

**ASSESSMENT OF THE PERFORMANCE OF SMALL CONSTRUCTION
ENTERPRISES UNDERTAKING CONSTRUCTION PROJECTS: A CASE
STUDY IN JIMMA UNIVERSITY AGARO CAMPUS**

***A RESEARCH PAPER TO BE SUBMITTED TO THE SCHOOL OF
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DECLARATION

I hereby declare that, this submission is my own work towards the MSc. Degree and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any degree of the university or elsewhere, except where due acknowledgement has been made in the text.

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Abstract

The construction industry is characterized by numerous projects that often experience significant time and cost overruns. These delays have detrimental effects on project success, including impacts on time, cost, quality, and safety. The existing literature has explored various aspects of construction project performance, including cost, time, and quality. However, there is a lack of research specifically focusing on small construction enterprises. This research aimed to assess the performance of small construction enterprises undertaking construction projects Jimma University Agaro campus. The general objective of the study was to assess the performance of small construction enterprises undertaking construction project's in Jimma University Agaro Campus. The study utilized a mixed-methods approach, including both qualitative and quantitative techniques. A total of 76 participants selected from the project owner, consultants and contractors of construction projects were participated. Simple random sampling was used after the employees were stratified into project owner, consultants and contractors. Data were collected through various sources, including surveys, interviews, and document analysis. Both qualitative and quantitative data analysis techniques were employed to analyze the data. Frequency tables were used to present the quantitative data. The measurement of time performance indicated that delays were primarily caused by factors such as poor coordination among project stakeholders and inadequate resource allocation. Finally, the study identified common challenges faced by small construction enterprises, including poor planning, limited access to resources, and insufficient communication and coordination. Cost overruns and time delays were observed. The identified factors contributing to these challenges include poor planning, inadequate resource allocation, lack of effective communication, and coordination among project stakeholders. To address the identified issues and improve the performance of small construction enterprises recommendations are made for responsible stakeholders.

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Table of Contents

<i>Abstract</i>	ii
List of Figure	vi
List of Table.....	vi
CHAPTER ONE.....	1
INTRODUCTION	1
1.1. Background of the Study.....	1
1.1.1Background of the Organization.....	3
1.2. Statement of the Problem	4
1.3 Objectives of the Study	6
1.3.1 General Objective of the study.....	6
1.3.2 . The general objective	6
1.3.3 Specific Objectives of the study.....	6
1.4 Significance of the Study	6
1.5 The Scope of the Study	7
1.6 Limitation of the Study	7
1.7 Organization of the Study	7
CHAPTER TWO.....	8
REVIEW OF RELATED LITERATURE	8
2.1. Definition and Concept	8
2.2. Theoretical Review	9
2.2.1. Classification of construction projects	9
2.2.2. Phases of construction projects	10
2.2.3. Construction Projects and Performance	10
2.2.4. Construction project performance measurement models	11
2.2.5. Measurement of Project Performance	12
2.2.6. Factors of Cost and Time Performance	13
2.2.7. Factors of Quality Performance	14
2.3. Empirical Review.....	15
2.4. Research Gaps.....	18
2.5. Conceptual Framework	18
CHAPTER THREE	19
RESEARCH METHODOLOGY	19
3.1. Introduction.....	19
3.2. Research Design and Approach	19
3.3. Research Design.....	20
3.3.1 In this study, a descriptive and explanatory research design was usedData Type.....	20

3.4.	Data Sources	20
3.5.	Target population and Sample.....	20
3.5.1.	Target population	20
3.5.2.	Sampling Size Determination.....	20
3.5.3.	Sampling technique.....	21
3.6.	Data collection methods and tools	21
3.7.	Data Analysis and Presentation.....	22
3.8.	Ethical Consideration	22
CHAPTER FOUR		23
RESULTS AND ANALYSIS.....		23
4.1.	Demography of the participants	23
4.2.	The cost factor performance of Jimma University Agaro campus construction project	27
4.3.	The Time factor on performance of Jimma University Agaro campus construction project	28
4.4.	The measure for time performance of Jimma University Agaro campus construction project	31
4.5.	Main challenges and gaps the performance of Jimma University Agaro campus construction projects....	32
CHAPTER FIVE		35
5.	SUMMARY, CONCLUSION AND RECOMMENDATION	35
5.1.	Summary	35
5.2.	Conclusion	36
5.3.	Recommendations	36
5.3.1.	Recommendation for Owner	36
5.3.2.	Recommendation for Contractors	37
5.3.3.	Recommendation for Consultant.....	37
Reference.....		38
Appendix I.....		42

List of Figure

Figure 1 Conceptual Framework 18

List of Table

Table 1 Organization type of small construction enterprises working in the Jimma University
Agaro Campus 23

Table 2 Sex distribution of respondents..... 24

Table 5 work experience of construction enterprises staff undertaking construction projects in
Jimma University Agro Campus..... 26

Table 6 cost factor performance of Jimma University Agaro campus construction project 27

Table 7 Owners responsibility 28

Table 9 Consultants responsibility 30

Table 10 External factor..... 30

Table 11 measure for time performance of Jimma University Agaro campus construction project
..... 31

Table 12 measure for cost performance of Jimma University Agaro campus construction project
..... 32

ACRONYMS

CM – Construction Manager

CV – Cost Variance

CPI – Cost Performance Index

CSA– Central Statics Agency

EAC – Estimate at Completion

ETC – Estimate to Complete

IM– Interface Management

BECO-Business and economics

MoFED – Ministry of Finance and Economic Development

PM – Project Management

PMBOK – Project Management Body of Knowledge

RII – Relative Importance Index

SPI – Schedule Performance Index

WBS – Work Breakdown Structure

CHAPTER ONE

INTRODUCTION

This chapter will discuss the background of the study, including the covering the very the reasons why the study undertaken, the statement of problem, the research question, the objective of the study, the scope of study, the significant of the study, and the organization of the study Below is how it should be:

This chapter will discuss the background of the study, including the reasons why the study conducted, the statement of the problem, the research question, the objives of the study, the scope of the study, the significance of the study, and the organization of the study.

1.1. Background of the Study

A project is a temporary endeavor undertaken to create a unique product or service. The project comes to an end when its aims completed, or when it is terminated because its objectives will not or cannot be met, or when the project is no longer needed. The project's performance and success are measured by cost, time, and quality. However, the construction industry is full of projects that are completed with significant time and cost overruns (Amhel et al.,2010). Delays, according to (Faridi, A. and El-Sayegh, S., 2006), have a negative influence on project success in terms of time, cost, quality, and safety. The impacts of building delays do not affect simply the construction business, but also the general economy of a country. The success of a project is judged by meeting the criteria of cost, time, safety, resource allocation, and quality which are determined by the owner. The goal of project management is to achieve goals and objectives by allocating resources in a way that meets the project's quality, cost, schedule, scope, and safety requirements. Any incident or situation that could jeopardize project performance must be controlled, deflected, or mitigated by the Construction Manager (Muir, B, 2005).

Construction projects are characterized by the complexity of the factors that can affect their successful completion. These factors can be caused by the owner, the contractor, the consultant and the construction site conditions. For the purpose of this research, time overrun is defined as the time difference between the actual completion time and the estimated completion time, agreed by and between the client and the contractor during signing of the contract. And cost

overrun is the cost difference between the actual completion cost and the estimated completion cost.

According to (Ajayi O. M. Ogunsami O. E. Ajayi A. K and Ofili C.M, 2010), the choice of contractor(s) is a critical factor for the project manager and typically has a significant impact on the success or failure of a project. The performance of a contractor would unquestionably be linked to the performance of the expert. Consider that the assessment of execution has been a challenge for the construction industry for decades. Analysts have proposed a few models and strategies for assessing venture execution. In any case, the majority of these strategies and also limit their examination to measures such as cost, schedule, or labor efficiency. Construction execution considers client satisfaction, time performance, cost performance, construction quality, and long-term progress.

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Ethiopia' s construction sector comprises innate and indigenized firms, as well as various major foreign civil engineering and construction companies. Construction industry in Ethiopia endures from numerous issues and complex issues in execution. Performance is related to numerous subjects and components such as time, cost, quality, client satisfaction productivity, and safety.

Previous studies conducted in Ethiopia have been identified areas that need further study, such as the effects of the construction project manager's skills on project execution, the performance level of public and private construction projects, the creation of an execution estimation system and a modeling framework to measure the performance of construction companies and projects, and the evaluation of the most important factors influencing the performance of construction projects. To this end, the current study investigate the performance of small construction enterprise projects in Jimma University Agaro Campus.

1.1.1 Background of the Organization

Jimma University (JU) is a public research university located in Jimma, Oromia Region, Ethiopia. It is recognized as the leading national university, as ranked first by the Federal Ministry of Education for four successive years (2009–2012). The establishment of Jimma University dates back to 1952 when Jimma college of Agriculture was founded. The university got its current name in December 1999 following the amalgamation of Jimma College of Agriculture (founded in 1952) and Jimma Institute of Health Sciences (founded in 1983).

The university is located in the city of Jimma, situated around 352 kilometers southwest of Addis Ababa. Its grounds cover some 167 hectares. JU is Ethiopia's first innovative community-oriented educational institution of higher learning, with teaching centers for health care students in Jimma, Omo Nada, Shebe, Agaro, and Asendabo. JU is a pioneer in Public health training. It has academic and scientific collaboration with numerous national and international partners. JU also publishes the biannual Ethiopian Journal of Health Sciences, and launched the Jimma University Journal of Law in October 2007.

Jimma University is one of the largest and comprehensive public research universities in Africa. The university has more than 4,000 faculty and staff members. It also has twelve research facilities, a modern hospital, a community school, a community radio station, an ICT center, libraries and revenue generating enterprises. The university is operating on four campuses and it is on the phase of establishing its fifth campus at Agaro. Currently, the university educates more than 43,000 students in 56 undergraduate and 103 postgraduate programs in regular, summer and distance education with more enrollments in the years to come. The university has many national and international linkages and collaborations in the area of research, education and community service. Its innovative educational philosophy, staff commitment and motivation and availability of better research facility have helped the university in attracting both national and international partners.

1.2. Statement of the Problem

The performance of construction companies is affected by various factors, and two of the most significant factors are cost and time. The performance of construction companies is influenced by various factors, with cost and time being two of the most significant ones. An effective management of cost and time is imperative to ensure the success of any construction projects. However, it is essential to identify the precise impact of cost and time on the performance of construction companies.

The impact of cost and time constraints on the performance of construction companies has far-reaching consequences. The consequences of cost and time constraints on construction companies' performance are far-reaching. Construction companies, that fail to effectively manage their costs and time effectively, may face several challenges, such as budget overruns or delays in the completion of projects. Moreover, it can lead to a decrease in the quality of work and the reputation of the company.

Therefore, it is crucial understanding the impact of cost and time on the performance of construction companies, both for the companies themselves and the stakeholders involved in their projects. A thorough understanding of the problem will help in identifying the solutions and devising the strategies to manage the cost and time constraints faced by construction companies.. It is necessary to analyze the relationship between these two factors to identify their individual and combined impact on overall performance of construction companies. The study aimed to evaluate time and cost performances of small construction companies in Jimma university agaro campus.

The three main objectives of project success are widely recognized as completion on time, within budget, and with the desired quality. However, construction projects often face challenges in meeting these objectives, experiencing time delays, cost overruns, and compromised quality. Meng X (2011) identified time, cost, and quality as important indicators of poor project success. Traditional project performance measures focus on cost, quality, and time, whereas non-traditional project performance measures encompass aspects such as health and safety, environment, management, worker skills, industrial relations, and facilities, as identified by Rwelamina and Omran (2012).

Wubishet (2017) has conducted a survey and case study on the causes of cost overrun in Federal Road Projects of Ethiopia in the case of Southern District. The study has identified six top-rated factors for a project cost overrun and these were material price fluctuation, cost underestimation, delay in supply of raw materials, inadequate review of contract documents, lack of coordination at the design phase and lack of cost planning during pre- and postcontract stage have the highest impacts on the performance of project costs from the client's, consultant's and contractor's perspective.

Various studies have been conducted to identify factors associated with time and cost overruns and its impacts (Siraw, 2014;), Fetene N, 2008). In the field of construction, a projects consists of multiple processes that begin with initiation and end with completion. Throughout teach significant stage, various activities are undertaken to accomplish the projects.

The study aimed to provide insight and understanding into the performance of small construction enterprises from project the perspectives of key project players, namely clients, contractors and consultants. It is expected that findings from this study guide efforts to improve the performance of public construction projects in addition to providing better ways and methods of delivering construction projects. Construction projects investigated in this study include administrative buildings, school buildings, students dormitory, communication facilities and laboratory building projects.

1.3 Objectives of the Study

1.3.1 General Objective of the study

1.3.2 . The general objective of this study was to assess the performance of small construction enterprises undertaking construction projects in Jimma University Agaro Campus

1.3.3 Specific Objectives of the study

The specific objectives of the study were:

1. To evaluate the performance of small construction enterprises in relation to project time and cost performance.
2. To identify factors challenging the performance of small construction enterprises
3. To determine remedial measures to overcome the challenges of small construction enterprises performance.

1.4 Significance of the Study

The findings of this study can provide valuable insights to small construction companies operating in similar contexts. It can help them understand their strengths, weaknesses, and areas for improvement in terms of project performance. By identifying the factors that contribute to successful project outcomes, small construction enterprises can enhance their capabilities, competitiveness, and overall business performance. The findings of this study can benefit project owners and clients who engage small construction enterprises for their projects. By assessing the performance of these enterprises, project owners can make informed decisions when selecting contractors or evaluating proposals. They can gain insights into the capabilities, track records, and project management practices of small construction enterprises, enabling them to choose reliable partners for their construction projects. In generally, study is important as it encourages the selected construction company; improving their performance thoroughly by avoiding time and cost overrun of projects, creating awareness on project performance to respondents of this research questionnaire in particular and construction company professionals in general. In addition the result of this study can be used as initial benchmark information for future study.

1.5 The Scope of the Study

This study was conducted in Jimma university agaro campus construction projects, In this research work, Jimma university agaro campus , as owner and consultant small construction enterprises licensed as grade 5,6 and grade 7 contractor were the targeted total population.

1.6 Limitation of the Study

Due to time limitation, the study limited to the impact of small construction enterprises in Jimma university agaro campus only, and also includes evaluating of the performances of small construction enterprise projects in agaro campus..

1.7 Organization of the Study

In this research work the first chapter presents an introduction of the study , the statement of the problem, research objectives, scope, limitation and significance of the study. The second Chapter contains Literature review. This presents literature related with the topic of the research and attempts to present a theoretical background and framework for the research. Third chapter contains methodology. This chapter explains the approaches and methods followed to achieve research objectives. It presents t how the data were collected as well as analyzed and presented s. Chapter four contain result and discussion, where as chapter five presents summary, conclusion and recommendation and concluded with reference and appendix.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Definition and Concept

The construction business faces a significant issue: project performance. Project deliverables such as on-time completion and client satisfaction are frequently utilized as success indicators. A construction project, according to (Kerzner H., 2006), is a complicated set of actions and tasks with a defined start and end date that consumes resources such as budget, human resources, outputs, and equipment in order to achieve certain goals. A project is temporary, according to the Advance Project Management Institute (PMI, 2008), because it has a stated start and end date, as well as a defined scope and resources. It's also distinctive in that it's not a typical procedure. Construction is defined as the process of combining materials, equipment, and machines into a permanent structure. It is broadly defined to include the construction of physical infrastructure (roads, trains, and harbors), as well as all construction work (including housing) and the maintenance and repair of existing structures. To distinguish between them, construction projects have been categorized in a variety of ways.

- **Cost overrun:** This is the amount by which the actual expenditure exceeds the budgeted cost of the project. It can also be referred to as cost escalation.
- **Cost Performance:** This is a comparison between actual expenditure and budgeted cost.
- **Key performance indicators:** Metrics upon which performance is measured.
- **Project Performance:** This is the extent to which a project achieves the intended objectives on prescribed metrics. In this study project performance is expressed in terms of time, cost, quality, safety, site disputes and environmental impact.
- **Quality performance:** During project inception, certain technical and quality specifications are prescribed for a project. The extent to which a project adheres to the specifications indicates the level of its quality performance.
- **Time Performance:** The degree to which a project achieves its time targets and is measured on the basis of scheduled time and the actual time taken by the project. Advance Project Management Institute (PMI, 2008).

2.2. Theoretical Review

2.2.1. Classification of construction projects

Most developing countries' construction projects can be divided into several groups based on their complexity, scope, and intended use. Despite the fact that all projects have unambiguous characteristics such as an objective, budget, and time allotment, (Shenhar A.J., 2001) contends that they differ in a few areas, implying that "one size does not fit all." In this way, construction projects can be defined as small, medium, big or mega; private or public ownership; use as residential, commercial, industrial, or utility; and scope as building or infrastructure projects. Project scope, among these classification criteria, provides a far better classification of public construction projects.

As a result, a project is classified as a building or an infrastructural project based on its scope. Engineering industries, highways, large structures, and bridges are examples of infrastructure projects (Grace F.M., 2010). A construction project is classed as either residential or non-residential based on its intended function. Houses, townhouses, apartments, and cottages are among the residential construction projects. Institutional and commercial buildings, such as hospitals and clinics, schools and universities, sports facilities and stadiums, large shopping centers and retail chain stores, light manufacturing plants and warehouses, and skyscrapers for offices and hotels, are all examples of nonresidential buildings. Private building construction is perhaps the most common type of construction project undertaken in developing countries, notably by the private sector, due to its widespread use.

The necessary and major public construction sectors of institutional construction for a country's development to satisfy its people's diverse demands. Although there are a large number of public construction infrastructural projects, they only make up a small part of the overall construction sector; they are a very essential element of it. Though such projects might be either institutional or commercial, the majority of public sector construction projects are for institutions such as schools, hospitals, industrial estates, and agricultural markets. Regardless of classification, every project goes through a series of stages known as phases of construction projects (Kerzner H., 2006), (PMI, 2008) that are sequentially related.

2.2.2. Phases of construction projects

Undertaken of a number of phases of construction building projects, each of which may be a designated group of activities that regularly result in a milestone. A number of researchers have described project phases in terms of conception, planning, procurement, construction, and start-up (Kerzner H., 2006). Others have simplified it into three stages: conception, design, and construction (Puspasari T.R., 2006). (PMI, 2008) stated that there are four phases to a project namely (1) conception, (2) development, (3) implementation and (4) termination. These phases capture all the activities that take place in construction projects. The four different stages could also be termed as (1) Project conception and planning, (2) Project design and tendering, (3) Project construction and (4) Project operation and maintenance. This nomenclature better reflects the activities carried out during the four phases of construction projects.

2.2.3. Construction Projects and Performance

The success of a construction project is largely determined by how well it performs. Several previous studies looked into the performance of construction projects. According to (Dissanayaka Sunnil M. and Kumaraswamy Mohan M., 1999), one of the guiding causes for the construction industry's poor execution is the inappropriateness of the chosen acquisition framework. The work achievement structure, criticism influences on efficiency and work quality, and impacts from upstream to downstream phases are all cited by (Reichelt Kimberly and Lyneis James, 1999) as three dominating structures that are fundamental to the energetic of a project performance.

Financial stability, progress of work, quality standard, health and safety, resources, relationship with clients, relationship with consultants, management capabilities, claim and contractual disputes, relationship with subcontractors, reputation, and amount of subcontracting are among the main performance criteria of construction projects, according to (Thomas S. Ng, Palaneeswaran Ekambaram and Kumaraswamy Mohan M, 2002). Construction time is becoming increasingly important, according to (Chan Daniel w. m. and Kumaraswamy Mohan M., 2002), because it frequently acts as a critical metric for evaluating project performance and project management proficiency.

While project administration is one of the many variables on which project performance is unexpected, according to (Pheng Low Sui and Chuan Quek Tai, 2006), it is also arguably the most important as persons creating the forms and structures that supply the projects. According to (Ugwu O.O. and Haupt T.C., 2007), an adequate understanding and knowledge of performance are desirable for archiving managerial goals such as improving institutional transformations and making efficient design, specification, and construction decisions at various projectlevel interfaces using appropriate Decision support tools. (Ling et al, 2007) investigated how Singaporean development enterprises responded to project management (PM) approaches. This project management team determined the performance level of their projects in China, identified PM strategies that led to improved results, and recommended essential PM practices.

2.2.4. Construction project performance measurement models

The Proposition of Performance develops and connects six underlying generalities to form a framework that can be utilized to explain performance and progress (Don Elger, 2010). Developing performance is a journey and position of performance refers to where you are on the journey. Environment, position of knowledge, situations of chops, position of identity, unique factors and fixed factors all play a role in current performance. For effective performance enhancements three axioms are presented.

These include a performer' s mentality, inundation in an improving environment and engagement in intelligent practice. Performance progressing through levels where the names “ Level 1,” “ Level 2,” etc. are utilized to characterize adequacy of performance. That' s an individual or organization at Level 3 is performing superior than an individual or organization at Level 2. Performing at a better level produces comes about that can be classified into categories: (i) quality increments; comes about or items are more compelling in assembly or surpassing the desires of partners; sum of squander goes down, (ii) capability increments; capacity to handle more challenging exhibitions or project increments, (iii) capacity increments; capacity to create more throughput increments, knowledge increases , depth and breadth of knowledge increases, (v) skills increase; abilities to set goals persist, maintain a positive outlook, etc. increase in breadth of application and in effectiveness and (vi) identity and motivation increases; individuals develop more sense of who they are as professionals; organizations develop their essences.

(Cheung SO, Suen HCH, Cheung KKW, 2004) used performance measurement to determine the method and area of measurement. The three performances are based on the methods of measuring performance: technical performance, commercial performance, and overall performance. Measuring areas include planning and design, marketing, and manufacturing, among others, and overall performance is measured at the firm or strategic business unit level. Furthermore, the proposes a performance measurement model in terms of outputs and resources to be measured at various levels. Outputs are measured to see if they help achieve objectives (effectiveness), and resources are measured to see if the least amount of resources is used in the production of outputs (efficiency).

However, in his model, (Cheung SO, Suen HCH, Cheung KKW, 2004) failed to reflect the welfares of stakeholders, their needs and expectations. The construction organizations are to remain competitive in the unless, long run, they need to develop and better understand their relations with their customers, suppliers, employees, lenders and the wider community, as suggested by (Love et al, 2005). Hence, performance measurement has to incorporate the interest of the stakeholders, both economically and morally.

Furthermore, (Chitkara K.K, 2004) propose a demonstration known as stakeholder perspective measurement (SPM) that adequately considers relationships with customers, suppliers, employees, financiers, and the larger community. All of them are critical to a company's viability, both in the short and long term. SPM considers the firm's three common points of view: as a partner substance, reflecting the interest of clients and shareholders (measures of product/service performance); as a goal-oriented, benefit center (measures of monetary execution); and as a framework that locks in resources gathering, transformation, and trade with the environment (measures of competitive capacity, efficiency and quality).

2.2.5. Measurement of Project Performance

The purpose of performance assessment is to help companies understand how decisionmaking processes or practices contributed to past success or failure, and how this knowledge may lead to future improvements. According to (Samson M and Lema NM, 2002), the kind of work, global rivalry, quality grants, organizational role, external requests, and IT power are all features of growing performance estimation indicators that require examination of both the organization and

the environment. The indicators should be able to detect root causes of problems, address all possible performance drivers, and indicate prospective improvement possibilities. And also (Cheung SO, Suen HCH, Cheung KKW, 2004) employed that Time, cost, quality, client satisfaction, client changes, company performance and safety and health are the seven essential critical markers for execution.

Those three disciplines, according to (Tangen Stefan, 2004), are economics, management and accounting. Performance measurement has sparked a lot of attention recently among academics and practitioners of performance measurement, which is a complicated problem that generally includes. (Tangen Stefan, 2004) found that the goal of the measurement, the amount of detail necessary, the time available for the measurement, the availability of preset data, and finally the cost of measurement all influence the choice of an appropriate measuring approach.

In order to enhance productivity, (Lehtonen Tutu Wegelius, 2001) proposed a new framework for measuring construction logistics using two dimensions. There are two types of measures in the primary measurement (measuring use). One of these types is known as development measures, which assist the development industry in identifying flaws with present hones. Typically, these measurements are employed in development initiatives. Another type is monitoring measures, which are used to keep track of processes in real time. The emphasis of measures is the second feature of the framework. It specifies which metrics can be utilized at the organizational level. Information should be available at the company and project levels, as well as at the level of each individual supplier or subcontractor.

2.2.6. Factors of Cost and Time Performance

(Chan Daniel w. m. and Kumaraswamy Mohan M., 2002) remarked that studies in various countries the three decades tried to limit and contributed significantly the knowledge of construction project time performance, while (Iyer K. C. & Jha K. N., 2005) remarked that project performance in term of cost is studied since 1960s. These studies range from theoretical work based on experience of researcher on one end to structured research work on the other end. Moreover, (Pheng Low Sui and Chuan Quek Tai, 2006) stated that there have been many past studies on project performance according to cost and time factors. (Fetene N, 2008) found that the most common effects of cost overrun were delay, supplementary agreement, adversarial

relations among stakeholders, and budget shortfall of project owners which guides efforts to improve the performance of the construction industry in the future. (Aje O.I. Odusami K.T. & Ogunsemi D.R., 2009) identified that cost and time performance of building projects significantly affected by contractors' management capability. (Scott S. & Wiguna I. P. A, 2005) revealed the building contractors were similar both project time and cost affected by the critical risks. They were: high inflation/increased material price, design change by owner, defective design, weather conditions, delayed payments on contracts and defective construction work.

According to (Iyer K. C. & Jha K. N., 2005), the following factors influence cost performance: project manager competence; higher administration support; project manager staffing and leadership skill; monitoring and feedback by members; take measure; coordination among venture members; owners' competence; social, temperate, and climatic conditions. Coordination among venture members was identified as the most critical of all the variables having the greatest impact on venture execution. (Love et al, 2005) examined project time-cost execution relationships using extend scope components for 161 development projects completed in various Australian States. It is noted that net floor area and the number of floors in a building are important determinants of project time execution. Furthermore, the findings indicate.

2.2.7. Factors of Quality Performance

(Curt, 2005) stated that the quality management system monitors and analyzes quality of the constructed project and predicts quality problems and issues. Typical quality measures include: (i) Quality control tests: number performed, frequency and percentage passed/failed, number of non-conformance issues, number of change requests and root causes, cost of rework, number of exceptions at turnover and cost of quality (ii) Quality Assurance Cost (cost of resources): quality assurance cost as a percentage of construction cost, cost of quality and Cost of quality as percentage of construction cost. (Lepartobiko W., 2012) stated that quality can be assured by identifying and eliminating the factors that cause poor project performance. (Iyer K. C. & Jha K. N., 2005) found that the project manager' s competence and top management support are found to contribute significantly in enhancing the quality performance of a construction project. Lack of contractor experienced topped the quality related cause of project failure. (T. Ling F. & Bui, 2010) discovered that major enablers that lead to project success are foreign experts' involvement in the project, government officials inspecting the project and very close

supervision when new construction techniques are employed. A factor which leads to poor performance is the lack of accurate data on soil, weather, and traffic conditions.

2.3. Empirical Review

(Fetene N, 2008) did a deliberate on causes and effects of cost overrun on public building construction projects in Ethiopia. From the findings of the study public building construction projects suffered cost overrun about 67 out of 70 The rate of cost overrun ranges from a least of 0% to the greatest of 126% of the contract sum for person projects. (Iyer K. C. & Jha K. N., 2005) did a research on factors affecting cost performance taken a cost execution evidence from Indian construction projects and found out that the significantly change enhance the quality of performance of a construction project by the project manager and top management of the Indian construction project.

(Kim et al, 2008), the execution of international construction projects is influenced by more complex and energetic components than residential projects; the construction project frequently suffers or is seriously impacted by external uncertainty such as political, economic, Social, and cultural risks, as well as internal risks from within the project. (Puspasari T.R., 2006) identified 46 possible factors as being responsible for poor construction contract Performance. The researcher classified factors into eight categories: those caused by clients, those caused by contractors, those caused by consultants, those caused by subcontractors, those caused by material and labor, contractual relationship factors, project procedures, and those caused by the external environment.

(Abdel-Razek, 2007) founded the improving of construction labor productivity in Egypt by applying benchmarking for labor productivity performance. The eleven building projects in Egypt are labor productivity data was used from masonry activities, several measures of benchmarks of construction labor productivity were demonstrated, calculated, and then used to evaluate the productivity and identify the best and worst performing projects.

The ultimate success of the project is a critical issue in any consulting service (Wondie B., 2016). Consultants have distinct responsibilities that are critical to the success of a construction project. The duties and responsibilities of a construction consultant are extensive. These

obligations are determined by the type of contract condition and project delivery method chosen. A consultant is essential in the completion of a construction project. It is difficult to imagine modern life without the contributions of consulting engineers to fields such as health, sanitation, transportation, public works, buildings and communications. The profession necessitates a high level of engineering knowledge and ability (Nuhamin getachew, 2018).

(Bui Ling Florence & Thuy Dung Thi, 2010) discovered that foreign experts' involvement in the project, government officials inspecting the project, and very close supervision when new construction techniques are used are major enablers and leads for project success in Vietnam. (Amusan L. M., 2011) investigated the factors that influence construction cost performance on Nigerian construction sites. The analysis revealed that factors such as contractor inexperience, inadequate planning, inflation, incessant variation order and change in project design were critical to causing cost overruns, while project complexity, project period shortening, and fraudulent practices were also to blame.

According to (Al-Momani Ayman H., 2000), the success of any project is determined by the service quality provided by contractors and the expectations of the project owner. Managing the construction so that all participants perceive equity of benefits is critical to project success. It is discovered that a complete lack of attention devoted to owner satisfaction contributes to poor performance. Poor performance is also caused by declining market share, low efficiency and productivity and rapid construction cost escalation.

(Jin XH Ling FYY, 2006) investigated the relationship-based variables that influence the performance of common Chinese building projects. Thirteen performance measures were used to assess the success of construction projects. These factors were divided into four categories: cost, schedule, and quality and relationship performance. It was suggested that foreign firms that have entered or plan to enter the Chinese construction industry learn how to build cooperative and harmonious relationships with Chinese partners and ultimately, achieve satisfactory project performance by taking into account the aforementioned variables.

In Malaysia, (Wa'el A. Mohd. Razali A. Kadir Azizah Salim and Ernawati, 2007) stated that using a survey, they identified the major causes of delays in construction projects in Malaysia. The primary goal is to identify the various parties' perceptions of the causes of delays, the allocation of responsibilities and the types of delays. As a result, the survey classified the causes/factors of delay into four categories based on responsibility: Contractor-related causes, Owner-related causes, Causes associated with the consultant, External factors were identified as causes and the top ten factors were identified. On top of the list of financial and economic difficulties (owner), on the second and third ranks, there are financial issues (contractor) and late supervision and slow decision-making (consultants). Instructions are given slowly (consultants), a scarcity of materials on the market (external), and Inadequate site management (contractor), On-site material shortages (contractor), Errors in construction and poor workmanship (contractor), Delay in delivering materials to the job site (contractor), Decision-making Slowness (owners), Inexperienced consultants (consultants), Incomplete documents (consultants) are the factors identified from fourth to tenth place.

(Wubishet et al, 2017) has conducted a survey and case study on Causes of Cost Overrun in Federal Road Projects of Ethiopia in Case of Southern District. The study has identified six top rated factors for a project cost overrun and these were material price fluctuation, cost underestimation, delay in supply of raw materials, inadequate review of contract documents, lack of coordination at the design phase and lack of cost planning during pre- and post- contract stage have the highest impacts on the performance of project costs from the client's, consultants and contractors perspective.

(Abubeker Z.k, 2015) stated the cost overrun problems in road projects in Addis Ababa by using questionnaire survey and desk study. This study identified all road construction projects filled in both time and cost performance. Therefore; the time delay rate in between 25% and 264.38% the contract amount and the cost overrun ranges in between 4.11% to 135.06% of the contract agreement.

2.4. Research Gaps

According to the literature review, one factor may affect another group factor, such as material shortages affecting cost, time, and quality performance, and project complexity affecting time and productivity performance. (Dissanayaka Sunnil M. and Kumaraswamy Mohan M., 1999), (Iyer K. C. & Jha K. N., 2005), (Ugwu O.O. and Haupt T.C., 2007), the following summarization is the main and group factors that affect the performance of construction projects based on literature reviews.

2.5. Conceptual Framework

Based on a literature review of the assessment of the performance of small construction enterprises in construction projects in Jimma University Agaro campus, they can be grouped as project characteristics related factors, labor and material related factors, contractual relationship, clients' related factors and contractors' related factors. These categories form the basis by which research model developed to measure their effect on Jimma University Agaro campus construction performance of this study. It is graphically presented as shown below.

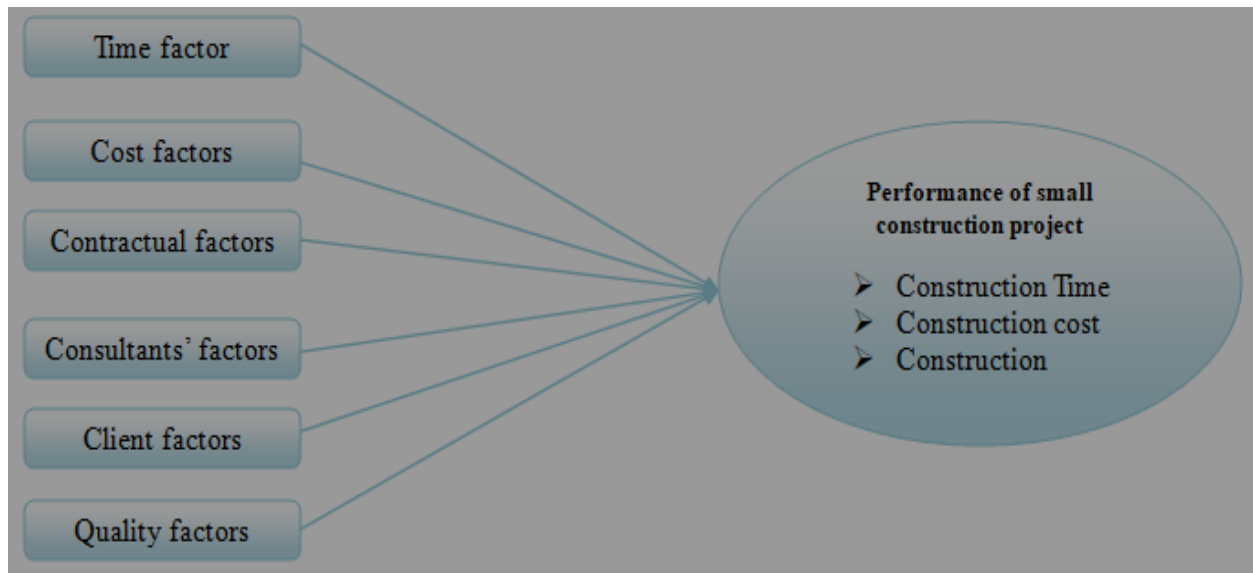


Figure 1 Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

Research methodology is the step by step procedure used to determine a solution to a particular problem. As such, the methodology used in this study provides the procedures that were necessary for obtaining the information needed to structure the research questionnaire, collect data, analyse the collect data, and interpret and present the results. The methodologies followed in this survey are outlined in the following sections.

3.2. Research Design and Approach

There are two basic approaches to research: quantitative and qualitative (Leedy P.D. and Ormrod J.E, 2005). The former involves the generation of data in quantitative form which can be subjected to accurate quantitative analysis in a proper and rigorous manner and in the form of a data base from which to realize characteristics or relationships. In quantitative research, samples of a population are studied (observed or questioned) to establish its characteristics, in short, a quantitative approach attempts to produce “ real answers” from “ hard data” , whereas a qualitative approach is concerned with subjective evaluation of opinions, behaviour and attitudes.

Qualitative methods are not good at giving direct answers, but are good at developing more questions, because of consistent use of “ soft data” (Higgins G.E., 2009). Therefore in this research, quantitative and qualitative approaches were used.

According to (Kerlinger F.N., 1986) research design is the plan and structure of investigation considering so as obtaining answers to research questions or test the research hypothesis. The plan represents the overall strategy used in collecting and analyzing data in order to test research hypothesis.

3.3. Research Design

3.3.1 In this study, a descriptive and explanatory research design was used

In order to draw the true picture of public construction projects in terms of their performance, the study has been employed primary data with the help of survey questionnaires to data.

3.4. Data Sources

The study collected data from primary sources. The primary sources of data were employees (professionals) working in difference section of the JU Agaro campus construction office, consultants and contractors who participate in office projects.

3.5. The primary data were also gathered from the sub-city construction office. By using the Five Point Likert Scale questionnaire for different worker at sample, project researcher was abled to obtain quantitative and qualitative data. The relevant information obtained was used as a benchmark against the primary data collected to support the research Target population and Sample

3.5.1. Target population

The population means the totality of individuals from which some sample is drawn. The target population of this research was the project owner, consultants and contractors of construction projects who were working at different level and who had more than one year experience. The target population of the study was 95 from three parties.

3.5.2. Sampling Size Determination

considering the fact that studying a subset of the population would be manageable relative to studing the entire population due to time, cost and accessibility challenges. Thus, the minimum sample size was calculated as per the following formula:

$$n = \frac{N}{1 + N * (e)^2}$$

Where n = Sample size, N = Population size, and e = Level of precision (the acceptable sampling error) given as 0.05.

$$n = \frac{95}{1+95*(0.05)^2} = \underline{76}$$

$$n_{C1} = (N_{C1}/N)*n = (25/95)*76 = \underline{20}$$

$$n_{C2} = (N_{C2}/N)*n = (30/95)*76 = \underline{24}$$

$$n_{C3} = (N_{C3}/N)*n = (40/95)*76 = \underline{32}$$

Where n is the sample size; n_{C1} is the calculated sample size from owner, n_{C2} is the calculated sample size of Consultant and n_{C3} is the calculated sample size of Contractor; N_{C1} , N_{C2} , and N_{C3} the population number of client, consultant and contractor respectively; N is the sum of population JU Agaro campus, consultant and contractor; e is the level of precision assumed to be 5%.

3.5.3. Sampling technique

Stratified sampling technique was used first, and then simple random sampling procedure was followed to choose employees within the stratum from each part of the total population, and distribute questionnaire and collect the required information from the determined samples. This technique was chosen to assist in minimizing bias when dealing with the target population. A 5-point scale ranging from 1 to 5 was applied as an answer to the statements of the variables. All data were coded and entered into a computer and analyzed in both descriptive and inferential statistics using the Statistical Package for Social Sciences (SPSS).

3.6. Data collection methods and tools

The data were collected from the samples through questionnaire and document review. Data were collected under continuous supervision of the researcher. Collected Data were both qualitative and quantitative.

, To achieve this the researcher used closed and open-ended questionnaires and semi structured. Semi structured questionnaire is a type of interview in which the interviewer asks only predefined questions, while the rest of the questions are not planned in advance.

3.7. Data Analysis and Presentation

As data means raw material, it has to pass through a process of analysis and interpreted accordingly. . Hence, both qualitative and quantitative data analysis techniques would be employed to analyze the data. The data from document analysis and questionnaire would be presented in a narrative form by the analysis result were used percentage, tables and graphs as they are simple to work with and easy to understand.

The collected data employed by the software Microsoft Excel 10 to determine the occurrence of assessment the performance of building construction projects Kolfe Keraniyo construction project. These data were test whether there is agreement or disagreement among each pair of parties (the respondents). The ranking of assess based on importance index was calculated using the formula shown below. According to Kometa et al. 2011, relative importance index method used to determine the various the asses performance consultant. The same method would be adopted for this study within various groups (i.e. owner, consultants or contractors). The five point scale ranged from 1 (strongly disagreement) to 5 (strongly agreement) is will adopt and transform to relative importance indices for each factor.

3.8. Ethical Consideration

The researcher first informed participants about the nature of the study and requested their consent to participate. Only those organizations and personnel who were voluntary to participate in the research were approached for an interview and for comment too. The researcher also assured that the names of respondents would not be revealed in the study. For reasons of ensuring that respondents become anonymous, direct quotations from respondents were merely ascribed to respondent's code. The researcher also committed to report the research findings in a complete and honest fashion, without misleading others about the nature of the findings. Under no circumstance, the researcher fabricated data to support a particular conclusion. Finally, the researcher took appropriate measures to ensure the research would cause no physical or psychological harm to research participants. As a general rule, therefore, the study did not raise any ethical concerns.

CHAPTER FOUR

RESULTS AND ANALYSIS

As planned by the researcher 76 questioners was distributed, among which 20 questioners for the JU Agaro campus construction office, 24 questioners to contractor and 32 questioners was to the consultant. The questioner structure that has distributed to contractor had additional structure from the questioner that had distributed to owners and consultants, in which it includes part of questions used to evaluate project performances. The data for the study was gathered from 100 percent of the sampled population, or 76 respondents. A summary of the analysis is also provided in this chapter.

4.1. Demography of the participants

In this study the owner was Jimma University Agaro campus. Because this study was targeted on different infrastructure projects of JU Agaro capus. the contractors were small construction enterprises which were participated on different small scale construction projects of JU Agaro capus. And the consultant was Jimma University construction office. It is governmental office, which is founded to provide consulting, supervising and controlling services for different construction projects of the all Jimma University entities.

Type of organization

Table 1 Organization type of small construction enterprises working in the Jimma University Agaro Campus

Type of organization	Frequency	Percent
Owner (JU Agaro campas)	20	26.4
Consultant	24	31.6
Contractor	32	42
Total	76	100%

Organization type of small construction enterprises undertaking construction projects in Jimma University Agaro campus from ----- (N=76)

The majority of respondents, 42 percent, were contractors, 31.6 percent were consultants, and 26.4 percent were owners, indicating that the majority of respondents were contractors.

I. Sex of respondent

Table 2 Sex distribution of respondents

Sex	Frequency	Percent
Male	54	71.05
Female	22	28.95
Total	76	100%

Sex distribution of respondents of participants of small construction enterprises undertaking construction projects in Jimma University Agaro campus from ----- (N=76)

Among the respondents, 54 individual (71.05%) identified as male, whereas 22 individuals (28.95%) were female. These figures suggest that the male respondents constituted the majority (table 2).

II. The respondent of work position

Table 3 Respondent of work position of small construction enterprises undertaking construction projects in Jimma University Agaro campus from ----- (N=76)

Job title	Owner (JU Agaro campus)		Consultant		Contractor	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Manager	2	10	2	8.33	1	3.125
Office engineer	8	40	7	29.17	12	37.5
Site engineer	6	30	15	62.5	11	34.375
Other specify	4	20	0	0	8	25

The majority (40.0 percent) of respondents had office engineer position, 30.0 percent had site engineer position, and 10 percent had manager position. This clearly demonstrates that the majority of the respondents were the position of engineer. The majority (62.5percent) of consultant respondents had site engineer position , 29.17 percent had office engineer position, and 8.33 percent had manager position. The vast majority (37.5 %) of contractor respondents had office engineer position, 34.375 percent had site engineer position, and 25 percent had other and 3.125 percent manager position. This clearly demonstrates that the majority of the respondents were between the office and site engineer position.

III. The respondent of education level

Table 4 Educational level of participants of small construction enterprises undertaking construction projects in Jimma University Agaro campus from ----- (N=76)

Education level	Owner (JU Agaro campas)		Consultant		Contractor	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
PhD	1	5	0	0	0	0
MSc	9	45	2	8.33	3	9.375
BSc	8	40	18	75	16	50
diploma	2	10	4	16.67	8	25
other related stream specifies	0	0	0	0	5	15.625
Total	20	100	24	100	32	100

The table presents the distribution of education levels among the respondents, categorized by their roles as Owner (JU Agaro campus), Consultant, and Contractor. It shows that the majority of Owners have a Bachelor's degree, while the highest proportion of Consultants have a Bachelor's degree, and the majority of Contractors have a diploma.

I. The respondent of work experience

Table 5 work experience of construction enterprises staff undertaking construction projects in Jimma University Agro Campus

Work experience	Owner (JU Agaro campas)		Consultant		Contractor	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1-5	4	20	2	8.33	11	34.375
5-10	6	30	12	50	14	43.75
10-15	8	40	3	12.5	2	6.25
15-20	1	5	3	12.5	4	12.5
>20	1	5	4	16.67	1	3.125

Respondent of work experience of participants of small construction enterprises undertaking construction projects in Jimma University Agaro campus from ----- (N=76)

The majority (40.0 %) of the owners of respondents had more than ten to fifteen years of experience, 30.0 percent had five to ten years of experience, and 20.0 percent had one to five years of experience. This clearly demonstrates that the majority of the respondents were over the age of ten, implying that the respondents have sufficient experience to adequately reply to the study's topic. The majority (50 %) of consultants of respondents had five to ten year of experience, 16.67 percent had more than 20 years of experience, and 12.5 percent had 15 to 20 years. The vast majority of contractors 50.68 percent of respondents had five to ten years of experience, 34.375 percent had less one to five year of experience, and 12.5 percent had 15 to 20 years. This clearly imply that the respondents have sufficient experience to adequately answer to the study's topic.

4.2. The cost factor performance of Jimma University Agaro campus construction project

Table 6 cost factor performance of Jimma University Agaro campus construction project

Cost factor	Mean	Std. dev.	Coeffient of variation
Inadequate project preparation, planning and implementation	2.84	1.223	0.4306
Delay in construction.	2.64	1.240	0.4696
Supply of raw materials and equipment by contractors.	2.38	1.006	0.4226
Resources constraint: funds, foreign exchange, power Associated auxiliaries not ready	2.83	0.823	0.2908
Delays in decisions making by government, failure of specific Coordinating bodies	2.58	0.956	0.3705
Wrong /inappropriate choice of site	3.00	1.058	0.352
Technical incompetence and poor organizational structure	2.97	1.154	0.3885
Labor unrest	2.97	1.131	0.3808
Natural calamities	2.99	1.125	0.3762

Cost factors performance of small construction enterprises undertaking construction projects in Jimma University Agaro campus from ----- (N=76)

The results show that factor of cost performance is a inadequate project preparation, planning and implementation stage and lack of experience of technical consultants, inadequacy of foreign collaboration agreements, monopoly of technology, with a mean of 3.00. This indicates that a jimma university agaro campus construction project preparation, planning and implementation cost performance and lack of experience of technical consultants, inadequacy of foreign collaboration agreements, monopoly of technology. The results showed that the natural calamities, with a mean of 2.99, so the calamites factor is in this area or agaro area is modaret. The result showed that the technical incompetence and poor organizational structure and labor unrest, with a mean of 2.97, so the the technical incompetence and poor organizational structure and labor unrest is at modaret stage level of the project. The results show that inadequate project

preparation, planning and implementation and resources constraint: funds, foreign exchange, power associated auxiliaries not ready, with a mean of 2.84, so the value is at moderate level. On the other hand delay in construction, delays in decisions making by government, failure of specific coordinating bodies and supply of raw materials and equipment by contractors is moderate practice regards to project process.

The higher the coefficient of variation, the greater the variation in performance across the cost factors. Factors such as inadequate project preparation, delay in construction, and supply of raw materials and equipment show moderate variations, while factors like wrong/inappropriate choice of site and lack of experience of technical consultants exhibit higher variations in performance.

4.3. The Time factor on performance of Jimma University Agaro campus construction project

Table 7 Owners responsibility

Time factors	Mean	Std. dev.	Coeffient of variation
Delay to furnish and deliver the site	2.55	0.826	0.3239
Lack of working knowledge	2.45	0.887	0.3620
Slowness in making decisions	3.30	0.733	0.2221
Lack of coordination with contractors	2.90	0.788	0.2717
Change orders by owner during construction	2.95	0.686	0.2325
Financial problems	2.85	1.089	0.3821
Shortage of site labor	2.90	0.718	0.2475

Owners responsibility of small construction enterprises undertaking construction projects in Jimma University Agaro campus from ----- (N=76)

According to the results, the respondent ranked the delay to furnish and deliver the site (Right of way problem) in fifth place, with mean equal to 2.55. This agreement between contractors and owners demonstrates the significance of these factors in project delays. Finance and payments for completed work have been ranked first by the respondent, while the mean equals 2.85. This result indicates that finance and payments for completed work have a significant impact on the

timeliness of a public construction project. Owners' slow decision-making has been ranked third, with a mean of 3.30. This result indicates that owners' slow decision-making has had a significant impact on the time performance of public construction projects. This shows that, as the whole response, almost all of the factors under this category have significance impact, to the degree of category's impact on the time performance of construction project.

Table 7 presents the results regarding owners' responsibilities in relation to time factors. The mean, standard deviation, and coefficient of variation are provided for each factor. The factors with lower means and coefficients of variation, such as delay to furnish and deliver the site and lack of working knowledge, indicate relatively lower impact on time performance. On the other hand, factors like poor communication and coordination have a higher mean and lower coefficient of variation, suggesting a significant impact on time performance. Slowness in making decisions by owners is also highlighted as a significant factor affecting project timelines.

Table 8 Contractors responsibility among small construction enterprises undertaking construction projects in Jimma University Agaro campus from ----- (N=76)

Time factors	Mean	Std. dev.	Coeffient of variation
Poor qualification of the contractor's technical staff	1.96	0.550	0.2806
Shortage of materials on site	2.00	0.798	0.399
Construction mistakes and defective work	2.26	0.752	0.3327
Poor skills and experience of labor	2.22	0.998	0.4495
Shortage of site labor	1.91	0.733	0.3837
Low productivity of labor	1.74	0.752	0.4321
Financial problems;	1.78	0.795	0.4466
Coordination problems with others;	1.70	0.765	0.45
Conflicts in sub-contractor's schedule in execution of project	2.09	0.900	0.4306
Lack of site contractor's staff	2.13	0.869	0.4079
Poor site management	1.96	0.825	0.4209

This table provides an overview of the contractors' responsibilities in relation to time factors. The mean, standard deviation, and coefficient of variation are presented for each factor. Factors such as poor qualification of the contractor's technical staff, shortage of materials on site, and construction mistakes and defective work have relatively higher means and coefficients of variation, indicating a potential impact on time performance. On the other hand, factors like poor skills and experience of labor, shortage of site labor, and low productivity of labor have lower means and coefficients of variation, suggesting a lower influence on time performance. Delays in site mobilization and conflicts in sub-contractor's schedule are also highlighted as factors affecting project timelines.

Table 9 Consultants responsibility

Time factors	Mean	Std. dev.	Coeffient of variation
Absence of consultant's site staff	2.37	1.238	0.5223
Lack of experience on the part of the consultant	2.69	0.931	0.346
Inadequate experience of consultant	2.19	0.780	0.3561
Delay in approving major changes in the scope of work	2.16	0.767	0.355

As indicated in the table, , Delay in approving major changes in the scope of work, mean equal to was 2.16. This result indicates that the time spent waiting for test and inspection approval is not a significant contributor to time performance. Inadequate experience of consultant, with mean was 2.19. This indicates that the consultant's lack of experience has a significant impact on time performance in public construction projects. Absence of consultant's site staff, with mean of 2.37 also indicates the absence of a consultant's site staff has a significant impact on the timeliness of a public construction project.

Table 10 External factor

Time factors	Mean	Std. dev.	Coeffient of variation
Mistakes and discrepancies in design documents.	3.50	0.757	0.2162
Delay in obtaining permits from municipality	3.17	0.855	0.2697
Lack of equipment and tools on the market	2.71	0.763	0.2815
Poor weather conditions; poor site conditions	3.09	1.022	0.3307
Poor economic conditions	2.61	0.994	0.3808

According to the overall response external factor has the fourth level of ranking among the fifth categories. This has the mean of 2.16. There are five determining factors under this category. The overall mean of the factors under this category were lies in the range of 2 and 3.

4.4. The measure for time performance of Jimma University Agaro campus construction project

Table 11 measure for time performance of Jimma University Agaro campus construction project

Project time management Process	Mean	Std. dev.	Coeffient of variation
Practice of activity definition process	2.75	1.367	0.497
Practice of activity sequencing process	2.75	1.245	0.4527
Practice of activity resource estimating process	2.88	0.979	0.3399
Practice of activity duration estimating process	3.16	1.020	0.3227
Practice of schadule development process	2.84	0.981	0.3454

Measures of time performance among small construction enterprises participants undertaking construction projects in Jimma University Agaro campus from ----- (N=76)

Table 11 shows the data obtained from client, owner and consultants for generating the rank of the remedial measure to overcome the challenges on time performance of construction projects of small enterprises in Jimma University Agaro campus construction project.

The practice of activity definition, sequencing, and schedule development processes all have similar means, ranging from 2.75 to 2.84, indicating a moderate impact on time management. The practice of activity duration estimating process has a higher mean of 3.16

1.5 The measure for cost performance of Jimma University Agaro campus

Table 12 measure for cost performance of Jimma University Agaro campus construction project

Project cost management process	Mean	Std. dev.	Coeffient of variation
Practice of cost estimating process	2.2895	0.78001	0.3407
Practice of cost budgeting process	2.2500	0.75056	0.3336

Measures of cost performance among *small construction enterprises participants undertaking construction projects in Jimma University Agaro campus from ----- (N=76)*

Table 12 shows the data obtained from client, owner and consultants for generating the rank of the remedial measure to overcome the challenges on cost performance of construction projects of small enterprises in Jimma University Agaro campus construction project.

4.5. Main challenges and gaps the performance of Jimma University Agaro campus construction projects

In addition to the above factors, based on open-ended questions the following factors were pointed out:

- Turnover of experienced and skilled human power from project office
- Lack of skill in project staff and client
- Lack of integration of stakeholders
- Unclear procurement
- Lack of project management training for three parties
- Lack of government official willingness to monitor
- Lack of political commitment
- Miscommunication in between the parties

During the construction phase, Jimma University Agaro campus construction projects were subjected to numerous issues that result in unnecessary delays, insufficient budget allocation, unconditional timing of the starting period, cost overruns, and poor project performance. It is common for people to blame one party (the contractor, the consultant, or the owners), most often the contractor, without taking into account all of the stakeholders involved in the project. As a result, in order to ensure that public construction projects run smoothly and without delay, each

stakeholder should be thoroughly informed about the problems encountered during the construction process.

According to the open-ended questionnaire of respondents, one of the reasons for the Jimma University Agaro campus construction project's weakness and inability to move at the appropriate pace is a lack of stakeholder integration. Because the construction sectors involves different stakeholders in the project, their inefficiency and ineffectiveness are reflected in the activities of Jimma University Agaro campus construction projects. Because when we take supply of electric power, water, and road, these are very important variables in the project sites, which means they are independent variables that determine the time, cost, and quality of public construction projects, and border enforcement and compensation are major problems. As a result, a lack of infrastructure and a lack of stakeholder integration have a significant impact on the project's completion. Therefore, the concerned body should give attention to provide adequate infrastructural service and enhance stakeholder integration to minimize the problem of public construction projects.

4. Discussion

This study was aimed to assess the performance of small construction enterprises undertaking construction projects in Jimma University Agaro campus. . The participants engaged in the construction were managers, contractors, and consultants involved in construction projects. The study found that the majority of participants were male (71.05%) and had an average work experience of 5-10 years in the construction industry.

The research findings indicated that cost performance was a significant concern in the construction projects. The study revealed that cost overruns were prevalent. Factors contributing to cost deviations included inadequate project preparation, planning and implementation stage and lack of experience of technical consultants, inadequacy of foreign collaboration agreements, monopoly of technology. This suggests the need for better cost control and estimation practices within small construction enterprises.

The study also examined the time performance of construction projects in the university campus. According to the results, the respondent ranked the delay to furnish and deliver the site (Right of way problem) in fifth place, with mean equal to 2.55. This agreement between contractors and owners demonstrates the significance of these factors in project delays. Finance and payments for completed work have been ranked first by the respondent, while the mean equals 2.85. This result indicates that finance and payments for completed work have a significant impact on the timeliness of a public construction project. These findings emphasize the importance of effective project planning and scheduling to ensure timely project delivery.

The research identified several challenges and gaps in the performance of small construction enterprises undertaking university campus projects. Based on the information from opened questionnaire, the following factors were pointed out: turnover of experienced and skilled human power from project office, lack of skill in project staff and client, lack of integration of stakeholders, unclear procurement, lack of project management training for three parties, lack of government official willingness to monitor, lack of political commitment, communication in between the parties

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary

Based on the results of the analysis of the study and respondents' responses from interview the following conclusions are drawn. The entire Jimma University Agaro campus construction projects investigated in the research, suffered from cost performance in their performance.

The research has covered various issues relating to factors affect the performance of Jimma University Agaro campus construction projects..

The most common factors affecting the cost performance of the Jimma university Agaro campus construction project were fluctuations in the cost of materials, project materials monopoly by some suppliers, design changes, the volume of required materials, type of required materials and needed labor, delays in issuing information to the contractor during construction stage, lack of cost planning/monitoring during pre and post contract stages public construction project needed pre and post planning to monitoring and evaluation of contract stage on cost performance.

Time management is an important factor that should be carefully planned. Orders should not be delivered late to the site. To determine how quickly the project will be completed, the financial problems of Jimma university Agaro campus construction should be minimized.. Owners should make certain that their contractors are paid on time in order to motivate them to complete their work as soon as possible. This means that while time performance has an effect on public construction project performance, its third rank performance group public construction project performance is the most important.

Quality is an essential component and a major factor for public construction projects and a lack of quality assurance training and follow-up has contributed to Jimma university Agaro campus construction project quality problems. Low experienced personnel and educated personnel are the major common bottlenecks of project quality performance, and were also identified as one

factor that affected project quality performance, conformance to specifications, and material quality.

5.2. Conclusion

According to the study, the performance factors of Jimma university Agaro campus construction projects are cost, time, and quality. The most common causes of cost overruns were inflation or an increase in the cost of construction materials, a change in the foreign exchange rate (for imported materials), a lack of cost control, and a failure to identify problems and take necessary and timely action. During the construction phase, construction projects were subjected to numerous issues that resulted in unnecessary delays, insufficient budget allocation, unconditional timing of the starting period, cost overruns, and poor project performance.

5.3. Recommendations

Based on the findings of the study and the responses of respondents during personal interviews, a number of recommendations were made to improve the poor performance of Jimma university Agaro campus construction projects. The researcher classified those recommendations into three types based on the stakeholders, such as client, contractor, and consultant.

5.3.1. Recommendation for Owner

As the study indicated, fluctuation of material price was one of the key factors affecting cost and time performance of Jimma university Agaro campus construction projects. As a result of this, clients are recommended to consider appropriate inflation factor during cost estimation process.

Proper project management techniques, such as proper planning, scheduling, and monitoring, proper cash flow and resource scheduling, and strict monitoring, should be used by both the project manager and top-level management. Clients are advised to supply good quality materials and equipment and to ensure that the project conforms to the specification because they provide materials for the project. To improve their performance, leaders and personnel should be trained in new skills.

The study also recommended that owner should strictly supervise the construction of Jimma university Agaro campus construction projects in order to minimize time delays, cost overruns, and poor construction quality. Furthermore, owners are encouraged to facilitate contractor payments in order to avoid delays, disputes, and claims.

5.3.2. Recommendation for Contractors

Contractors are advised to have proper planning and a good site management system in place for the various activities of the project in order to avoid mistakes that may result in rework of activities, resulting in cost, time, and quality performance issues. Contractors should be very strong in bidding for the project so that they estimate the exact cost rather than low cost in order to win the bid, collect the advance payment, and then disappear.

To avoid financial problems, contractors should make proper use of advance payments and develop a financial management philosophy for each project. Also, do not transfer project funds from one project to another. Set up some incentives and provide training to motivate workers and improve productivity.

5.3.3. Recommendation for Consultant

Consultants are recommended to provide orientation to the owner, and the impacts on project construction such as immediate approval of payments, variations, and additional works, as well as price fluctuation, are improving project performance. Approve the requested payments, additional works, variation orders, and so on, in accordance with contract rules and regulations, in order to successfully complete the Jimma university Agaro campus construction of the proposed projects on time.

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JIMMA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF ACCOUNTING AND FINANCE

Appendix I

Instructions: This research is conducted for academic purposes, so please try to fill it carefully and truthfully. For each of the questions, please tick [√] in the provided box the most suitable answer using the given scale. Please also answer all the questions to enhance the objectivity of the research.

Typical questioners for clients, contractors and consultants

I. back ground information

➤ Please mark your choice on the blanks provided for each questions below.

1. Gender.

A, Female _____ B, Male _____

2. Age.

A, 18-25 _____ B, 25-32 _____ C, 32-39 _____ D, >39 _____

3. What is the Name of the organization or office? _____

4. What is your position in the organization?

A, manager _____ B, Office Engineer _____ C, Site Engineer _____ D, Other
Specify _____

5. What is your education level in construction engineering?

A, PhD. ___ B, MSc. ___ C, BSc. ___ D, diploma ___ E, other related stream specifies _____

6. Years of your experience in similar position.

A, 1-5 _____ B, 5-10 _____ C, 10-15 _____ D, 15-20 _____ E, >20 _____

II. project performance data.

➤ Please mark your choice on the blanks provided for each questions latter.

1. Have you participated in managing process of construction projects that are constructed by small construction enterprise?

A, Yes _____ B, No _____

2. If your answer for question No.1 is **Yes**, how many projects do you supervise?

A, 1-10 _____ B, 10-20 _____ C, 20-30 _____ D, >30 _____

3. How many projects were accomplished within scheduled time?

A, < 25% _____ B, 25% - 50% _____ C, 50%-75% _____ D, 100% _____

4. How many projects were accomplished within project cost?

A, < 25% _____ B, 25% - 50% _____ C, 50%-75% _____ D, 100% _____

Assessment of the performance of small construction enterprises in construction projects; a case study in Jimma City

III Data related to Factors that challenge time and cost performance of the projects.

A. Time factors

The factors listed in the table below are considered potential factors which influence time performance of the projects. There are five columns: 1, extremely significant (ES), 2, very significant (VS), 3 moderately significant (MS), 4, slightly significant (SS) and 5, not significant (NS). Please mark in the box under the column of your choice.

NO	FACTORS	E.S	V.S	M.S	S.S	N.S
A	OWNERS RESPONSIBILITY					
1	Delay to furnish and deliver the site					
2	Lack of working knowledge					
3	Slowness in making decisions;					
4	Lack of coordination with contractors					
5	Change orders by owner during construction					
6	Financial problems					
7	Shortage of site labor					
8	Poor communication and coordination					
B	CONTRACTORS RESPONSIBILITY					
1	Poor qualification of the contractor's technical staff					
2	Shortage of materials on site					
3	Construction mistakes and defective work					
4	Poor skills and experience of labor;					
5	Shortage of site labor					
6	Low productivity of labor					
7	Financial problems;					

8	Coordination problems with others;					
9	Conflicts in sub-contractor's schedule in execution of project					
10	Lack of site contractor's staff					
11	Poor site management					
12	Delays in site mobilization					
C	CONSULTANTS RESPONSIBILITY					
1	absence of consultant's site staff					
2	lack of experience on the part of the consultant					
3	Inadequate experience of consultant					
4	Delay in approving major changes in the scope of work					
D	EXTERNAL FACTOR					
1	Mistakes and discrepancies in design documents.					
2	Delay in obtaining permits from municipality					
3	Lack of equipment and tools on the market;					
4	Poor weather conditions; poor site conditions					
5	Poor economic conditions					

B. Cost factors

The factors listed in the table below are considered potential factors which are influence cost performance of the projects. There are five columns: 1, extremely significant (ES), 2, very significant (VS), 3 moderately significant (MS), 4, slightly significant (SS) and 5, not significant (NS). Please mark in the box under the column of your choice.

IV Data related to Remedial possible measure to overcome the challenge of
. time and cost performance of the projects

A. Remedial measure for time performance

In the table below the five process of time management are listed. Give your opinion on which of those process practice should be improved to overcome the challenges in the time performance of the project. There are five columns: 1, extremely significant (ES), 2, very significant (VS), 3 moderately significant (MS), 4, slightly significant (SS) and 5, not significant (NS). Please mark in the box under the column of your choice.

NO	FACTORS	E.S	V.S	M.S	S.S	N.S
1	Inadequate project preparation, planning and implementation,					
2	Delay in construction.					
3	Supply of raw materials and equipment by contractors.					
4	Resources constraint: funds, foreign exchange, power associated auxiliaries not ready					
5	Delays in decisions making by government, failure of specific coordinating bodies					
6	Wrong /inappropriate choice of site					
7	Technical incompetence and poor organizational structure					
8	Labor unrest					
9	Natural calamities					
10	Lack of experience of technical consultants, inadequacy of foreign collaboration agreements, monopoly of technology.					

IV Data related to Remedial possible measure to overcome the challenge of

. time and cost performance of the projects

A. Remedial measure for time performance

In the table below the five process of time management are listed. Give your opinion on which of those process practice should be improved to overcome the challenges in the time performance of the project. There are five columns: 1, extremely significant (ES), 2, very significant (VS), 3 moderately significant (MS), 4, slightly significant (SS) and 5, not significant (NS). Please mark in the box under the column of your choice.

NO	Project time management Process	E.S	V.S	M.S	S.S	N.S
1	practice of Activity definition process					
2	practice of Activity sequencing process					
3	practice of Activity resource estimating process					
4	practice of Activity duration estimating process					
5	practice of schadule development process					
6	practice of schedule control process					

B. Remedial measure for cost performance

In the table below the three process of cost management are listed. Give your opinion on which of those process practice should be improved to overcome the challenges in the cost performance of the project. There are five columns: 1, extremely significant (ES), 2, very significant (VS), 3 moderately significant (MS), 4, slightly significant (SS) and 5, not significant (NS). Please mark in the box under the column of your choice.

NO	Project costManagement process	E.S	V.S	M.S	S.S	N.S
1	practice of cost estimating process					
2	practice of cost budgeting process					
3	practice of cost controlling process					

1.If you have any comment on my study, please leave it here

Additional questioners structure only for Contractors

I. Background of the Company

1. Type and grade level contractor license _____
2. Commencement date of the project _____
3. Type of project _____
4. Total cost of the project _____
5. Financial status of the projects _____
6. Percent of work performed _____
7. Scheduled percent of work performance _____
8. Actual cost of work performed _____
9. Budgeted cost of work performed _____