ADDIS ABABA SCIENCE AND TECHNOLOGY UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING

SCHOOL OF CIVIL ENGINEERING AND CONSTRUCTION TECHNOLOGY

CHALLENGES FACED BY GRADE ONE BUILDING CONTRACTORS AND
THEIR POSSIBLE SOLUTIONS IN ETHIOPIA

BY HIWOT ABEBE

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Declaration

I, Hiwot Abebe, declare that this research paper is my own original work and that it has not been presented and will not be presented to other university for a similar or any other degree award.

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Hiwot Abebe
Acknowledgments

First of all, thanks pass to the almighty God, who gave me the commitment and tolerance to pass various obstacles and come to the accomplishment of this research paper in a situation of many challenges.
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LIST OF ABBREVIATION

Growth Domestic Product................................................................. GDP
Growth and Transformation Plan......................................................... GTP
Transitional Government of Ethiopia .................................................... TGE
Agricultural Development Led-Industrialization ..................................... ADLI
Abstract

The objective of the study is addressing recommended solution to challenges faced by grade one contractor in the Ethiopian construction industry. It mainly aims to evaluate recommended solution that will really help contractor to be on top of success for longer period of time according to the rate given by respondents.

The data used in the study is obtained from sample questionnaires of forty-two grade one contractor respondents. The first analysis shows that from list of problems faced by grade one building contractors, financial and machinery management is the most significant problem encountered. Subsequently poor management is also next dominant problem faced in terms of adapting general project management procedures, project management functions, tools & techniques to be unsatisfactory.

However, the second analysis shows if all contractors are willing to change their history of falling down after some time of being on top of industry, the construction industry will be a successful industry only if they make their self-ready to change according to the respondent recommended solution by jointly working with foreign contractors to build the capacity, to share experience from different construction company and also training and development of technology and skill for employee of contractor to upgrade their knowledge on management, construction and standards.
CHAPTER 1  INTRODUCTION

1.1. Background

The construction industry is a very important element of the economy and has a significant effect on the efficiency and productivity of other industry sectors. No one can think of development of other industry investment unless the construction results of infrastructure facilities are constructed. The construction industry accounts for around one-tenth of the world’s gross domestic product, seven percent of employment, half of all resource usage and up to 40 percent of energy consumption (Well.et.al, 1986).

The construction industry everywhere faces problems and challenges. However, in the developing countries, these difficulties and challenges are present alongside a general situation of socio-economic stress, chronic resource shortages, institutional weaknesses and a general inability to deal with the key issues. There is also evidence that the problems have become greater in extent and severity in recent years.

In the past few years Ethiopia’s construction industry is growing in accelerating rate. The government spending on construction activities and at the same time the contribution of the construction industry to GDP (Growth Domestic Product) growth has shown a significant growth (National bank Ethiopia, 2016).

The construction industry in Ethiopia has been developing tremendously since 2001. Recent studies indicated that the sector is expected to register a 36.4 percent annual growth and contribute 7.6 per cent to the country’s gross domestic product in the 2014/15 fiscal year (Zewdu and Aregaw, 2015).
Expansion of economic infrastructure being critical towards achieving the country’s Growth and Transformation Plan (GTP). Significant amount of the country’s budget is allocated to economic development through financing infrastructures for development of educational and power projects, construction of railways and road projects which increased road network density, construction of health projects, access for water and Sanitation infrastructure. The private sector is investing its capital for acquisition of various fixed assets such as acquiring new machinery and equipment and construction of new buildings and building maintenance activities. The construction industry of Ethiopia has contributed much in reduction of poverty, in increasing employment expansion through small and medium enterprise development and job creation through the construction of low cost houses in Addis Ababa which was subsequently replicated to other regional states (MoWUD annual progress report, 2010/11).

The construction industry is a fundamental economic sector which permits most of the other sectors as it transforms various resources into constructed physical economic and social infrastructure necessary for socio-economic development. It embraces the process by which the physical infrastructures are planned, designed, procured, constructed or produced, altered, repaired, maintained, and demolished. The construction industry has important contributions to the Ethiopian economy, as demonstrated by its share in the GDP. The sector has registered a remarkable growth, over the last 11 years there has been increased investment on the development and expansion of various infrastructure projects (Annual Progress report, Ethiopian Federal House of parliament, 2011/12).
The realization of Vision 2025 partly depends on the existence of a reliable and competitive local construction industry that is capable of delivering quality services and value for money in the development and maintenance of the physical infrastructure. Since 2005 there have been a number of initiatives geared towards developing the local construction industry. Despite such interventions, the state of the local construction industry has remained poor. Performance constraints include inadequate capacity of local contractor’s, inadequate public sector delivery capacity, corruption, unpredictable work opportunities, use of outdated technologies and practices, lack of effective supporting policies and poor state of the economy.

In every industry the objective is serving the people and generating return, the same is true for construction companies in Ethiopia’s construction industry. But Contractor Specifically Grade one contractors are facing challenge after some time of success and domination in the construction industry thus, this paper tried to list recommended approach to challenges faced by Grade one contractors.

**1.2 Development of Construction Industry**

Construction has been an aspect of life since the beginning of human existence. The first buildings were huts and shelters constructed by hand or with simple tools. As cities grew during the Bronze Age, a class of professional craftsmen like bricklayers and carpenters appeared. Occasionally, slaves were used for construction work. In the 19th century, steam-powered machinery appeared, and later on diesel and electric powered vehicles such as cranes, excavators and bulldozers. Traditional construction, might be considered as having properly, commenced between 4000 and 2000 BC in Ancient Egypt and Mesopotamia when humans started to abandon a nomadic
existence, that caused the construction of shelter. The construction of Pyramids in Egypt (2700-2500 BC) might be considered the first instance of large structure construction. Other ancient historic constructions include the Parthenon by Iktinos in Ancient Greece (447-438 BC), the Apian Way by Roman engineers (312 BC), and the Great Wall of China by General Ming T’ien under orders from Ch’in Emperor Shih Huang Ti (c. 220 BC). Similarly, the Romans developed civil structures throughout their empire including aqueducts, harbors, bridges, dams and roads.

1.2.1 Development of Construction Industry in Ethiopia

In the past history of Ethiopia, the construction industry was not considered as an independent sector of the national economy. It was rather considered as incapable of generating national wealth. As a result, no comprehensive strategy for its development was considered. This, in turn, has led to the undesirable features of the current construction sector. These features include lack of clear developmental objectives for the industry; inadequate co-ordination of planning between the industry and infrastructure programs in the various sectors of the economy heavy dependence on foreign resources such as materials, equipment and expertise representation of the role players in the construction sector by inadequate and ineffective organizations inadequate numbers of suitably qualified and experienced personnel at all levels that include engineers, technicians, mechanics, operators and foremen, etc. inadequate relevant local construction regulations and standards, and inadequate consideration given to the use of local resources including community participation in labor-based works.

Ethiopia witnessed a decline in the performance of almost all sectors of the economy during the various periods of government prior to 1991. The post-world war period
in Ethiopia registered significant changes from the time of Emperor Haile Selasie (1941-1974) to that of the Derg (1974-1991) conclude in the events of 1991 which resulted in the formation of the Transitional Government of Ethiopia (hereinafter TGE). Even though various market based economic reforms have been introduced to the various industries of the country, including the construction industry, since the downfall of the Derg regime in 1991, the domestic construction industry has still faced several hindering factors in its development.

In the New Economic Policy statement issued in 1992, the TGE made clear its intention to transform the stagnant command economy inherited from its predecessors into a functioning market-based economy. This transformation is sought to be achieved through an Agricultural Development Led-Industrialization (hereinafter ADLI) strategy for the country which is supported by similar strategies in education, health and transport sectors. However, even if the country is well endowed with natural resources with 60% of its total land area estimated to be potentially arable, its road density is amongst the lowest in Africa nations and other developing countries. Furthermore, the existing road network has deteriorated to the extent that only eleven percent of paved roads and nineteen percent of gravel roads are in good condition, making it the worst in comparison with other developing countries. It is evident from the above that the success of the ADLI strategy and the consequent economic recovery and development of the country is highly dependent on the restoration of the country’s road infrastructure.

With the above considerations in mind, the construction industry is being given special focus in the policies of the country. The construction industry is one of the three sectors of the economy identified by the Ethiopia Government for special
consideration to foster the country’s economic development. However, the general state of the domestic construction industry in Ethiopia is still characterized by inadequate capital base, old and limited numbers of equipment, low levels of equipment availability and utilization, deficiencies in technical, managerial, financial and entrepreneurial skills, limited experience and participation of the private sectors in construction, and insufficient and ineffective use of labor-based building construction and maintenance technology (Abyssina law, 2012).

1.3 Statement of the Problem.

The main reason that initiated this research was Domestic Contractor Specially Grade one contractor is facing challenge after some time of success and domination in the construction industry. Therefore, it is appropriate to raise the question why does most of Grade one contractors, who are licensed for investment, are not successful for longer period of time. And also how do Grade one contractors be on top of success for longer period of time and listing problems. Thus to answer all the above questions identifying challenges and recommendation was found as an appropriate tool.

1.4 Objectives of the study.

1.3.1 General Objective.

❖ Identify recommended approach to Challenges faced by grade one contractor while executing building project.

1.3.2 Specific Objective.

❖ To state problem faced by grade one contractors while executing building project.
To evaluating recommended approaches that will really help contractor to be on top of success for longer period of time.

To propose possible remedies (solutions) based on the findings of the study.

1.5. The Project questions

- What are major challenges faced by grade one contractor while executing building project?
- What are recommended solution to challenges faced by grade one contractors?
- How do grade one contractors be on top of success for longer period of time?

1.6. Significance of the study

This finding of this study can provide significant contributions to different users including the construction companies, government agencies, contemporary researchers and others interested parties.

The study will show recommended solution to challenges faced of Grade one building contractor in Ethiopia. This will bring the strength and weakness of Grade one contractor in light. As a result, it will be helpful to improve the strategy to overcome those weaknesses in the past period.

The Project result will be used as base line information for contemporary researchers in similar areas. And used as an indicator of the need of policy reformation for government agencies.

1.7 The Study Scope & Limitation

The paper is conducted to list problem faced and recommended solution for grade one contractors while executing building project. To evaluate recommended
approach that will really help contractors to be on top of success for longer period of time. The paper work was not without its problems and limitations which were encountered throughout the preparation of this research. Its limitation is the respondent contractor’s reluctance to provide information in the construction industry.

Due to shortage of time the data collection was made only from contractor side since they are primary source of problem and solution. since they also practicing it close enough than other stakeholders. As a result, the expected research findings might reflect only the contractor recommendation and further research might be needed for inclusion of consultant and client recommendation.

CHAPTER 2 LITRATURE REVIEW

2.1 General.

A contractor is defined as a company, or a person with formal contract to do a specific job, supplying labor and materials. As per the Ministry of Works and Urban Development a General Contractor is a contractor that is allowed to engage in any types of construction contract works, building Contractor only in building construction, a road Contractor only in road construction, and A Specialized Contractor in a special construction works.

Generally, contractors’ capacity is differentiated by grades and categories of different levels. These grades and categories are set by the recognized public authorities. Based
on the data acquired from the Addis Ababa Bureau of Trade and Industry Development the total licensed contractors in the city is more than 5950 as of April 2017. Out of the total contracting firms about 160 are Grade One General Contractors which gives us only 2.6%, 74(1.2%) are grade two contractors, 203(3.4%) are grade three contractors (3.4%), 506(8.5%) are grade four contractors, 894(15%) are grade five contractors, 986(16.5%) are grade six contractors, 1013(17%) are grade seven contractors, 1717(28.8%) are grade eight contractors, 373(6.2%) are grade nine contractors and 24(0.40%) are grade ten contractors (MUDHo, 2009/2017 budget).

The construction industry in Ethiopia is characterized by small number of construction firms with limited capacity when compared to the size and need of the country. Not only is the number of construction firms small but also the existing firms are concentrated at the lower level (grade 5 and below) according to the categorization applied in the country (Ethiopian investment agency, 2006, cited in Girma et.al, 2006).

Even though the above listed number of construction companies are small considering the massive need of infrastructure constructions of the country, they could bring a great deal of change if they managed well. But currently the reality the construction companies are dealing with different problems and fall down from top of success because of lack of good Management, different stakeholder issues, inappropriate technology and practices, application of proper building regulations and standards, financial and machinery problems were among the various reasons for the unsatisfactory performance of contractors. It causes a loss to some contractors which resulted in making them move away from the industry shortly or after some time. The local construction industry is weak and could not play an effective role as
expected due to those constraints. If the local contractors were given additional assistance from government and international donors to help ease the constraints they are facing, their performance would be even better and could transform themselves into the level of international contractors.

2.2 Key Challenges and their Implications.

2.2.1 Poor Project Management.

Project Management is a specialized management technique necessary for the planning, organization and control of projects under one strong point of responsibility also described Project Management as the application of knowledge, skills, tools, and techniques to project activities in order to meet project requirements. Good project management in construction must vigorously pursue the efficient utilization of labor, material and equipment. Lack of sound or good Project Management by contractors on projects on the other hand leads to construction delays and extra costs for both parties. Similarly, define professional project management practices as the skills and science of planning, designing, and managing activities on the other hand construction projects are somewhat difficult to manage and meet these requirements due to the nature of the industry; such as complex and unique nature, mobile workforce, ingrained culture, working conditions, and project-based setup, diverse sub-contractors and suppliers. since function of construction project management is therefore to predict as many of the risk and problems as possible and to plan, organize and control activities so that the project is completed successfully throughout the project lifecycle, Poor management.
With a strong technological base, there is no reason why the construction industry cannot catch up and reassert itself to meet competition wherever it may be. Individual design and/or construction firms must explore new ways to improve productivity for the future. Of course, operational planning for construction projects is still important, but such tactical planning has limitations and may soon reach the point of diminishing return because much that can be compressed out of the existing practices have already been tried. What is needed the most is strategic planning to usher in a revolution which can improve productivity by an order of magnitude or more. Strategic planning should look at opportunities and ask whether there are potential options along which new goals may be sought on the basis of existing resources. No one can be certain about the success of various development options for the design professions and the construction industry. However, with the availability of today's high technology, some options have good potential of success because of the social and economic necessity which will eventually push barriers aside. Ultimately, decisions for action, not plans, will dictate future outcomes.

2.2.1.1 Materials management

Materials management is an important element in project planning and control. Materials represent a major expense in construction, so minimizing procurement or purchase costs presents important opportunities for reducing costs. Poor materials management can also result in large and avoidable costs during construction. First, if materials are purchased early, capital may be tied up and interest charges incurred on the excess inventory of materials. Even worse, materials may deteriorate during storage or be stolen unless special care is taken. For example, electrical equipment often must be stored in waterproof locations. Second, delays and extra expenses may
be incurred if materials required for particular activities are not available. Accordingly, insuring a timely flow of material is an important concern of project managers.

Materials management is not just a concern during the monitoring stage in which construction is taking place. Decisions about material procurement may also be required during the initial planning and scheduling stages. For example, activities can be inserted in the project schedule to represent purchasing of major items such as elevators for buildings. The availability of materials may greatly influence the schedule in projects with a fast track or very tight time schedule: sufficient time for obtaining the necessary materials must be allowed. In some case, more expensive suppliers or shippers may be employed to save time.

Materials management is also a problem at the organization level if central purchasing and inventory control is used for standard items. In this case, the various projects undertaken by the organization would present requests to the central purchasing group. In turn, this group would maintain inventories of standard items to reduce the delay in providing material or to obtain lower costs due to bulk purchasing. This organizational materials management problem is analogous to inventory control in any organization facing continuing demand for particular items.

Materials ordering problems lend themselves particularly well to computer based systems to insure the consistency and completeness of the purchasing process. In the manufacturing realm, the use of automated materials requirements planning systems is common. In these systems, the master production schedule, inventory records and product component lists are merged to determine what items must be ordered, when
they should be ordered, and how much of each item should be ordered in each time period. The heart of these calculations is simple arithmetic: the projected demand for each material item in each period is subtracted from the available inventory. When the inventory becomes too low, a new order is recommended. For items that are non-standard or not kept in inventory, the calculation is even simpler since no inventory must be considered. With a materials requirement system, much of the detailed record keeping is automated and project managers are alerted to purchasing requirements.

2.2.1.2 Labor Productivity Management

Productivity in construction is often broadly defined as output per labor hour. Since labor constitutes a large part of the construction cost and the quantity of labor hours in performing a task in construction is more susceptible to the influence of management than are materials or capital, this productivity measure is often referred to as labor productivity. However, it is important to note that labor productivity is a measure of the overall effectiveness of an operating system in utilizing labor, equipment and capital to convert labor efforts into useful output, and is not a measure of the capabilities of labor alone. For example, by investing in a piece of new equipment to perform certain tasks in construction, output may be increased for the same number of labor hours, thus resulting in higher labor productivity.

Identification and evaluation of factors affecting labor construction productivity have become critical issue facing project managers for a long time in order to increase productivity in construction. (Motwani.et.al, 1995). Understanding critical factors affecting productivity of both positive and negative can be used to prepare a strategy
to reduce inefficiencies and to improve the effectiveness of project performance. Knowledge and understanding of the various factors affecting construction labor productivity is needed to determine the focus of the necessary steps in an effort to reduce project cost overrun and project completion delay, thereby increasing productivity and overall project performance. There are a wide range of factors that influence the productivity of construction industry. Identified Factors affecting construction labor productivity are supervision, resource availability, project uniqueness, organization of the work, labor availability, changes in technology, management (poor or good), labor organizations, wages, training of workers, motivation, training of the work force, weather conditions, uncertainty, location, monitoring of performance and others.

2.2.2 Financial and Machinery Management Problem.

As we disused before construction industry is a very large industry which consists lots of employees' and stakeholders' participation. Because of this, the industry needs a well administered management system in order to be effective and efficient. This management problem is an issue all over the world. For instance, a research and find out that financial problems are the main factor, and coordination problems are the second most important factor causing delay in construction projects in Malaysia (Wa’el et.al (2007). And foreign firms 'financial and economic risk in china they identified that there are a number of economic and financial risks affecting foreign firms that operate in China's construction industry (Florence L. and Hwee. L, 2007).

Construction equipment is a major resource in the building process for a construction project. When equipment is owned by a contractor, it forms a sizable portion of his assets requiring proper management practices. The use of new equipment and
innovative methods has made possible wholesale changes in construction technologies in recent decades. The selection of the appropriate type and size of construction equipment often affects the required amount of time and effort and thus the job-site productivity of a project. It is therefore important for site managers and construction planners to be familiar with the characteristics of the major types of equipment most commonly used in construction.

2.2.3 Stakeholder Issues.

Project stakeholders can be classified into two major groups: primary and secondary stakeholders. Primary stakeholders are those persons or groups of the project team who have a contractual or legal obligation to the project team and have responsibility and authority to manage and commit resources according to schedule, cost, and technical performance objectives. These stakeholders can also be named as contractual stakeholders namely employer/client, consultant/engineer and contractor. Secondary stakeholders are those who have no formal contractual relationship to the project but can have strong interest in what is going on regarding the project. These stakeholders can be participants on budgetary and financial agreements, business and professional interests or relationships and they are also referred to as budgetary and collateral stakeholders.

Stakeholder involved in construction industry have issues that can generate problem to the smooth progress of work. They are process uncoordinated efforts of the concerned bodies. some of problems are in giving as much as possible finalized drawing that not create ambiguity in Constructing it, site handover of boundary and peripheral areas at date of commencement date, strict measures in delayance in time, the client must be aware of what is done and how it done before everything is started.
The drawings should be nearly hundred percent complete; however, in many instances this does not happen, leading to addenda being issued to clarify details, resolve conflicts or to complete the design and site handover of site.

2.2.4 Inappropriate Technology and Practices

The improvement of the capacity and performance of the industry to international competitiveness cannot be achieved by using inappropriate technologies and practices. The creation of a strong construction industry should be supported by macro-economic policies (Mekuria.H, 2016). The development of the construction industry requires stakeholders’ commitment to make sustained efforts in familiarizing themselves with appropriate technologies for better results. To meaningfully improve the competitiveness of the industry, strong technological development is needed. And also the construction industry is faced with lack of skilled manpower. Development of adequate human resources is essential for the industry to realize national development goals and to meet the needs in the area.

2.2.5 Building Regulations and Standards

The project building regulations and standards arrangements currently in use in developing countries have been adapted from Western countries which have a different history, culture, collective experience and breadth of construction expertise. Given the uniqueness of practices to particular groups of people, and its influence in societies and organizations, these studies confirm that the construction industry must differ in every country.
On other hand government must take some measures to improve the capacity of the construction industry to play its part in the development of the nation. The following points are worth to consider in a way to facilitate the participation of local contractors by introducing contracting out works, improving regulations.

2.3 List of Recommended Approach to challenge

2.3.1 Joint venturing with Each other

‘Joint Venture’ is defined as a business undertaking by two or more persons engaged in a single defined project. (Bryan.A, 1999) Similarly, in our Commercial Code, ‘Joint Venture’ is also defined as “an agreement between partners on terms mutually agreed and is subject to the general principles of a law relating to partnership (Commercial Code Proclamation no 166, 1960).

Ethiopian history of the law of business organizations, we can see that joint venture was introduced to our legal system since 1933 by the Law of Business Organizations of 1933(Ethiopian Law of Business Organizations, 1933). Although joint venturing will upgrade their capacity in financial, managerial, personnel, resource capacity to build one strong, big and capable Contractor. But joint venturing Contracting in construction was not practiced until recently by two Contractors. It good start for Ethiopian construction as solution to challenge faced by grade one contractor.

2.3.2 Joint venturing with Foreign Contractor

In Ethiopia, there are foreign and domestic contractors working in the country. When foreign contractors come, they bring with them the opportunity of technology transfer. The government must encourage and facilitates joint ventures between local
and foreign contractors so that in the process there will be an opportunity to learn about new technologies and new skills. Local contractors will be able to build their capacity and will have the ability to participate in different projects such as road, dam and railway construction.

Currently there are a lot of mega projects in Ethiopia like the railway construction project where foreign contractors are leading. Those kinds of projects are bound to be transferred to local contractors in due time as their capacity and technological advancement develops.

2.3.3 Get Finance from International Financer

In financial sense Some of contractors might not have cash on hand as most of the cash might be tied up in equipment. When this happens they will have a problem with cash flow for the next step of the project. So getting finance from international banks or government fiancé might solve problem of cash.

2.3.4 Training and development of technology and skills

Scheduled training and development is needed to continuously develop their skills, through training and developing. Training is teaching operational or technical employees how to do the job for which they were hired and Development is teaching managers and professionals the skills need for both present and future jobs.

Local contractor should determine what needs exist in the first step in developing a training plan and evaluate relevant job performance criteria before and after the training to determine the effect of training in order to successful in top for long period of time.
Project management challenges are the consequences of poor practice of project management tools and techniques and lack of adapting appropriate project management procedures (Tadesse.A. et.al ,2016).

2.3.5 Modify Building Regulations and Standards

The building code sets out building regulations and requirements. It is a legal document and it confers powers to all the local authorities to oversee that the building code and building by-laws are maintained in the areas of their authority.

The drawings and specifications should also go through a constructability review, wherein the construction documents should be analyzed for completeness, coordination between activities, and general code compliance by the government body.

Thus, it is necessary for effort to be made to application of proper building regulations and standards which are suited to each country: universal solutions are not practical. In particular, effort should be made to formulate regulations and standards which enable and facilitate the integration of the construction process in the context of the country concerned.
CHAPTER 3  MATERIALS AND METHOD

3.1 The Study Approach and Project Type

The project is based on a practical problem developed from the observation of construction projects and the project questions are oriented to investigate the recommended approach to addressing challenges faced by Grade One Building Contractors in Ethiopia.

3.2 Data Source and Collection

Recommended approach and Challenges faced by contractors were first examined and identified through a relevant literature review and by conducting a pilot study that sought advice from experienced construction staff.

The study has used the data sources to produce the following basic documents: respondents’ documents.

The questionnaire contained three part:

- General information pertaining to the respondents was specific since the whole research aimed at their problem and solution to their challenge.

Part I- Questionnaire for Challenges faced by Grade One Contractors

- List of Key Challenges faced by grade one contractors were listed to be select for respondent based on significance.
  
  0- No significance
  1- Minor significance
  2- Average significance
  3- High significance
  4- Extreme significance
Part II- Questionnaire for Recommended Approach Addressing Challenges Faced by Grade One Contractors

- After identifying the chances of occurrence of the Challenges faced by grade contractors, respondents were asked about the Recommended approach for Specific Challenges faced by grade one contractors from list of solution found from literature reviews.

- The questionnaire included an additional question, where respondents were required to mention suggested approach for specific Challenges faced by contractors.

3.3 Sample Size Determination

A sample is a small proportion of a population selected for observation and analysis. This research initially attempted to involve grade one contractors and as far as possible, attempts have been made to ensure that the samples drawn from the population are representative. The random sampling method was used for this research. The numbers were determined on the basis of the time available for conducting the research work, and the reliability of the respondents, so that the overall research work would indicate the reality of the situation.

From the 60 questionnaires distributed to practitioners, 42 participated in the main survey, which equates to a 70% response rate.
CHAPTER 4 RESULTS AND DISCUSSION

4.1 Introduction

This part of the project deals with the analysis and discussion of the data gathered from the questionnaire survey. It includes the identification of challenges faced by Grade One Contractor while executing building project, study and explore recommended approach for challenge faced by grade one contractor. The procedure used in analyzing the results was aimed at identify recommended approach that is really help contractor to be on top of success for longer period of time. The questionnaire gave each respondent an opportunity to identify challenges faced by Grade One Contractor by giving the response 0- No significance, 1- Minor significance, 2- Average significance, 3- High significance, 4- Extreme significance and also choosing recommended solution for the problems listed in part one section.

4.2 Questionnaire Response Rate'

To make the analysis more comprehensive a total of 60 questionnaires were distributed to Contractor out of which 42 questionnaires were filled and returned.

4.3 Recommendations on the Findings of the Results and Discussions.

4.3.1 Mean Score Analysis

The First part analysis is done using mean score to identify the significance of each problems identified in literature review. Mean Score of a certain set of data is equal to the sum of all the values in the data set divided by the total number of values. Frequency is multiplied by weight in order to find all values in the data and divided by its total number of values.
The analysis shows that from list of problems faced by Grade one building contractors, financial and machinery management is the most significant problem encounter. Since Contractors allocate advance payment to another project that has financial problem and investing the money to another activity in which the owner wish to do. However, purchasing materials and machinery that may not be needed for further construction of project. In addition, poor management is also next dominant problem faced in terms of adapting general project management procedures, project management functions, tools & techniques to be unsatisfactory. From study the level of practice in terms of safety, risk and time management was found to be very low. table below shows mean score calculated value for list of problems.

Table 4.3.1 Mean Score Analysis

<table>
<thead>
<tr>
<th>Description</th>
<th>E.S</th>
<th>V.S</th>
<th>M.S</th>
<th>S.S</th>
<th>N.S</th>
<th>No of respondent</th>
<th>Total Weight</th>
<th>Mean</th>
<th>Rank</th>
</tr>
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<tr>
<td>Challenge faced by grade one contractor</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>1. Financial and machinery management Problems</td>
<td>40</td>
<td>81</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>37</td>
<td>121</td>
<td>3.270</td>
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<tr>
<td>2. Poor Management. (Labor and Material)</td>
<td>36</td>
<td>90</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>39</td>
<td>126</td>
<td>3.231</td>
<td>2</td>
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<tr>
<td>3. Stakeholder Issues</td>
<td>27</td>
<td>60</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>39</td>
<td>87</td>
<td>2.231</td>
<td>5</td>
</tr>
<tr>
<td>4. Inappropriate Technology and Practices</td>
<td>120</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>40</td>
<td>120</td>
<td>3.000</td>
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</tr>
</tbody>
</table>
A Research Paper On Recommended Approach to Address Challenges Faced by Grade One Building Contractors in Ethiopia

| 5. Application of Proper building regulations and standards | 36 | 40 | 9 | 38 | 85 | 2.237 | 4 |

4.3.1 Calculating Percentage of Respondent Recommended Solutions.

Part two of finding was recommending approach to problems listed above section.

The finding of study was:

- Recommended solutions for Financial and Machinery management problem.

From a total sample of Thirty-nine contactors nineteen of them were preferring to Joint venture with local Contractor and Twenty of them were preferring to Joint venture with foreign Contractor as solution to problem of financial and machinery problem.
Figure 4.3.1 Recommended solution for Financial and Machinery management problem

- Recommended solutions for Poor Management problem.

  From a total sample of thirty-seven contractors ten of them were preferring to joint venture with foreign contractor and twenty-seven of them were preferring to training and development of technology and skills as solution to Poor Management problem.
Recommended solutions for Stakeholder problem like ignoring standards and conflict on boundary.

From a total sample of Thirty-Nine contactors thirty of them were preferring to Training and development of technology and skills and nine of them were preferring to Proper Building Regulations and Standards as solution to Stakeholder Issues problem.
Figure 4.3.3 Recommended solution for Stakeholder Issues as problem

- **Training and development of technology and skills**: 23%
- **Proper building Regulations and Standards**: 75%

Recommended solutions for Inappropriate Technology and Practices.

From a total sample of thirty-nine contractors twenty-nine of them were preferring to Training and development of technology and skills and ten of them were preferring to Proper building regulations and standards as inappropriate technology and practices.
Figure 4.3.4 Recommended approach for Inappropriate Technology and Practices

From list of problems encounter recommended solution for application of proper building regulations and standards as problems is to enforce Proper building regulations and standards as it is to be applied.

Finally, the respondents were asked to enter some solutions to challenge faced by grade one contractor in the Ethiopian. Each respondent were given open question for writing his own view of the solution. With a total collected solutions of 35, 9 were repeated:

- Apply modern finance management.
- Stakeholders’ collaboration.
- Experience sharing and information capitalization.
- Training.
- Application of construction management practices.
- Modify regulations set by the government.
- Allocate sufficient time for design and planning.
- Build capacities of all stakeholders by joint venturing.

CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

This study demonstrated that the analysis shows that from list of problems faced by grade one building contractors, financial and machinery management is the most significant problem encountered. Since Contractors allocate advance payment to another project that has financial problem and investing the money to another activity
which the owner wish to do. However, purchasing materials and machinery that may not be needed for further construction of project. Subsequently poor management is also next dominant problem faced in terms of adapting general project management procedures, project management functions, tools & techniques to be unsatisfactory.

Regarding solution to listed challenge, Joint venturing with foreign Contractor, Training and development of technology and skills of grade one contractor employee were the most suitable for above main problems mentioned. In addition, the respondents have suggested nine solutions for problems faced that are apply modern finance management, build capacities of all stakeholders by joint venturing, stakeholders’ collaboration, experience sharing and information capitalization, training, application of construction management practices. modify regulations set by the government. allocate sufficient time for design and planning.

5.2 Recommendations

The development of the construction industry requires stakeholders’ commitment to make sustained efforts in familiarizing themselves with appropriate technologies for better results. To meaningfully improve the competitiveness of the industry, strong technological development is needed. The construction industry is faced with lack of skilled manpower. Development of adequate human resources is essential for the industry to realize national development goals and to meet the needs in the area. The sector could meet even a larger demand when the economy expands and sees the intended growth pattern in the future. However, empowering construction
manpower is a responsibility of the education sector through providing training for its manpower.

Moreover, rent-seeking attitudes and practices, lack of financial and machinery provision, uncoordinated efforts of the concerned bodies, unsustainable service of construction permits and controls, and less determination to implement the industry programs and packages have also been cited as the major challenges of this industry sector.

However, if all contractors are willing to change their history of falling down after some time of success on top of industry, the construction industry will be a successful industry. Some of solution may be jointly working with foreign contractors to build the capacity, to share experience from different construction company and training and development of technology and skill employee of contractor to upgrade their knowledge on management, construction, standards etc.

REFERENCES


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Appendix