



**JIMMA UNIVERSITY
COLLEGE OF NATURAL SCIENCE
DEPARTEMENT OF INFORMATION SCIENCE**

**ASSESSMENT OF KNOWLEDGE MANAGEMENT PRACTICES
ON PRODUCT PROCESS IMPROVEMENT FOR DIRE DAWA
NATIONAL AND TURE CEMENT FACTORIES IN ETHIOPIA**

BY

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**JIMMA, ETHIOPIA
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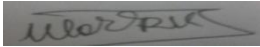
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This thesis entitled “**Assessment of Knowledge Management Practices on Product Process Improvement for Dire Dawa National and Ture Cement Factories in Ethiopia**” has been read and approved as meeting the requirements of department of Information Science in partial fulfillment for the award of the degree of Master of Science in Information Science (Information and Knowledge Management), Jimma University, Jimma, Ethiopia

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DEDICATION

I dedicate this research to my family especially for Emu and friends who were help me.

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Abstract

Knowledge management in organizations reflects the identification and use of collective knowledge whereas knowledge management practices refers to practical aspects of knowledge management, given that manufacturing is the organizations nature of business, there is a link between knowledge management practice and operational benefits. knowledge management practices improved their industries operational activity in a variety of ways, such as reducing the design cycle time, lead time, cost, reducing time product-to-market, and improving the quality of product. This study identified knowledge management practices that exercise in cement factories, policy and culture that is available in cement factories and ICT facility that is currently available in Dire Dawa national and Ture cement factories and also examines the relationship between knowledge management practices and organizational productivity. Then adapted different concepts from pre designed allied Knowledge management models to design Knowledge management framework for product improvements tailored to Ethiopian cement factories context. Qualitative and quantitative approach was used to investigate the existing gaps that may likely be initiated by different contextual attributes. To carry out this investigation a descriptive research method was used. Purposive and simple random sampling was used for selected 143 office employees from the 500 total populations. Questionnaire, interviews and observation check list were used to gather data. The result of present study showed that knowledge creation, knowledge capture, knowledge share and knowledge application are knowledge management practices that exercise in selected cement factories. Principle and organizational written document use as the base of knowledge management policy in the factories and organization used knowledge management practices for business process achievement. The relationship between productivity and available knowledge depends on people, ICT facility and organizational existing policy available in the factories. The limited functionality of ICT facility, the non availability of knowledge management policy and limited capacity knowledge expert are problems that hinder implementation of knowledge management practices in the factories. Moreover the results of the present study revealed a statistically significant correlation ($P \leq .01$ with 0.000 sig values) between knowledge management practices and organizational product process. The data was analyzed and finally knowledge management framework was design and developed for organizational productivity.

Acronyms and abbreviations

BA= Bachelor of Art

BIMA= Business Intelligence Model

BSc =Bachelor of Science

CRIC =Centre for Research on Innovation and Competition

G-KMMM =General Knowledge Management Maturity Model

HR= Human Resource

ICT= Information Communication Technology

IPMS= Improving Productivity and Market Success

IT= Information Technology

K2BE= knowledge management to Business Excellency

KBO= Knowledge-Based Organization

KBS =Knowledge Base System

KM= Knowledge Management

KMP= knowledge management practices

KS= Knowledge Sharing

MIS = Management Information System

OECD=Organization for Economic Co-operation and Development

OPC= Ordinary Portland Cement

PLC=Public Limited Company

PPC=Pozolana Portland Cement

R&D= Research and Development

SMEs= Small and Medium Enterprises

SPSS= Statistical Package for the Social Science

UAE =United Arab Emiret

CHAPTER ONE

Introduction

1.1 Background of the Study

Most companies like banks, cement industry, health center and university library have knowledge management (KM) inside their organizations. However, KM in organizations reflects the identification and use of collective knowledge (Churchill, 1999). KM also a trans-disciplinary field aimed at doing what was needed to get the most out of knowledge resources (DeVaus, 2001). According to Smith and Mills (2010), managing knowledge resources effectively is vital for individual and the organizations that want to utilize their knowledge assets for competitive advantage in an organization with knowledge management. KM promotes continuous improvement in organization, facilitates innovation in business processes and products, embraces people as architects at the center of the knowledge creation process and enhances stakeholders' relationship management.

Claiborne (2010) presented the process of KM synthesizing information flowing into an organization resulting improvement in the effectiveness of organization performance. It is the ability to make sense and use of information flowing into an organization to create a competitive advantage and improves organizational performance, facilitates innovation and creates sustainable competitive advantage for the organization, However Enz (2008), indicated that intangible assets such as knowledge management, organizational learning and market orientation allow an organization to develop those abilities that enhance competitive advantage leading to superior market performance. On the other way, Barclay and Murray (1997), defined KM as a business activity with two primary aspects, namely treating the knowledge component of business activities as an explicit concern of business reflected in strategy, policy, and practice at all levels of the organization and making a direct connection between an organization's intellectual assets that is recorded and tacit that mean personal know-how and positive business results.

Pemberton (2002), studied about KM in industry that concerns gathering, organizing, refining, and distribution of knowledge, which is a systematic, explicit and deliberate building, renewal and application of knowledge to maximize an enterprise's knowledge related effectiveness returns from its knowledge assets. That it can also help in tracking and retaining knowledge and information within the organization; to provide the appropriate audiences in the most effective manner for which it was important to develop a knowledge-sharing culture and mechanisms to support it.

Fischer (2000) also addressed about number of specific aspects requesting consideration of KM for manufacturing industry as a specific sub-domain. That knowledge was centered on specific products, processes, technologies and addressing; good transparency of business processes and products, great common business interest potentially leading to a solid legal background for knowledge sharing. It also concern on increased motivation of management and employees, transition from traditional manufacturing to knowledge driven companies, actors for internal KM systems in double role that was source and user of knowledge from shop-floor workers, to high specialists, top managers.

Various authors argued that nowadays, knowledge management practices (KMP) provide companies with a competitive advantage as a result of their impact on the organization's ability to act in more efficient, sustainable and innovative ways. According to Beimbornet (2010), the practices of knowledge management, namely knowledge generation, knowledge codification, knowledge sharing and knowledge utilization were significantly and positively correlated with one another as well as with organizational performance. Through the practices of knowledge management, an organization focuses on the systematic exploitation and reuse of knowledge. Haddad (2007), explored that KMP can be useful for identifying the organizational structures, processes and information technologies for measuring, collecting and analyzing costs and risks incurred before, during and after the project. Jennex (2008), also studied about measures of KMP outcomes in terms of organizational performance as enhancement of product and service quality; productivity; competitive capacity and position in the market; and customer satisfaction; employee satisfaction; knowledge sharing; transparency and its retention. The main concern of his study is the benefits of applying KMP in the organization is create knowledge society.

In knowledge society, enterprises were more and more concerned with KMP as a key factor for improving their efficiency and competitiveness in industry. Borg novo (2004), studied about KMP in the industry supports the assimilation of knowledge by building and organizing a firms' knowledge stock and also encourage the transformation of knowledge comprising the combination of prior and newly acquired and assimilated knowledge by providing means to update and share knowledge. Addicott and Ferlie (2006), stated that many large companies and non-profit organizations have resources dedicated to internal KMP efforts, often as a part of their business strategy, information technology, or human resource management departments. They also believed that several consulting companies that provide strategy and advice regarding internal KM to these organizations are in existence. According to those authors, it was very hard for an organization to gain the advantage over its competitors.

To achieve superiority, a firm needed a range of resources to be able to achieve success and competency in the market place. knowledge in industry was a blend of experience, insights, expertise, intuition, judgment that exist in the mind of the knower, while KM in industry was the practice of creating, acquiring, capturing, sharing and using knowledge to enhance learning and performance in an organization. According to Meron (2011), Ethiopia cement factories production capacity utilization rate in the country is below 50 percent. This level of capacity utilization is substantially low compared to global average of 60-70 percent or recommended acceptable optimum production capacity utilization rate that range between 80-85 percent. The factories rich as global production capacity by using cement technology and trained person for the sector. The demand for trained professionals by new cement factories is expected to increase job mobility in the industry.

1.2 Statement of the Problem

In Ethiopia, there is a recognizable competition among the existing cement factories and thus improving productivity and quality of the products through the application of KMP. However, the researcher observation and interview established in Dire Dawa national and Ture cement factories being part of Ethiopian cement factories that are affected by the problem

Of lack of implementations of KMP, lack of availability of technology facility, shortage of information about organizational knowledge source, skill gap on KM expert, Un understandable KMP outcomes, unwisely use of information and invisible relationship among KMP and product process. Therefore, this research is initiated with the main aim to investigate KMP for product improvement on Dire Dawa national and Ture cement factories. Maingi(2007) in his study brought into focus the need to develop KM as supplementary measure of the organizational profitability, sustainability and continuity, outside the usual measures. One of the main issues that many employees are still not aware is what KM is all about. The Mosoti and Mesheka(2010) study focused on KMP in organizations revealed that, most of the challenges experienced by organizations were how to create and implement KMP as part of organizational culture, organizational strategy and organizational leadership.

According to Ruggles(1998),KM based on the principle justified that, just as human beings were unable to draw on the full potential of their brains, organizations were generally not able to fully utilize the knowledge that they possess. Knowledge sharing depends on the habit and willingness of the knowledge worker to seek out and be receptive to these knowledge sources (William, 2009).Fugate (2009) conducted a study in a logistics operations context and prove the existence of a strong positive relationship between a KMP and operational and organizational performance. But, by this study, he justified as there is no understanding on how different KMP affect organizational performance. It is therefore necessary for this research to answer the following research question:

1.3 Research questions

1. What is the current status of KMP in Dire Dawa national and Ture cement factories?
2. What are ICT facilities that are available in the cement factories for enhancing KMP?
3. What is the existing policy to support KMP in the cement factories?
4. What is the contribution of KMP on product improvement in the cement factories?

1.4 Objectives of the Study

1.4.1 General Objective

The main objective of this study is to assess knowledge management practice for product process improvement in Dire Dawa national and Ture cement factories.

1.4.2 Specific Objectives

The specific objectives of this research are as follows:-

- To identify the current status of KMP available in the cement factories.
- To investigate the existing policy that support KMP in the cement factories.
- To identify ICT facilities that is available in the cement factory for enhancing KMP and organizational productivity.
- To understand the contributions of KMP in productivity of the cement factories.

1.5 Significance of the study

The significance of the present research includes identify KMP exercise and show KMP helps organizations (private and public) sectors, manufacturing industry and business process in problem solving and supporting decision making. It also create employee's understanding about KM within organizational information context by identifying and defining the main types of KMP exercise by pointing out the critical factors of KMP and find suitable ways of management of knowledge in that context.

KMP helps to remove resource constraint, decrease cost of products and create innovative applications for mature products that make companies move ahead of their competitors. This research gives information for all community of the organization about KM as supplementary measure of the organizational profitability, sustainability and continuity with challenges experienced by organizations to implement KM inside their factories. This study was also very significant in a number of ways that include contributing to identifying KM policy and ICT facility in Dire Dawa national and Ture cement factories, whereas; help for top managers of the factories have clear understanding about KM and KMP in the factories also takes the necessary measures to improve individual and organizational competitiveness.

1.6 Scope and Limitation of the study

The scope of the current research was Dire Dawa national and Ture cement factories and this study did not include other cement factories in the country because of time and budget constraints. The study was also limited to 500 offices employees as study population in the selected cement factories based on establish time and usability of KM. The research scope also limited to KMP on product improvement in the selected cases.

1.7 Operational Definitions

KM: - is defined as the deployment of a comprehensive system that enhances the growth of an organization's knowledge that is an effort to expand KM discipline, it can be defined as the management functions that encompass the creation of knowledge, managing the flow of knowledge within the organization, and using knowledge in an effective and efficient manner for the long-term benefit of the organization.

KM process: - in organization, those knowledge generation, knowledge codification, knowledge application, knowledge storing, knowledge mapping, knowledge sharing and knowledge transfer from one to the other.

KMP: -is the practical aspect of knowledge management, given that manufacturing is the organizations' nature of business. It can be useful for identifying the organizational structures, processes and information technologies.

KMP in industry:- is improved their industry operational activity in a variety of ways, such as reducing the design cycle time, lead time, cost, reducing time product-to-market, and improving the quality of product.

Product improvement:-means improve organizational performance by becoming more efficient in specific areas.

Offices worker:-An employee who works in an office, especially one engaged in clerical or administrative work

KMP with organizational productivity:-is fully mediates the impact of organizational culture on organizational effectiveness, and partially mediates the impact of organizational structure and strategy on organizational effectiveness

ICT facility: - are tools and it has a crucial role to play in the creation and dissemination of knowledge in a variety of organizations

KM policy:-is dissemination and sharing of the Company's existing knowledge, continuous learning, and cultural exchange, enhances operational efficiency through the proper use of intellectual capital

KM framework: - elements that need not only work together, but also work with the existing systems, structures, infrastructures and technologies within the company.

Existing policy: - is organizational policy and internal written document

Business environment:-all internal and external factors that affect a company's operations

Knowledge management environment:-is including all KM process available in the factories.

Selected factories/ both: - include Dire Dawa national and Ture Dire Dawa cement factories

CHAPTER TWO

REVIEW OF THEORETICAL WORK

2.1. Over view of knowledge

Nonaka and Takeuchi, 1995 defined knowledge as tacit and explicit knowledge, to understand how knowledge is shaped and how knowledge can be applied is the use of knowledge. According to Nonaka and Takeuchi explicit knowledge can be processed by a computer, transmitted electronically, or stored in database. On the other hand, tacit knowledge is personal and specialized; it can only be extracted by human. Spuzic (2008) defined knowledge as a construct formed by interlinking a spectrum of intellectual components, the simplest being information, information is composed of yet simpler form, termed data which are tentatively positioned at the boundary of knowledge strata. According to Reichman and Franklin knowledge refers to all types of understanding gained through experience or study whether indigenous, scientific, scholarly, or otherwise nonacademic. It also includes creative works; some view knowledge as polemical, in that it has dual functions as a commodity and as a constitutive force of society (Reichman and Franklin 1999; Braman 1989).

On the other hand, knowledge is an established system of relations, which survives by being shared with more than one person, usually a significant number of humans. Knowledge can continue to exist over a significant time span with considerable reliability, in a higher level, knowledge is stored systematically as an asset within the scientific disciplines and it is accessed and used for multiple purposes by an individual or by the organization and it is composed of theories and hypotheses. Motivation for grouping theories and hypotheses into scientific or academic disciplines is to facilitate storing, growth, communication and application in specific category of knowledge (Abhary, 2008). In organizational terms, knowledge is generally thought of as being know how, or applied action. Knowledge is a vital resource for effective product management, the use of effective managed knowledge is to reduce new product and introducing project time, improve quality and increase customer satisfaction (Sixotte & Langley, 2000).

The ability to manage knowledge is crucial in today's knowledge economy. The creation and diffusion of knowledge have become increasingly important factors in competitiveness. More and more, knowledge is being thought valuable commodity that is embedded in products (especially high-technology products) and implanted tacit knowledge for highly mobile employees. While knowledge is increasingly being viewed as a commodity or intellectual asset, there are some paradoxical characteristics of knowledge that are radically different from other valuable commodities (Bill Wolf, 2001). KM is the name given to the set of systematic and regimented actions that an organization can take to attain the maximum value from the knowledge available to it. Effective KM normally requires a proper amalgamation of organizational, social, and managerial initiatives along with exploitation of apposite technology.

2.2. Knowledge management

Knowledge may be available in individual mode bound basically to a person, KM involves systematic approaches to find, understand and utilize knowledge to achieve organizational objectives, but sometimes KM creates value by reducing the expense time trial and error processes. Alavi and Leidner (2001) also had a comprehensive observation regarding to the different views in defining knowledge from information technology, strategic management, and organizational theory. The dominant hierarchical view of data, information, and knowledge which is particularly in IT literature, they also described several perspectives of knowledge including knowledge as; state of mind, an object, process, condition of having access to information, or capability. They show this different result views in different organizational KM processes. KM broadly defined from many perspectives, Wiid (1997) viewed as a set of activities that lead an organization in acquiring knowledge both internally and externally.

According to Salisbury (2003), KM is defined as the deployment of a comprehensive system that enhances the growth of an organization's knowledge that is an effort to expand KM discipline, it can be defined as the management functions that encompass the creation of knowledge, managing the flow of knowledge within the organization, and using knowledge in an effective and efficient manner for the long-term benefit of the organization (Darroch& McNaughton, 2002).

KM effectiveness is regarded as a management discipline which focused on the development and usage of knowledge to support the achievement of strategic business objectives. In similar way, KM is not only associated with managing knowledge as a resource, but also to manage business processes that take place using that resource. It should involve the analysis of existing knowledge as a resource, as well as defining the objectives regarding the generation, protection and application of new knowledge, then transfer, exchange and dissemination of knowledge, effective use of knowledge and performance measurement. Knowledge is create internally and externally, from external knowledge is generated by purchasing technology and software, hiring experts, using consultants and strategic partnerships and from internal knowledge is a process of individual learning in a group of individuals as well as the process of organizational learning. In both cases, the key role is on the company's (organizational) development and the charge of education and training of employees (Krstic, 2007).

According to Antezana (2009), also KM defined as the process of systematically capturing, structuring, retaining and reusing information to develop an understanding of how a particular system works and sub squint to convey this information meaningfully to other information systems, i.e. knowledge distribution, nature, ownership, learning and context, these knowledge characteristics affect KM in organizations. Knowledge characteristics are important to determine how to manage this knowledge and its role as a resource for the organization. Barth (2000) also studied about KM enables that the communication of knowledge from one person to another, so that it can be used by the other person. The domains in which knowledge concepts are leveraged in organization through knowledge initiatives are sharing knowledge and best practices, instilling responsibility for sharing knowledge, capturing and reusing best practices, embedding knowledge in products, services and processes. Producing knowledge as a product, driving knowledge generation for innovation, mapping networks of experts, building and mining customer knowledge bases, understanding and measuring the value of knowledge and leveraging intellectual assets.

In other way, according to Sivan(2001), KM is the art of performing knowledge actions such as organizing, blocking, filtering, storing gathering, sharing, disseminating and using knowledge objects such as data, information, experiences, evaluations, insights, wisdom and initiatives. This should be the performance of knowledge actions on knowledge objects.

KM is a process that helps organizations identify, select, organize, disseminate and transfer important information and expertise that is a part of the organizational memory that typically resides within an organization in an unstructured manner. KM allows effective and efficient problem solving, dynamic learning, strategic planning and decision making. The other focuses of KM organization is identifying knowledge, explicating it in way so that it can be shared in a formal manner and thus people reusing it (Gupta, 2002). There is widespread agreement as to the goals of an organization that under takes KM. according to Nickols (2000) the basic aim of KM is to leverage knowledge to the organization's advantage and some of management's motives are obvious, the loss of skilled people through turnover, pressure to avoid reinventing the wheel, pressure for organization-wide innovations in processes as well as products, managing risk, and the accelerating rate with which new knowledge is being created.

2.3. Knowledge management processes

The aim of KM is integrating people, process, technology and organizational issues for best utilization of knowledge that would result in quality service and product, innovation, customer handling, maximized profit, and sustainable organizational performance improvement (Andreeva and Kianto, 2012). According to Wiig, 1997 KM have two aspects, the first aspect is concerned with the managerial facet of the KM and it is about how to manage company's knowledge. It reflects the dynamic view of KM as a set of processes concerned with the usage, development, renewal and value creation of knowledge and the second aspect is more concerned with the economic facet of KM and involves a more static notion of knowledge as asset, which can manage and deploy in order to generate value.

As regards, the literature provides different methodological tools and models for identifying and assessing the knowledge assets of organizations. According to Neha Yadav, (2013) KM has two components that is KM infrastructure and KM processes. KM infrastructure is the mechanism for the organization to develop its knowledge and also stimulate the creation of knowledge within the organization as well as the sharing and protection of it. KM process is the mechanism of collecting and identifying useful information, transferring tacit knowledge to explicit knowledge, storing the knowledge in the repository, disseminating it through the whole organization,

enabling employees to easily retrieve it and exploiting and usefully applying knowledge. The study showed that culture, structure; people and information technology are the main elements which build the KM infrastructure in any organization.

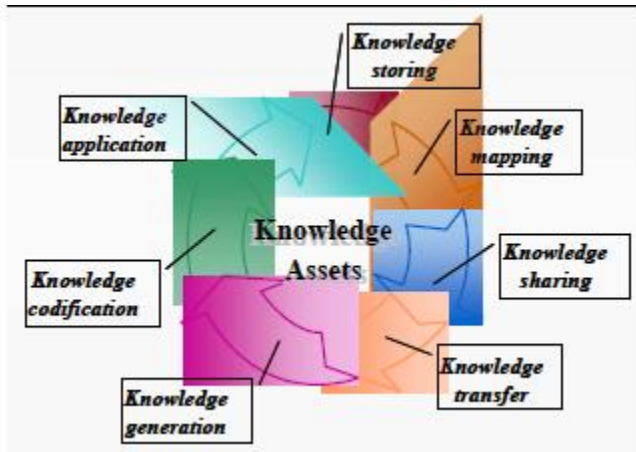


Figure 2.1: KM processes (Marr and Schiuma, 2001)

Ruggles and Hothouse (1999) also identified key attributes of KM process in the organizational, generating new knowledge, accessing valuable knowledge from outside sources, using accessible knowledge in decision making, embedding knowledge in processes, products and/or services, representing knowledge in documents, databases, and software, facilitating knowledge growth through culture and incentives, transferring existing knowledge into other parts of the organization and measuring the value of knowledge assets and/or impact of KM.

Organizations possess external and internal knowledge; external knowledge reflects awareness of regulations, competition and market trends, as well as the ability to anticipate a market and internal knowledge includes an understanding of core competencies, know-how, strengths, weaknesses and lessons learned from past experiences (Frappaolo, 2000). KM process is an everyday business process within the company and the major role in transfer of relevant information for decision-making across all levels of structure in the manufacturing. The ultimate result of well-created process of KM is that every employee in the company fulfills its mission, which reaches the corporate objectives and strategies, and identifies the most valuable knowledge from the sea of information.

It is not an easy task because it involves the management structure at the highest levels of management; they are responsible for the processes of finding, selecting, organizing and presentation of information in a manner that promotes understanding of employees in a particular area of interests. KM is important as a managerial tool, which promotes the creation of new knowledge and it's sharing through the corporate values. The use of KM process increases the effectiveness of decision-making processes, as well as the level of operational efficiency, flexibility, commitment and involvement of employees. According to Tisen, the aim of KM process is support innovation, encourage the free flow of ideas through the company, it helps increasing revenues by facilitating products and services are delivered to market faster and reducing costs by eliminates redundant and unnecessary business processes.

This process increases the time that employees spend in the company, because their knowledge and efforts are valued by the system of rewards and KM process increases the value of the company and its competitiveness as a whole by increases the efficiency and effectiveness and create relationship of all resources and innovation (Tisen, 2006). Calling (2003), studied about KM process, according to him KM process is divided into three parts knowledge development, knowledge utilization and knowledge capitalization each process has its own importance for the factory, but according to Awad and Ghaziri (2004), their study identified four processes of KM which consisting of capturing, organizing, refining and transferring.

Each phase has its own contribution, the capturing phase deals with knowledge capture and includes e-mail, audio files, digital files and the like. After the capturing phase, captured data or information should be organized in a way that can be retrieved and used to generate useful knowledge. One can use indexing; clustering, cataloguing, filtering, codifying methods can be used. The third process of KM is refining, data mining can be applied in this phase and data mining takes explicit knowledge found in databases and transforms it into tacit knowledge. According to Awad and Ghaziri the last phase of the KM process is transferred, knowledge should be disseminated or transferred by making knowledge available to employees via tutorials or guidelines for effective use.

In another way KM process in the literature is coming from Becerra-Fernandez, Gonzalez and Sabherwal (2004), those authors studied KM process in four steps. Those KM processes supported by seven KM sub processed. According to those authors knowledge discovery is the first step, which defined as the development of new tacit or explicit knowledge from data and information or from the synthesis of prior knowledge. The two sub processes of knowledge discovery are combination and socialization. The discovery of new explicit knowledge relies more directly on combination, whereas the discovery of new tacit knowledge relies more directly on socialization. 'Knowledge capture' is the second step of the KM process, which defined as the process of retrieving either explicit or tacit knowledge that resides within people, artifacts or organizational entities.

The sub processes of this step's are externalization that involves converting tacit knowledge into explicit forms such as words, concepts, visuals, or figurative language and internalization that transforms of explicit knowledge into tacit knowledge. Knowledge sharing is the third step of the KM process, tacit or explicit knowledge is communicated to other organizational participants in this step and three important clarifications are in order. First, knowledge sharing means effective transfer, so that the recipient can understand it well enough to act on it. Second, what is shared is knowledge instead of recommendations based on the knowledge. Third, knowledge sharing may take place across individuals as well as across groups, departments, or organizations. Knowledge sharing has two sub processes in the names of socialization and exchange, it is used to communicate or transfer explicit knowledge between individuals, groups and organizations.

From the authors result knowledge application is the last step of the KM process, this means making decisions and performing tasks perfectly in organizations. It requires knowledge utilizations benefits from two processes that do not involve the actual transfer or exchange of knowledge between the concerned individuals-routines. Directions and routines are sub processes in this phase. Directions refer to the process through which individuals possessing the knowledge direct the action of another individual without transferring to that person knowledge underlying the direction. Routines involve the utilization of knowledge embedded in procedures, rules and norms that guide future behavior. Alavi and Leidner (2001), summarize the process of KM in the context of information technologies such as knowledge creation, knowledge storage/retrieval, knowledge acquisition, transfer and application in organizing.

2.4. RELATED WORK

2.4.1 Knowledge management practice in industry

KMP refers to practical aspects of KM, given that manufacturing is the organizations nature of business, there is a link between KMP and operational benefits which suggests that the main reason is because the role of KM is aimed at improving manufacturing processes which are embedded in the organization's business strategy. KMP improved their industries operational activity in a variety of ways, such as reducing the design cycle time, lead time, cost, reducing time product-to-market, and improving the quality of product.

Rod Coombs (1998), studied in CRIC working paper no 6 on KM but the main interest has been in KMP which contributes directly to the creation of novel business propositions, these practices are concerned primarily with the accumulation, analysis; management and dissemination of evolving stocks of knowledge in a firm, covering three main areas those include, technology; knowledge about technologies used and developed within the company, as well as those available and under research in other companies, markets; market-based knowledge concerning: the requirements of customers, their behavior and the market opportunities which might be feasible in the future, current offerings and plans of competitors and regulatory and standards developments affecting all players and company processes; knowledge about internal administrative, technical management operations through which the organization identifies and delivers products and services.

The study conducted by Wiig in 1993 also considers KM in organizations, the study cover from three perspectives, each with different horizon and purposes; business perspective: focusing on why, where, and to what extent the organization must invest in or exploit knowledge. Strategies, products and services, alliances, acquisitions, or divestments should be considered from knowledge-related points of view, management perspective; focusing on determining, organizing, directing, facilitating, and monitoring knowledge-related practices and activities required to achieve the desired business strategies and objectives and hands-on perspective: focusing on applying the expertise to conduct explicit knowledge-related work and tasks.

The business perspective easily maps onto the strategic nature of KM, the management perspective to the tactical layer and the hands-on perspective may be equated with the operational level. KMP is made an integral part of the work those people cannot be sure of the relative contribution of those KMP to the success of a project or industry process. Coombs & Hull (1998), studied about KMP interims of innovation processes include a wide range of activities such as the writing and dissemination of technical reports, R&D staff, and the use of ICT. KMP is valuable management focus for improving performance within innovation processes, it can be observed, so they provide a tangible framework to help companies reflect on KM within innovation processes, common features of KMP in different companies can be identified and best practices transferred from one setting to another and regular audit of KMPs can help to broaden and continuously improve practices which contribute to innovation performance.

KM involves strategies and processes of identifying, capturing, and leveraging knowledge to enhance competitiveness. The new world of knowledge-based organizations is distinguished from the organizations of the last millennium by its emphasis on monitoring and controlling the organization by shared knowledge derived from internal and external data sources, this research was done by Adish Kumar in 2006 by access the impact of KMP in Indian manufacturing industries and he use postal survey methods, his results indicate that the main reasons why these organizations are focusing on KM are gaining complete advantage and creating new knowledge.

However, culture and financial constraints are amongst the highest ranked barrier for KM implementation. Another study was conducted by Goh (2006), he contribute to one of the earliest studied on KMP in Malaysia, his result indicated that Malaysian organizations tend to be slow in the uptake of KMP and that levels of KMP is still in the infancy stage and knowledge sharing among manufacturing was found at a moderate level, electrical and electronics-based organizations revealed that there is no clear and identifiable KM strategy in place and he use quantitative research method. Patrick & Choi (2009), study about KMP as observable organizational activities that relate to KM. It is an interrelated set of various business processes developed in an organization to create, store, transfer, and apply knowledge.

Girbert and Probst (1969), studied on practical KM in an organization, the first organizational practice is KM identification that means organization identifies what knowledge and experience exist both inside and outside their walls. According to them knowledge development, knowledge distribution, knowledge use and knowledge preservation are KMP in industries. Khalid 2009 studied KMP in United Arab Emirates (UAE) Bank industry by using explanatory research methods and the study was conducted in UAE, the concern with his study depends on KMP today and future in the bank industry. The results of Khalid's study show that in Bank industry KMP, today is in an infant stage, but he suggests in the future by using KM enablers KMP in Bank industry will reach a high stage.

2.4.2. Knowledge management in Ethiopia

KM in Ethiopia is not yet developed well but there are some related works in this area like the study of Ermias (2011) on innovative approach of KM in agriculture the case of IPMS by using a theoretical approach in 10 pilot districts of 4 regional states of the country. The results of his study show that the IPMS project followed systematic and step-wise approaches of KM and capacity development by support of various ICT and non ICT tools that facilitated multidirectional knowledge flows, empowerment of practitioners and linkage creation to improve productivity, profitability and sustainability of market oriented agricultural development.

According to Ermias the major tools and processes are establishment of agricultural knowledge centers for up to date and relevant information resource delivery, enhancement of program delivery and technical skills through participatory training; establishing partnership with various stakeholders and institutions at all levels and developing a web based platform, Ethiopian agriculture portal, www.eap.gov.et, for availing agricultural resources relevant to Ethiopian agriculture. A lesson from IPMS on implementing the above components with the need for an overall understanding of knowledge as a critical 'input' to agricultural development being internalized among program implementers at all levels and importance in building capacity of actors, not only to have implementers but also to have those who forge linkages, identify needs and manage partnership processes.

Another study done in Ethiopia was KMP in development and humanitarian aid organization in Ethiopia by Hermella, 2000 the research done by using qualitative research methods via online survey. The results of this study depend on Kruger & Synman KM maturity assessment instrument and the general KM maturity model (G-KMMM) by Pee & Kankanhalli provides a useful framework through which to assess knowledge management. According to this author, organization is aware of and has the intention to manage its organizational knowledge, but it might not know how to defined basic infrastructure is put in place to support KM to managed, KM initiatives are well established in the organization and optimized where KM is adequately integrated into organizational processes.

Her result also prove main pillars of the G-KMMM and Kruger and Synman in the study area that ICT as an enabler of KM and information management's role for KM in an organization describe the technological readiness of the organization. Similarly formulation of KM principles, policy and strategy in an organization and 'implementation of KM in an organization' touch upon the processes involved for the smooth implementation of KM and facilitator are essential for establishing a successful KM initiative in aid organization. According to Hermella result staff and knowledge workers in these organizations are actively involved in sharing information and knowledge resources when required for speeding up working processes. In another way her result shows absence of proper organizational guidelines on knowledge sharing, lack of knowledge of what colleagues need and shortage of time and resources to facilitate knowledge sharing.

2.4.3. Knowledge management practice with organizational product process

Productivity means improve organizational performance by becoming more efficient in specific areas; this is done by applying specific methods, tools, metrics, knowledge and the end result is organizational excellence. Productivity also evaluated in terms of the output of an employee in a specific period of time. The success of any organization relies upon the productivity of its workforce; KM with employee productivity is an important consideration for businesses (Margaret, 2014). According to Margaret knowledge creation, knowledge utilization knowledge publication and application are some of the important steps for the productivity improvement and this all are called KM.

On the other hand, manufacturing industry is a dynamic and ever changing organization which needs to keep itself quite up to date using the newest technologies and knowledge ability in the management and keeping the competitive advantage and movement toward application of the new technologies in complex organizations like hospitals which are a combination of great human and equipment resources requires knowledge and KM. Study conducted by Amir ashka in 2012 on the relationship between KM and productivity in teaching hospitals of Hamedan, Iran by using multi _stage random method and the result of this study showed that KM in the healthcare organizations and especially in the hospitals can have a main role, the guidance and allocation of the human resources, information, equipments and proper decision making along with conditions and needs of the organizations.

According the above author, KM can be very useful in accomplishment of the mission and the objectives of the organization and it can definitely plays a great role for the future of the organization. Therefore, getting familiar with the advantages of KM and its establishment in correlation with the organizational needs leads to better performance and impact and is of high concern for the organizations. One of the key benefits of introducing KMP in organizations is its positive impact on organizational performance and the most important goals of each organization is to achieve productivity. The research conducted in Croatia (Slovenia) suggested that KM positively affects organizational outcomes of company innovation, product and employee improvement.

Dimovski, (2008) and Choi (2008) also studied on the combining of tacit internal oriented and an explicit external oriented KM strategy indicates a complementary relationship, which implies synergistic effects of KM strategies on performance improvement. The result of the study conducted by Zheng in 2009 showed that KM fully mediates the impact of organizational culture on organizational effectiveness, and partially mediates the impact of organizational structure and strategy on organizational effectiveness.

Wei (2009), assessed the perceived importance and actual level of implementation of five preliminary success factors, four KM strategies and three KM process towards the increasing industry performance. He asserted that successful achievement of overall organizational performance was based on actual application of KM process.

It showed a positive relationship between KM process, namely construction, organizational performance, embodiment and deployment. He also agrees with Amidon (1998) and Scarborough (1999) idea that indicates the capability of KM and business benefit or a bottom line was almost self-evident, the added value or the bussing benefits were identified by using theory building approach in India.

KM is necessary for companies because what worked yesterday may or may not work tomorrow because market needs are changing rapidly. The same holds for assumptions about the optimal organization structure, the control and coordination systems, the motivation and incentive schemes. To remain aligned with the dynamically changing needs of the business environment, organizations need to continuously assess their internal theories of business for ongoing effectiveness. Organizational performance is affected by KM at different levels of management in a factory (Kalling, 2003). Gold (2001), found a strong and significant relationship between both knowledge infrastructure and knowledge processing with organizational effectiveness, using a broad set of non-financial outcomes.

Additionally the result indicates that KMP are positively associated with organizational performance. Alavi & Leinder (2001), also study on organizational competency, Due to this study, an important source of competitive advantage is in the application of knowledge and technology can be supportive in knowledge application by inserting knowledge into organizations processes and procedure.

Nausheen,(2012), start his work on the linkage between KMP and company performance, according to him sharing of best practice, building of consistent processes and management of core competency are the most important KMP for the small/ medium and large companies that can facilitate KM success having a significant impact on firm performance by using purposive research methods and select 412 employees from a managerial position in Pakistan.

2.4.4. ICT facility on knowledge management practice

Information technology has a crucial role to play in the creation and dissemination of knowledge in a variety of organizations and information technology allows an organization to create, share, store, and use knowledge.

The focus of KM has moved from technology towards human expertise, including recognition of the importance of tacit knowledge, other disciplines and departments have become increasingly involved (Koenig & Srikantaiah 2002). The degree of competition in a particular country or sector is often considered to be among the most important of such factors, since a lack of competition reduces the pressure on firms to incorporate better technology, remove organizational slack and improve productivity performance.

The diffusion of technology is promoted by openness to international competition and efficiency is also closely linked to competition as weak competition may result in management and workers appropriating rents in the form of organizational slack and overstaffing (OECD, 1996). KM is a process that has been heavily influenced by the growth and application of computer technology to data and information management. Technology can support KM in two ways: firstly by providing the means to organize, store, retrieve, disseminate and share explicit knowledge and information rapidly around the organization and around the world, secondly by connecting people with people through collaborative tools to capture and share tacit knowledge (Jain 2007). According to Martin 2008 study the most common technology applications area for KM are Groupware that is messaging and email, document management, workflow, multi-media repositories, intranets and portals, information retrieval technologies and search engines, business modeling and intelligent agents can be categorized by content management that is in the form of knowledge sharing and collaboration or by using collaborative technologies.

Implanting KM system in any scale without technology is extremely difficult, but the technology itself does not make the KM system work, it can facilitate and enable connections and communications but it will not make them happen (Wormell 2004). The result of Webster 2007, study technology can improve knowledge flows, but cannot guarantee them. Even the most successful technological solutions can be frustrated by a lack of time and motivation for knowledge sharing, and inability to truly capture tacit knowledge and use this knowledge effectively. It is also worth noting that some organizations function well without formal KM systems by exploiting existing technology, such as intranets. Due to the advances in science and technology and the rapid changes in the market, a product's life cycle has become much shorter than before.

Mills and Smith, 2011 study about technology element of knowledge infrastructure comprises the information technology systems that enable the integration of information and knowledge in the organization as well as the creation, transfer and storage of organization's knowledge assets. According to Mills and Smith the role of information technology infrastructure is important, because it enhances knowledge access, transfer and facilitates the knowledge sharing inside the organization. Kazemi and Allahyari (2010) points out that KM technologies and software application provide the right information to the right people at the right time. To maximize the value of knowledge, appropriate information system infrastructure is required to facilitate sharing, transforming and capturing knowledge.

According to Ajmal, and Kekale (2010) the use of strong information technology for organization is facilitates communication, collection, and re-use of knowledge. KM system should also facilitate communication and knowledge exchange across different organizational entities that share knowledge and experiences (Du Plessis, 2007). Géraud in 2005 studied the common misconception about KM in the organization that is KM is mainly about technology those getting an intranet, linking people by e-mail, compiling information databases but technology is often a crucial enabler of KM it can help connect people with information, and people with each other, but it is not the solution and it is vital that any technology used fits the organization's people and processes otherwise it will simply not be used.

2.4.5. Organizational policy and culture on knowledge management practice

Organizational culture is not only specifies what knowledge is valued, but also what knowledge must be kept inside the organization for sustained innovative advantage (Long, 1997). There are four comprehensive ways in which culture influences the behaviors of knowledge creation, sharing, and use. First, culture shapes assumptions about what knowledge is and which knowledge is worth managing. Second, culture establishes relationships between individual and organizational knowledge, determining who is expected to control specific knowledge, as well as who must share it and who can hoard it. Third, culture creates the context for social interaction that determines how knowledge will be used in particular situations. Finally, culture shapes the processes by which new knowledge with its accompanying uncertainties is created, legitimated, and distributed in the organization (DeLong and Fahey, 2000).

The goal of KM Policy is dissemination and sharing of the company's existing knowledge, continuous learning, and cultural exchange, enhance operational efficiency through the proper use of intellectual capital, always furthering the interests of the company and of the companies belonging to the group of companies of which the company is the controlling entity, within the meaning established by law (the Group), and without prejudice to specific policies that may be established at particular companies of the Group (IBERDROLA,2015).KM program tend to have both collecting and connecting dimension, the collecting dimension involves linking people with information, it relates to the capturing and disseminating of explicit knowledge through information and communication technologies aimed at codifying, storing and retrieving content, which in principle continuously updated through computer networks. Through such collections of content, what is learned is made readily accessible to future users.

The connecting dimension involves linking people with people specifically people who need to know with those who do know, and so enhancing tacit knowledge flow through better human interaction, so that knowledge is diffused around the organization and not just held in the heads of few. Connecting is necessary because knowledge is embodied in people, and in the relationships within and between organizations.

Information becomes knowledge as it is interpreted in the light of the individual's understandings of the particular context. skills directories and expert directories , searchable online staff directories that give much more detail about who does what and who knows what are examples of connecting dimension and collaborative working, communities of practice networks of people with a common interest, and various socialization activities designed to support knowledge flows are connecting dimension. According to his study organization that focuses entirely on connecting, with little or no attempt at collecting, can be very inefficient. Such organizations may waste time in reinventing wheels. The aim of integrated KM program is managing knowledge, by combining the benefits of both approaches and achieving a balance between connecting individuals who need to know with those who do know, and collecting what is learned as a result of these connections and making that easily accessible to others (Géraud,2005).

2.4.6. Knowledge management framework

In the basic level KM consists of identification of needs, identification of knowledge resources, acquisition, creation, or elimination of knowledge related resources /environments, retrieval, application and sharing of knowledge and storage of knowledge. It is important to note that none of these processes are independent and all of them are affected by countless factors, this is why KM frameworks are typically very different and can be presented in a wide variety of ways(Alan Frost, 2010). KM framework is very important for the organizations that intend to implement KM system in their organization.

It will become as the guidelines in order to avoid the errors and gain other benefits in terms of time and effort as well as cost involvement. The elements of KM framework need to not only work together, but also work with the existing systems, structures, infrastructures and technologies within the company. That's why there can be no such thing as an off the peg KM framework only frameworks that we tailor to your own context.

Strong KM framework is vital for the success of KM with no accountabilities, it is nobody's job with no processes; nobody knows how with any technology, nobody has the tools and with no governance, nobody sees the point those are the benefit of KM(Knoco, 2008). Numerous researchers have proposed several KM frameworks, Leonard-Barton (1995) model highlighted KM framework that comprises of four core capabilities and four knowledge-building activities that are crucial to a knowledge-based organization (KBO). Arthur and APQC (1996) have advanced model comprising seven KM processes that can operate on an organization's knowledge: create, identify, collect, adapt, organize, apply, and share. According to Wiig's (1997) KM framework has three KM pillars which represent the major functions needed to manage knowledge. The pillars are based on a broad understanding of knowledge creation, manifestation, use, and transfer.

KM framework studied by Parikh M, 2001 has different phase, knowledge capture or acquisition confines knowledge using matching technologies and symbolizes or formalize knowledge in the format used by computers. Three phases can either interact with each other to enhance the knowledge obtained into the knowledge combination, which serves as a temporary repository.

Knowledge combination, this element framework is concerned about knowledge combination phase to collect information discovered, captured and created into a single portfolio. Chih-Ping (2002) proposed another KM framework by integrating the previous frameworks. It consists of three aspects, knowledge resources, KM activities and knowledge influences. In addition, this phase is considered as a core process of KM, since the main goal and objectives of the KM research and practice are to foster the flow of knowledge among individuals Knowledge application's purpose is to apply and represent information to knowledge seekers in an appropriate matter.

Knowledge application is also the solution to wrapping knowledge to guarantee widespread usage. Moreover, knowledge application translates information into practical tools and applying the knowledge into real world. Moreover, BIMA KM framework goal is to capitalize on the knowledge assets to reach maximum attainable business performance. Knowledge performances are also concerned with evaluating the process, performance and impact of KM and perceive if new knowledge was created (Lai and Chu, 2000). In conclusion the literature review takes about KM, KM process, KMP, KMP in industries, KM in Ethiopia, existence of KMP on organizational performance, ICT facility on KM and organizational policy on KM, this study concerns itself on the assessment of KMP on product improvement in Dire Dawa national and Ture cement factories in Ethiopia.

2.4.8. Theoretical and conceptual frameworks for the study

The researcher generated theory for the research by using indicative approach and conducted descriptive theory for the current study. The main target of the research was study KMP for product improvement, in this research there are concepts that works together, like KMP, policy, culture, ICT facility and population. The study gets knowledge creation, knowledge capture, and knowledge share and knowledge application as the result under KMP. Organizational policy and KM policy result under existing policy, laptop, desk top and Internet connection under ICT facility and office worker, Heads of ICT departments and Head of MIS under population.

The research use qualitative and quantitative research approach (methods) and descriptive research design were used. Knowledge creation takes from inside and outside the organization; knowledge capture inside organization also takes place in the form of electronic and hard copy. Trupest, departmental benefits and innovation were employee's purpose of knowledge sharing; face to face and focused group are ways of employees apply their knowledge inside their organization. Finally, the study conducts by find organizational policy, ICT facility and organizational product process with KMP and office worker, head of MIS and head of ICT department use as a population by purposive and simple random sampling techniques for answering qualitative and quantitative research question use as research methods. Productivity product quality and profitability are the expected result of organizational product process change.

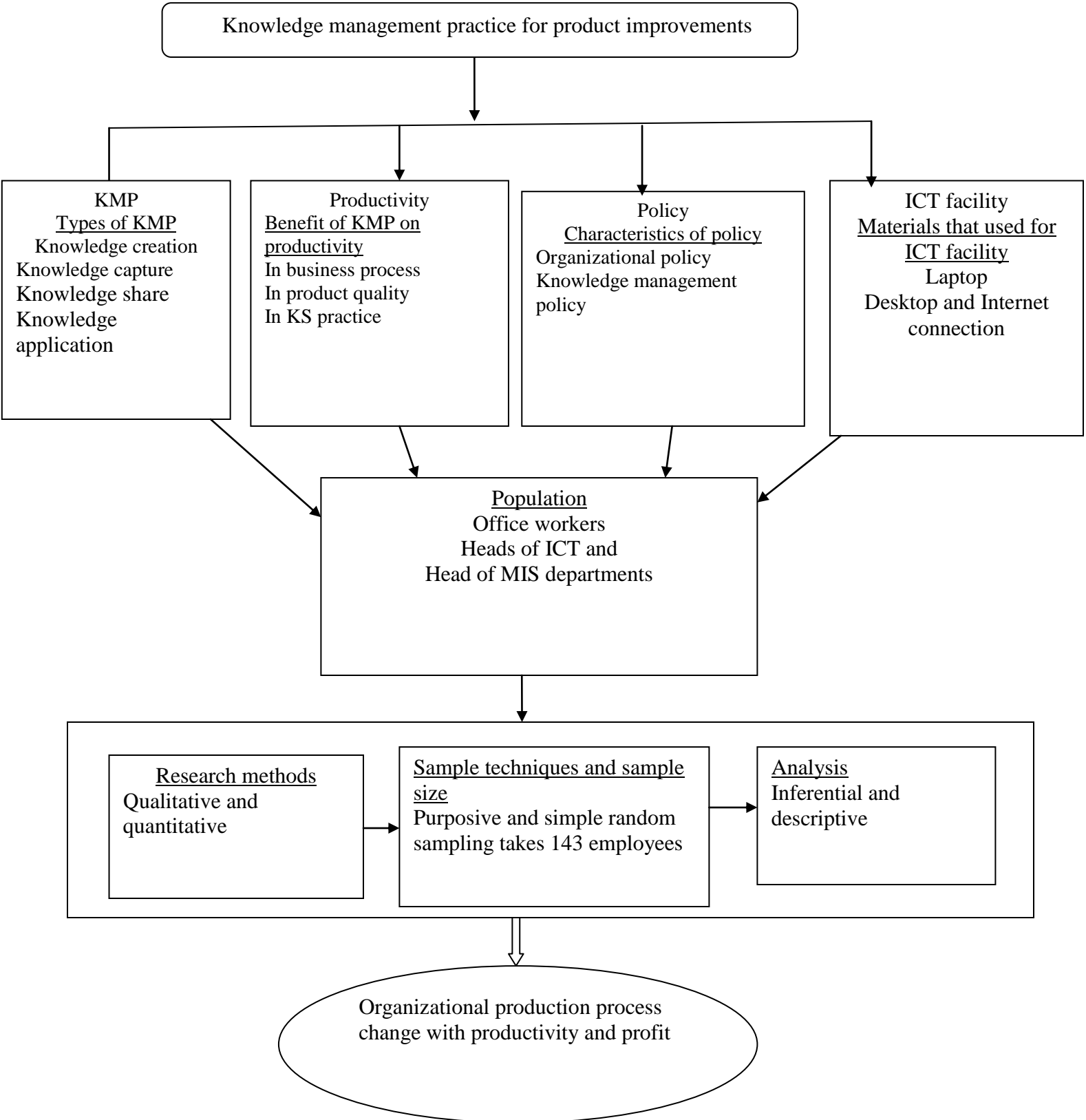


Figure 2 .2 Conceptual framework for the study

CHAPTER THREE

METHODOLOGY

3.1 Description of the study area

Dire Dawa national and Ture cement factories are one of the cement factories in Ethiopia. It is located at 515 kilometers away from the capital city, Addis Ababa to the east in the Dire Dawa administrative region. Dire Dawa national cement factory is the first cement factory in Ethiopia, which is established in 1936 by Italians. The total number of employees in Dire Dawa national cement factory is currently 1000 (East African Holding S.co, 2011).

The second cement factory in Dire Dawa town which considered for this study is Ture cement factory. The cement factory, which has a combined production capacity of 1, 500 tons of ordinary Portland Cement (OPC) and Pozolana Portland Cement (PPC) per day, started the function of its factory in 2008. The cement factory has targeted to deliver its products to the eastern parts of Ethiopia, Somalia and Djibouti. The total number of Ture cement factory employees is 500 (Helen, 2012).

3.2 Research methods

The research method is cross-sectional survey, cross-sectional or one time research, which is limited to a single time period being a strategy employed in achieving the objective of the research or study which enabled the researcher to collect data on the views, opinions, and practices about KMP on product process from the selected factories from the respondents and analyzed by using a descriptive statistics like percentage, means and standard deviation.

3.3 Population of the study

Dire Dawa national and Ture cement factories have a total population 1500; where Dire Dawa national contains 1000 and Ture contains 500. The target populations for the study are all office employees of Dire Dawa national and Ture cement factories. Dire Dawa national and Ture cement factory has a total of 500 office employees where Dire Dawa national contains 350 office employees and Ture contains 150 office employees with different educational status and

professions; thus considered as the total population of this study from those 350 office employees were population numbers of Dire Dawa national and 150 office employees population numbers of Ture cement factories. Thus the total target population for this study was 500, they are the once directly involve in the KMP and also using the ICT facilities for the purpose of KM. from each employees the researcher need detailed information about the statues of KMP, ICT facility, organizational policy and culture.

3.4. Sample size technique and sampling

3.4.1 Sampling techniques

The sampling technique used for this study was purposive and simple random sampling for qualitative and quantitative data collection from the factories. Purposive sampling techniques were used for top managers, head of MIS and ICT director for interview on detailed information about organizational policy and ICT facility. From each department 1 employee take purposively as a total 3 employees are selected for qualitative data. A Simple random sampling technique was used to select a total of 140 employees for quantitative data collection by distributing questioners. When identifying the specific 140 employees from the factories. This was done after the researcher obtained list of the office employees from human resource (HR) offices then the respondents were selected randomly by using lottery methods from the obtained list.

3.4.2 Sample size

Dire Dawa national and Ture cement factories has 500 total offices employees, where 350 populations from Dire Dawa national and 150 from Ture cement factories. From this, the researcher calculated sample size based on research advisor, 2006 formula for sample size determination. It used to determine the appropriate sample size confidence level = 95% and margin of Error = 5%; Kothari; (2004) formula for proportional allocation of subjects.

$$n = \frac{X^2 * N * P * (1-P)}{(ME^2 * (N-1)) + (X^2 * P * (1-P))}$$

n = sample size

x= chi-square for the specific confidence level at 1 degree of freedom

N = population size

p=population of proportion

ME=desired Margin of Error

Considering the sample size table, 2006 the sample size should be:

Whereas:

x=1.96

N= 500

P= 0.5

ME= 0.05

$$n = \frac{217}{1 + \frac{217}{500}} = 140(\text{sample size}).$$

Sample size allocation (proportional allocation for Dire Dawa national and Tura cement factories

$$n_1 = \frac{n * N1}{N}, n_1 = \frac{140 \times 350}{500} = 98 \text{ for Dire Dawa national}$$

$$n_2 = \frac{n * N2}{N} n_2 = \frac{140 \times 150}{500} = 42 \text{ for Ture cement } (kothair, 2004).$$

Therefore, the total sample size for this research was 143 employees, a number that is representative of the target population.

3.5 Data collection techniques

The instrument that is used to collect data for this study was questionnaire, interview and observation check list. The questionnaire was one of the instruments used for collect data from respondents. (See appendix A). Face to face semi- structured interview was used to collect data from managers, ICT director and head of MIS about organizational policy, ICT facility, KM and

organizational productivity.(See appendix B). Detailed observation was done by the researcher for the availability of ICT facility and organizational policy availability and factories productivity at each study site (See appendix C).

3.6. Data collection procedure

The data for this research was collected by using a structured questionnaire, interview and observation. The questionnaires were created by using suitable questions modified from related research and individual questions formulated by the researcher and approved by advisors. To collect data from the respondents the researcher got official letter from the department of information science, Jimma University and the researcher submitted the letter to top manager of the study site to get permission for conduct the survey. Top manager forwarded the letter to all concerned bodies by approving the study can be done. After that the researcher went to the human resource department of the study organization to find out list of office employees. The questionnaire was distributed to the employees selected by using simple random sampling technique.

3.7. Checking the validity and reliability of the instruments

The questioners adopted from Mesay, 2013 on university libraries but the current study check validity and reliability in terms of whether the translation of English to Amharic questions are clear, appropriate and familiar with employees work in factories and also address objective by Amharic research question. The current study collects data by using questionnaire, interview and observation checklist. After the pilot testing and all necessary modifications were done like grammatical spelling error and reputation of question that identify the same problem but write by different way in the interview and the questionnaire, it also helped testing the language and contents of the questions also the length of the interviews. The chosen place for the pre test study was Dire Dawa national cement factory; it was done by distributing the questionnaire randomly for 10 employees and interviewing for ICT coordinator and head of MIS director as internal validity and external validity that is the translation of words and weather question achieve the goal is check by advisor. The pre test result shows most of the problem was found with the translation of similar terms to Amharic questions asking employees and modifications were

made on the basis of the suggestions offered, these modifications included changing Amharic terms from questions and addition of similar terms.

3.8. Data quality control

The researcher gave an orientation to the data collectors and the data was collected under the supervision of the researcher. The completeness and consistency was also checked at the site by the researcher. The missing data, completeness and consistency were checked before data analysis; this increases the validity of the research.

3.9. Method of data analysis

After the required amount of data was received from the study area, an inconsistency was reviewed, organized and analyzed. Quantitative data is analyzed by using statistical package for the social sciences (SPSS) version 20 with inferential and descriptive statistics; whereas qualitative and quantitative data is analyzed by using thematic content analysis.

This involved categorizing related data into topics by perusing through the collected data and identifying information that is related to the research questions and objectives. After categorizing the data, interpretation of the data was done and a summary report developed by identifying the major themes and associations between them.

3.10 Ethical consideration

Ethical issue was considered in all steps of the research and the issue was a crucial issue for both researcher and respondents. Detailed explanations of Each and every activity in this study about the objective, purpose and benefit of the study were given to the study population. Study participants' full cooperation and verbal consent were taken. During the study, the respondents felt free and expressed their ideas freely without any internal and external pressures and any personal information was to be kept confidential.

CHAPTER FOUR

Results and discussion

4.1 Results

4.1.1 Response rate

In this section, the results of the response rate of 140 questionnaires that were distributed to Dire Dawa national and Ture cement factories office staff were analyzed and presented. Among the 140 distributed questioners, 120 were returned and 20 were not returned. Among 20 non returned questionnaires 12 questionnaires was not returned from Dire Dawa national and 8 questionnaires was not returned from Ture. Summary of the response rate is presented in table 4.1 below:

Table 4.1: Response rate of the study

s.no	Questionnaires	Number of questionnaires	Percent
1	Questionnaires returned	120	85.71%
2	Questionnaires not returned	20	14.28%
3	Total	140	100%

4.1.2 Socio demographic data

This table presents the respondent gender, workplace, educational status and service years. This respondent response is summarized in table 4. 2 below:

Table 4.2 Socio demographic data of the respondents

s.no	Respondent profile	Item	Number	Percentage
1.	Gender	Female	34	27.9%
		Male	86	72.1%
		Total	120	100%
2.	Workplace	Dire Dawa national	98	70%
		Ture	42	30%
		Total	120	100%
3.	Educational status	Certificate	23	18.9%
		College diploma	59	49.9%
		BA/BSc degree	34	27.9%
		Master's Degree	3	2.5%
		Doctorate degree	1	0.8%
		Total	120	100%
		4.	Service years	Number
Less than 3 years	48			39.3%
3 to 5 years	49			41.8%
5 to 7 years	14			11.5%
More than 7 years	9			7.4%
Total	120			100%

The first section present employees gender, workplace, educational status and service years. As shown in the table 4.2 above, 86 (72.1%) of respondents were male and 34 (27.9%) of respondents were female. With respect to workplace, most of the respondents were from Dire Dawa national 98(70%) and 42(30%) were from Ture. Regarding to educational status, most of the respondents obtained a college diploma 59 (49.9%) followed by BA/BSc degree 34(27.9%). Respondents work experience ranges from less than 3 years to more than 7 years, with an average of 5 years. Accordingly those employees with less than 3 service years were 48(39.3%), 49(41.8%) 3 to 5 years, 14(11.5%) and 9 (7.4) were more than 7 years.

4.1.3 KMP in Dire Dawa national and Ture cement factories

The respondents answer different questions posed to them for about awareness of KMP among employees as it is depicted in Figure 4.1 below:

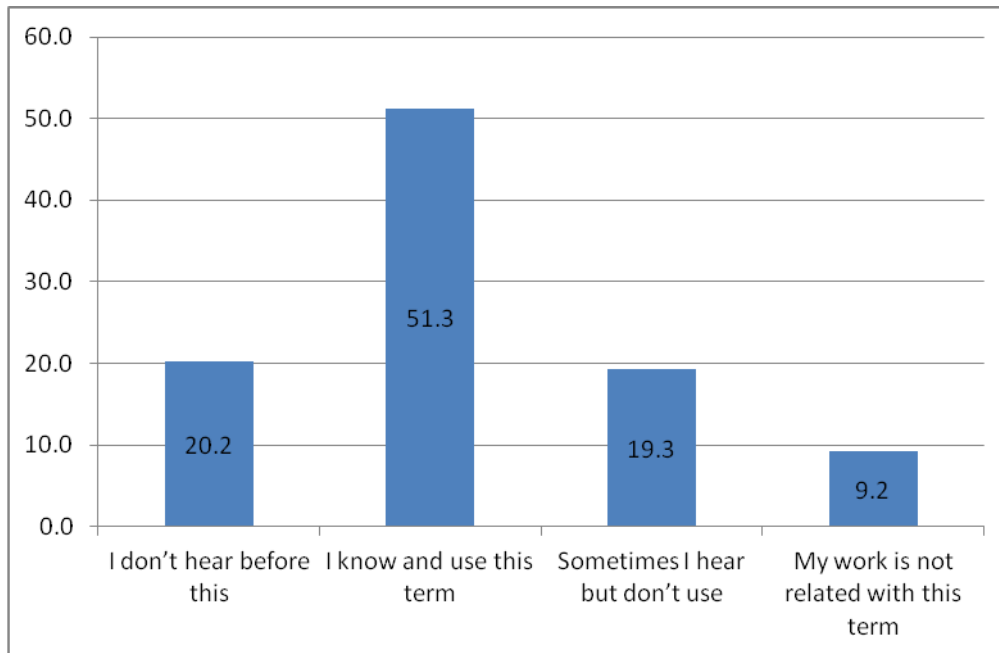


Figure 4.1 Awareness of KMP

In the case of understanding about KMP, respondents answered, I know and use this term is 61 (51.3%) followed by I don't hear before this 24(19.3%), sometimes I hear but don't use 19.3% and my work is not related with this term 9.2%. This implies that, majority of employee's work in Dire Dawa national and Ture cement factories were familiar with the term KMP and use in the work place. However, there are employees who did not hear and were not familiar with the term and meaning of KMP in their workplace.

Professional understanding about KM is another indicator of KMP in those selected factories. The summary of the responses professionals understanding are presented in Figure 4.2 below:

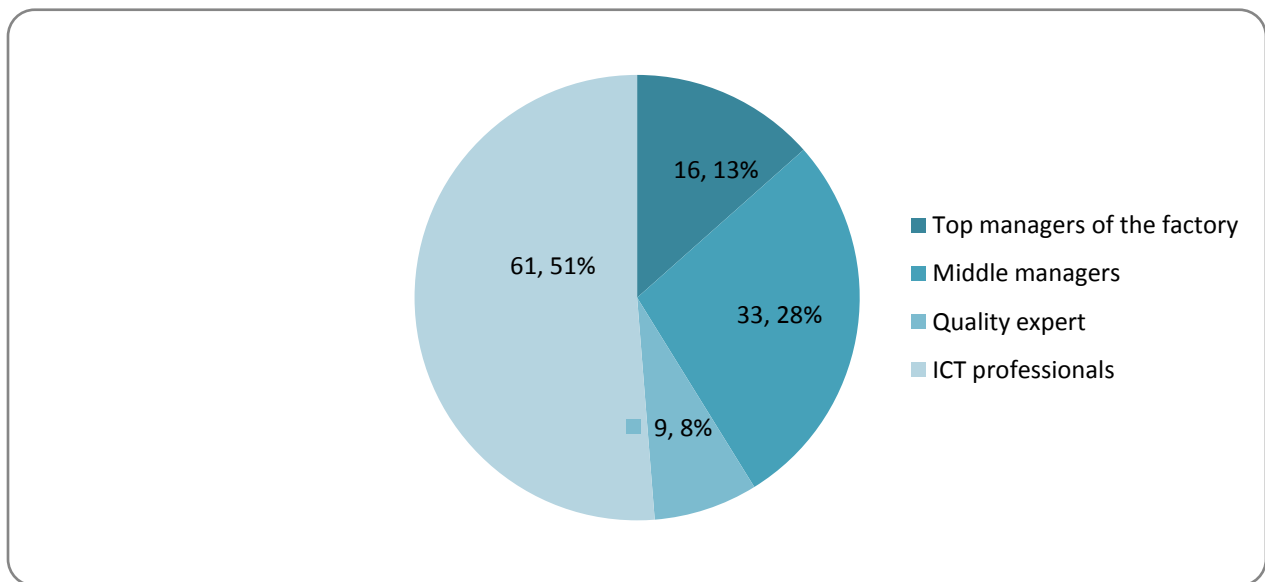


Figure 4.2 Professional understanding of KMP

As depicted in figure 4.2 above, understanding about KMP are different in the works department or profession. According to the respondents, 61(51.3%) ICT professionals have more understanding about the term and purpose of KMP followed by most middle managers with 33(28%) value, 16(13%) top managers and 9(8%) know about km. This show both in Dire Dawa national and Ture cement factories; ICT professionals have better understanding about the meaning and the benefit of KM and also middle managers and expert know about KMP.

Knowledge creation, knowledge capture, knowledge share and knowledge application are KMP exercised both in Dire Dawa national and Ture cement factories. The response is summarized in Figure 4.3 below:

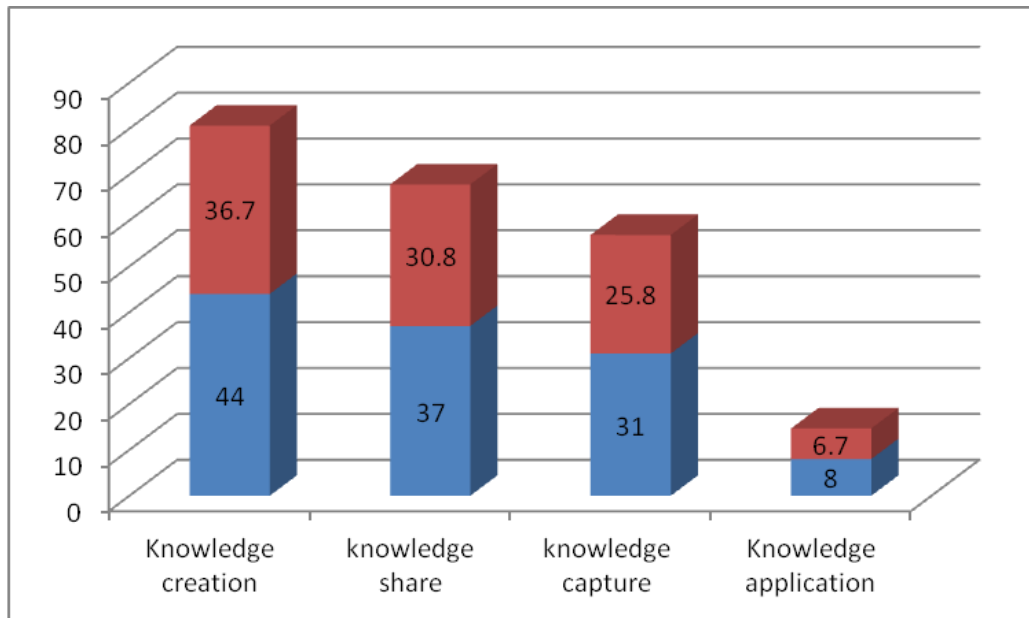


Figure 4.3 current status of KMP exercised

The above figure 4.3 shows types of KMP exercised in both Dire Dawa national and Ture cement factory. According to the respondent's, 44(36.7%), knowledge creation is currently exercise, 37(30.8%,) currently knowledge sharing is practice, 31(25.8%) respondents say knowledge capturing is also practice and only 8(6.7%) respondent agree knowledge application exercised in both factories. From this result, it is possible to say that knowledge creation, knowledge share and knowledge captures are types of KMP currently exercise in both factories.

Benefit of knowledge sharing, level of knowledge sharing, common practice available in the factory and factory's common activity are indicators of KMP both in Dire Dawa national and Ture cement factories. Summaries of the respondents response is presented in table 4.3 below:

Table 4.3KMP in cement factories by considering different activities

s.no	Activity	Frequency	Percent
1	Benefit of knowledge sharing		
	Better communication	77	64.2%
	Improve production processes	26	21.7%
	Increase knowledge reuse	16	13.3%
	Others	1	0.8%
	Total	120	100%
2	Level of knowledge sharing		
	At any time	49	40.8%
	In any situation	42	35.0%
	The top manager ordered	28	23.3%
	Others	1	0.8%
	Total	120	100%
3	Common practice available in the factory		
	Employee know about the policy of the factory	62	51.7%
	Employee get training must trained others	29	24.2%
	Employee get knowledge related to work use	29	24.2%
	Total	120	100%
4	Factory's Common activity		
	Knowledge sharing	55	45.8%
	Knowledge creation	30	25.0%
	Knowledge storage and retrieve	35	29.2%
	Total	120	100%

From the above table 4.3, knowledge sharing was one of KMP available in Dire Dawa national and Ture cement factories. The questions were posed to know the benefit of knowledge sharing practice in cement factories. For the benefit of knowledge sharing, majority of the respondents answered as knowledge sharing is used for better communication 77(64.2%) followed by improving production processes 26 (21.7%) and increase knowledge reuse 16(13.3%). From the result, it can be observed that knowledge sharing is the best mechanism to create better communication between employees and this also improves production by increasing knowledge reuse.

Regarding to knowledge sharing level in the factories, 49(40.8%) of the respondents said as at any time employees are willing to share their knowledge followed by 42(35.0%) that answered in any situation employees also willing to share their knowledge and 28(23.3%) employees share knowledge when top manager order. From this it can be said that employees are willing to share their knowledge without any criteria.

The respondents were asked to give their opinion about common practices available in both factories. The result presented in above showed that, employees know about the policy of the factory, employee get training must trained other employees and employee get knowledge related to work using its own work are common practice exercised by all employees in day to day activity both in Dire Dawa national and Ture cement factories. According to the respondents, every employee knows about the policy of the factories and employee other are common practice available in the factories with the value 62(51.7%) and 29(24.2%) respectively and employee get knowledge related to work use with the value 29(24.2%).

This shows that, majority of employees knows about the policy available in the factory because this is common practice and familiar with employees' day to day activity. From respondents' opinion knowledge sharing 55(45.8%), knowledge creation 30(25.0%), knowledge storage and retrieve 35(29.2%) are most common activity in both Dire Dawa national and Ture cement factories. Even if knowledge creation, knowledge capture, knowledge share and knowledge application are KMP available in those factories, knowledge sharing, knowledge creation, knowledge storage and retrieve also common activity available and familiar with majority employees in both factories.

Examining respondent's opinion about KMP in both factories by identifying the respondents' level of satisfaction and the respondent's response is summarized in 4. 4 below:

Table.4.4 Respondents' satisfaction level on KMP exercise

S N	Indicator of KMP	Respondents level of satisfaction					Central Tendency		
		1	2	3	4	5	Mean	SD	Dec
1	Knowledge is generated in factory by identifying key knowledge sources and capturing knowledge of key personnel through videos and documents	9	30	12	56	12	3.26	1.169	A
2	Knowledge in the factory is organized for better access and collaboration	11	22	13	64	10	3.33	1.147	A
3	Sharing and distribution of knowledge to its employees through workshops, mentoring, training and electronic document access	6	20	18	62	13	3.57	1.411	A
4	Capturing and sharing of individual and group knowledge succeed where the principles and practices of KM was applied.	3	21	11	68	17	3.62	1.013	A
5	Knowledge learning was the heart of knowledge management.	3	22	12	65	18	3.60	1.031	A

Scale: 1=Strongly Disagree (SD), 2=Disagree (DA), 3= undecided (U), 4=Agree (A), 5=Strongly Agree (SA), SDv= standard deviation

Knowledge sharing mechanism and knowledge generated by identifying knowledge source, knowledge in the factories organized for better access and collaboration, sharing and distribution of knowledge to its employees through workshops, mentoring, training and electronic document access, capturing and sharing of individual and group knowledge succeed where the principles and practices of KM was applied. The researcher used the mean value scores to make decision as: the mean score from 0.8 – 1.6 is SD; from 1.6 -2.4 is DA, from 2.4 -3.2 is U, from 3.2 -4 is A, and from 4 -5 is SA; this decision equates to the likert scale used in the study. In the case of knowledge generation by identifying knowledge source, most respondents' decision was agree with the mean value 3.26. Employees, written document, external document and electronic document are common sources of knowledge in the case of Dire Dawa national and Ture cement factories.

The result confirms that the mean value 3.26 is agree, this shows respondents know about organizational knowledge source that is available in the factories. For the question knowledge was organized for better access and collaboration respondents' decision was agree with the mean value 3.33. Based on knowledge sharing mechanism most respondents' decision was agree with the value of mean 3.57. Workshops, training and electronic document access are knowledge sharing mechanism in Dire Dawa national and Ture cement factories. This showed that knowledge sharing is one of KMP in both factories and those factories has knowledge sharing mechanism to creating better organizational culture for product improvement.

Principles and practice of knowledge management with the grater mean value 3.62, the respondents' decisions were agree, the success of capturing and sharing individual and group knowledge in organization by applying the principle and practice of knowledge management. The decision of respondents in one of the availability of KMP indicator that is knowledge share is the heart of productivity was agree. According to the respondents' knowledge share is common activity available in both factories and also knowledge sharing was the heart of productivity by increase quality of product in the factories. So, from table 4.4 above the researcher summarized that in Dire Dawa national and Ture cement factories KMP has its own principle and practice.

Knowledge share is the heart of productivity with knowledge sharing mechanism in the factories and knowledge in the factories also organized for better access and collaboration with others knowledge by identifying knowledge source available in the factories. The researcher wants to know about whether those KMP indicators have relation with organizational productivity.

The researcher use Pearson correlation for identifying KMP indicators have relation with organizational productivity and Pearson correlation shows linear relationship only and variable have quantitative nature. The researcher use this scale is functional for all Pearson correlation table. According to Evans, 1996 the value of a range from 00-.19 is very weak, from .20-.39 is weak, from .40-.59 is moderate, from.60-.79 is strong, and from .80-1.0 is very strong. The researcher accepts the range of Evans in the current study. The researcher shows Pearson correlation among KMP indicators with organizational productivity, this correlation is presented in table 4.5 below:

Table.4.5 Pearson correlation in among KMP indicators

KMP indicators	Who knows KMP	Level of KS	Common practice	Common activity
Who knows KMP	1	-.405** .000	-.268** .004	.142 .160
Level of KS	-.405** .000	1	.298** .001	.050 .025
Common practice	-.268** .004	.298** .001	1	.000 .998
Common activity	.142 .160	.050 .025	.000 .998	1

** Correlations is significance at the 0.01 level (2- tailed)

From the above table 4.5, the researcher wants to see the relationship in between KMP indicators; all asterisks inside the table indicate statistical significance. From the above table the researcher wants to know or answer the question is there a relationship between KMP indicators available in the factories. As the results of correlation analysis' of table 4.5 above, the range of correlation among KMP indicator is between -0.405 to 0.299. All variables have negative, moderate and positive relation between KMP indicators with statistically significant at ($P \leq 0.01$). The correlation coefficient between who knows KMP and level of KS is $r = -0.405$ at level of $P \leq 0.01$.

Who knows KMP has negative relationship with level of KS by 0.00 sig. value that is moderate that indicates any employees' work in both factories know about KMP, so at any time they share their knowledge because employees know about what KMP means and the benefit, they can easily share what they know but employees do not know about KMP it not shares anything about KMP. All the above negative relationship and .000 sig. value shows the result of one KMP indicator is affect the other KMP indicator that means increase the number of varies professionals to exercise KMP is affect knowledge sharing value, in but both the availability of KMP indicator has correlation in between them. Correlation coefficient between level of KS and common practice of the factories was significant at the level of $P \leq 0.01$. The rate of relationship between two variables was $r = 0.298$ with the sig values .001 indicating a weak and direct correlation between these two variables.

4.1.4. ICT facilities in Dire Dawa national and Ture cement factories

For The elicit contributions of ICT in manufacturing industry for overall productivity and profitability, different questions were posed to the respondents on ICT facility and availability, availability of Internet connection, storage of data and access computerized data. A summary of the respondents' response is presented in table 4. 6 below:

Table 4.6 ICT facilities and availability

Statements	Indicators	Frequency	Percent
Available of ICT facilities in the factories	Yes	95	79.2%
	No	25	20.8%
Availability of internet connection in the factories	Yes	74	61.7%
	No	46	38.3%

According to the above table 4.6, 95 (79.2%) of the responded ICT facility was available in Dire Dawa national and Ture cement factories and 25(20.8%) respondent says there is no ICT facility in their office. based on availability of Internet connection 74(61.7%) of respondents from Dire Dawa national and Ture cement factories says that in the office computer has an Internet connection and 46(38.3%) respondents say there is no internet connection in their offices. Internet connection, storage of data and access electronic data were indicators of ICT facility, but those indicators were different in Dire Dawa national and Ture cement factories as summarized in table 4.7 below:

Table 4.7 availability of ICT facilities with respondent work place

Statements	Place	Indicators	Value
Internet connection in work place	Dire Dawa national	Yes	71
		No	15
	Ture	Yes	12
		No	22
Storage of data in work place	Dire Dawa national	Electronic	62
		Manual	24
	Ture	Electronic	12
		Manual	22
Access of electronic data in work place	Dire Dawa national	Yes	62
		No	24
	Ture	Yes	12
		No	22

According to Table 4.7 above; respondents on the availability of Internet connection, storage of data and access of electronic data was varying in the respondents' work place. The finding shows that,71(72.4%) respondents from Dire Dawa national said as Internet is available in the office and 15(15.3%) respondents no Internet connection; in Ture12(28.5%) respondents said Internet connection was available in the office and 22(52.3%) respondents say no Internet connection in their office. The storage and accessibility of electronics data 62 (63.2%) respondents' stored their data in digital format and 24(24.4%) respondents stored in manual form in Dire Dawa national but in Ture 12(28.5%) respondent stored data in digital format and 22(52.3%) respondents stored data in manual. In Dire Dawa national, Internet connection was functional and data was stored in electronic format and majority of the employees' access electronic data. In the case of Ture cement factory Internet connection was available in employee's office but not fully functional and most data were stored in manual form or they use both electronic and manual storage mechanisms.

The following statement identifies attitude of respondents on satisfaction level of ICT facility. A summary of the respondents' response is presented in table 4.8 below:

Table 4.8 Respondent satisfaction level on ICT facility

S N	ICT indicator	Level of satisfaction					central tendency			
		1	2	3	4	5	Mean	Me d	SD	Dec.
1	Social network are used to share relevant information related to work	0.8%	27.5%	16.7%	50.0%	5.0%	3.30	2.0	1.17	A
2	Getting the address of factory employees from a computer, who can help when doing work	13.6%	32.2%	16.1%	33.1%	5.1%	2.83	2.0	1.17	U
3	Employees are encouraged to access and use knowledge saved in systems.	5.0%	32.5%	14.2%	40.8	7.5%	3.13	2.0	1.10	U
4	Computer program or software that performs routine work operations or automates business processes.	6.0%	31.5%	40%	15%	7.5%	3.0	3.0	1.38	U

Scale: 1=Strongly Disagree (SD), 2=Disagree (DA), 3= undecided (U), 4=Agree (A), 5=Strongly Agree (SA), SD= standard deviation

Table 4. 8 above present the distribution of respondents' perception with regarding to ICT facility in Dire Dawa national and Ture cement factories. Social communities is used to share relevant information with 3.30 mean value was agree, most of the respondents use social community for share relevant data and new information with other employees in their work place. Everyone get the address of factory employees from a computer when they needed their support and employees access with the mean value 2.83, the decision is undecided and use knowledge saved in the system with the mean value 3.13 the decision also undecided.

About employees accessed and used data that store in the system for facilitate product improvement, the result of this study also reflected that encouraging employees to use available knowledge in the system give power to employees and the products they produced, using knowledge available in the system facilitate factory product, the respondents' decision was undecided. Another very importance respondent' so pinion on computer program or software that performs routine work operations or automates business processes with the same value of mean and median 3.0, the decision of respondent opinion was undecided. From this the functionality and usability of ICT facility in Dire Dawa national and Ture cement factories affect by organizational policy.

The researcher explain about the respondents answer on ICT facility inside the factories and the contributions of ICT for organizational productivity and the relationship between ICT facility and organizational productivity is checked by Pearson correlation. This correlation is summarized in table 4.9 below:

Table 4.9 Pearson correlation between ICT facility and productivity

ICT facility	Internet connection	Storage of data	Access electronic data
Internet connection	1	.397** .000	.445** .000
Storage of data	.397** .000	1	.239** .010
Access electronic data	.445** .000	.239** .010	1

** Correlations is significance at the 0.01 level (2- tailed)

On the above table 4.9, the range of correlation among ICT facility is between 0.445 to 0.239, all variables have positive relationship and statistically significant at ($p \leq 0.01$). In factories, ICT facility and Internet connection has great moderate relationship with the value .397 as the factories increase the functionality of Internet connection in employees offices, the accessibility and storage of electronics data was increased.

All those relationships have positive relation with moderate indicates as if there is no ICT facility in the factories, it is difficult to access and stored data in electronic formats; but those relations has positive also impact on organizational productivity; so, ICT facility has relationship with productivity.

4.1.5 Existing policy in Dire Dawa national and Ture cement factories

Another way of examining KMP for product improvement were by examining existing policy in Dire Dawa national and Ture cement factories, to determine employees' knowledge about existing policy in the factories. Summaries of the respondents response is presented in Figure 4.4 below:

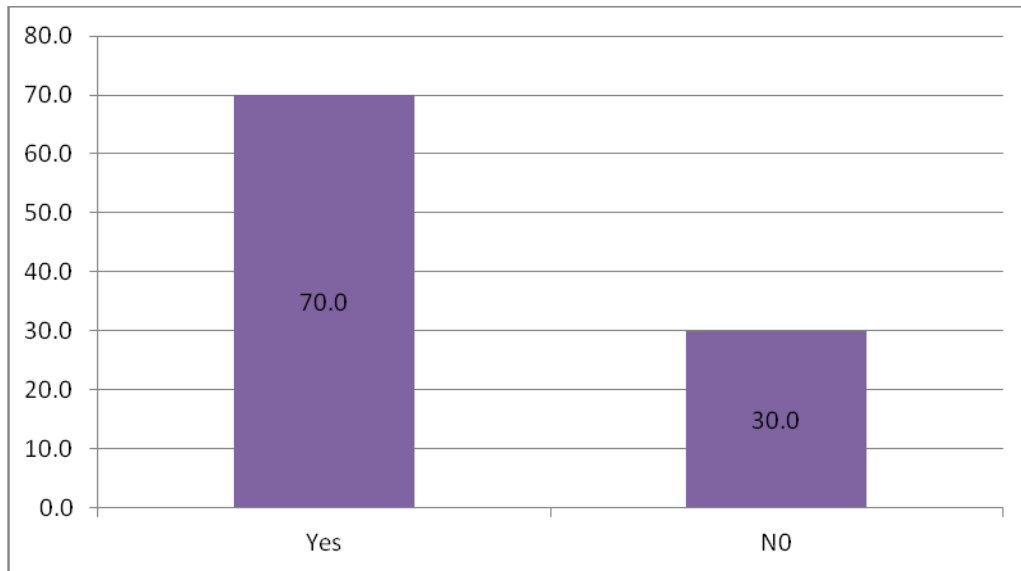


Figure 4.4: availability of KM policy

The above figure 4.4 shows; 84(70%) of respondents answer KM policy was available and functional both in Dire Dawa national and Ture cement factories.-Whereas, 36 (30%) said as there is no KM policy in both factories. By this it is possible to say that, there is KM policy in factories. KM policy is also different in Dire Dawa national and Ture cement factories. This different respondent response rate is summarized in table 4.10 below:

Table 4.10 Existing organizational policies with employees' work place

Statement	Work place	Indicator	Value
KM policy	Dire Dawa national	Yes	58
		No	28
	Ture	Yes	16
		No	18

The above table 4.10 shows; whether there is organizational policies with employees' work place or not. accordingly, 58 (59.1%) and 16 (38.1%) of respondents said that, there is organizational policy in employees' work place in DD national and Ture cement factories respectively. Whereas, 28 (28.5%) and 18 (42.8%) respondents said that, there is no organizational policy in DD and Ture cement factories respectively. By this data it is easy to say that, there is organizational policy in DD national factory and not in Ture cement factory.

Mistake correction methods, employees work motivation methods and update employees work profession are indicators of existing organizational policy in both Dire Dawa national and Ture cement factories. Summaries of the respondents response is presented in table 4. 11 below:

Table 4.11 Existing organizational policies

s.no	Activity	Frequency	Percent
1	Mistake correction methods		
	Discussed about the issue	72	60.5%
	Fire employee that makes a mistake	16	13.4%
	They use as a sample	26	21.8%
	Others	6	4.3%
	Total	120	100%
2	Employees work motivation methods		
	additional money	43	36.1%
	educational chance	53	43.7%
	managerial position	24	20.2%
	Total	120	100%
3	Update employees work profession		
	Attending workshop	74	61.7%
	Taking short term training	28	23.3%
	Attending meeting	17	15%
	Total	120	100%

From the above Table 4.11, there are other organizational policy available in Dire Dawa national and Ture cement factories to improve employees work motivation, improves employees profession and to improve mistake correction. By improving of employees work motivation, proved educational chance, additional money and managerial position are the organizational culture and policy which accounts 53(43.7%); 43(36.1%) and 24(20.2%) respectively. Regarding improving of employees profession, 74(61.7%) of respondents said that attending workshop is the way employees use to improve work profession followed by 28(23.3%) taking short term training and 17(15%) employees attending educational conference meeting.

From this in both factories, education was the basis of production. By this, Workshop is the best by employees mistake correction method; both factories use discussed about the issue 72(60.5%) followed by the use of the mistake as sample 26(21.8%) and fire employee that makes a mistake 16(13.4%). According to both factories trend discussing the issue and use the problem as a sample in managerial level, then take measurement according to their mistake and worker proclamation was the main problem solving mechanism but there is situation that fire employees that make a mistake.

Respondents' level of satisfaction was another way of examining available existing policy inside the factory to improve productivity in Dire Dawa national and Ture cement factories. Table 4.12 summarized level of respondents satisfaction, according to the statement on knowledge sharing practices contribute organizational productivity of the factory, decrease cost of production, factories need functional policy regarding to knowledge sharing among employees for better product and factory has a policy regarding databases of good work practices are regularly updated. The responses given by the respondents are summarized in table 4.12 below:

Table 4.12 Respondent's satisfaction level for organizational existing policy

<i>S</i> <i>N</i>	Organizational existing policy	Central tendency		
		Mean	SD	Dec.
1	Knowledge sharing practices contribute organizational productivity of the factory and decrease cost of production.	3.52	2.07031	A
2	Factories need functional policy regarding knowledge sharing among employees for a better product	3.68	2.16809	A
3	The factory has a policy regarding databases of good work practices are regularly updated.	3.10	2.20437	U
4	The policy in my factory work on writing documentation.	3.53	2.01379	A
5	Encourages workers to participate in project teams with internal and external experts	3.62	2.13909	A

Table 4.12 discussed about the overall existing policy in the factories. Knowledge sharing practices contribute for organizational productivity of the factory and decrease cost of production the respondents decision with mean value 3.528 is agree shows that in both factories knowledge sharing is common practice that exercise in day to day employees' activity. Respondents' decision on factories need functional policy regarding to knowledge sharing among employees for better product with the mean values 3.683 was agree, this shows both factories need knowledge sharing policy for day to day employee's knowledge sharing activity. Policies regarding to databases updating is another policy exercised by employees in both factories.

The statement has respondents decision with mean values 3.10 was undecided indicate majority employees work in both factories does not have clear understanding about database. In another way policy in the factories depends on written document that is available and legal was another indicator of organizational policy, perversely this research shows electronic document, written document and employees were sources of knowledge in both factories, policy in the factories depends on written document has respondents' decision agree by the mean value 3.53. Respondents' opinion on encouraging workers to participate in project teams with internal and external experts has the mean values 3.63 indicates that majority of respondents decision was agree. From the above organizational policy indicators it can conclude that majority respondent decision is agree.

4.1.6. KMP with organizational product process change in Dire Dawa national and Ture cement factories

To determined KMP for productivity, Question that is identifying the relation between KMP with product process change was asked to Dire Dawa national and Ture cement factories respondents. The responses given by the respondents' are given in table 4.13 and in table 4.14 below:

Table 4.13 Summarized organizational product process change with KMP

s.no	Statements	Indicators	Frequency	Percent
1	Product process change in the factory	Yes	118	98.4%
		No	2	1.6 %
2	Relation of product process change with knowledge available in the system	Yes	109	91%
		No	11	9%

As the above table 4.13 shows 118 (98.4%) of respondents responds as product process change with KM. Whereas, 2 (1.6%) said that, there is no product process change with KM, by this it is possible to conclude that, organizational product process changed as KM exercise. Regarding to the relationship between productivity and knowledge available in the system, 109 (91%) respondents responds as there is a relationship between them and 11 (9%) of them said as there is no relationship between productivity and knowledge available in the system. So, it is possible to conclude as there is relationship between productivity and knowledge available in the system.

Another way of examining KMP comes with organizational productivity by examining the respondents' level of satisfaction; this summarized in table 4. 14 below:

Table 4.14. Satisfaction level of respondent for organizational product process

S N	Indicator product process	Level of satisfaction					Central tendency		Dec
		SD	D	U	A	SA	Mean	SD	
1	Knowledge in organization is used for the business process achievement and service improvement.	13	13	15	64	15	3.55	2.17	A
2	The use of KM systems is differentiating products from low cost substitutes in the marketplace.	6	23	5	78	8	3.51	2.33	A
3	Enhancement of product and service quality; productivity and communication was the major outcome of knowledge management.	6	16	18	67	13	3.54	2.0	A
4	Organizational product process change comes with the effective share and reuse of knowledge for increase product.	10	25	34	43	8	3.11	2.0	U
5	KM initiative in the factory improved organization's effectiveness and product process	6	15	19	72	8	3.5	1.2	A
6	Productivity and profit is benefits of KM in organization.	11	27	7	49	26	3.43	2.3	A
7	KM increased market share and collaborative work of virtual teams and better decisions	6	22	19	55	18	3.57	2.1	A
8	KMP improved KS with employees, customers and increases knowledge reuse.	5	17	9	75	14	3.6	2.0	A

Scale: 1=Strongly Disagree (SD), 2=Disagree (DA), 3= undecided (U), 4=Agree (A), 5=Strongly Agree (SA), SDv= standard deviation

In the above table the percent of respondents decision listed from 1-8 as KMP on productivity. In Dire Dawa national and Ture cement factories knowledge is used to contribute to business process achievement and service improvement, KM systems in differentiate products from low cost substitutes in the market place, enhancement of product and service quality for productivity and communication.

Knowledge transparency and retention was the major outcome of knowledge management, KM in both factories deal with the effective transfer and reuse of knowledge for product process change. KM initiatives in the factory improved organization's effectiveness and product process this productivity and profit was the benefits of KM, increased market share; better achievement of strategic objectives, collaborative work of virtual teams for better decisions and improved sharing of knowledge with employees, customers; increase in knowledge reuse are all indicator of KMP for organizational product process in Dire Dawa national and Ture cement factories.

Organizational product and service improvement come with available knowledge inside those factories by respondents' decision agree. KM initiative improved organizational effectiveness and productivity, enhancement of product and service quality and communication were the major outcome of KM and the importance of KM is increased market share; better achievement, improved transparency, collaborative work of virtual teams and better decisions were another indicator of KM for organizational productivity with mean values of 3.5, 3.51 and 3.54 respectively, the respondents decision on the above statements agree. This respondent's decision of agree indicated that KM give strength for organizational effectiveness and product process change with customer need.

Similarly, organizational product process come with effective transfer and reuse of knowledge for increase product by respondents' opinion undecided with mean value 3.11 is another indicator of KM with organizational productivity. This respondent's decision indicates even if knowledge sharing was common practice always exercises in day to day employee's activity but there are problems when knowledge store in a system for reuse purpose. From the above indicator it is possible to say that the respondent decision is agree on the organizational product process change with KMP.

The Pearson correlation check by the researcher was identifying the relation between KMP with organizational product process change. Finally the researcher wants to identify the relation between KMP exercise and organizational product change by asking the question Is there relation between KMP and organizational product process change. The response of Pearson correlation is summarized in table 4. 15 below:

Table 4.15 Pearson correlation between KMP and productivity

Organizational productivity	Product change	KMP exercise
Product change	1	.250** .000
KMP exercise	.250** .000	1

** Correlations is significance at the 0.01 level (2- tailed)

From the above table the researcher get the answer is there relation between KMP and organizational product process; KMP come with organizational product process change has positive relation with $r=.250$ values and $.000$ sig, that is weak relation. Both factories increase the application of KMP exercise in their factories, organizational product process increase. The well exercise KMP in their cement factories, also enhance their product process, similarly KMP exercises in both factories come with organizational product process change with $p \leq 0.01 = .000$ sig value.

4.1.7. Results of qualitative data

Qualitative data was done by thematic content analysis using interview. The researcher also carried out interviews in Dire Dawa national and Ture cement factories' top manager, head of MIS and ICT director. Interview was done to strengthen and get detail information to achieve the objective that is to investigate existing policy that support KMP in the cement factories and to understand the contributions of KMP in organizational product process for the cement factories and for the objective that identify ICT facility that is available in cement factories for enhancing KMP and organizational product process is use interview to show how it work in detail and process.

In both factories the interviewees indicated that there were ICT facility in an employee's office, in addition, interviewee from Dire Dawa national said that the system was networked and semi-automated based on the department need, according to Dr.Kuldy, if employees need any information from top managers, they get from their computer, even if Internet connection does not work all computers were connected to each other; communication is never disconnected.

Moreover, communication web mail, Gmail chat and techno blorth were way of communication in Dire Dawa national. Techno blorth is one of the communication ways in Dire Dawa national, this use as social communication and functional on local area network, this technology is functional with Internet connection and without Internet connection by pop up message. Respondents from Ture even they have ICT facility in their offices; however Internet connection is not fully functional. According to respondents from Dire Dawa national and Ture cement factories data were stored in electronic form and majority of the employee's access electronic data. According to the interviewees result, the benefit of ICT such as facilitating works in each office and create good work environment, manage work, control over all systems and facilitate system functions were the main responsibility of ICT office in both factories.

Moreover, knowledge base system (KBS) was available in Dire Dawa national cement factory for decision making purpose, any decision in the factory was supported by KBS. Web long, Clinic system, safety encapsulations and document repository were some of the decision mechanism supports by the KBS in the case of Dire Dawa national. Regarding to the above issue, according to Ture cement factory respondents not such system available but they have a plan to create a system that facilitates productivity. Respondents in both factories said that improve product and service quality, transparency and productivity were the major outcomes of KMP. Both in Dire Dawa national and Ture there were no responsible offices for KMP but In Dire Dawa national the work is done by position of ICT director, the same is true in Ture the work is done by quality control office and those two departments use one office but the work is different.

Dire Dawa national and Ture cement factories have organizational culture to facilitate educational chance, training outside country, to give allow Gmail account (phone card) are the way of incentive mechanism to motivate employees in the work place. According to both factories respondents there were no clear written KM policy but in Dire Dawa national there were a written ICT policy with collaborate with KM policy, but in Ture cement factory there is no any clear written ICT and KM policy, but they are working related to worker proclamation, factory principle with KM as a culture. In Ture cement factory like knowledge sharing exercise as a culture and policy like mistake correction methods work based on worker proclamation.

Limited capacity KM expert in the system, shortage of ICT facilities, most employees work on ICT is not professionals, shortage of protecting offices and uncomfortable work environment were the major problems that hinder implementation of KM in their factories raised by respondents from Ture cement factory. In the case of Dire Dawa national cement factory, the complexity of KMP, the expensiveness of materials used for ICT facilitating and responses of employees for the system were the main problems at the time of KM implementation. Building fully automated system and builds a smart work environment were the future plans of Dire Dawa national cement factory, similarly building a full network environment, build KBS for decision making purpose and show big image on the world by increasing productivity and quality of product were the future plans of Ture cement factory.

From all the above qualitative data the researcher want to see details information about ICT facility, organizational policy and the impact of KMP on organizational product process change that means the researcher use qualitative data as the supporter of quantitative data. As a result of the interview the major finding was ICT facility, knowledge and organizational existing policy were business process facilitator. Non availability of KM policy, non functionality in some office and expensiveness of ICT material, limited capacity knowledge expert, no responsible offices for KMP and the complexity of KM process are problems that hinder implementation of KMP in their factories. Improve quality product, transparency and productivity were the major outcomes of KMP, thereby showing a deficiency in lack of collaboration among business process facilitators in the cement factories.

This would therefore need a framework to create collaboration among business process facilitators and KM expert with KMP exercise on business process. The observation result from Dire Dawa national cement factory shows, regarding to availability of document staff Dire Dawa national has well electronics and paper based document staff and every one need any information regarding to staff document they get easily. Regarding to Ture cement factory document staff were available in the form of hard copy and electronic format, the main thing in this regard most employees work in Ture cement factories access document that is stored in the form of hard copy easily and the principle of kaizen is work will.

Based on good work environment or availability of employee's office observation result shows the service is better. Observation result regarding to Ture cement factory based on good work environment or availability of employee's office is not better, in one office more than two department's employee's work and more than ten employees work in one office. According to ICT facility Dire Dawa national has better and use high technology but in Ture cement factories ICT facility are available but Internet connection is not fully functional. From the observation result knowledge creation, knowledge share and knowledge storage and retrievals were KMP exercise in day to day employee's activity in both factories.

Administrator of Dire Dawa national focused on employee's motivation to work by facilitate work environment and work with bottom employees. Similarly, Ture cement factory administrators give freedom for employees in addition to money and educational chance for employee's motivation. In both factories there is no clear KM policy but factories use ICT and organizational policy as KM policy. Dire Dawa national has functional knowledge portals for use business process and using Internet for business process for promotion organizational product, exchange information for employees and customers. KBS is not work in Ture but they use Internet for business process, Dire Dawa national and Ture cement factories use social network for organizational productivity.

4.1.8 Proposed framework for product improvement

The current study shows KMP is not fully exercise because knowledge application is low that affect by organizational knowledge capturing process that is not exercise well as users need. Knowledge available in the factories has pre request knowledge in the system but current user does not get update pre request knowledge when doing the work. Non functionality of ICT facility affects KMP that is storage and sharing. Non availability of KM policy affects organizational product process and use different ICT policy. Majority of the respondents does not agree by productivity and profit is benefit of KM in organization, this creates KM environment and business environment. All those the above problems solve by the current proposed framework. Improving manufacturing productivity involves collecting and analyzing data and makes effective decisions. KM was an integrated approach to create, capture, share and apply knowledge to enhance organizational productivity, profitability and growth.

The proposed framework came after the current result and recommends using this for solving the problem that is found in the study. From the current result knowledge, ICT facilities and organizational policy are the main input or facilitator for organizational productivity. The proposed framework has created collaboration with the above productivity facilitator with organizational culture and creates collaboration between KM environments with a business environment.

The availability of KMP was the strength of Dire Dawa national and Ture cement factories. The result of the current study showed that knowledge application is nearly not practiced/ less practiced because there is knowledge that is available in the factories not well capture, which shows a gap in KMP, because application of the existing and created knowledge was a very important practices, even if the factories identify and create what knowledge needed, then captured for reuse purpose is the main practice in KMP then share for an employee that needs and this needs correction by the current proposed framework.

ICT facilities and organizational culture available in the factories considered for productivity which was strength for both factories, but this facility is not fully work with each other because both factories do not have clear KM policy. Organization was not fully automated and there is no system for facilitate KMP with ICT facility, organizational policy and productivity. This research showed this as a gap and it needs maintenance or correction by the proposed new system. knowledge creation in both factories takes in the main form of task analysis, documentation, focus groups, learning by being told and interviewing experts, that is most knowledge available (stored) in the system has pre request knowledge and knowledge capture in the form of document is difficult to access when user needed, interview is difficult to capture at the time, so this proposed framework solve such problem effectively. Majority of the respondent does not agree by productivity and profit is benefits of KM in organization this problem creates the separate environment that was KM and business environment, this needs improvement or both environments work each other and correct by the current proposed framework.

The proposed framework, depicted in figure 4.7 below contains two environments, Knowledge management expert control the overall system in the factories, first expert identify the two environments and what is done in each environment with the factories.

Under KM process environment, knowledge was processed and in business environment business is applied and knowledge expert control all process with internal and external factors. In the proposed KM framework, Knowledge expert start knowledge management process by creating new knowledge for organization from inside and outside source that is knowledge is available in the form of tacit and explicit then capture in to database. Knowledge sharing takes after the request came from employees then expert check existing reality about people, policy and technology then answer employees question. Finally employees applied what they get from expert within short time, and then the product process time is decrease with increasing profit and productivity. Knowledge expert is the main attribute in this proposed framework; those experts accept tacit or explicit knowledge. KM experts have been using techniques for accepting tacit and explicit knowledge that techniques was social network analysis, systems analysis, processing map, focus group sessions, and one-on-one interviews with key employees.

The ultimate goal of this proposed framework was by using managed knowledge inside the factories and KM environment collaborate with the business environment to facilitate or increase organizational productivity. Externalization, internalization and socialization were the process of knowledge around the organization, top manager, middle manager and employees are actors or facilitators inside the organization. Knowledge may be tacit or explicit and knowledge process takes by externalization from the outside world, by internalization takes knowledge available in the factories or knowledge process in a socialized way in between them. Knowledge flows inside the factories take from the top manager to the employees or vice-versa.

KM environment is the main attribute of this proposed KM framework, in KM environment KMP is processed that is knowledge create, knowledge capture, knowledge share and knowledge application. Capturing was the first KMP in the proposed KM framework. Knowledge evaluation comes at the time of knowledge capture, before knowledge capture it needs evaluation because knowledge it may or may not be importance for the factory. Value, accuracy and relevance are way of knowledge evaluation. Knowledge filter was the second KMP in the proposed framework; knowledge filter takes after knowledge to be relevant for the factories or after knowledge capture. Organization, classification and categorization were preparation or filtering methods when knowledge store in the factories database.

Knowledge sharing takes after once knowledge organized, classified and categorized in the database, once knowledge filter and stored in the database then knowledge easily share inside the factories and finally knowledge application takes place when the request came from business environment. Business environment is the second main attribute in this proposed framework, this environment encompasses all internal and external factors that affect a company's operations and include strengths, weaknesses, internal power relationships and orientations of the organization, social and cultural factors, clients and suppliers, technological developments and laws.

Surrounding, which have direct or indirect bearing on the functioning of business, knowledge application depend on business environment request, the request comes in the form of subjective or objective, finally the system answered the request by the support of knowledge expert with considering the factory people, policy culture and technology that was available in the factories. People, policy, culture and technology were actors and those are internal factors in this proposed framework facilitator in business environment.

Supplier, customers and market are external factors that affect business environments, material that use for product from customer affect organizational product. Customers and market affect organizational product because the once directly use the product. The final goal of this proposed framework is by creating collaboration among KM environment inside business environment; the result is organizational productivity for the cement factories. The final attribute or output from the proposed framework is productivity, quality and profitability; accordingly, the following framework is proposed.

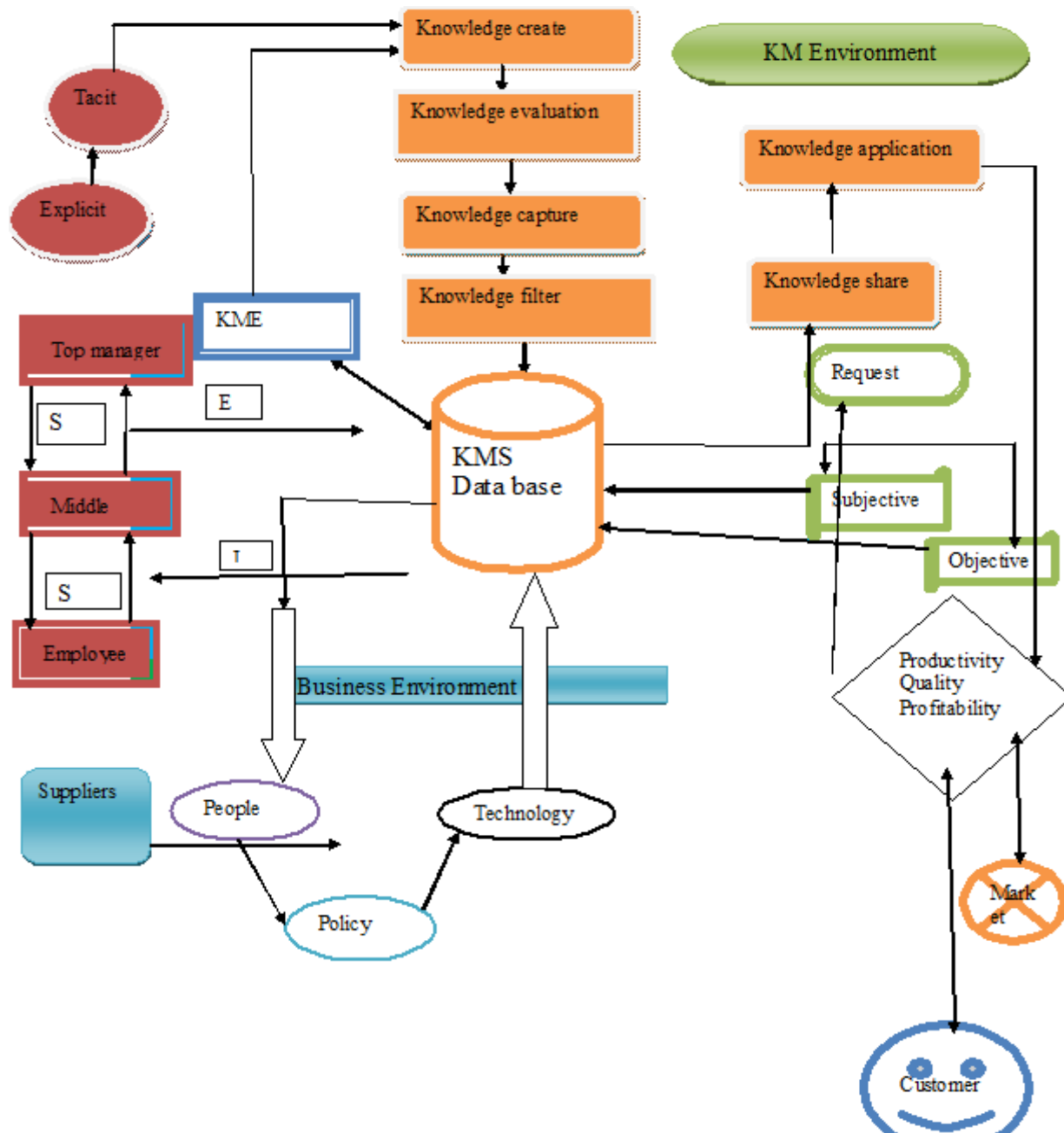


Figure 4.7 Proposed KM frameworks

From the new proposed framework, E= stand for externalization, S = socialization, I= internalization, EME =stands for knowledge management expert.

4.2 Discussion

4.2.1 KMP in Dire Dawa national and Ture Cement factories

On the base of analysis and interpretation of data collected from respondents, it is clear that most of the respondents said KMP is available both in Dire Dawa national and Ture cement factories. Knowledge creation, knowledge share, knowledge capture and knowledge application are KMP available in both factories. Knowledge application is not well exercise because in both factories knowledge is not capture as the user needs. Knowledge storage and retrieval was done in both factories at any time employees wants but knowledge storage in the system is affect by the problem of ICT facility and functionality. The process of KMP in Dire Dawa national and Ture cement factories is almost the same because those are cement manufacturing industry, both factories create new knowledge from outside and inside its boundary.

Customers, suppliers and market are outside source of knowledge when factories employee create new knowledge. Both factories provide different training programs for its employees depending on their employees work inside the factory and give printed manual for trained, employees create new knowledge by reading these training manuals and documents is another way of knowledge creation in both factories. Discussing its own tacit knowledge with other employees is another knowledge creation mechanism exercise by employees of both factories, even if employee have new knowledge get by nature or get by training before create and stored in the database, factories manager must be sure that knowledge is important for production process. Both knowledge capture and knowledge share affect by organizational policy, once employees create knowledge and identified in the form of specific individuals or groups then next process is capturing that knowledge. Capturing knowledge in both factories collecting all the relevant documents and organizing them in a meaningful manner for the use of factories productivity, knowledge creation in both factories takes in the main form of task analysis, documentation, focus groups, learning by being told and interviewing experts. In most case cement factories knowledge have prerequisite that store in the system or in the form of hard copy in this time knowledge capture by task analysis was done.

Knowledge that is important for production process and product quality control has prerequisite idea and knowledge creation by task analysis is done in those departments. Documentation is another way of knowledge capturing methods in both factories, regarding to policies, work manuals, reports, memos, meeting notes and standards were knowledge that is captured in the form of documentation. Focus groups is another knowledge capturing mechanism practiced by Dire Dawa national and Ture cement factories, in previous time employees discuss the problem of Internet connection and solve the problem, in other time the problem of Internet connection happens ICT departments need the first discussion about what is the problem and how to solve at that time focus group work together then discuss the issue and capture that knowledge.

Learning by being told was the main knowledge capturing mechanism exercised by Ture cement factory day to day activity, most employees in Ture cement factory capture knowledge from Chinese by the way of “learning by being told” about how the work flows and interview with Chinese expert about technical knowledge then capture all working process in the form of hardcopy and electronic form. This way of knowledge capturing was not only exercised by Ture but Dire Dawa national exercised this when they need.

Knowledge sharing also another KMP exercise both in Dire Dawa national and Ture cement factories, in those factories employees share their knowledge for different purposes like for monitoring all people inside their factories, for only departmental benefit, for getting individual trust and the major one was for getting reward from their factories. Most employees’ share their knowledge for getting the above purpose especially reward from their factories. Workshop, training, face to face group discussion, electronic media like radio were some of the mechanisms employees’ use for sharing their knowledge in Ture cement factory. In Dire Dawa national and Ture employees work in ICT department that is ICT technicians have responsibility to share their ICT technical knowledge for the purpose of monitoring the system and helping others people inside their factories.

Employees work in product quality control and production department share their knowledge about the production process, quality of product and standard for the purpose of departmental use or benefits. There are employees in abroad for getting long term education or sort term training then come to our country, such types of employees were willing to share new knowledge for the purpose of getting trust by other employees and top manager; reward is main way of facilitating knowledge sharing inside both factories.

The research that is conducted by Michael,(2002) shows organizations that apply KM tools and techniques have a real opportunity to impact bottom-line results. The study was sagest by avoiding the drawback that frequently occur KM efforts factories can more effectively apply their knowledge to reduce costs of production, better serve to their customers and gain a distinct competitive advantage in the marketplace. According to Michael study successful companies recognize that significant learning occurs when employees attempt to jointly solve problems on a day-to-day basis by using its own knowledge.

One way that organizations have fostered informs all earning is by using and supporting formal or informal groups of employees who have a common way of working. These communities bring individuals together to ask questions, share documents and tools and provide a forum where practitioners can tap into the experiences of others; so, the current study result of KMP in the factories have a positive impact on organizational performance has an agreement with Michael,2002.

In Dire Dawa national and Ture cement factories knowledge source is not capture properly and use key knowledge sources like employees, customer (market), technology and document available in the factories. Employees were the base of knowledge in both factories because everybody has its own tacit and explicit knowledge that was important for organizational productivity. Customers that was market also source of knowledge for factories, customers or market of Dire Dawa national and Ture cement factories give knowledge about the material that want from the factories, the procedure of the production quality and type.

In both factories there are production and promotion department that department collect information about the product from market for the purpose of product increment, those department have knowledge about the market, competent, customer and new product available in the market because this was the key knowledge source of productivity. In Dire Dawa national and Ture cement factories technology and document like policy, rule and regulation of the factories were source of knowledge in the factories.

The study of Bojan, 2012 reported, the result about market knowledge implies knowledge (information) about wishes and demands of customers, their needs and their business processes. The more it is known about customers and markets, the greater the opportunities for invention and innovation. In addition, active monitoring of market signals was very important because it provides opportunities for creating innovation. According to Bojan market knowledge was useful for the factories by provides information about the problems and requirements of customers; it facilitates estimation of the value of new product/services and of other changes in the market; it facilitates and improves future communication among factories and its buyers (customers) and technological knowledge refers to knowledge of manufacturing or production methods and tools, it includes the education level of employees, their work and technological experience; so, the current study about the factories knowledge source agree with Bojan.

The study of Ler (1999), on product management and knowledge management, the competitiveness of an organization was there by achieved knowledge sharing and integration process can generate new knowledge. He pointed out that KM involves collecting information and transferring information to demanders. Activities like knowledge discovery, knowledge refining, knowledge storing and knowledge sharing and also knowledge application can effectively increase the value of knowledge asset in an organization, according to Ler those process was called KMP; so, the current study agrees with Ler.

4.2.2 The contributions of ICT facility for productivity in Dire Dawa national and Ture cement factories

The current study result shows that ICT facility was working in both factories with internet connection but the non functionality in some office of both ICT facility and Internet connection affect KMP implementation and organizational performance. ICT service that is the availability of computer, Internet connection, storage and accessibility of computerized data; In both factories social network help knowledge sharing practices and non functionality of ICT facility affect knowledge capturing, knowledge sharing, access and use of knowledge save in the system. From the total respondents 79.2% respondents' answers there is ICT facility in their office and from the total 61.7% respondents also answers Internet connection is available in their office.

Dire Dawa national and Ture cement factories use social network for knowledge sharing purpose, the main knowledge sharing mechanism inside and outside the factories was social network like group mail, face book, twitter, linkedIn and pinterest. Any employee work in Dire Dawa national cement factory was not exchange information from outside world except ICT directors allow the permission.

The main use of social network was distribute large knowledge or information at the same time to all employees and people in the world, in both factories face book is block in all time but both factories has face book page for sharing knowledge or information that is available in the factories for outside world by ICT director. In Dire Dawa national group mail and popup remainder are key electronics knowledge sharing mechanism inside their factory, similarly in Ture cement factory group mail and individual e-mail are the main electronic knowledge sharing mechanism use within the factory.

The research article reviewed by Stephan Kudyba, 2003 indicated a well-designed document repository with portal access helps spread the available captured knowledge and experience existing within the firm to those in need of this information. According to his study other IT attributes such as search engines in some initiatives also augment the process of retrieving vital documentation or expert contacts.

Even simpler IT systems such as e-mail and online internal chat systems facilitate informal networking channels for employees to correspond and share experiences, information and knowledge which can help reduce redundancy of errors and lead to innovative techniques for processes and product development. According to his result majority of the respondents identify the importance of ICT for productivity that is ICT as a medium or channels of communication was a very useful tool, it saves time and enhances the speed of correspondence and decrease the reaction time and it is also minimizing errors. The use of ICT was to improve their work performance and the main benefit of internet connection was to share available data easily and in secured way, this is the means of improving productivity, if using strategically by this reason the current result of ICT for organizational productivity is agree with Kudyba, 2003 .

4.2.3 Existing KM policy in Dire Dawa national and Ture cement factories

In both factories KM policy does not have clear written document and policy in the factories as the base of organization principle and written document. Work motivation and problem solving mechanism for employees have policy. Manufacturing industry identifies KM policy and the major important to apply KMP for improving productivity was to know about policy that was available in the factories and use that policy. Employees are loyal for factory principle and worker's proclamation, every activity in both cement factories work on the base of organizational principle and worker proclamation.

Education is the base of organizational productivity and once problem is occurs employees are discussed about the problem then solve. Both factories facilitate educational workshop frequently because those facilities were part of organizational policy and proved educational chance was the major principle or policy that both factories use for increase employee work motivation and innovation mechanism. KMP in Dire Dawa national and Ture cement factories are the base of productivity, knowledge available in the system came with organizational productivity and KMP used on the area of business process achievement; on service improvement, product quality, market share, collaboration among employees and knowledge sharing. Effectiveness, productivity and profit were the major benefit of KMP in both factories.

The current study agrees with the study of Herkema (2003), who addressed the process of knowledge acquired, adapted and shared with the aim to create new knowledge which improve product and service are consider the innovation process. For increasing organizational efficiency, key decision making as to resource allocation was a prime requisite for this KM initiative was no exception. According to his result KM initiative was a strategic plan that seeks to develop and utilizing the existing assets of knowledge and experience of individuals within an organization in order to enhance business process. The finding of the current study also agrees with the finding of Kiessling (2009), on exploring KM to organizational performance in a transitional economy. Kiessling found that direct effect of KM was on the outcome, creativity, products, and service improvement and employees development of the organization. KM is found to have a direct relationship with productivity of the organization. The current study of KMP has direct relationship with productivity and policy, technology and people or leadership system that was the facilitator of KMP on organizational productivity.

The researcher wants to answer the question “Is there relationship between available knowledge in the factories and organization productivity, Is there relationship between ICT facility and organizational productivity and Is there relationship between KMP and organizational productivity” the answer was “yes” there is negative, moderate and positive relation by 91% respondents answer with .000sig values under $P \leq 0.01$.

The study conducted by Amir, 2012 reported that there is no meaningful relationship between KMP and productivity. The reason behind this result was the degree of utilization on policy and approach, leadership systems, promotion and bonus system, knowledge acquisition system, knowledge training system are less. According to his result policy and approach, leadership systems, promotion and bonus system, knowledge acquisition system is not directly affect the factory KMP and the contribution is not clear on organizational productivity. The current study work on the relation of those things by this reason the current study result disagree with the work of Amir.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

The study showed that, KMP such as knowledge creation, knowledge capture; knowledge share, knowledge preservation and knowledge application are available and exercised in both factories. The applicability of organizational knowledge is affected by organizational knowledge capturing process. Awareness about KMP increased among employees through time to time. Incentive was the main issue when KMP exercised; whereas, workshop; training and document are used as knowledge sharing mechanism.

ICT facilities with Internet connection are available; but, the non functionality of both ICT facility and Internet connection in some sections affects KMP implementations. ICT facility includes availability of computer, Internet connection, storage and accessibility of computerized data. Social network helps knowledge sharing practice, for instance to exchange information through Gmail, Gmail chat, pop up message about the factory product, service, price and organizational information for people that live inside and outside the factory at any time. There is no officially specified responsible body to facilitate KM policy. As a result of KM policy does not have clear written documents; the factories use principle and written document as the base of organizational KM policy.

KMP is used for business process to achieve product quality, market share, and collaboration among employees. The relationship between productivity and available knowledge in the factories depends on people, ICT facility and organizational existing policy available in the factories. The non availability of KM policy and limited capacity knowledge expert are problems that hinder implementation of KMP in their factories. The study also concludes currently both cement factories have two environments those were KM processes and business process environment, this two environment works separately, so the research propose KM framework for creating collaboration for those environment.

5.2 Recommendations

Willingness of managers and employees who participate in create, capture, share and application of knowledge in both factories depends on their motivation, since there was a meaningful relationship between KMP and organizational productivity, both factories must consider all those people who participate in KMP and gave the necessary training on KMP, approaches, policy, objectives and the importance of knowledge management. They also give incentive strongly to motivate the employees in order to ensure sustainable participation in KMP. Even though KMP were available, knowledge application was the final KMP and this practice have relation with knowledge capture in those factories. Therefore, the managers of both factories should give due attention to knowledge capture because it is the base of knowledge application and develop a strategy so that each and every knowledge that could contribute towards productivity improvement and increase organizational productivity be capture for application.

A more immediate and productive area of policy development was that of stimulating diffusion of quality knowledge to the cement factories community, through various bodies and mechanisms. These might include the support of business networks, development and KBS or knowledge portals especially for Ture cement factory, so managers of Ture cement factory give attention and facilitate this in their work place.

An increased understanding the role of knowledge and KMP for those types of manufacturing industry in particular will most probably lead to good returns in productivity and social benefits. Both factories create knowledge center and introduced the use and available good practices in their factories.

In both factories KM does not have policy but Dire Dawa national cement factory work with ICT policy instead of KM policy related with factories vision and mission, to achieve this objective factories give attention for employee's profession and work on introducing KM policy clearly. Knowledge sharing was highly variable, differentiated and culture in Ture cement factory, Therefore managers of Ture cement factory should set written KM policy for further work and work on employees work profession and educational statues.

Effective KM helps an organization adjust quickly its business processes in accordance with current conditions, which especially becomes noticeable in times of frequent and dynamic changes. Efficient KM enables employees to use knowledge, and other resources more efficiently, both factories create efficient KM enables in the facility.

ICT facilities is the base of factory production process and organizational productivity, for organizing available materials with knowledge that is need for production purpose capable KM expert is need, so both factories established its own KM and ICT office and solve limited capacity of KM expert for easy work.

In both factories, education was the base of organizational productivity and everyone in their factories needs to learn, so organization more work on culture of education and proved educational chance for employees.

KM environment and business environment have link. Therefore the researcher strongly recommends for both Dire Dawa national and Ture cement factories to implement the proposed framework.

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Appendix

Appendix A: Questionnaire for factory employee

Dear respondent:-

This questionnaire is a data collection instrument for a research entitled “Assessment of KMP for product improvement: the case of Dire Dawa national and Ture cement factory”. The questionnaire has 3 sections with each section on: general information, KMP and product development, which elicit information about you and your factory. You are selected to fill this questionnaire from your factory.

Please contact me at my address below, if you need any clarification.

I think you for taking your time to fill this questionnaire.

Name:-YeshiaregTemtime

Phone number:- 0913972932

E- mail address: yy.yeshi@gmail.com

Section A: General information

1. Gender

Male Female

2. What is your highest educational status?

Certificate Doctorate degree

College diploma Master’s Degree

BA/BSc degree

Other (specify) -----

3. Service years in the factory

Less than 3 years 5 to 7 years

3 to 5 years More than 7 years

Section B: KM process

This section discussed about KM process with KMP and available existing policy

1. What is the current status of KMP are available? For all question more than one chose possible.
 - A. Knowledge creation
 - B. Knowledge capture
 - C. Knowledge sharing
 - D. Knowledge application
 - E. Others specify.....
2. What is your understanding about KMP?
 - A. I don't hear before this
 - B. I know and use this term
 - C. Sometimes I hear but don't use
 - D. My work is not related with this term
 - E. Others specify.....
3. By your understanding who knows about KMP?
 - A. Top managers of the factory
 - B. ICT professionals
 - C. Middle managers
 - D. Quality control expert
 - F. Others specify.....
4. Is there KM policy available in your factory?
 - A. Yes
 - B. No
5. Which policy is functional in your factories?
 - A. Policy related with knowledge sharing for employees
 - B. Policy related with knowledge capture from external
 - C. Policy related with improve knowledgeable worker retention
 - D. Policy related with innovation for successful employee

- E. Others specify.....
6. What is your organization policy says, if the employee does a mistake on work?
 - A. Discussed about the issue don't repeat mistake in the future.
 - B. Fire employee that do a mistake.
 - C. They use as sample
 - D. Others specify.....
 7. How employees share their knowledge inside the factory?
 - A. By getting incentive
 - B. By getting position
 - C. By its own moral responsibility
 - D. Others specify.....
 8. What is the level of knowledge sharing habit in the factory?
 - A. At any time employee are willing for share
 - B. Any situation is occurred they are willing for share
 - C. From tope manager ordered they are willing
 - D. Others specify.....
 9. How the factory policies improve employees work motivation?
 - A. By Proved additional money
 - B. By Proved educational chance
 - C. By Proved managerial position
 - D. Others specify.....
 10. How the factory policies improve employee work profession?
 - A. By facilitate employees attending work shop
 - B. By facilitate employees taking short term trading
 - C. By facilitate employees attend meeting
 - D. Others specify.....
 11. What is the employees' common practice available in the factory?
 - A. Employee know about the policy of the factory and responsible for this.
 - B. Any employee get training must trained others
 - C. Employee get knowledge related with work use its own
 - Others specify.....

12. Which activity is the most employees' common in the factory?

- A. Knowledge sharing
- B. Knowledge creation
- C. Knowledge storage and retrieve
- D. Others specify.....

Tick (✓) against each of the KMP listed below that you think are practiced in your factory according to your agreement or disagreement.

Thus SD = strongly disagree

DA = disagree

U = undecided

A = agree

SA = strongly agree

KMP with KM process and existing policy						
SN	Statements	SD	D	U	A	SA
1	The policy in my factory encourages employees to access and use knowledge saved in systems when they are needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Knowledge sharing practices contribute organizational productivity of factory, decrease cost of production and employees motivation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	My factory have functional policy regarding knowledge sharing among employees for better product					
4	My factory has policy regarding databases of good work practices, lessons learned and skills of experts are regularly updated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	The policy in my factory work on written documentation training manuals, good work practices and articles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	My factory encourages workers to participate in project teams with internal and external experts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organizational activities for KM process						
SN	Statements	SD	D	U	A	SA

1.	Knowledge is generated in my factory by identifying key knowledge sources (employees, documents) and capturing knowledge of key personnel through videos and documents	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2.	Knowledge (in the form of documents, strategies) in my factory are organized for better access and collaboration	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.	My factory facilitates the sharing and distribution of knowledge to its employees, like through workshops, mentoring and electronic document access	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.	In my factory knowledge is used to contribute to business process achievement and service improvement	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Section C: Types of KMP.

This section ask question regarding to KMP with information communication technology (ICT) and productivity.

1. Is there enough ICT facility available in the factory to perform factories work?
 - A. Yes
 - B. No
2. If your answer for Q.1 is yes, which facility is available in your office? For all questions more than one chose possible?
 - A. Laptop
 - B. Desktop computer
 - C. Printer
 - D. Scanner
 - E. Others specify.....
3. Is there Internet connection in your factory which allows (facilitate) us to find information and communicate with factory and outside world?
 - A. Yes
 - B. No
4. Is your factory having its own web site?
 - A. Yes
 - B. No

5. How to store data in your factory?
 - A. By using database management system(computerized)
 - B. By using manual system
 - C. Others specify.....
6. Can you access computerized data on time?
 - A. Yes
 - B. No
7. If your answer Q.7” No” what is the reason?
 - A. Less computer skill
 - B. Non functionality of computer
 - C. For the Security of data computer are secured
 - D. Others specify.....
8. Is there any productivity change in your factory as compared to perversely and current?
 - A. Yes
 - B. No
9. If your answer Q.9 is “Yes “what is the current statue of productivity in your factory?
 - A. Very fast
 - B. Fast
 - C. Slow
 - D. Others specify.....
10. If your answer Q.9 is “NO” what is the reason factory is not productive?
 - A. Less ICT facility
 - B. In availability of KMP
 - C. In sufficient work environment
 - D. Others specify.....
11. Is there relationship between productivity with knowledge available in the factory?
 - A. Yes
 - B. No
12. What is the major outcome of KMP in your factory?
 - A. Increase production
 - B. Decrease material cost
 - C. Increase employee motivation

- D. Increase profit
- E. improved transparency
- F. better decisions
- G. Others specify.....

13. What is/are the benefit(s) of sharing knowledge in your factory? (choosing more than one option is possible)

- A. Create better communication between employee
- B. Improved production processes.
- C. increase knowledge reuse
- D. Others specify.....

Tick (✓) against each of the KMP listed below that you think are practiced in your factory according to your agreement or disagreement.

- Thus SD = strongly disagree
 DA = disagree
 U = undecided
 A = agree
 SA = strongly agree

	KMP with very important Measurement items and productivity	
<i>SN</i>	Statements	<i>SD</i> <i>D</i> <i>U</i> <i>A</i> <i>SA</i>
1	My factory has KM systems to differentiate products from low cost substitutes in the market place and enables the organization to achieve Sustainable competitive advantage for organization.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2	Capturing, sharing and leveraging of individual and group knowledge as a corporate asset was most likely to succeed where the principles and practices of KM was applied in my factory.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3	Knowledge transfer and learning were at the heart of KMP in my factory.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

4	Enhancement of product and service quality; strategy formulation process productivity; innovative ability and activity; communication and knowledge transparency and retention was the major outcome of KM in my factory	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5	KM in factory deal with the effective transfer and reuse of knowledge for increase product.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6	KM initiatives in the factory improved organization's effectiveness and productivity by applying knowledge gained from previous experiences to current and future decision-making activities.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
7	There were many benefits that can be gained by KMP throughout the value chain resulting in higher productivity and profit in my factory.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
8	My factory also increased market share; better achievement of strategic objectives, improved transparency, ease collaborative work of virtual teams and better decisions	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
9	My factory improved sharing of knowledge with employees, clients, customers; increase in knowledge reuse and improved production processes.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

KM enabling with ICT adoption practices

<i>SN</i>	Statements	<i>SD</i>	<i>D</i>	<i>U</i>	<i>A</i>	<i>SA</i>
1	There is a computer software or program that performs routine work operations or automates business processes of my factory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	I can get address of my factory employees from a computer, who can help me when doing my work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Social communities of interests like face book are used in my factory to share relevant information related to our work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Employees in my factory are encouraged to access and use knowledge saved in systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B: Interview schedule

Section A: Interview schedule for top managers

1. How do you say about your factory practice or experience in promoting knowledge generation, organization, retention, and utilization by your employees? Particularly, in shaping the flow of people and knowledge through employee selection methods, compensation strategies, career development/ training, and performance evaluation systems as they could be directed to motivate and build the capabilities of employees to perform and contribute to knowledge leverage, generation and application.
2. How do you say about your factory organizational culture and leadership issues in supporting, promoting or Proved attention to knowledge capture, sharing, transfer, Store and ruse with productivity?
3. Is there any relation productivity with knowledge capture, sharing, transfer, Store and ruse in your factory?
4. What is the contribution of KM for product improvement or increase factory product and quality?

5. How do you say on factory strategy in relation to promoting information and knowledge capture, sharing, transfer, store and ruse by the employees?
6. Is there any office in your factory that is responsible to knowledge capture, sharing, transfer, store and ruse?
7. is there KM policy in your factory, how it work, who are responsible for this.
8. What are the challenges and opportunities to improve KMP?
9. What is your future plan with respect to KMP?
10. More information with respect to KMP in your organization
11. Is there any functional policy related with quality control and use of knowledge available in the factory?

Section B: Interview schedule for head of MIS

1. How does your factory create or build knowledge relevant to the work? Is it by making employees communicate and discuss or by creating conducive environment for employees to use exiting knowledge like organizing and making ease access of relevant documents?
2. What are the strategies/ policy your factory uses to make employees work towards achieving business objectives based on their knowledge? Is it like allowing them to communicate and socialize or making ease access of existing knowledge resources to them?
3. How do you prioritize the value focus of your factory? Is it product leadership, customer familiarity or operational excellence, knowledge generation?
4. How do you say about your factory in capture, sharing, transfer, store and ruse of knowledge? Knowledge includes key personnel and relevant documents, How about the factory focus/ attention to these processes and what is the process of this activity?

5. How to share knowledge available in your office to outside? Is there any contribution knowledge available in your office knowledge for factory product?
6. How do you say about your factory's corporate strategy in promoting and acknowledging knowledge, its sources (people, documents, and organizational routines), and the processes (capture, sharing, transfer, store and ruse of knowledge)?
7. How to control quality of your product? What is the Contribution of KM for quality control and increase production in the factory?
8. More information with respect to KMP in your organization

Section C: Interview schedule for ICT director

1. What are the contributions of your office for the factory, especially with respect to KMP?
Is there any contribution of ICT with productivity, quality of product and create easy work environment in the factory?
2. What is the main responsibility of your office for factory?
3. Do you have knowledge based system, which can be used by the top management as a decision support system; if not available do you have a plan to create one?
4. Do you have enough infrastructures for KM purpose?
5. What are the main challenges not to fully practice KMP?
6. Any additional information you would like to provide me -----

Appendix C: Observation check list Dire Dawa national and Ture cement factories

	yes	No	Remark
1. Availability of KMP			

2. Employee motivation methods			
3. knowledge portal			
4. Using internet for selling and buying process			
5. Factory productivity			
9. Availability of knowledge networks such as of e-mail, web social media			

<input type="checkbox"/> Dire Dawa national		<input type="checkbox"/> Ture cement factory	
Observations	Availability	Efficiency	Remark
1. Intranet connection			
2. Organizational website			
3. Availability of computers			
4. Internal networks or LAN			
5. Database management systems			
6. Electronic document storage and access			
7. Availability of documented staff work			

ጥያቄዎች

መግለጫ

ለፋብሪካ ሰራተኞች የሚቀርቡ ጥያቄዎች

ውድ መላሸቻችን

ይህ ጥያቄ መረጃ ለመሰብሰቢያነት ማለትም ለሪሶርሽ ርዕስ Assessment of knowledge management practice on Product process improvement for Dire Dawa National and Ture Cement Factory:- ጥያቄው ሶስት ክፍሎች አሉት አያንዳንዳቸው ክፍል ጠቅላላ የመረጃ አያያዝ እርሶ የተመረጡት ስለራሶና ፋብሪካው መረጃ እንዲሰጡ ነው። ለማንኛውም ጥያቄዎ አባክዎን በሚቀጥለው አድራሻ እኔን ማግኘት ይችላሉ ውድ ጊዜዎትን ስለሰጡኝ ከልብ አመሰግናለሁ።

ስም:- የሺህረግ ተምትሜ

ስልክ ቁጥር 0913972932

ኢሜል አድራሻ yy.yeshi@gmail.com

ክፍል አንድ :ጠቅላላ መረጃ

1. ፆታ

ሴት ወንድ

2. የቅርብ ጊዜ የትምህርት ደረጃ

ሰርተፊኬት ዲግሪ ማስተርስ
 ዲፕሎማ ዶክተሬት
ሌላ ካለ _____

3. የአገልግሎት ዘመን

ከ3 ዓመት ያነሰ ከ5-7 ዓመት
ከ3-5 ዓመት ከ7 ት በላይ

ክፍል ሁለት:- መረጃ አያያዝን በተመለከተ የመረጃ አያያዝ ከመረጃው ሂደትና የፋብሪካው ህጎች ጋር

1. በፋብሪካው ውስጥ የመረጃ እውቀት አያያዝ ሂደት አለ
ሀ/ አለ ለ/ የለም

2. የእርሶ መልስ የጥያቄ ቁ.1 አዋ ከሆነ የትኞቹ ተግባራዊ ይደረጋሉ። ከአንድ በላይ መልስ መምረጥ ይችላሉ።

ሀ/ መረጃውን (እውቀቱን) ማግኘት

ለ/ መረጃውን (እውቀቱን) ለሌሎች ማካፈል

ሐ/ መረጃውን መያዝ

መ/ መረጃውን መተግበር

ሠ/ ሌላ ካለ _____

3. በእርሶ መረዳት መረጃ እውቀት መጠቀም ማለት ምን ማለት ነው

ሀ/ ከዚህ በፊት ሰምቼ አላውቅም

ለ/ አውቃለሁ አልፎ አልፎም እጠቀማለሁ

ሐ/ አንዳንዴ እሰማለሁ ግን አልጠቀምም

መ/ የኔ ሰራ ከዚህ ጋር የሚገናኝ አይደለም

4. በእርሶ ሃሳብ ስለእውቀት አጠቃቀም ማወቅ ያለበት ማን ነው

ሀ/ የፋብሪካው አስተዳደር

መ/ የአሥተዳደር ሠራተኛ

ለ/ የመረጃ ባለሙያዎች

ሠ/ ሌላ ካለ _____

ሐ/ የጥራት ባለሙያዎች

5. የመረጃ አያያዝ ፓሊስ (ህግ) አላችሁ ወይ?

ሀ/ አለ

ለ/ የለም

6. ለጥያቄ ቁጥር 5 የእርሶ መልስ አለ ከሆነ የትኞቹ ፓሊሲዎች በስራ ላይ ውለዋል።

ሀ/ መረጃን ለሰራተኞች ማከፋፈል የሚለው ፖሊሲ

ለ/ ከውጪ ምንጮች መረጃን እውቀትና መያዝ የሚለው ፓሊሲ

ሐ/ አቅም (እውቀት) ያላቸውን ሰራተኞች በፋብሪካው ውስጥ የቆይታ ጊዜያቸውን ማራዘም የሚለው ፖሊሲ

መ/ ውጤታማ ለሆኑ ሰራተኞች ማበረታቻ መስጠት የሚለው ፖሊሲ

ሠ/ ሌላ ካለ _____

7. ሰራተኞች ካጠፉ የፋብሪካው ህግ ምን ያህል

ሀ/ ስህተቱ እንዳይደገም ወይይት ማድረግ

ለ/ ስህተት የሰራውን ሰው ማበረር

ሐ/ ህስተቱን እንደማስተማሪያ መጠቀም

መ/ ሌላ ካለ መጥቀስ _____

8. በፋብሪካችሁ ውስጥ መረጃን ለሌላው ማካፈልን በተመለከተ ፖሊሲ (ህግ) አለእንዴ

ሀ/ አለ

ለ/ የለም

9. ለተራ ቁጥር 8 የእርሶዎ መልስ አለ ከሆነ ሰራተኞቹ ያላቸውን እውቀት (መረጃ)

እንዴት ለሌሎች ሊያካፍሉ ይችላሉ፡፡

ሀ/ ማበረታቻ እየተሰጣቸው

ሐ/ በራስ ተነሳሽነት

ለ/ ስልጣን እየተሰጣቸው

መ/ ሌላ ካለ _____

10. በፋብሪካው ውስጥ እውቀትን (መረጃን) የማካፈል ልማዱ ምን ያህል ነው

ሀ/ በማንኛውን ሰዓት ሰራተኞች እውቀታቸው ለማካፈል ፈቃደኛ ናቸው

ለ/ አጋጣሚውን ካገኙ ለመክፈል ዝግጁ ናቸው

ሐ/ ከላይ አለቃ ትዕዛዝ ሲሰጣቸው ያካፍላሉ

መ/ ሌላ ካለ _____

11. የፋብሪካው ህግ የሰራተኞችን የሰራ ተነሳሽነት እንዴት ማሳደግ ይችላል

ሀ/ ተጨማሪ ብር በመስጠት

ለ/ የትምህርት እድል በማመቻቸት

ሐ/ ስልጠና በመስጠት

መ/ ሌላ ካለ _____

12. የፋብሪካ ህግ የሰራተኞችን የሙያ ብቃት እንዴት ማሳደግ ይችላል

ሀ/ ተከታታይ ስልጠናዎች እንዲከፈሉ በማድረግ

ለ/ የአጭር ጊዜ ስልጠናዎች እንዲካፈሉ በማድረግ

ሐ/ ስብሰባዎች ላይ እንዲከፈሉ በማድረግ

መ/ ሌላ ከላይ ይግለፁ _____

13. በፋብሪካ ውስጥ የተለመዱ እንቅስቃሴዎች የትኞቹ ናቸው

ሀ/ ሰራተኞች ፋብሪካውን ፖሊስ (ህግ) አውቀው ተጠያቂ መሆን

ለ/ እያንዳንዱ ሰራተኛ ስልጠና ካገኘ ሌላውን ማሰልጠን አለበት

ሐ/ ሠራተኞች ለስራቸው ጠቃሚ የሆነ እውቀት ካገኙ መልሰው መጠቀም አለባቸው

መ/ ሌላ ካለ _____

14. ለፋብሪካው በጣም ጠቃሚ የሆነው እንቅስቃሴ የትኛው ነው

ሀ/ መረጃ (እውቀትን) ለሌላው ማካፈል

ለ/ አዲስ መረጃ (እውቀት) መፍጠር

ሐ/ መረጃ (እውቀት) ማስቀመጥ እና በተፈለገ ጊዜ መልስ ማውጣት

መ/ ሌላ ካለ _____

በፋብሪካው ውስጥ ይከናወናሉ ብላችሁ የምታሰቡትን ምልክት አድርጉ

በአ= በጣም አልሰማም

አ= አልሰማም

ው = ውሳኔ አልሰጥም

እ= እሰማለሁ

በእ= በጣም እሰማለሁ

የመረጃ አያያዝ (እውቀትን) የመረጃ አያያዝ ሂደቱ ካለው ፖሊሲ

ተ.ቁ		በአ አ ው እ በእ
1	የፋብሪካችን ፖሊሲ ለሰራተኞች መረጃን (እውቀት) እንዲደርሳቸውና እንደጠቀሙ ያበረታታል	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2	እውቀትን(መረጃን) ለሌላው ማከፋፈል ለፋብሪካው እድገት የምርትን ዋጋ ይቀንሳል የሰራተኞችን የስራ ፍላጎት ይጨምራል።	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3	ፋብሪካችን በውጭና በአገር ውስጥ ስልጠናዎች ላይ የሚሳተፉ ሰራተኞችን ያበረታታል	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4	የፋብሪካችን ፖሊሲ እውቀትን (መረጃ) ለተሻለ ምርት ይጠቀማል	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5	የፋብሪካው ፖሊሲ የመረጃ ቋት በየጊዜው ይታደሳል	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6	የፋብሪካው ህግ የሚሰራው የተጻፉ ፋይሎችን፣ የስልጠና መስጫ ደክመንቶች ተንተርሶ ነው	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
የፋብሪካው እንቅስቃሴ መረጃዎችን ከመያዝ አንፃር		
1	ከፋብሪካው ውስጥ (እውቀት) መረጃ የሚገኘው ዋና ዋና የእውቀት ምንጮችን በመለየትና በመያዥ ነው።	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2	በፋብሪካው ውስጥ (እውቀት) መረጃ የሚጠቀመው ጥሩ ለሆነ ግንኙነትና በጋር ለመስራት ነው	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3	በፋብሪካችን ውስጥ መረጃን (እውቀትን) የምናካፍለው በስብሰባ፣ በስልጠናና የኮምፒውተር መረጃዎችን በማከፋፈል ነው	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4	በፋብሪካው ውስጥ ያለው እውቀት (መረጃ) ለምርታማነትና ጥሩ አገልግሎት ለመስጠት ያስችላል፡	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

ክፍል 3 የመረጃ(እውቀት) አያያዝ አይነቶች፣ መረጃ አያያዝና መረጃ ማግኛ ቴክኖሎጂ

1. በፋብሪካ ውስጥ ስራን ለመስራት በቂ የሆኑ ኮምፒዩተሮች አሉ ወይ

ሀ/ አሉ

ለ/ የለም

2. የተራ ቁ.1 መልስ አሉ ከሆነ በእርሶ ቢሮ የትኞቹ መሳሪያዎች ይገኛሉ

ሀ/ ላፕቶፕ

ለ/ ዴስክቶፕ ኮምፒዩተር

ሐ/ ፕሪንተር

መ/ ሌላ ካለ _____

3. በፋብሪካው ውስጥ በቂ የሆነ የእንተርኔት አገልግሎት አለ ወይ

ሀ/ አለ

ለ/ የለም

4. ፋብሪካው የራሱ የሆነ ድረገፅ (ዌብ ሳይት) አለ ወይ

ሀ/ አለው

ለ/ የለውም

5. በፋብሪካው ውስጥ መረጃ እንዴት ይቀመጣል

ሀ/ በኮምፒዩተር ውስጥ

ለ/ በወረቀት ላይ

ሐ/ ሌላ ካለ ይግለፁ

6. እርሶዎ የምትፈልጉትን መረጃ በምትፈልጉት ሰዓት ታገኛላችሁ

ሀ/ አገኛለሁ

ለ/ አላገኛም

7. ለጥያቄ ቁ 7 የእርሶዎ መልስ አላገኛም ከሆነ ምክንያቱ ምንድን ነው

ሀ/ አነስተኛ የኮምፒዩተር እውቀት ስላለኝ

ለ/ ኮምፒዩተሮቹ ስለማይሰሩ

ሐ/ ለመረጃው ደንነት ሲባል

መ/ ሌላ ካለ _____

8. በፋብሪካው ውስጥ የአመራረት ለውጥ አለ ወይ በፊትና አሁን ስታወዳድሩ

ሀ/ አለ

ለ/ የለም

9. ከተራ ቁጥር 9 መልሱ አለ ከሆነ አሁን የለበት የምርታማነት ሁኔታ ምን ይመስላል

ሀ/ በጣም ፈጣን ነው

ሐ/ መካከለኛ

ለ/ ፈጣን ነው

መ/ ሌላ ካለ _____

10. ለተራቁጥር 9 መልሱ የለውም ከሆነ ፋብሪካው ምርታማነት መቀነስ ምክንያት ምንድነው

ሀ/ የቴክኖሎጂ አለመኖር

ለ/ የመረጃ (የእውቀት) አለመኖር

ሐ/ የስራ መስክ አለመመቻቸት

መ/ ሌላ ካለ _____

12. በፋብሪካ ውስጥ ያለው እዉቀትና የፋብሪካው ምርታማነት ግንኙነት አለው ወይ

ሀ/ አለው

ለ/ የለውም

13. የመረጃ አያያዣችሁ ቀደሚ ውጤት ምንድነው

ሀ/ ምርታማነትን መጨመር

ለ/ የእቃዎችን ተመን መቀነስ

ሐ/ የሠራተኞች ተነሳሽነት መጨመር

መ/ ግልፅነት

ሠ/ መሰረታዊ ውሳኔ መስጠት

ረ/ ሌላ ካለ _____

14. በእናንተ ፋብሪካ ውስጥ መረጃን ማከፈል ምን ጥቅም አለው

ሀ/ በሠራተኞች መካከል ጥሩ ግንኙነት መፋጠር

ለ/ ምርታማነትን ማሳደግ

ሐ/ መረጃን (እውቀትን) ዳግም ጥቅም ላይ ማዋል

መ/ ሌላ ካለ _____

በፋብሪካው ውስጥ ይከናወናሉ ብላችሁ የምታሰቡትን ምልክት አድርጉ

በአ= በጣም አልሰማማም

አ= አልሰማማም

ው = ውሳኔ አልሰጥም

እ= እስማማለሁ

በእ= በጣም እስማማለሁ

የመረጃ እውቀት አያያዥ በጠቃሚ የምርታማነት መለኪያዎች ጋር		በአ	አ	ው	እ	በእ
1	ፋብሪካችን የመረጃ እውቀት አያያዥ ስልት በተለያዩ ምርት ከአነስተኛ ዋጋ ጋር፣ ቀጣይነት የለው የገቢያ ዋጋ ለምርታማነት እና ተወዳዳሪነት ይጠቀማል	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	እውቀትን መረጃን ለአያንዳንዱ ለማህበረሰቡ ማካፈልን ወይም ማስቀመጥን የፋብሪካው ህግ ያሳክብራል	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	በፋብሪካው ውስጥ የመረጃ እውቀት ምንጭ የምንላቸው የመረጃ ማሳተላለፊያን ከሌሎች መማር ናቸው	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	በፋብሪካው ውስጥ የምናመርተው ምርትና የምንሰጣቸውን አገልግሎት ጥራት መመሪያዎች የመንደፍ ሒደት የገቢያ መወዳደሪያ ብቃት ዋና ዋናዎቹ የመረጃ አያያዣን ውጤቶች ናቸው	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	በፋብሪካ ውስጥ ያለው የመረጃ እውቀት አያያዥ የሚቆራኘው ጠቃሚ የሆነ እውቀትን ከማሸጋገር እና ደግሞ ከመጠቀም ጋር	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	ነው	
6	በፋብሪካው ውስጥ እውቀት መረጃን ማስቀመጥ የፋብሪካው እድገት ምርታማነትንም ከበሬትም ልምዳችን በመነሳት አሁን የለውም የወደፊቱን አመራር ሒደት በማየት ነው።	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
7	መረጃን እውቀት መያዝ ብዙ ጥቅሞች አሉት ማለትም ምርታማነትና ትርፍን ያሳድጋል	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
8	ፋብሪካው በገበያ ውስጥ ድርሻውን አሳድጓል ከዚህ የበለጠም ለማስመዘገብ መመሪያዎችን ይደግፋል፣ ግልፅነትንና ህብረተሰብን መሰረት ያሳድጋል	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
9	ፋብሪካችን እውቀትን መረጃን ከሰራተኞች ጋር ከደንበኞች ጋር በመሆን ምርታማነት ያሳድጋል	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
የመረጃ አያያዝ ከአይ ሲ ቲ ጋር		
1	በፋብሪካችን ውስጥ ለምርታማነትን ለማሳደግ የሚያገለግሉ የኮምፒውተር ፕሮግራሞች አሉ	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2	ከኮምፒውተር ውስጥ ለስራ የሚጠቅመኝን የሰራተኛ አድራሻ ማግኘት እችላለሁ።	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3	የማህበራዊ ድህረ ግፅችን የምንጠቀመው ጠቃሚ መረጃዎች ለማስተላለፍ ነው።	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4	በፋብሪካችን ውስጥ ያሉ ሰራተኞች በኮምፒውተር ውስጥ የተቀመጡ መረጃዎችን(እውቀት) እንዲጠቀሙ ያበረታታል	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>