ADDIS ABABA UNIVERSITY

ADDIS ABABA INSTITUTE OF TECHNOLOGY

SCHOOL OF CIVIL AND ENVIRONMENTAL ENGINEERING

STUDY ON THE IMPACT OF HUMAN CAPITAL DEVELOPMENT ON ROAD CONTRACTORS PERFORMANCE

A thesis submitted to the School of Graduate Studies of the Addis Ababa University in partial fulfillment of the requirements for the degree of Master of Science in Civil Engineering

(Construction Technology and Management)

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Advisor: **Professor (Dr.-Ing.) Abebe Dinku**

November, 2017

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DECLARATION

I hereby declare that this research has been carried out under the supervision of Prof. Abebe Dinku (Dr.-Ing), School of Civil and Environmental Engineering, Addis Ababa university as part of Masters of Science program in Construction Technology and Management. In addition, I declare that this research is my own work towards the Master of Science in Construction Technology and Management and that, to the best of my knowledge, it contains no material previously published by another person.

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November, 2017

ACKNOWLEDGEMENTS

First, I would like to thank the almighty God for guiding me throughout the period of study, which has made it possible for me to reach this.

I would also like to express my gratitude to my advisor Prof. (Dr.–Ing) Abebe Dinku for tirelessly supporting and guiding me during the course of writing this Thesis.

I would also like to express my gratitude to my family for the immense love, encouragement, and support. To my friends and colleagues, I want to say thanks for having you around as friends and wish everyone the best in the future.

Finally, my sincere thanks go to all who in various ways have helped to make my research work complete especially all respondents.

ABSTRACT

The Construction industry provides infrastructure that supports the other sectors of the economy. Unfortunately, the industry is saddled with numerous challenges varying from internal weaknesses to external threats that affect and influence its performance. The success of any organization and any industry depends on the human capital available. Human capital is getting wider attention with increasing globalization and also the saturation of the job market due to the recent downturn in the various economies of the world.

The study is aimed at assessing the impact of human capital development on performance of road contractors. The research focused on Category 1 / GC 1 contractors and their performance on asphalt road projects specifically in the ERA and AACRA Projects. A questionnaire survey approach involving 36 professionals in various construction companies were used. The questionnaire sought to elicit response from the sample by adopting open and close ended questions. Subsequently, the response data was analyzed using descriptive statistics, relative importance index and using SPSS software.

The findings revealed that the managements in almost all surveyed companies were willing to invest resources to ensure personnel development. But, lacks of detail evaluation after giving the human capital development were identified as the critical challenges for the performance of the contractors. Project performance was also examined against time and cost and the research showed that the lack of human capital development is one of the main reason for projects to complete with overruns. Thus the study re-echoed the need for well-designed and accepted training policy and systematical evaluation and impact identification mechanism for the improvement of skills, knowledge and professional development in the construction industry.

Keywords: Construction Industry, Development, Ethiopia, Human capital, Performance, Road contractors

ABBREVIATIONS

AACRA: Addis Ababa City Roads Authority

AAIT: Addis Ababa Institute of Technology

AAU: Addis Ababa University

EEA: Ethiopian Economic Association

ERA: Ethiopian Roads Authority

GC: General Contractor

GDP: Gross Domestic Product

GTP: Growth and Transformation Plan

HC: Human Capital

HCD: Human Capital Development

HR: Human Resource

HRM: Human Resource Manager

MoWUD: Ministry of Works and Urban Development

OECD: Organization for Economic Co-operation and Development

RSDP: Road Sector Development Program

SPSS: Statistical Package for Social Scientists

UCBP: University Capacity Building Program

UK: United Kingdom

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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The construction industry is one that has a special role in any country's quest for development. It plays a key role in building economic infrastructure and in expanding factories. It has also an important role to bring about fast growth in any economic and in terms of creating employment opportunities especially in urban areas is becoming visible.

However, construction as an industry often faces many difficulties ranging from internal weaknesses to external threats that affect and influence its performance (Ofori, 2000). In both developing and developed countries, these weaknesses and difficulties are usually compounded by the lack of skilled and qualified operatives which often results in cost and time overruns, as well as quality shortfalls. Other symptom of challenge is setting the industry that could stem from lack of quality skilled operatives include, unavoidable rework, waste, idle resources, accidents, claims, disputes. Rowings et al., (1996) argued that many of the problems faced by the industry arise from a need to maintain a skilled and competitive workforce. It is also noted that productivity and quality levels are dependent on the performance of construction workers at all levels. Upgrading the knowledge and skills of all the workers in the industry, including crafts people are therefore required to improve productivity and quality of work

In many developed countries, there has been a shift in recent decades away from traditional craft methods of building in situ, to the production of components in factories and their subsequent assembly on site. There has also been a move towards a greater use of plant and machinery in building and in civil engineering. Even in developed countries, increased mechanization and prefabrication does not provide a real alternative to raising the level of skills. This is partly because there are limits to the extent to which skilled labor can be replaced by machines and also because new technologies require new skills and can fail if there is inadequate training (Gann and Senker, 1998). The importation of skilled workers is generally regarded as a more appropriate short term solution to the skills crisis.

In current global market, companies are composed by competitors, to develop a competitive advantage it is important that construction firms truly leverage on the workforce as a competitive weapon. A strategy for improving workforce productivity to drive higher value for the construction firms has become an important focus. construction firms seek to

optimize their workforce through comprehensive human capital development programs not only to achieve business goals but most important is for a long term survival and sustainability.

To accomplish this undertaking, firms will need to invest resources to ensure that employees have the knowledge, skills, and competencies they need to work effectively in a rapidly changing and complex environment. In response to the changes, most firms have embraced the notion of human capital has a good competitive advantage that will enhance higher performance. Human capital development becomes a part of an overall effort to achieve cost-effective and firm performance. Hence, firms need to understand human capital that would enhance employee satisfaction and improve performance.

1.2 Statement of the problem

Human capital is the backbone of the success in every organization. Lack of human capital development becomes one main factor which makes it difficult for contractors to deliver the quality of products that more discerning customer require. Currently in Ethiopia, the demand from clients for higher quality building is also causing concern amongst contractors about lack of skills and should lead to a new interest in training. Again, the influx of foreign contractors who are setting higher quality standards (with many high-rise buildings and other complex roads and civil works) which means that local contractors may have no choice but to raise their standards and quality of work. It is in this regard that, this research seeks to look into the impact of human capital development among Ethiopian road contractors and challenges faced in the development of human capital.

1.3 Research Questions

- Is there any link between human capital and firm success?
- What are the main challenges of road contractors to human capital development?
- To what extent does human capital create impact on firm performance?

1.4 Research objective

1.4.1 General objective

The aim of this research is to assess the impact of human capital development on the performance of selected road contractors in Ethiopia.

1.4.2 Specific Objectives

The research is based on the following specific objectives.

1. To determine the link between human capital development and firm‘s success.
2. To evaluate human capital development among road contractors and its impact on their performance.
3. To identify challenges to human capital development among road contractors in Ethiopia.

1.5 Significance of the study

The study presented empirical evidence on the impact of human capital development on a firm‘s performance in the construction industry. This will provide a profound opportunity for road construction companies to develop the required strategy to improve on their performance and clients will be able to get a quality of work with fair cost and time. The findings of the research also equip construction companies in the area of challenges faced in human capital development. Finally, the study is a contribution to the wide range of literature and scholarly works in the field of studies and research as far as human capital development is concerned. It is therefore provided the framework and set the stage for further empirical studies to be conducted into the human capital development in Ethiopian construction industry.

1.6 Scope of the Study

This study delves into human capital development of local construction organizations in Ethiopia and the research was focused on grade one general contractors and their performance on ERA and AACRA projects. These classes of contractors are chosen because the classification places on them some responsibility to own some equipment as well as the employment of key personnel during the execution of their construction contracts. Firm‘s performance was viewed in terms of Cost and Time performance on the specific projects.

1.7 Methodology

This research involve the use of desk study to gather secondary data. Through the desk study pertinent literature in the area of human capital development and its impact on a company‘s performance was identified. Primary data were collected through a well-structured questionnaires and interviews.

The questionnaire seeks to explain answers from the respondents by adopting a close ended questions. Data were analyzed using descriptive statistics. An analytical tool to estimate

relationship between variables such as descriptive statistics, relative importance index and cross tabulation was adopted to find the relationship between performance and human capital development.

1.8 Organization of the Study

The research is arranged into five chapters. Chapter One provide background, introduction of the study and explains the problem at hand, the aim and objectives as well as the scope of the study.

Chapter Two presented the literature review of human capital development and skills improvement in the construction industry and their impact on service delivery to prospective clients.

Research methodology was laid in Chapter Three by providing concrete considerations for conducting quantitative and qualitative study. The chapter also underlined the research design and methodology that was used to gather and analyze data towards the achievement of the study objectives.

The fourth Chapter focuses on analysis of the data from questionnaires and interviews. Discussion of the key results that emanated from the analysis of the data also a vital exercise in this chapter.

Chapter Five is the last chapter in the study and focuses mainly on drawing of conclusions and recommendations based on the research objectives.

CHAPTER TWO

LITERATURE REVIEW

2.1 Human Capital

The term capital can be defined as something that generates wealth and income or yields output over time through the production process (Savvides and Stengos 2009). The concept shows that human knowledge plays an important role in the production of goods and services. Therefore, investment in human beings could be considered as a form of capital.

The topic human capital has been studied since the 18thcentury, Adam Smith in his 'The Wealth of Nations (1776)' stated that productivity depends on the division of labor. Human capital is the knowledge, competencies, and values, social and personal attributes that are represented in the ability to perform labor so as to produce economic value. In other words, it can be defined as a measure of the economic value of an employee's skill set. The idea was later developed by various scholars in different fields that can be divided into those focused on economic growth (Mincer, 1958), education (Schultz, 1961) and innovation (Nelson & Phelps, 1966).

In economic terms human capital theory has been analyzed in relation to the rate of return of investment in human capital, job mobility, wages and expenditures on human assets. From the perspective of classic economic theory human capital considers labor as a commodity that can be traded in terms of purchase and sale. This theory focuses on the exploitation of labor by capital. Human capital perceived by economists and researchers as a major pillar of a firm`s economic growth. Knowledgeable humans are of equal importance as other resources in production process (Livingstone, 1997). In general according to Benhabib and Spiegel (1994) countries with a high stock of human capital will also be leader in the world economy. This is because human capital is crucial for improving the performance of companies (Benhabib, 1994).

Human capital also refer to processes that relate to training, education and other professional initiatives in order to increase the levels of knowledge, skills, abilities, values, and social assets of an employee which will lead to the employee's satisfaction and performance, and eventually on a firm performance. Education level will determine the level of skills produced and this factor will increase revenue (Schultz 1961).

As Mincer explained an individual's level of human capital was built upon some initial level of basic ability. It is through these basic skills and abilities that which facilitate the

gathering and acquisition of more knowledge and skills. Each individual is able to then build upon this basic level through accumulating more human capital or knowledge through the means of formal schooling, job training and work experience. According to Schultz (1961) formal education is necessary condition to raise production capacity. Highly educated human capital will contribute to a high level of intellectual skill that increases economic returns. Many scholars argued that, investment in education is best way of improving human capital. Schultz argued that investment in education and training are crucial for a company to increase its productivity.

Research by Mohnen and Roller (2005) indicates that skilled human capital is significant for innovative activities in an industry and a country as a whole (Mohnen and Roller, 2005). They showed that the innovation process is retarded if it is not accompanied by sufficient skilled human capital. Skill is defined as the ability to perform tasks. Nevertheless, there are a range of definitions given to skill. As explained by Teixeira (2002) it can mean the ability to perform given tasks or to master various techniques or more broadly it can refer the range of behavioral attributes such as reliability, ability to work without supervision and stability of employment. Skills possessed by an individual are generally divided into two types:- "general skills" and "specific skills" (Becker 1964). Normally, knowledge gained from schools or other formal means is categorized as general since the knowledge doesn't have any intention to build specific expertise. The main purpose of general skills is to develop high cognitive abilities in students (Serneels, 2008). Specific skills are conversely acquired from the workspace and they are usually derived from experiences and on the job training. These type of skills depend on the work conditions.

Human resource input plays a significant role in enhancing firms' competitiveness. As stated above human capital is also the competencies and knowledge that are embodied in a person. People work with their minds as well with their bodies. Indeed, in developed economies, intellectual ability is far more important than physical ability in determining a person's wage. Therefore, investment in improving people's intellect has become the most important form of investment in human capital.

Human capital can be in the form of health. Health status may also affect the human capital level of individuals and there by the growth of a company. Health capital can affect economic growth through the channels of productive efficiency, life expectancy, learning capacity, creativity, etc. (Howitt, 2005). Healthier workers will become strong, energetic, creative, attentive so forth that makes them more effective in the production process with any given combination of skills, physical capital and technological knowledge.

That means, better health enhances the effective and sustained use of the knowledge and skills that individuals acquire through education. As with investment in education and training, the quantity and quality of the human capital stock can be increased through investment in the prevention and treatment of illness (Gardner and Gardner, 2001). Due to this, some scholars include stock of health on their model and argued that health determines the total working hour that an individual wants to spent to generate income (Basov, 2002).

Barro (2013) argues that better health can reduce the depreciation of educational capital, and thus increases the favorable effect of education on growth. He has developed a model that includes the effect of health on productivity and concludes that: "For a given quantities of labor hour, physical capital, workers schooling and experience, an improvement in health raises a workers' productivity. In addition to this direct effect, an improvement in health lowers rate of mortality and disease and thereby decreases the effective rate of depreciation on human capital" (Baroo, 2013).

Finally, as a company develops economically, the health of its employees improves. This improvement in health can be seen as a direct evidence that people are leading better lives. Improvement in health will also have a productive side as healthier people can work harder and longer. Therefore, the better the well-being of a company`s employee is the higher the productivity will be.

2.2 The Concept of Human Capital Development

Human capital development is the process of helping people to acquire expertise. In an organizational context it is the process by which organizations help their employees in a continuous and planned way in order to acquire or sharpen the abilities required to perform various functions associated with their present or expected future roles; develop their general skills as individuals, discover and utilize their inner potential for their own and organizational development purposes; develop an organizational culture in which supervisor subordinate relationships, teamwork and collaboration among sub-units are strong and contribute to the professional well-being, motivation, and pride of employees.

Human capital investment is any activity which improves the quality or productivity of worker. It involves an initial cost (tuition and training course fees, forgone earnings while at school and reduced wages and productivity during the training period) which the individual or firm hopes to gain a return on in the future (for example, through increased earnings or higher firm productivity).

2.3 Human capital and complementary capitals

The accumulation of exceptionally talented individuals is not enough for the organization. There must also be a desire on the part of individuals to invest their skills and expertise in the organization and their position. In other words, individuals must commit or engage with the organization if the effective utilization of human capital is to happen. Additionally, regarding human capital, there must be social capital and organizational (or structural) capital surrounding the essential context.

2.3.1 Intellectual capital

Organization for Economic Co-operation and Development (1999) defines intellectual capital as the economic value of two categories on intangible assets of a company' organizational and human capital (OECD, 1999). Wright et al. (2001) argues that intellectual capital is a factor that includes human capital, social capital and organizational capital. According to the research of Nahapiet & Ghoshal (1998) intellectual capital refers to the 'knowledge and knowing capability of a social collectively, such as an organization, intellectual community, or professional practice'. There is a lack of clarity surrounding these and related terms, with numerous definitions abounding.

The stock of human capital consists of human (the knowledge skills and abilities of people) social (the valuable relationships among people) and organizational (the processes and routines within the firm)' (Wright et al., 2001). Developing human capital therefore requires attention to these other complementarities. If competitive advantage is to be achieved, integration between human, social and organizational capital is required.

2.3.2 Social capital

According to the work of Nahapiet & Ghoshal (1998), 'the central proposition of social capital theory is that networks of relationships constitute a valuable resource for the conduct of social affairs. Much of this capital is embedded within networks of mutual. Social capital, is argued, increases the efficiency of action, and aids co-operative behavior (Nahapiet & Ghoshal, 1998). Social relationships and the social capital therein, are an important influence on the development of both human and intellectual capital. At the individual level, individuals with better social capital, individuals with stronger contact networks, will 'earn higher rates of return on their human capital' (Garavanet al, 2001). Yet it is at the organization level that social capital is highly important.

As Nahapiet and Ghoshal (1998) argue social capital facilitates the development of intellectual capital by affecting the conditions necessary for exchange and combination to

occur. Within a provisional concept of social capital, the authors argue for three major elements: a structural dimension (network ties, network configuration and appropriable organization), a cognitive dimension (shared codes and languages, shared narratives), and a relational dimension (trust, norms, obligations and identification). All three influence the development of intellectual capital. This approach links well with the prevailing resource based view with its emphasis on bundles and combinations of resources.

Social capital, with its stress on linkages between individuals, creates the conditions for connections, which are non-imitable, tacit, rare and durable. Gratton & Ghoshal (2003) contend that social capital is based on the indistinguishable concepts of sociability and trust worthiness: 'the depth and richness of these connections and potential points of leverage build substantial pools of knowledge and opportunities or value creation and arbitrage.

2.3.3 Organizational capital

The principal role of organizational capital is to link the resources of the organization together in to process that creates value for customers and sustainable competitive advantage for the firm (Dess & Picken, 1999). The culture of the organization has a large impact on both recruitment and retention as well as in the area of generating commitment. A supportive culture with strong corporate purpose and compelling values has been seen as the underlining reason for major corporate success (Peters & Waterman, 1982). A second major influence on human capital is the incentive structure and how performance is measured and managed in general. The degree that skilled and motivated employees are directly involved in determining what work is performed and how this work gets accomplished is crucial (Delaney & Huselid, 1996). To this end, employee participation, internal career ladders and team based working have all been shown to positively link to organizational performance. Moreover, Rumelt (1984) points out that the routines and processes, which act as the glue for organizations, can either enhance or disable cooperative working and the development of knowledge. This is ultimately the simple point that the organizational structures and processes must support the purpose of the organization and so have requisite variety without creating boundaries between individuals and groups.

2.3.4 Knowledge

The connections between human capital, social capital and organizational capital will produce intellectual capital. This, in turn, will affect the management of knowledge within the organization. Knowledge has long been recognized as a valuable resource by economists and has been a focus of significant attention in the human capital literature. The importance of knowledge in organization becomes crucial that the employees as the source

of knowledge are managed well. This requires that firms 'define knowledge, identify existing knowledge bases, and provide mechanisms to promote the creation, protection and transfer of knowledge' (Wright et al., 2001). The fundamental issue with understood knowledge is its intangibility, whereas scholars argue that the knowledge doing gap (translating knowledge into action) is at least as important as accumulating knowledge in the first place. In other words, attending to the conditions under which people are prepared to share and act upon their knowledge is a major component of human capital management.

The human capital literature is as much concerned with the organizational sharing of knowledge, making it accessible and transferable. Leonard-Barton (1995) has identified four processes for supporting organizational innovation as follows:

- owning/solving problems (egalitarianism)
- integrating internal knowledge (shared knowledge)
- continuous experimentation
- integrating external knowledge (openness to outside)

2.4 Human Capital Development Mechanisms

There are different Human Capital Development mechanisms some of them discussed on these research are (Jayagopal, 1988)

- Training and Development
- Job Rotation
- Career planning and development
- Coaching or Monitoring
- Orientation

2.4.1 Training and Development

Training is a learning process that aims to permanently improve the ability and behavior of the employees by enabling them to acquire new skill, knowledge and attitude for more efficient performance. Which includes: identification of training needs; developing suitable training programs; providing requisite job skills and knowledge to employees; evaluating the effectiveness of training programs. Training is considered fundamentally important to human capital development. It could be described as the vehicle that takes organization to their destination within a stipulated time frame.

Development is the growth or realization of a person's ability, through conscious or unconscious learning. Development programs usually include phases of planned study and experience, and are usually supported by a coaching or counseling facility. Development

occurs when a gain in experience is effectively combined with the conceptual understanding that can illustrate it, giving increased confidence both to act and to perceive how such action relates to its context. Some of the benefits of training employees for an organization as many scholars description are as follows (Alebel. W, 2012)

- Trained personnel will be able to make better and economical use of materials and equipment's. As a result Wastage will be low.
- A well trained employee usually shows greater productivity and higher quality of work output than untrained employee. Training increases the skill of the employees in the performance of particular job.
- Training is the best available methods of work that can be standardized and made available to all employees. Standardization will make high level of performance.
- If the employees took a proper training, the responsibility of supervision will became less. Training doesn't eliminate the need for supervision but it reduces the need for detailed and constant supervision.
- Training helps to reduce the learning time to reach the acceptable level of performances. The employees need not learn by trial and error or by observing others and waste time if the formal training program exists in organization.
- When new skills are required by the organization, it has to face great difficulties in employment. Therefore, training can be used in spotting out promising men and in removing defects in selection process. It is better to select and train employees from within the organization rather than seek the skilled employees from the outside sources.
- The morale of employees will be increased if they are given proper training. A good training program will improve employees' attitude to achieve support for organizational activities and to obtain greater cooperation and loyalty. With the help of training, dissatisfaction, complaints, absenteeism can be reduced among the employees and this will motivate and initiate employees to increase their productivity, innovativeness and competitiveness.

2.4.1.1 Distinction between training and development

Even if most literatures are used training and development interchangeably it has its own difference in concept (Armstrong, 2006). These differences are shown in Table 1.

Table 1 Differences between development and training (Armstrong, 2006).

Training	Development
Training means learning skills and knowledge for doing a particular job. It increases job skills.	Development means the growth of an employee in all aspects. It shapes attitudes.
The term training generally used to denote imparting specific skills among operative employees.	Development is associated with the overall growth of management.
Training is concerned with maintaining and improving current job performance. Thus, it has a short term perspective.	Management development seeks to develop competence and skills for future performance. Thus, it has a long term perspective.
Training is job centered in nature.	Development is career oriented in nature.
The role of trainer or supervisor is very important in training.	Self-development

2.4.1.2 Training and development process

In today's changing environment, employees at all levels need additional training and development opportunity to develop their working ability and management thinking (Swanson & Holton III, 2009). In this respect, organizations are required to be engaged in continuous employees training and management development programs. The steps in the human resource training and development process are:

- Identifying training and development needs;
- Establishing training and development objectives; Selecting training and development methods;
- Implementing the actual training and development program;
- Conducting evaluation and follow-up.

2.4.1.3 Evaluation of training and development

Evaluation is the final phase of the training and development program. It is a means to verify the success of the program, i.e. whether employees in the program do the jobs for which they have been trained. As Balogun (2011) noted, the concept of evaluation is most commonly interpreted in determining the effectiveness of a program in relation to its objectives. Human resource development is an investment in people. The major reason for investment in training and development program is that to help employees to perform better in the achievement of organizational objectives. Hence, evaluation is a means to assess the cost / benefit of the program to the organization. However, Balogun (2011) arrgued, evaluation is like brushing your teeth after every meal everyone advocates it but few

actually do it. Evaluation can be done for various purposes. It may be done (Balogun, 2011)

- to increase effectiveness of the program while it is going on
- to increase the effectiveness of the program to be held next time
- to help participants to get feedback for their improvement and efficiency
- to find out to what extent the objectives are achieved.

2.4.1.4 Process of training and development evaluation

According to the researchers`, there are three main training and development evaluation steps these are:

- evaluation before giving the training and development
- evaluation during training and development
- evaluation after giving training and development

2.4.1.4.1 Before Training:

The learner's skills and knowledge are assessed before the training program. During the start of training, candidates generally perceive it as a waste of resources because at most of the times candidates are unaware of the objectives and learning outcomes of the program. Once aware, they are asked to give their opinions on the methods used and whether those methods confirm to the candidates preferences and learning style (Ahmad & Din, 2009).

2.4.1.4.2 During Training:

It is the phase at which instruction is started. This phase usually consist of short tests at regular intervals (Balogun, 2011).

2.4.1.4.3 After Training:

It is the phase when learner's skills and knowledge are assessed again to measure the effectiveness of the training. This phase is designed to determine whether training has had the desired effect at individual department and organizational levels.

2.4.2 Job Rotation

Job rotation is a human resources strategy where companies move employees around to various jobs within the organization. Intended to provide benefits to both employees and the employer, job rotation is supposed to increase employee interest level and motivation.

Job rotation in an organization contains three elements namely; individual learning, knowledge from outside resources and reciprocal action between employees and therefore, it is regarded as an excellent catalyst of improving utility of outside learning resources. It is therefore, a strategy conducted by organizations to improve employee performance and productivity. (Benjamin. K, 2014).

Different scholars divide job rotation in to two main groups the first one is "Task rotation" usually takes place in jobs that involve a high degree of physical demands on the body or a high degree of repetitive tasks that can become extremely tedious. Employees are periodically removed from these mentally stressful or physically demanding tasks to a less demanding task for a while to give them a break. Task rotation has some distinct advantages. It can increase job satisfaction because workers will be exposed to various work tasks that will reduce constant physical or mental stress, which may create more motivation to continue in the position and reduce turnover. Another advantage is the additional effect of cross training employees for different tasks, which will Increase the flexibility and adaptability of the organization.

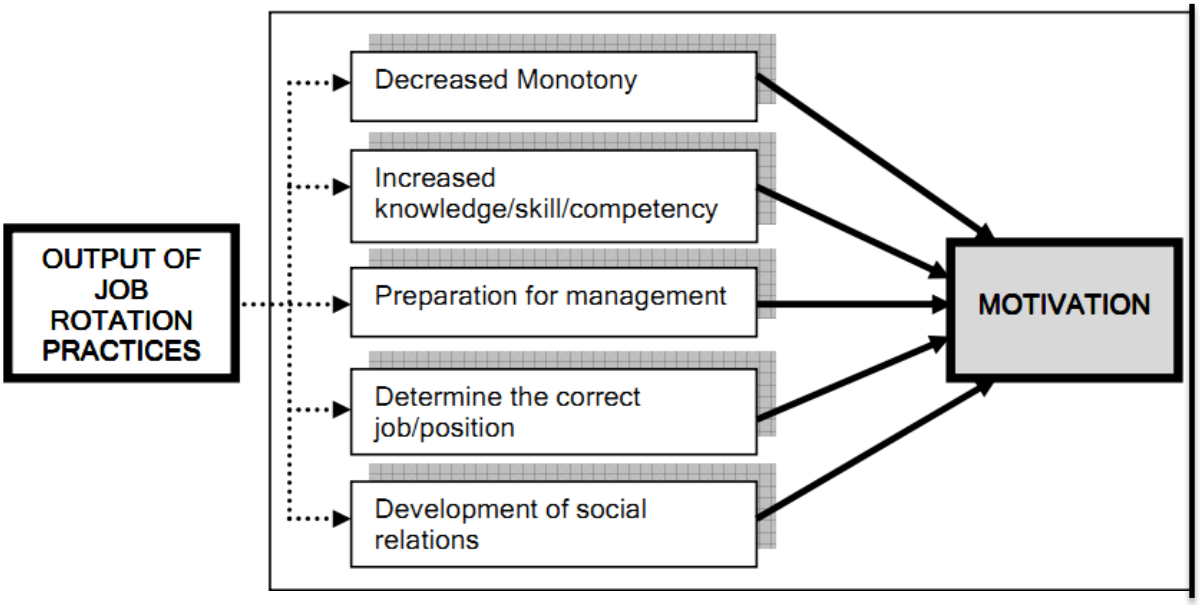
The other main type of job rotation is "Position rotation" is the process of laterally moving an employee to different positions, departments or geographic locations for the purposes of professionally developing the employee by exposing them to new knowledge, skills and perspectives. Position rotation can be further broken down in to within function rotation and cross functional rotation. Within function rotation is where an employee rotates between jobs with similar levels of responsibility and in the same functional or operational areas. Cross functional rotation, on the other hand, usually involves a sequence of positions, often with increasing levels of job responsibilities.

Position rotation has some distinct advantages. Position rotation can be used to prepare promising employees for future leadership positions by increasing their knowledge, skills and perspective. It can also assist an organization in creating members with a broad base of organizational knowledge. Position rotation may also facilitate new personal relationships across the organization that may help develop a sense of cohesion and loyalty. According to the research of Gannon and Brainin, Job rotation has many benefits (Gannon and Brainin, 1971). Some of them are-

- increasing motivation and productivity
- decreasing monotony
- creating training opportunity
- supporting career development
- easing adaption to change etc.

In the figure 1, five different independent variables (reduction in monotony, increase in knowledge, skill, competency, preparation for management, choice of correct work position and development of social relations) and one dependent variable (motivation) were used to indicate theoretically that there is an effect of job rotation on motivation.

Figure 1:- Conceptual frame work for the effect of job rotation on motivation (K. Kaymaz, 2010)



2.4.3 Career Planning and Development

Career planning is the continuous process of managing career. It involves gathering information and knowledge that help to make informed decisions about the future training and career choices. It also helps to assess employees' skills and interests in order to find jobs and career paths that are right for the company.

The concept of career planning encourage employees to analyze and assess their ambitions and provide them with the information about a company's career opportunities. It focuses on generating an awareness of strengths and weaknesses among employees and at organization. Some advantages of Career planning and development are to (Emma. L, 2015)

- manage career pathway, work towards the target and monitor if we are on track
- identify short term and long term career goals
- identify skills, strengths and weaknesses of employees as well as possible areas where training may be required
- discover suitable and appropriate career options
- keep abreast of current industry trends, developments and changes
- take action to update individual skills if required (career planning, April 2015).

Career development programs are most effective when they are integrated with the organization's ongoing training and development strategies. For being able to do this, an

organization must have a carefully designed career development system especially designed to meet its own unique needs and requirements. An automated and well-designed career management system not only benefits organizations but also help employees and managers or supervisors in establishing effective communication with each other. All the parties gain different benefits and combining which they can together set an organizational culture that supports such types of activities in an organization.

A career development system includes a variety of components for use in the organizations. In order to increase the efficiency of the system, to achieves greater efficiency, most organizations use (Eliza. A, 2010).

- self-assessment tools
- individual counseling
- organizational assessment programs
- developmental programs

2.4.4 Coaching or mentoring

This involves having the more experienced employees coach the less experienced Employees. The practice is often applied to newly recruited graduates in the organization by being attached to mentor who might be their immediate managers or another senior manager. This however does not imply that older employees are excluded from this training and development method but it is mainly emphasized for the newly employed persons within the organization.

2.4.5 Orientation

This involves getting new employees familiarized and trained on the new job within an organization. During this process, they are exposed to different undertakings for example the nature of their new work, how to take on their identified tasks and responsibilities and what is generally expected of the employees by the organization. They are further given a general overview of the organizational working environment including for example working systems, technology, and office layout, briefed about the existing organizational culture, health and safety issues, working conditions, processes and procedures.

2.5 Measuring human capital

Measurement is obviously important to gauge the impact of human capital interventions and address areas for improvement. It is then essential to measure these impacts in terms of

outcomes. These outcomes differ along a number of familiar categories: (Guest et al., 2000). either

- financial measures;
- measures of output of goods and services, units produced, customers served, number of errors, customer satisfaction.
- Measures of time:- lateness, absence etc.

The definitions of HC indicate that HC is intangible, not directly observable as that of physical capital and therefore proxies have been used to capture key elements of HC. According to Le, Gibson, and Oxley (2003) to measure the return on investment in human capital is a bit complicated because human capital is always attached to its owner. It's difficult to separate a part of a person's education from the rest of his body and see how much it gets paid. To get around this, economists infer the return to human capital from data on people's wage. The fact that people with higher education earn a higher wage can be taken as evidence that the market values their human capital. Therefore, as a person receives one more year of schooling it will result in an increase in that persons wage, which is defined as the return to education. There are many arguments on how to measure human capital. Le, Gibson, and Oxley (2003) identifies three major approaches to measure human capital:

- using educational attainment based approach
- using the value of the inputs that enter the production of human capital (input or cost-based approach)
- using the output that stems from human capital that is typically measured by labor market income (income based approach).

2.5.1 The Educational Attainment Based Approach

The educational attainment method uses academic output indicators for measurement of human capital. This technique is based mostly on the assumption that these indicators are closely connected to educational investments and this is a key component in the formation of human capital. Human capital incorporates a lot of dimensions. However, education is arguably the most vital part.

Educational indicators (outcome-based approach) such as college admission rate, academic attainment or the rate of literacy are used solely by some researchers in order to measure human capital of a company. However, utilizing these measures as an option for human capital have a few constraints. First, it undermines the quality of schooling which might be influenced by instructive infrastructures, access to instructive services. Second, it assumes productivity among workers varies with levels of education and it is proportional to their

years of schooling (Mulligan and Sala-I-Martin, 2000). Referring Jones and Fender (2011), what this means is that, a worker with ten years of schoolings is presumed to have a human capital which is ten times bigger than a worker with only one year of schooling. However, individual's effectiveness can be recognized after participating in production activities (Dae-Bong, 2009).

2.5.2 Cost of Production Approach

Stock in human capital is considered as being the depreciated value of the monetary amount that is spent on investment in human capital. It is an indirect measure of human capital that relies on summing costs invested for human capital creation (Dae-Bong, 2009). One advantage of this technique is that it presents an estimate of the sources invested in the schooling and different human capital related sectors, which can be beneficial for fee-gain analyses. Diewert (2008) has argued that the fee-based approach is the second fine opportunity manner of valuing output whilst the great alternative might be to use final call for prices to price output.

However, it isn't away from some barriers. The first is that it is limited to only supply-aspect, but its demand determines the value of human capital, which toughens the comparison between cross-sectional and inter-temporal. This approach also fails to take account of the heterogeneity of people. For example, a situation where one employee is less capable than the other employee, to the extent that it is more expensive to educate to a particular attainment level, the cost-based approach will overestimate the lesser employee human capital while underestimating the human capital of the more able employee. Likewise, this method ignores quality of education. For example, schools vary in their quality as do the teachers within schools.

Based on Hanushek (2000) discovery of social background, the quality of teaching is the best predictor on how well students do in school but this approach has a problem in identifying which costs should be included and how they should be measured. In general, reclassification of human capital expenditures as investment rather than consumption may not be accurate, to the point where individuals enjoy their courses. further, part of the expenditure on schooling could also be regarded as a form of childcare, which provides children with a safe environment allowing their parents to use their time for other activities.

For this approach, because of weariness of skill due to aging or illness, the atrophy of skills caused by insufficient use, job-specific obsolescence started by technological and organizational change or sector-specific obsolescence triggered by shifts in employment, it is

important to calculate depreciation rate like physical capital, human capital depreciates over time. (Grip and Van Loo, 2002).

2.5.3 The Output or Income Based Approach

Another alternative that values the human capital stock using the earnings of the individuals obtained from a labor market is Income or Output based approach. The output or income based approach measures human capital by summing the discounted values of all future income streams that all individuals in the population expect to earn throughout their life time (Farr, 1853). In addition, Mulligan & Sala- i-Martin (2000) argued that the cumulative stock of human capital is the sum of individual incomes.

Discussing this approach main advantage and disadvantage, in this method, there is no need to assume an arbitrary rate of depreciation since it is already implicitly captured. However, the approach relies on the assumption that labor is paid according to its marginal productivity. Further it is also sensitive to the choice of discount rate and the retirement age.

This method assumes that uneducated workers are always have the same human capital, although they do not necessarily earn the same income. One noticed drawback, which is common in this approach is that, as noted above, formal education and training are not the only determinants of human capital. Some of an individual's capital is inborn to them and is in some sense, a non-produced asset. Thus, the asset created by education could be regarded as improvements in human capital by education and training. Another shortcoming of these measure is that it focuses on individual's human capital and aggregate them to arrive at the population measure, which ignores spillovers between workers so that the whole may be more than the sum of the parts

2.6 Construction industry

According to many scholars Construction Industry can be described as the sum of all economic activities related to civil and building works: their conception, planning, execution, and maintenance. Such works normally comprise capital investment in the form of roads, railways, airports, ports and maritime structures, dams, power generating stations, irrigation schemes, health centers and hospitals, educational institutions, warehouses, factories, offices and residential premises.

The construction industry plays a key role in building economic infrastructure like roads, railways etc. in expanding social infrastructure like schools, hospitals, etc. and in expanding factories. As one facet of improving people's lives is the building and renovation of

residences, construction plays a great role in this regard as well. To bring about fast growth in any economic sector, a strong and efficient construction industry is called for.

The construction industry includes all companies primarily engaged in construction such as general contractors, heavy construction (airports, highways, and utility systems), and construction by specialist trades. Also included are companies that engage in the preparation of sites for new construction and in subdividing land for building sites. Construction work may include new work, additions, alterations, or maintenance and repairs.

The construction sector represents, for many countries, a core economic activity. It not only provides the infrastructure for all other industries, but also constitutes one of the largest single sectors in the economy on its own. Closely linked with public works, governments have relied on the construction sector as a strategically important industry for creating employment and sustaining growth. For the developing economies, the construction sector carries particular importance because of its link to the development of basic infrastructure, training of local personnel, transfer of technologies, and improved access to information channels (International Investment and Services Directorate Industry, 1999).

Construction is a high-risk venture. Each project is unique and has its own specific design to be constructed on a particular site within a definite timeframe, cost, materials, equipment and labor. Successful construction requires flawless functioning of the project stakeholders comprising the client, the design team, the construction team, and various trades, manufacturers, suppliers in a professional and timely manner. In spite of the client and the contractor as the contract parties, other project players are involved in the construction process. Due to the different culture, interest and organizational structure of each of them, some parties represent a risk source to other parties.

The contribution of the industrial sector to the overall economic development of a country is significant. One of the main indicators of socio-economic and technological development of a country is the level of the progress scored in this sector. Industry plays a leading role in the realization of the agricultural development lead industrialization strategy of the country. This is because of its economic and technological contribution in supplying inputs such as raw materials, machinery, hand tools, spare parts, components, construction materials as well as in expanding infrastructure and providing materials and technical services for agriculture, and other economic sectors. In addition to this, the sector has got a decisive role in the economic development process of the country in strengthening linkages, interdependence and in attaining a balanced regional development.

Globalization, technological change, market complexity and the increasing number of participants in all industries have put high premium on human capital development because it is a critical component of organization's competitive capability. Marimuthu et al. (2009) posited that production technology, financing and marketing can all be copied by other competitors but the strategy that is harder to copy is the unique ways an organization optimizes its workforce through comprehensive human capital development towards the realization of organizational goals, long term survival and sustainability.

2.7 Construction Industry in developing countries

The economies of many developing countries are confronted by severe difficulties owing to a combination of lower commodity prices, higher energy costs, falling exchange rates and rising inflation Ofori (1993). At the same time, the countries face immense social problems (including a rising urban population and unemployment) which are putting pressure on the nation's resources and capabilities. The construction industry in developing country is facing reduced levels of demand as a result of adjustment programs which invariably involve cuts in governments' capital investment.

Construction industries need companies which take a long-term view, and are prepared to invest in human resource, equipment and research and development in order to improve their performance. However, the construction enterprises in developing countries are known for their lack of knowledge, short-term orientation and lack of focus on construction (Ofori 1991). They are also unable to employ qualified personnel, and unwilling to appoint them to positions of responsibility. Management development should be a key concern in the construction firms of the developing countries.

According to the study of Ofori (1991) in most developing countries there is significant scarcity of qualified manpower, access to materials and machines for hire is limited, and the technology base is low. Therefore to improve the problems of construction industry in developing countries working on human resource has high value.

2.8 Construction Industry in Ethiopia

The evolution of the modern construction industry in Ethiopia is a recent phenomenon and can generally be summarized into Six distinct periods (Tadesse, 2016). The first period covers the period prior to the year 1968 when most civil works (including roads) were carried out by foreign contractors through international competitive bids. Relevant skilled manpower was also largely employed from abroad (EEA, 2008). Due to the encouragement of private sector, Some domestic construction companies started to emerge (1968 to 1982)

and according to EEA, 2008, this period is called the second era in the development of the construction industry.

From 1982 – 1987 the government has taken the private construction, state-owned construction companies were established and undertook almost all construction activities. Construction projects were carried out without competitive bidding by awarding contracts directly to government construction companies. This was regarded as the lost opportunity for the creation of a competitive construction industry in the country (Tadesse, 2016). The fourth period begins from 1987 to 1991 during this period design service and construction phase was introduced as a separate phase to Ethiopian construction industry.

Economic management has shifted from a command to a free market system from 1991 to 2001. Private sectors re-emerge and established in the country and started taking part in many construction activities from. Basically, since 2001 the government has introduced the concept of integration and capacity building in 2001. Domestic firms begin to be involved in some projects and the industry has been developing tremendously (Tadesse, 2016).

The country has been implementing a significant number of projects, which include the University Capacity Building Program (UCBP), the housing development program and the road sector. The GDP contribution of the industry has been raised to 8.5% in 2014/2015 (National Planning Commission, 2016). Despite its prominent role, the construction industry in Ethiopia, like in other developing countries, faces many challenges in its practice. Some of these challenges are project overruns, poor quality, low level of capacity and weak performance of contractors and consultants, week and non-facilitative policies and regulatory framework (MoUDC, 2012), (Tadesse, 2016).

These challenges have caused delays in implementation of construction projects and incur additional construction cost. Moreover, this had affected the competitiveness and critical role of the sector on industrial and infrastructural development (National Planning Commission, 2016).

2.8.1 The Construction Industry Set-Up

The construction industry in Ethiopia is a very important in boosting the economy of the country. It consists of different types and size of firms. These operate in the different sub-markets characterizing the construction industry. Construction firms must be registered and licensed in order to undertake any construction work in Ethiopia. The firms are classified according to size, expertise and financial capability by the Ministry of Construction.

The key stakeholders in the construction industry in Ethiopia are clients, professional consultants, and contractors. Before contractors, architects and engineers undertake any

construction work, they need to be licensed and registered. The present motivation for licensing of contractors in Ethiopia is to ensure that applicants for a project have the necessary capacity and capability. The procedure of registration and issuance of graded licenses relies on ownership of relevant equipment and number of staff. These criteria for licensing and registration relate neither to past performance nor to the contractor's (architect's, engineer's or consultant's) ability to lease or hire equipment, thus making it difficult for contractors, with sound technical and financial performance in other fields, to enter new markets.

Contractors are categorized into four different groups. These are General Contractors, Building Contractors, Road Contractors, and Specialized Contractors. General Contractor is a contractor that is allowed to engage in any types of construction contract works, a Building Contractor only in building construction, a Road Contractor only in road construction, and a Specialized Contractor in a special construction works other than those mentioned above such as water works, airport field construction...etc.

2.8.2 Road Construction

Infrastructure projects are key elements for a development of a nation. Accordingly, the Government initiated various programs to enhance the capacity of the sector and to create a competent construction industry. For this, the government has already formulated construction policy framework to guide the development of the industry.

The Ethiopian Road Sector Development Program (RSDP) with the objectives of improving transport efficiency and rural accessibility among others has been in implementation starting from 1997 through different phases. Since the program began 20 years ago, the country has made significant growth in the sector and contributing to the development of various dimensions of the economy. However, it is constrained by problems, such as Capacity limitation, slow level of competency, increasing construction cost, shortage of skilled human resources, shortage of construction materials, staff turnover etc.

According to the report of GTP I, efforts were made to improve the competitiveness of the sector by promoting entry of new domestic firms into the industry. A wide range of training is being provided to alleviate the shortage of trained human resources. In addition, every stakeholder in the industry implements capacity building program in their company for developing the capacity of their employees and to make their company competitive throughout the world. But, some factors have hidden the use and advantage of the program some of these are:

- most of the companies select training without considering factors such as company's goals, objects, price, and priorities.
- only a few companies have a dedicated human resource personnel who deals with staff capacity building.
- companies don't select the right employee who fits for the training.
- companies don't measure/analyze the delivered training whether it has met the target or not.
- companies don't tie the employees who received the training either by means of deliverables or commitment or train the trainer approach.

2.9 Challenges to Human Capital Development within the Construction Industry

The challenge of human capital development for a developing country is enormous (Fugar. F, 2013). This is in view of how far and ahead the developed countries and the amount of efforts and resources needed to catch up with them. A firms ability to provide and organize human capital development program is limited by its own internal situations, internal constraints and by factors outside the firm, external constraints. Internal constraints include financial resources, physical resources and staff skills and external resources include the economic situation, legislation, competition and the job market. The following are some of the challenges of human capital development.

2.9.1 Lack of Awareness

There is general ignorance with regard to the importance of HCD in a developing country like Ethiopia. Some managers do not place value on the importance of human capital development as the means for reinventing organizations to be competitive and proactive in a highly competitive and ever-changing economic environment (Fugar et al., 2013). In such environment, human capital development is not factored into the policy and structure of the company. This has somewhat contributed to the non-sustainability and non-effectiveness of companies.

2.9.2 Slowness to change

The construction industry is slow to transformation; old construction procedures and materials are still been used therefore making human capital development apparently inappropriate.

2.9.3 High employee mobility

High mobility of construction employees is a major barrier for training and development. Trained workforces are easily poached by other companies through the use of attractive

wages and other benefits. Consequently, no employer is willing to train employees who become easy preys' for their competitors. It is unappealing for contractors to train employees because with a better motivation a contractor can attract trained personnel from other companies. The consequence of this, according to Loosemore et al., (2003) is a training stalemate. Furthermore, these traveling of employees fail to cultivate any loyalty to their companies thus further negating the need to provide training to staff. Paradoxically, many research studies have concluded that one of the ways to reduce mobility is by training the employees. Because training engenders commitment of employees and committed employees remain in the organizations for longer periods.

2.9.4 Jobs market

The jobs market will impact on the level and type of training activity. High levels of unemployment indicate a surplus of labor in most sectors of the economy and firms may choose to recruit new staff rather than train existing employees. Low unemployment may result in shortage of staff that causes a firm to train its employees in the new skills and knowledge needed. Sometimes these trained employees may be lured to other employers or poached by offers of better pay and conditions. This may lead to firms reducing training and resorting to poaching to meet skills need. This approach will create long term problems for the economy or business sector as skills supply will never meet skills needs. The resulting shortfalls will stop firms.

2.9.5 Low technology of the industry

According to Fugar (2013) construction industry in developing countries, is labor intensive and many of the activities on construction projects are physical in nature and cannot be effectively learned in the classroom. This has contributed to the less value placed on formal training or education by some managers (Loosemore et al., 2003).

2.9.6 Lack of equipment, Facilities and Material

In construction companies, there is shortage in necessary equipment, facilities and materials. This will highly affect the performance of a company since the employees couldn't practice what they have been learnt during the development program there will not be any change in the company. For example if a company trained one employee about basic computer skills and if that employee couldn't practice due to lack of computer in his office therefore this is waste for both the company and the employee.

2.10 The Relationship between Human Capital and Firm Performance

The human capital focuses on two main components which are individuals and organizations. This concept have further been described by Garavan et al., (2001) that human capitals have four key attributes (1) flexibility and adaptability (2) enhancement of individual competencies (3) the development of organizational competencies and (4) individual employability. It shows that these attributes in turn generate and add values to individual and organizational outcomes.

From the individual level, Collis and Montgomery (1995) point out that the importance of human capital depends on the degree to which it contributes to the creation of a competitive advantage. From an economic point of view, transaction-costs indicate that firms gain a competitive advantage when they own firm-specific resources that cannot be copied by rivals. Thus, as the uniqueness of human capital increases, firms have incentives to invest resources into its management and the aim to reduce risks and capitalize on productive potentials. Hence, individuals need to enhance their competency skills in order to be competitive in their organizations.

The human capital theory has undergone a rapid development. Within its development, greater attention has been paid to training related aspects. This is much related to the individual perspective. Human capital investment is any activity which improves the quality (productivity) of the worker. Therefore, training is an important component of human capital investment. This refers to the knowledge and training required and undergone by a person that increases his or her capabilities in performing activities of economic values.

From the organizational level, human capital plays an important role in the strategic planning on how to create competitive advantages. Firm indicates that resources are valuable when they allow improving effectiveness, capitalizing on opportunities and neutralizing threats. In the context of effective management, value focuses on increasing profits in comparison with the associated costs. In this sense, firm‘s human capital can add value if it contributes to lower costs, provide increased performances. Another study found that the human capital indicators had a positive association on organizational performances. These indicators such as training attended and team-work practices, tended to result in superstar performers where more productivity could be translated to organizational performances.

Admittedly, human capital development and enhancement in organizations tend to create a significant contribution on organizational competencies and this in turn becomes a great boost for further enhancing innovativeness and the current literature to a large extent

supports the fact that firm performance is positively impacted by the presence of human capital practices. Some even endorsed that human capital development is a prerequisite to good financial performance (Delaney & Huselid, 1996). In addition, evidence shows that the relevance of human capital to firm performance has also become prevalent among the technology-based new ventures, and it seems that the use of human capital tool (emphasizing quality of employees) per say in small technology based new ventures tends to have a great impact on the firms‘ success.

2.10.1 Impact on Firm Productivity

National Institute of Economic and Social Research provide some interesting evidence on the links between the skill composition of the work-force of a firm and labor productivity is provided. In their study, they take a number of UK manufacturing firms and match them with continental firms producing similar products. This allows them to carry out direct productivity comparisons of these matched samples of manufacturing plants (Mason and van Ark, 1994). In the UK, the lower level of manpower skills was found to affect negatively labor productivity, the types of machinery chosen, the ways in which machinery was modified for the firm‘s particular needs, the smooth running of machinery and the introduction of new technology. The relationship between workers‘ productivity and subsequent firm profitability is, however, a complex one (Mason and van Ark, 1994).

Present literature aiming to enumerate directly the impact of training to worker or firm productivity, several studies show that training does indeed have a positive effect on productivity. Some studies have found a positive effect of human resource practices (including training) on firm productivity (Black and Lynch, 1997). Some very interesting conclusions can be drawn from the evidence concerning the impact on productivity of training undertaken with a previous employer.

2.10.2 Impact on Firm Profitability

Existing literature also shows positive correlation between human capital development and firm‘s profitability. The few studies available that have addressed this issue tend to confirm that not all the productivity gains resulting from training are compensated through a corresponding increase in individual remuneration, so that investment in training remains profitable for firms. In particular, two studies using very different data and approaches suggest that the productivity increase is over twice the size of the wage increase caused by training (Tamkin et al., 2004) Further interesting results relate to the existence of profitability returns to the firm from training sponsored by another employer. This suggests that on the job employer provided training sometimes generates considerable third party

externalities (benefits that are not appropriated by either the trainee or the trainer) when trainees do not stay with the employer who trained them.

2.10.3 Impact on Firm Long-Term Competitiveness

Some empirical studies directly confirm findings, suggesting strong links between the employment of graduates, including professional scientists and engineers, and the adoption and use of high-level technologies in the firm, and between the extent of investment in worker training and the speed and successful adaptation of new technology and also impact on future competitiveness (Pfauand Kay, 2002). More highly educated and more highly skilled workers have been found not only to be able to adapt more rapidly and efficiently to new tasks and technologies, but also to be a direct source of innovation and to influence the long term competitiveness of the company (Low and Kalafut, 2002). In fact, education and even previous informal training have been found to increase substantially a worker‘s ability to be innovative on the job.

2.11 HR practices for developing human capital and performance

The high performance management, or high performance work practices, has become an important field. A number of the scholars have studied the depth and breadth of the HR practices, particularly in association with performance. High commitment management aims to go beyond high performance management to include an ideological component the identification of the employee with the goals and values of the firm, so inducing commitment (Walton, 1985). The work of Wood & Albanese (1995) has identified a number of common features of high commitment management:

- the development of career ladders and emphasis on train ability and commitment;
- a high level of functional flexibility with the abandonment of potentially rigid job descriptions;
- the reduction of hierarchies and the ending of status differentials;
- a heavy reliance on team structure for structuring work and problem solving;
- exemplary job design to promote intrinsic satisfaction;
- a policy of no compulsory layoffs or redundancies;
- new forms of assessment and payment systems; and
- a high involvement of employees in the management of quality.

In the Guest's work for the Institute of Personnel and Development, surveying 835 organizations in the UK, endorses that there is a strong link between HRM and performance, but that this link is indirect, through the apparent impact on employee commitment, quality and flexibility. Patterson et al. (1997) identify a positive relationship

between employee attitudes, organizational culture, HRM and company performance, and conclude that employee commitment and a satisfied workforce are essential to improving performance. Two highly significant areas of HR practices are seen as: the acquisition and development of employee skills (recruitment, selection, induction and performance appraisals), and job design (skill flexibility, job responsibility, team-working).

2.12 Human Capital Development in Ethiopian Context

World Bank, 2015 stated that the productivity of firms is strongly and positively correlated with worker education and training in Ethiopia. Skills shortages in Ethiopia constitute a key constraint to growth and improved productivity in the construction industry. In summary, to increase the productivity of firms Ethiopia's education sector will need to develop and supply the appropriate managerial, technical and soft skills within the workforce (world bank 2015). The existing literature shows a strong positive relationship between human capital development and firm's performance. Even if a lot of problems countered during the implementation of the development program. This research explored empirical evidence of the implications of human capital development in the Road contractors in the Ethiopian context.

2.13 Summary of literature review

Human capital development makes significant contributions to the improvement of contractors' performance. The study also elaborates further, by reviewing different researches and by taking data from desk study. Many researchers have agreed that the conceptualization of human capitals is closely connected to some basics of economics and firm performance.

The literature review was conducted to provide an in depth contextual and conceptual understanding on the impact of human capital development on road contractors performance. It demonstrates that there are solid proofs to show that the infusion of human capital development in organizations encourages innovativeness and better firm performance.

The first part of the literature review is designing the contextual framework which encompasses the target of the research context. It introduces the general idea of human capital and human capital development. Once having a clear understanding, the second part dealing with the main idea of the research i.e. mechanisms of human capital development, how to measure and evaluate human capital, the main challenges of human capital development and the link between human capital development and firm performances. Studies also point out the fact that financial performance is surely impacted through the

development of human capitals. Finally the literature helped to guide in shaping the research end target.

Through the in depth literature review processes from the contextual frame work to the literature review, the researcher realized that to sustain competitiveness in the global organization, human capital development becomes a medium through which productivity can be increase. Hence, the problems substantiated with the literature review in line with the questionnaire and interview will assess the impact of human capital development on Road contractors' performance. Finally the reviewed literatures and the data gathered through questionnaires and interviews help to draw conclusions and forward recommendations for the betterment of the local construction industry in the future.

2.14 Gap Identification

Based on the literature reviews and desk study a number of points are identified as a gap for road contractors. Developing country like Ethiopia has vast challenges with regard to the development of human capital in view of the amount of efforts and resources needed in comparison with the developed countries.

To mention some of these Gaps that are noticed in the construction companies are, first there is a clear lack of awareness among some executives and managers on the importance that it brings, which as a whole hinders the overall progress. Further, the companies are still using old construction procedures and material, which indicates that there is a resistance towards changes and transformation. Another important point to mention is that the high mobility/movement of trained workforces in the markets has caused companies to reduce the investment in human capital. Finally, construction companies understand the concept of human capital development incorrectly and due to this, these companies do not assess or evaluate the program necessity and outputs of executed programs.

Questioners and interviews were used to proof the gap which identified through the literature review and desk studies and analyzed using the methodology described in the next chapter.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

A research design is logical sequence that connects the empirical data to a study‘s initial research question and ultimately to its conclusion. The next important step in any research process after study of literature and identifying the research question is deciding on the most suitable methodology (Cooper and Schindler, 2003).

With this understanding, the purpose of this chapter is therefore to present or describes the researcher's general study approach, discussion and motivation of data collection methods employed. The methodology also informs the strategy and procedure to be employed in carrying out the research agenda and how the data collected is interpreted.

3.2 Research Approach

This research started as two stage study. Problem identification has been done through a preliminary unstructured literature review and informal discussion with colleagues and professionals in the sector. As an output of this initial phase assessment on the impact of human capital development on company performance was identified as a proposed problem to be studied where research questions were developed in lieu of investigating this problem.

Contextual and conceptual literature reviews have been done once the problem is identified to have an in depth understanding on the research topic. The review includes books, journal articles, internet sources and archival document search such as issues related to human capital development program. The document search was mainly intended to collect how the performance of companies was improved practically.

This research adopts the mixed method of research strategy. It was applied the use of quantitative and a multiple of qualitative methods in the study to assess the impact of human capital development among contractors‘ and its impact on performance to firms success. Data collection also comprised a mixture of qualitative and quantitative data, though mainly qualitative, due to the nature of the units of analysis as well as the expected outcomes of the various instruments. To allow for the depth of information needed from construction companies, a cross-sectional survey comprising desk study, questionnaires and interviews were used as data collecting mechanism.

3.3 Research Design

A cross sectional design applied for this research. This was because the research comprised a wide variety of designs including: surveys, structured observations, content analysis and official documentation. The where', who' and what' questions were asked by this research and answered by employing survey design methods: interviews and questionnaires.

Additional questions including the hows and whys also answered by employing other designs including narrative analysis, content analysis, official statistics, and documents. Also, historical data (archival analysis) obtained from literature and desk studies informed the research and aided in the design of the procedural framework. This provided a good platform to extensively exhaust the questions and provide appropriate answers to them.

To identify the impact and challenges of human capital development road construction companies in Ethiopia, a desk study approach, questionnaire survey and interviews were carried out. The purpose of the desk study was to obtain actual data from the source documents. Besides this a literature review to develop conceptual basis for the study was also conducted side by side. Through the above literature review, main challenges to human capital development were identified. The review provided the basis to design the questionnaire which was distributed to professionals involved in the road sector program.

For the questionnaire survey respondents were selected from the list obtained from employer's ERA and AACRA, who have been involved in the road sector development program. The questionnaire which consists of both open and close ended question was distributed to these professionals.

The answer for the structured questionnaire was rated based on Relative Important Index of five ordinal measures of agreement on each contributing factors (from 1-5) to identify main challenges and availability of human capital development program on the sector. The respondent were requested to put the possible effects corresponding for each contributing factors by rating the most recurrent effects based on their experience.

First the availability of human capital development program was identified, in this case respondents were asked about their agreement on whether HCD prepared on their company or not on the following scale of measurement: Yes or No

After this they were asked whether they saw any change after taking the program or not and their believe whether the program is a critical factor in increasing organization performance or not on the same measurement scale with the above question.

Once these basic questions are answered by the respondents then they are asked to what extent human capital development applies in their organization according to their frequency of occurrence and the main challenges to human capital development program based on the following scale of measurements.

1. Not Very Frequent
2. Not Frequent
3. Neutral
4. Frequent
5. Very Frequent

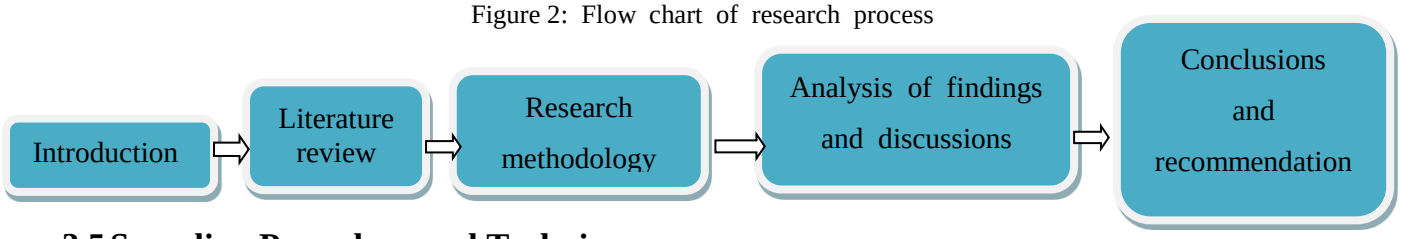
After identification of the most important Challenges that have high Impact on performance, respondents were asked to indicate any recommendation on human capital development to improve the competitiveness', innovativeness of responsible stakeholders.

3.4 Research Process

Exploratory and in-depth review of existing literature on the subject matter coupled with a preliminary desk study was served as a background to the research. This build-up led to the establishment of the problem, justifying the need for this research which further led to the establishment of research questions, an aim and specific objectives.

The study surveyed 24 registered GC 1 construction companies currently participate on ERA and AACRA projects to investigate their Human Capital Development (HCD) practices and challenges. The whole research document is classified into five (5) major parts as shown in Figure 2.

Figure 2: Flow chart of research process



3.5 Sampling Procedure and Techniques

According to the data of Ministry of construction, there are around 56 GC 1 contractors registered for 2008 budget year in Ethiopia. Out of these 24 local GC 1 contractors involved in ERA and AACRA road projects since the population is small. All 24 contractors are the target of the questionnaire distribution. Table 2 describes that How the samples were chosen from the total populations.

Table 2:- Number of sampled contractors

Clients	No of Project	No of contractors		Total Sample
		Local	Foreign	
ERA	41	14	3	24
AACRA	28	10	1	

3.6 Data Collection

The in-depth review of existing literature laid the platform for the commencement of primary data collection for the cross-sectional study. Data was collected using mainly Desk study and semi-structured interviews with the HR Managers and it was continued using questionnaire survey. Prior to contacting the companies, the researcher took support letters from the Addis Ababa University Institute of Technology (AAIT), The Ministry of construction was contacted for a list of registered construction firms in the country and Representatives of ERA and AACRA was contacted for list of active participant of contractors and their current performances.

3.6.1 Desk Study

Desk studies on Human capital Development were used in this research to support supplement responses and arguments found by questionnaires and Interviews.

3.6.2 Questionnaires

The questionnaire for this research had two sections: Section ‘A‘ and Section ‘B‘. Section ‘A’ explores characteristics of the survey companies and the respondent answering the questions. Section ‘B‘ investigate characteristics of their Human Capital Development (HCD) practices, function, organizational structure, its impact on a firms performance and challenges of HCD in the construction industry. Both sets of questionnaires were prepared in English. The questionnaires contained both closed-ended and open-ended items. Most of the closed-ended items were constructed in the form of multiple choice (of course some of them were in the form of rating scale). The open-ended questions were prepared in a form that enables to collect the respondents` suggestions, comments, and recommendations.

3.6.3 Interviews

An interview is a data collection method in which an interviewer asks questions of an interviewee. That is, the interviewer collects the data from the interviewee. An interview guide was prepared in English so as to get better detailed information from the company. The interview was conduct on a face-to-face basis.

Semi-structured interviews were conducted from the construction companies sampled for the purposes of this research and representatives of clients. The interview sought to amongst others investigate the HCD practices of the companies in greater depth than the questionnaire allowed. It was conducted after the questionnaire answered by the respondent. This approach was adopted to allow the interviewer to explore the views of the interviewee, allow them to explain their views on the subject matter; make recommendations and suggestions and make room for the discussion of other pertinent issues not covered in the interview guide.

3.7 Data Processing and Analysis

Both qualitative and quantitative approaches to data analysis were employed for the study. The data collected was edited, sorted, and coded. The procedure used in analyzing of data was aimed at establishing the relative importance of the level of Human capital development and various challenges of human capital development. There are three steps in analyzing the data:

- calculating RII
- ranking of each factors based on RII
- determining degree of correlations in ranking the variables among Contractors.

3.7.1 Desk Studies Analysis

To analyze the data's of archival records the researcher used the following procedure:

- read their completion reports, progress reports, contract documents and training assessment thoroughly.
- identify the challenges encountered during the course of action and the methods to manage/administer Human Capital Development.

3.7.2 Questionnaire Analysis

In the analysis, the "Relative Importance Index" methods were adopted to determine the ranking relative importance of variables. The five point scale (1, 2, 3, 4 and 5) was used to calculate the relative importance index for each variable which was then used to determine the relative ranking. The relative importance index is computed using Eq. 3.1

$$RII = \sum N * (W/A) \quad \text{.....} \quad \text{[Eq 3.1]}$$

Where:

W = Weight assigned to each factor by the respondents (ranging from 1 to 5).
A = The highest weight (i.e. 5 in this case).
N = The total number of respondents (33 in this case).

3.7.3 Interview Analysis

To analyze the data's of interviews the researcher used the following procedure:

- interview human resource managers and engineers on subject matter.
- identify the challenges encountered during the course of action and the methods to manage/administer Human Capital Development.
- compare the data from the data obtained from the questionnaire.

CHAPTER FOUR

RESULTS, ANALYSIS AND DISCUSSION

3.1 Introduction

This chapter sets out the analysis of the data collected to achieve the aim of the research. The main aim was to assess the impact of human capital development on the performance of road contractors. Firstly the demographic data was analyzed with descriptive statistics while the rest of the data is analyzed using the relative importance index**.**

The questionnaire is divided into three main sections. The first section deals with the demographic data of the individuals and sought to answer questions like the position held by the respondents, the length of time of service in the institution, age group distribution and academic qualification. Out of the 36 questionnaires distributed, 33 representing 92% were completed and retrieved. The basis of the research findings were on these 33 questionnaires retrieved and the data got from the interview and desk study.

3.2 Analysis of Demographic Data

This section sets out the analysis of the demographic data as shown in Table 3. A total of 36 questionnaires were sent out and 33 were retrieved. The high response rate is attributed to the follow ups that were regularly done and also on the insistence of the questionnaires to be answered when given rather than leaving it with the employees and managers to be collected later.

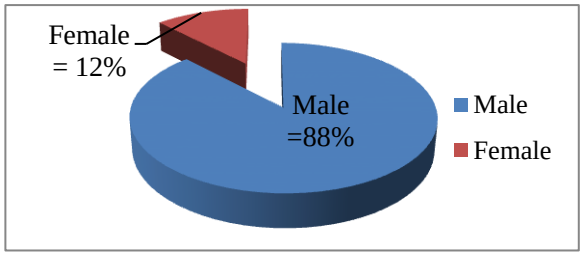
Table 3 Demographic data

No	Stakeholders	Questionnaires			
		Distributed		Returned	
		No	%	No	%
1	GC 1 Contractors	36	100	33	92

4.2.1 Gender of the respondent

The first question sought to find out the gender group of the respondents. The study shows that over 80% of the respondents were Male. Figure 3 shows that the involvement of women on management staff is very rare.

Figure 3 Gender group of respondent



4.2.2 Age group of respondent

The Next question sought to find out the age group of the respondents. The study show that over 94% of the respondents were greater than or equal to the age of 25 years. This is not surprising as most middle and top management are those who are experienced in the fields and by this reason they are senior in ages. Out of 94%, 33% of the respondents were between the ages of 41-54 years, the majority of the respondents are between 25 to 35 years old and only One respondent is above the age of 55. The ages of the respondent is summarized as shown in Table 4.

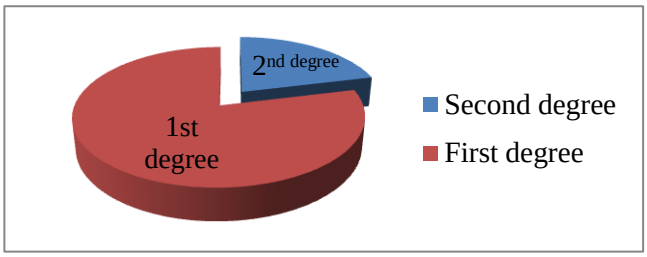
Table 4 Age group of respondent

Variable	Option	Frequency	Percent (%)
Age Group of respondent	< 25	2	6.06
	25 to 35	**14**	**42.42**
	36 to 40	5	15.15
	41 to 54	11	33.33
	55 and above	1	3.03
		TOTAL	**100%**

4.2.3 Highest academic qualification

The educational background of the individuals of the respondents was also investigated and this result is displayed in Figure 4. The results showed that out of the 33 people 26 of the individuals had attained an undergraduate degree representing about 79%, 21% had a post graduate degree. The results represent the perception of individuals with a higher degree of intellectual capacity since there was no technical certificate and diploma and it inform the quality of the findings.

Figure 4:-Highest academic qualification



4.2.4 Professional qualification of respondent

The respondents were asked to indicate their professional background. The highest numbers of professionals represented in the survey were of engineering background. They represented 60.6% of the respondents. i.e the sum of architectural engineering, civil engineering, construction technology and management graduate engineer and hydraulic and water resource engineer. The rest of the professionals had a fair representation with having 39.4%. The professionals were made of the management and engineers are summarized as shown in Table 5.

Table 5:- Professional qualification of respondent

Variable	Option	Frequency	Percent (%)
Professional Qualification of the respondent	Architect	1	3.03
	Civil engineer	12	36.36
	Construction technology management	6	18.2
	Hydraulic and water resource engineer	1	3.03
	Business and Management	13	39.4
	TOTAL	**33**	**100**

4.2.5 Duration spent by respondents in current institution

The next question sought to investigate the duration of respondents in their various institutions. This question sought to find out how experienced the individuals are in their various place of work. An individual who has spent a lengthy time at a particular place is better positioned to answer the research questions than one who is not. The results are displayed in Table 6. The results show that over 60% of the respondents have spent more than 3 years at their various places. This increases the quality of answers derived from the respondents as they have spent more time at their various place.

Table 6:- Service year in the company

Variable	Option	Frequency	Percent (%)
Duration Spent in current company	Less than 3 years	13	39.4
	3 to 5 years	10	30.3
	6 to 8 years	2	6.1
	more than 8 years	8	24.2
	TOTAL	**33**	**100**

4.2.6 Position held by respondents

The questionnaire further explored various positions held by the respondents to the questionnaire. The results show that 36% of those answered the questionnaires were Human resource Managers, 21% office engineers and 15% claim and contract engineers. The results are displayed in Table 7. The results show that the least represented individuals in answering the question were training and development manager. The questionnaires were targeted at individuals in middle management and above. This was done due to the fact that individuals in such positions are very conversant with human developmental process taking place in the company.

Table 7:- Position held by respondents

Variable	Positions	Frequency	Percent %
Position held by respondent	Claim & contract engineer	5	15.15
	Engineering department manager	4	12.12
	Human Resource manager	12	36.36
	office engineer	7	21.21
	Project monitoring and evaluation engineer	4	12.12
	Training & development manager	1	3.03
	TOTAL	**33**	**100**

4.3 Level of Human Capital Development in the Ethiopian Road Construction Industry

This section tried to ask views from the respondents if there was any program in place for human capital development in their respective construction firms.

4.3.1 Program for human capital development in company

The availability or otherwise of a program for human capital development in a company informs the degree to which human capital is enhanced. The second Section of the questionnaire investigated this. The research study indicated that only 24.2% of the construction industry have available program in place for human capital development which is 75.8% of the companies were not applied the HCD in their company. The results are summarized in Table 8.

Table 8:- Availability of human capital development program

Variable	Option	Frequency	Percent %
Availability of HCD in company	Already implemented	8	24.2
	In preparation	10	30.3
	Not planned	15	45.5
	TOTAL	**33**	**100**

4.3.2 Level of Human Capital Development

As part of the data collection, it was imperative to establish from the respondents the level of human capital development in the construction industry. It considered that knowledge of this kind would provide a basis to understand how this level influences the performance of the organization. Subsequently the respondents were asked to rate the level of frequency of various activities of human capital development from 1 to 5, where 1 represents Not Frequent, 2 represents Less Frequent, 3 represents Neutral, 4 represents Frequent and 5 represents Very Frequent. The results from the analysis are displayed in Table 9. Based on the five-point Likert scale rating, a criterion is deemed significant if it had a mean of 3.5 or more.

The highest ranked variable was the management is willing to invest resources to ensure personnel development. It had a mean of 4.85 and thus it can be concluded that this is one of the most significant in most construction companies. The least rank activity were, periodic off the job training for employees and there is a process in place to identify and correct performance gaps respectively.

Table 9:- Frequency of Human Capital Development activities.

Human Capital development	W	RII	Rank	Mean
There is a well-designed and widely accepted training policy in the company	141	0.85	2	4.30
The management is willing to invest resources to ensure personnel development	159	0.96	1	4.85
The company has a periodic on the job training for Employees	137	0.83	3	4.17
The company has a periodic off the job training for employees	86	0.52	7	2.62
There is a process in place to equip employees with skills to help them move into new roles in the future.	123	0.75	4	3.75
There is a process in place to identify and correct Performance gaps.	104	0.63	6	3.17
Employees who return from training programs are given opportunities to try out what they have learnt	116	0.70	5	3.53

The results from the study show that even if the concept of human capital development understood by most road contractors there is less practice for identifying the performance gaps. It should however be noted that the variable, performance appraisals are taken seriously..

4.3.3 Identifying Challenges to Human Capital Development

This section highlighted on the challenges in identifying human capital development in an organization. The challenges and their weight is displayed on Table 10

Table 10:- Challenges to Human Capital Development

Human capital Development challenges	W	RII	Rank	Mean
Lack of awareness	156	0.94	2.00	4.16
Slowness to change	151	0.91	3.00	4.03
High employee mobility	159	0.96	1.00	4.24
High level of unemployment	97	0.59	6.00	2.60
Low technology of the industry	124	0.75	4.00	3.32
Lack of equipment, Facilities and Material for practicing	104	0.63	5.00	2.77

Following the literature review and the data obtained from the survey a number of challenges to human capital development were identified. The respondents were asked to rate how significant these challenges were using the Likert scale. Table 10 summarize the results of the analysis. It has already been stated that a criterion is deemed significant if it had a mean of 3.5 or more. From the results three out of six identified challenges had a mean above 3.5 showing how significant challenge they are to the construction industry. These variables include; lack of awareness, slowness to change, and high employee mobility. The least rank variable is high level of unemployment.

The highest ranked challenge is high employee mobility. High employee mobility had a RII of 0.96 and a mean of 4.24. High employee mobility is a major restraint to the developmental needs of most construction companies. The next highest rated challenge is the Lack of awareness. This variable had an RII of 0.94 and a mean of 4.16. This also shows that this variable is a very significant challenge in the construction industry.

The least ranked variables were, High level of un employment and Lack of materials and facilities after getting the training each having an RII of 0.59 and 0.63 respectively. The results indicate that despite this is a challenge to the industry it is not very significant.

4.3.4 Project Performance: Time and Cost Performance

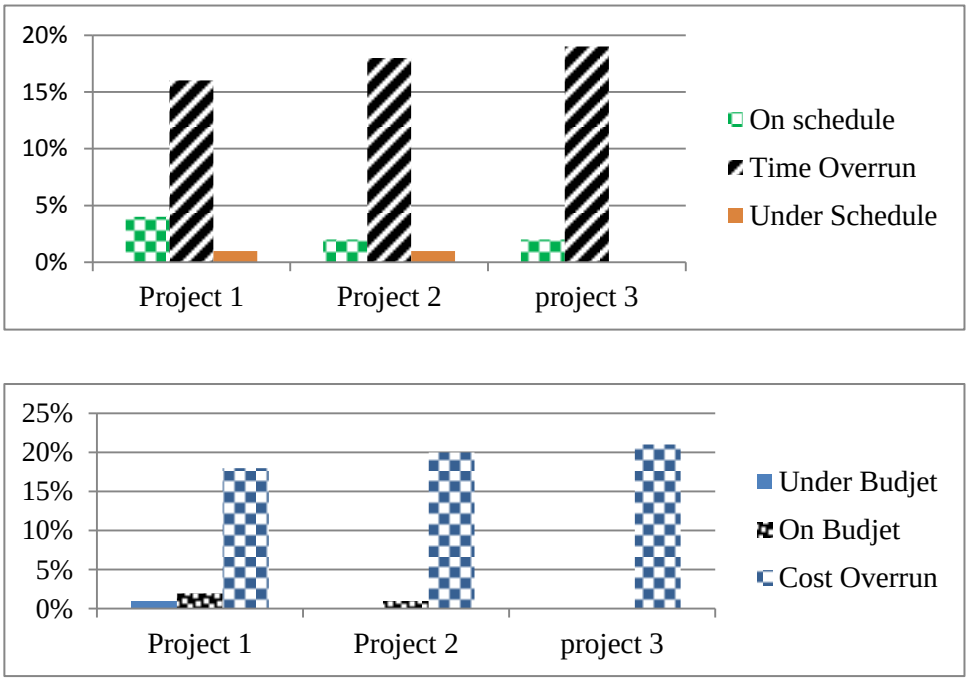
The project performance of the companies were investigated against two main variables, time and cost. Figure 5 shows the time and cost performance of the surveyed companies. With regard to time performance in the last 3 projects, the survey result show that most of the companies completed their project with time overruns, whereas some completing on the scheduled time. When it comes to cost performance, studies have shown the inability by most construction companies to meet project cost. Which is usually associated with cost overruns.

Referring the researches carried by Turkey.W (2011) and Wondwosen. K (2013) , Faulty Project Management, Shortage of technical person, financial related problems and inadequate site investigation are identified as some of that factors leads to cost and time overrun in Ethiopian Federal road construction projects.

Each of the factors, drawn by the researchers are mainly occurred by the lack of human capital, which is manifested as unrealistic resource allocation in the planning period, poor site coordination of available resource during the construction period, improper utilization of Payments followed by financial constraint for construction material. Finally all the above listed and other factors push the projects to complete with overruns. Therefore the

researcher argues that lack of HCD in the company become one reason to drive the project time and budget frame.

Figure 5:- Time and Cost performance



4.4 Summary of analysis and results

The aim of this research has been to assess the impact of human capital development on performance of road contractors and to achieve this, a number of objectives were set. It has already been presented that human capital development plays a pivotal role in company success. The study has reviewed pertinent literature, archival documents, reports, surveyed the relevant populations and results of the survey analyzed and discussed.

The data gathering instruments were questionnaires, interviews and desk study. The data were gathered from the records of contractors and clients. Thirty six questionnaires were distributed to contractors employee worked on the management staff and for engineers. Thirty three out of thirty six were properly filled, returned, and used. Finally, the data were analyzed using frequency, percentage, mean, weighted mean and Relative important index whereas the data collected through interview and observation were analyzed in narration. Based on the analysis and interpretation of the data, the following major findings were found out and discussed on the next chapter.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The main aim of this research was to assess the impact of human capital development on performance of road contractors. Subsequently research objectives were developed in order to collectively satisfy this aim. To achieve this objective review of pertinent literature and desk study, interviewee and questionaries' was conducted. Based on the above data the following conclusions are drawn.

1. Previous studies show a positive link between human capital development and firm's success. All the respondents in these research were agreed then human capital has a positive link for firm success. The research found out that other studies show that human capital development results in an increase problem solving skills and creative thinking of managers, high and effective performance, corporate commitment among others.

2. The findings from the survey demonstrate that Human Capital in Ethiopian road contractors is almost null around 75.8% of the surveyed companies were not implement the HCD program and 24.2% of the surveyed companies include the HCD Program in their yearly budget and achieve the program even though the level of understanding towards it is minimal. In addition, these companies do not assess or evaluate the program necessity and outputs of executed programs. Further, in some cases, companies are noticed, to execute the program repeatedly without knowing the actual output (without measuring the previously implemented programs), which significantly affects the performances.

3. Unnecessary material purchase, Reworks, existence of wastes and other different quality problems are the result of poor human capital developments in the companies. These poor human capital developments will results to overruns, less productivity, less performance, less competitiveness of the companies.

4. High employee mobility were identified as a major restraint to the developmental needs of most construction companies.

5.2 Recommendations

Human capital development is imperative for the road construction industry. With the increasing need to provide better quality service by road contractors and also to remain on the competitive edge, human capital development is a must. From the study the following recommendations are made:

1. Contractors should have strong and systematical evaluation and impact identification mechanisms so as it maximize the effort of both the employee and organization.

2. Implementing HCD identified as one main factor which affect the performances of contractors therefore the level of understanding towards HCD should be improved

3. High employee mobility is identified as the main challenges for the contractors to implement HCD. Therefore contractors should minimize the high rate of mobility using different mechanisms.

4. Contractors should have well designed and widely accepted training policy in their company.

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APPENDIX A

Questionnaire

Addis Ababa University

Institute of Technology

School of Civil and Environmental Engineering

Graduate studies program

Master of Construction Technology and Management

Dear Respondent,

This questionnaire is prepared by Tigist Ayele, who is Master of Construction Technology Management student at Addis Ababa University. The purpose of this questionnaire is to gather data in order to study impact of human capital development on company performances. Please cooperate by filling the questionnaire. Because your frank, genuine, and on time response is vital for the success of my study. Besides, the data gathered by this questionnaire is purely for academic purpose and your response will be secured. Thus, the researcher kindly requests you to respond each item carefully.

Please note that:

1. No need of writing your name.
2. Please fill the answer by putting "√" mark.
3. Please give more attention and return the completed questionnaire as much as possible.
4. If you need further explanation, you can contact me on through the address shown below.

Tigist Ayele

E-mail: **tigist.ayele213@gmail.com**

Thank you in advance, for your cooperation!

Section A: General information filled by Respondent

1. Gender:

☐ Male ☐ female

2. In which age group are you?

☐ <25 ☐ 41 to 54

☐ 25 to 35 ☐ 55 and above

☐ 36 to 40

3. What is your current educational status?

☐ Second degree and above ☐ College diploma

☐ First degree ☐ Grade 12 complete and below

4. Your field of specialization in highest educational status_____

5. Service years in the company

☐ Less than 3 years ☐ 6 to 8 years

☐ 3 to 5 years ☐ more than 8 years

6. In which position are you currently working? _____

Section B: Level of Human capital development on the company

1. Does your company have a program for human capital development?

   ☐ Already implemented ☐ in preparation ☐ not planned

2. Have you taken any form of Human capital Development program prepared by the company?

   ☐ Yes ☐ No

3. Have you realized any change on your performance after taking any form of training in the company?

   ☐ Yes ☐ No

4. If your answer for question no.3 is yes, please explain.

   _____

   _____.

5. Do you believe that individual's training is the critical factor in increasing organizational performance?

   ☐ Yes ☐ No

6. Please, answer the following questions by indicating to what extent they apply or occur in your operation.

   Not very frequent– (1) Not frequent - (2) Neutral– (3)

   Frequent– (4) Very frequent – (5)

Human Capital development	1	2	3	4	5
There is a well-designed and widely accepted training policy in the company					
The management is willing to invest resources to ensure personnel development					
The company has a periodic on the job training for Employees					
The company has a periodic off the job training for employees					
There is a process in place to equip employees with skills to help them move into new roles in the future.					

There is a process in place to identify and correct Performance gaps.					
Employees who return from training programs are given opportunities to try out what they have learnt					

7. How significant are these challenges in identifying human capital development in your organization. Please use the scale below to answer the following questions.

   Not Significant – (1) Not very Significant - (2) Neural– (3)

   Significant – (4) Very Significant – (5)

Human capital Development challenges	1	2	3	4	5
Lack of Awareness					
Slowness to change					
High employee mobility					
High level of unemployeement					
Low technology of the industry					
Lack of equipment, Facilities and Material for practicing					

8. How will you describe human capital development in construction industry in Ethiopia?

   ☐ it is important, it makes a firm competitive, and improves employee Performance

   ☐ It is not necessary ☐ I don‘t know

9. Please if you have any recommendation for the development of human capital in the construction industry? Kindly indicate below

   .....

THANK YOU

APPENDIX B

Interview Questions

1. What are Ways of improving employee competency level and Organizations Performance other than training?
2. Do you think human capital development and firm performance have some link?
3. Do you think that human capital development brings benefit for company competitiveness? How?
4. What are the main challenges to human capital development?
5. What is the role of your company to improve competitiveness and innovativeness of road contractors?