findings of this study offer additional insights into the effect of factors that influence knowledge transfer. This study included only five factors, there could be some other relevant factors that may be perceived as important by employees, but those were excluded from this study. Secondly, targeting employees only located in Addis Ababa could not adequately represent population of EDR. Therefore, it necessitates for conducting of further research by incorporating others located in other geographical area of the country.

Future researches, Furthermore, can conduct a survey on the feedback of vendors and managements towards knowledge transfer. Therefore, they could expand their analysis by incorporating vendors and managements.

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APPENDIX A: QUESTIONNAIRE

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF GENERAL MANAGEMENT

Questionnaire for factors affecting the knowledge transfer: the case of Ethio-Djibouty standard gauge railway Share Company.

Dear respondents;

I am a graduate student at St. Marry University and currently conducting a research for the completion of my Master of Arts in general management. This research questionnaire aims at gathering data on "factors affecting the knowledge transfer: the case of Ethio-Djibouty standard gauge share company".

This study has a huge importance in contributing towards a better and inclusive understanding of the barriers to knowledge transfer. It also will have undisputed contribution to existing theory. Most of all, it will have great benefit in terms of improving the knowledge transfer practices in EDR's outsourcing activities.

I kindly request you to spend few minutes responding freely to the questions based on your knowledge. The information gathered will be used only for study purpose and not for other purpose. You don't have to write your name.

Brook Geresu

brookgeresu@gmail.com

PART ONE: - GENERAL INFORMATION /DEMOGRAPHIC QUESTIONS

1) Gender

□ Male □ Female

2) Age

□ 18-30 Years □ 31-40 Years

□ 41-50 Years □ above 50 Years

3) Education level

□ High school & below □ Diploma

□ Degree □ Masters & above

4) Which department do you belong to?

□ Railway signalling and telecom □ Railway maintenance

□ Railway transportation □ Railway rolling stock

□ Railway safety □ other (please specify)

5) Kindly, indicate your experience in the organization?

□ Less than 1 year □ 1-4 years

□ 5-9 Years □ above 10 years

PART TWO: - questionnaires regarding factors affecting the knowledge transfer

The following set of questions relate to factors influencing knowledge transfer. Please read and show to what extent you agree with them by marking (√) sign.

NB. 1-SD = Strongly Disagree 2-D = Disagree 3-N = Neutral 4-A = Agree 5- SA = Strongly Agree

	A. organization related factor	**S D**	**D**	**N**	**A**	**S A**
1	The organization have clear picture on the type of knowledge and implement the knowledge transfer strategy					
2	There are established processes and clear procedures to facilitate project knowledge transfer.					
3	There is a reward and incentive system for knowledge transfer.					
4	Training content and quality is continuously evaluated to make sure it is both current and effective, making changes accordingly.					
5	There is a trend of letting employees talk and share ideas within the company.					
6	Opportunities are created for both formal and informal KT mechanisms.					
7	The senior managers support employees to provide alternative perspectives and contribute their efforts					

	B. Vendor Related factors					
1	Vendors are capable of disseminating knowledge without difficulty.					
2	Vendors were willing and transparent so that they usually allowed access to their knowledge-base.					
3	Vendor's have the required capability and expertise to provide the needed knowledge.					
4	Vendors were reliable and trustworthy to transfer quality knowledge.					
	C. Recipient Related factors					
1	Employees have good perception about the benefits of capturing and disseminating knowledge in the company.					
2	Employees roles within the project office were clear so that everybody knows the kind of knowledge needed in his work area.					
3	Project staffs have the desired competence to absorb new knowledge from vendors.					
4	Employees have the desire, commitment and intent to learn and acquire new knowledge from vendors.					
	D. Knowledge Related factors					
1	Some of the knowledge possessed by vendors was not complex, and thus easy to be transferred.					
2	Some knowledge was really simple and easy					

	to understand only by attending seminars, workshops and trainings offered by vendors.					
3	On job practical trainings are directly related with the theoretical knowledge so that easy to capture.					
4	The reading materials are supported with pictures, tables, graphs....so that clearly describes the subject matter.					
5	The knowledge is easy that the recipients doesn't need additional formal training time on subject matters.					
	E. Relationship Related factors					
3	Working with vendors having different cultural backgrounds was not a challenge.					
4	Language is not a barrier between clients and vendors to knowledge transfer effort.					
5	incompatibility with foreign vendors in work behavior and decision making process created a major problem for knowledge transfer.					
	knowledge transfer					
1	Knowledge is formally and easily transferred through documents, meetings and trainings.					
2	On-the-job training and mentoring are more effective to capture project knowledge from vendors.					
3	Knowledge transfer can be enhanced through the use of a variety of social events.					
4	Social relationships and informal ties enabled tacit knowledge transfer.					

What suggestions you can give to the development of knowledge transfer in EDR's?

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THANK YOU!