ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE

ASSESSMENT OF PROJECT DISTRESS PREVENTION AND INTERVENTION STRATEGIES IN CONSTRUCTION PROJECTS

A CASE OF PROJECTS CONTRACTED BY SUNSHINE CONSTRUCTION PLC

BY-YOHANNIS TEKALIGN

A RESEARCH PROJECT WORK SUBMITTED TO ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF ARTS DEGREE IN PROJECT MANAGEMENT

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Statement of Declaration

I, Yohannis Tekalign, have carried out independently a research work on the topic entitled "**Assessment of project distress prevention and intervention strategies in construction projects: A case of projects contracted by Sunshine Construction plc."** In partial fulfillment of the requirement for the degree of masters of art in project management with the guidance and support of the research advisor, Abdurezak Mohammed (Ph.D.). This study is my own work that has not been submitted for any degree or master program in this or any other institutions.

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School of Graduate Studies

This is to Certify that the thesis prepared by *Yohannis Tekalign* entitled: "*Assessment of Project Distress Prevention and Intervention Strategies in Construction projects: A case of projects contracted by Sunshine Construction plc.*" submitted in partial fulfillment of the requirements for the degree of Degree of Master of Arts in project management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Advisor: _____ Signature: _____ Date: _____

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Abstract

The purpose of the study is to identify factors causing project distress and assess project distress prevention and intervention strategies in sunshine construction plc. A comprehensive literature investigation of academic articles was carried out to determine 14 critical factors causing project distress in the Ethiopian construction industry. Then, a quantitative study was carried out using a questionnaire survey as a method to obtain the data. 15 respondents (project managers, Team Leaders and Engineers) from 3 Projects (Bole Marriot international hotel project, Bole Beshale sunshine real estate Project, and CMC-2 sunshine real estate Project) were selected using purposive sampling as their education level and experience is highly important for the study. Collected data from the survey were analyzed using SPSS (version 27) software by using mean and standard deviations for ranking purposes. The study found that the top three ranking factors causing distress at sunshine construction plc are poor project implementation strategies, project environment, and lack of integrated Planning. The study also assessed project distress prevention and intervention strategies and found that sunshine construction plc focuses on mostly on designing, preparing work breakdown, and then rush to construction, instead of giving all the 10 project management knowledge areas equal emphasis as they all contribute towards the successful completion of a project. The study also found specific issues in areas of dynamic risk management, scope management, and stakeholder management. And recommended several management tools to address these issues.

***Key Words**: Project distress, Distress prevention, Intervention strategies, Ethiopian construction industry.*

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List of Acronyms and Abbreviations

APM – Agile Project Management

CPI – Cost Performance Index

MoWUD – Minister of Urban Development and Construction

PM- Project Management

PMLC- Project Management Life Cycle

RPM- Recovery project manager

SPI – Schedule Performance Index

TPM – Traditional Project Management

WBS- Work Breakdown Structure

CHAPTER ONE

INTRODUCTION

Project consume a huge amount of resources, most of which are very limited and their success is crucial for the economic growth of a certain county. Due to the unique nature of projects, they are often subjected to failure. In Ethiopia, many projects face challenges that are exposing them to a great amount of schedule, and cost overrun that in turn affecting the very profits that were supposed to be gained from these projects. One of the main reasons for these challenges is the lack of appropriate project distress management strategies that would help to address those problems before they occur and to intervene once they are detected.

Thus, taking into account the above-mentioned issues, this study attempts to assess Project Distress Prevention and Intervention Strategies in Sunshine Construction Plc.

1.1 Back ground of the study

The construction industry is one of the major contributors to the overall socio-economic development of a country. In many developing countries, major construction activities account for about 80% of the total capital assets, 10 % of their GDP, and more than 50% of the wealth invested in fixed assets (Ofori, 2007). In addition, opens a door to vast opportunities for employment, according to (MoWUD, 2006) The industry has a significant multiplier effect on the economy as a whole and its growth and success heavily affects the day to day life of the people in that country.

In the past few years, Ethiopia's construction industry is growing at an accelerating rate. The government spending on construction activities and at the same time the contribution of the construction industry to GDP growth has shown significant growth (National bank Ethiopia, annual report, 2016/17).

Currently, the Ethiopian construction industry is composed of both foreign and local contractors. As a result of the low-level capacity of Ethiopian construction contractors, big projects such as foreign-financed road projects, hydroelectric dams, and stations, international airports and terminals, and special and complex buildings are undertaken by

foreign contractors. Enhancing the capacity of domestic contractors is, therefore, of importance to reduce the existing excessive dependence on foreign contractors (Berhanu,2009).

Sunshine construction plc was one of the biggest and well-known local contractors responsible for numerous construction projects in Ethiopia since its establishment in 1984 G.C. Despite the long years in the industry, the organization has been challenged to deliver its projects efficiently and within the expected budget and schedule.

Planned schedules and budgets are frequently missed and technical specifications are subjected continuous changes thus making the projects to be distressed. That in turn affected the competitiveness and performance of the organization.

1.2 Background of the Organization

Sunshine Construction Plc was founded in 1984, as a sole proprietorship and later in 1993 transformed into a private limited company. In the early years of its establishment, the company had started to engage itself in minor construction and waterproofing works with less than ten employees. Currently, the company has over 3000 employees and the 36 years milestone career of the company enabled it to build a reliable capacity and exhibit practical excellence in the construction sector. Sunshine construction has attained a prestigious role position at the helm of the sector and become a bloodline to the establishment of other businesses and philanthropic entities under The Sunshine Investment Group. Since establishment sunshine construction has undertaken 1129.78 KM Road projects, 427 Villas and 3254 Apartments.

1.3 Statement of the problem

The problem of delays in the construction industry is a global phenomenon and Ethiopia is no exception. Many projects in developing countries encounter considerable time and cost overruns, fail to realize their intended benefit, or even totally terminated and abandoned before or after their completion (Idoko and Adeyemi 2008).

The success of any project is measured by its completion time, within the budget cost and meets the planned performance based on the initial plan (Tesfaye at el, 2017). But when

we look at the reality, Construction projects are highly subjected to cost overrun schedule overrun or the various scope and requirement changes thus leading the project to distress if not a failure. Whenever a project falls short of the above-mentioned success measures it is considered as distressed project.

A project is judged to be in distress, whenever the performance of a project falls outside nominal values (Wysocki, 2011). and these nominal values could be exceeded due to several factors.

Identifying major factors causing distress in advance as a prevention strategy and the intervention strategy once the project starts to drift from the nominal parameters stated as a guideline as early as possible is rather a pressing issue and requires looking into in detail.

Preliminary study of projects from sunshine construction plc indicated that the planned project completion time for Bole Marriot international hotel project was 3 years while the project took 6 years and currently on 89%. This shows 100% schedule delay. Similarly, the initial budget for the project was 635,243,106.88 birr, while its current cost was 736,277,663.90 birr which is 15.9% cost overrun. In addition to this there will be more overruns since the project is not yet completed.

The planned project completion time for Bole – Beshale Sunshine Real estate project was 3093(days) while the project took 3070(days) This shows the project was supposed to be completed after 23 days but the project is currently on 72.92% which shows the project is going to face schedule overrun. Similarly, the initial budget for the project was 457,505,712.78 birr, while its current cost was 543,474,249.13 birr which is 18.79% cost overrun and more cost overrun is expected.

The planned project completion time for CMC - 2 Sunshine Real estate project was 1890(days) while the project took 2315(days) and currently on 67.6%. This shows 24.5 % schedule delay. Similarly, the initial budget for the project was 572,452,613.13 birr, while its current cost was 624,664,198.76 birr which is 9% cost overrun. Since the one third of the project is still remaining it will be subjected to significant amount of both cost and schedule overrun.

From the above figures it is clear that the projects are distressed projects and need immediate action to reduce further unnecessary delay and cost expenditure. In order to do that the reason behind the distress, flaws in prevention strategy and intervention strategies in place to recover these projects should be investigated and corrective measures should be taken. This research is conducted to fill this gap.

1.4 Research Questions

The main research questions to be addressed in this research are: -

1. What are the factors leading to project distress?
2. What are prevention strategies in place to reduce project from getting into distress?
3. What are the implementations of intervention strategies on distressed projects?

1.5 Objectives of the study

The general and specific objectives of the study are set below.

1.5.1 General Objective

The general objective of the study is to assess the factors leading to distress, and distress management strategies in Sunshine Construction Plc.

1.5.2 Specific objectives of the study

1. To investigate the preventive distress management strategies in place or being used Sunshine Construction Plc.
2. To investigate the implementations of intervention strategies on distressed projects at Sunshine Construction Plc.

1.6 Significance of the study

The study will aid in reducing possibilities of project failure by placing early warning signs to detect distress, use preventive strategies to avoid distress to some extent if possible. If it could not be avoided, how to use intervention strategies to put it back to a normal state and to do this using a well-crafted strategy that has appropriate tools techniques and processes that are easy and ready to use in this kind of situation.

The study also intends to give recommendations on how to improve their distress management strategies that can be used by the project manager and project teams to identify and manage project distress on current and future projects.

The result of this research will benefit Sunshine Construction and other local contractors to improve their distress management practice thus increase their performance capacity and It will also provide some information for future researchers or other sector experts who wish to further investigate this particular or related issue.

1.7 Scope of the study

The research focuses on the assessment of distress management strategies on projects contracted by Sunshine Construction Plc, which is a Grade 1 Local Contractor in Ethiopia. It concentrates specifically on 3 major projects located in Addis Ababa city and currently under construction. These projects are Bole Marriott international hotel project, Bole-beshale sunshine real estate project and CMC-2 sunshine real estate project. The details of the Projects are presented in Annex III.

1.8 Limitation of the study

Even though the general characteristics of a distressed project are similar, the finding of this research may not fully be generalized to all Grade 1 contractors without considering factors that differ from one organization to another or unique to that particular organization. The study also has relatively small sample size (15), and it should be taken into consideration when generalizing the results of the study.

1.9 Organization of the study

This study was organized into five chapters. Chapter 2 will present the literature review. Chapter 3 is devoted to the presentation and discussion of the suitable research methodology that will be used in this research and also describes how the data is collected. Chapter 4 presents the empirical findings of the study extracted from the information gathered using the questionnaires and interviews. Chapter 5 presents conclusions and recommendations based on the findings from the empirical data and theories. It then ends with suggestions on areas of future research.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter is devoted to a good explanation of the literature review and developed in a manner to give an insight and deep understanding of this work.

These literature help to identify and bring out an explanation about existing knowledge on project, project management, distressed project, and different project distress management strategies and concepts put forward by different authors that are relevant to the research area.

2.2. Theoretical Review

2.2.1 Project

Many authors over the years have tried to define a project in their context, some are more comprehensive while some are more specific.

PMBOK guide defines a project as a temporary endeavor undertaken to create a unique product, service, or result (Project Management Institute, 2017). A unique product that can be either a component of another item, an enhancement or correction to an item, or a new end item in itself (e.g., the correction of a defect in an end item), A unique service or a capability to perform a service (e.g., a business function that supports production or distribution), A unique result, such as an outcome or document (e.g., a research project that develops knowledge that can be used to determine whether a trend exists or a new process will benefit society) and A unique combination of one or more products, services, or results (e.g., a software application, its associated documentation, and help desk services) (Project Management Institute, 2017).

“The temporary nature of projects indicates that a project has a definite beginning and end. The end of the project is reached when one or more of the following is true. The project's objectives have been achieved, The objectives will not or cannot be met, Funding is exhausted or no longer available for allocation to the project, The need for the project no longer exists (e.g., the customer no longer wants the project completed, a

change in strategy or priority ends the project, the organizational management provides direction to end the project), The human or physical resources are no longer available or The project is terminated for legal cause or convenience" (Project Management Institute, 2017).

"Projects are temporary, but their deliverables may exist beyond the end of the project. Projects may produce deliverables of a social, economic, material, or environmental nature. For example, a project to build a national monument will create a deliverable expected to last for centuries" (Project Management Institute, 2017).

When we look at the less comprehensive definitions, (Cleland and Ireland ,2002) defined a project as "a combination of organizational resources pulled together to create something that did not previously exist and that will provide a performance capability in the design and execution of organizational strategies. Projects have a distinct life cycle, starting with an idea and progressing through design, engineering, and manufacturing or construction, through use by a project owner."

2.2.2 Project management

"Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management is accomplished through the appropriate application and integration of the project management processes identified for the project. Project management enables organizations to execute projects effectively and efficiently" (Project Management Institute, 2017).

Olsen, (1971) describes project management as "the application of a collection of tools and techniques to direct the use of diverse resources toward the accomplishment of a unique, complex, one-time task within time, cost, and quality constraints. Each task requires a particular mix of these tools and techniques structured to fit the task environment and life cycle (from conception to completion) of the task."

Effective project management helps individuals, groups, and public and private organizations to meet business objectives, satisfy stakeholder expectations, be more predictable, increase chances of success, deliver the right products at the right time, resolve problems and issues, respond to risks on time, optimize the use of organizational

resources, identify, recover, or terminate failing projects, manage constraints (e.g., scope, quality, schedule, costs, resources), balance the influence of constraints on the project (e.g., an increased scope may increase cost or schedule) and manage change in a better manner (Project Management Institute, 2017).

Poorly managed projects or the absence of project management may result in missed deadlines, cost overruns, poor quality, rework, uncontrolled expansion of the project, loss of reputation for the organization, unsatisfied stakeholders, and failure in achieving the objectives for which the project was undertaken (Project Management Institute, 2017).

2.2.3 Project distress

“Whenever the performance of a project falls outside nominal values, it is judged to be a project in distress” (Wysocki, 2011). Those exceedances of nominal values are often in terms of time and cost overrun. Flynn disclosed that “in our consulting practice, we generally use the term 'distressed' to represent a project or program that is 20% greater off the cost and schedule baseline targets, exhibits missed milestones, and has missed key deliverables” (2014). (Hanna and Gunduz,2011) explained that distress can be expressed in terms of budgeted hours being exceeded because of unexpected activities in the construction phase.

Simply put distressed also known as troubled project means that “the project's variance trends of the time, cost, and scope have exceeded acceptable levels and, without immediate intervention, the project will continue on a path to failure” (Ward, 2007). Distressed projects carry a high cost both to the organization and, by association, to key executives (Ward, 2007).

Both project distress and project failure can have different meanings for different stakeholders in the project. The project manager's definition might just be not meeting the triple or competing constraints criteria. Some stakeholders, on the other hand, seem more interested in business value than the triple or competing constraints once the project begins.

Stakeholders' perception of failure might be when the project has become too costly for the expected benefits or value, the project will be completed too late, the project will not

achieve its targeted benefits or value, or the project no longer satisfies the stakeholders' needs.

Projects do not get into trouble overnight. There are early warning signs, but most companies seem to overlook them or misunderstand them. Some companies simply ignore the tell-tale signs and continue hoping for a miracle. Failure to recognize these signs early can make the cost of downstream corrections a very costly endeavor. Also, the longer you wait to make the corrections, the more costly the changes become (Kerzner,2011).

Some companies perform periodic project health checks. These health checks, even when applied to healthy-looking projects, can lead to the discovery that the project may be in trouble even though on the surface the project looks healthy. When a project gets way off track, the cost of recovery is huge and vast or even new resources may be required for corrections. The ultimate goal for recovery is no longer to finish on time but to finish with reasonable benefits and value for the customer and the stakeholders. But regardless of what is done, not all troubled projects can be recovered (Kezner,2011).

2.2.4 Symptoms of distressed projects

According to Robert k. Wysocki the following characteristics are depicted as symptoms of a distressed project:

“The project has exhibited a performance trend that, if continued, will result in its failure: Whenever the cumulative history of one or both of those metrics exhibits certain trends, it suggests that the project is out of control. Growing schedule slippage is one such trend that, if continued, will lead to failure” (Wysocki,2011).

The project's performance has exceeded one or more metric values and is a high risk for failure (Wysocki,2011): When any one of these metrics exceeds its trigger value, the project is at high risk for failure. That sets off a series of activities designed to identify the source of the anomaly and the corrective action that needs to be taken. A significant schedule slippage due to a bad estimate, a mistake, and serious vendor delays are three such events that may result in project failure.

The project has recently experienced some significant change that may result in failure (Wysocki,2011): Oftentimes these changes are related to personnel or other major organizational shifts. Even though the project performance metrics do not indicate any problem, the environmental change may be sufficient to throw the project off course. A change of sponsor and a loss of critical resources are two such changes that may result in a distressed condition and eventual project failure.

Similarly (McDonagh & Partners,2018) depicted these symptoms as performance trends, slipping schedules, and organizational change.

If any of the preceding situations happen, it should immediately trigger a project intervention process designed to discover the reasons for the distressed condition, fix the condition, and re-plan the project going forward.

2.2.5 Reasons for project distress

Wysocki, (2011) describes the following as possible reasons why projects become distressed or fail.

Poor, Inadequate, or No Requirements Documentation

It is impossible to generate complete requirements documentation at the beginning of a project. Once requirements have been generated ask yourself what your level of confidence is that you have done the best job possible. You should be reasonably certain that you have identified the necessary and sufficient set of requirements and only their detailed decomposition is suspect.

Inappropriate or Insufficient Sponsorship

Some sponsors take their job of sponsorship seriously. Others do not. As a project manager, you should keep the project very visible to your sponsor. Sending an e-mail once a week is not sufficient. Try for face-to-face meetings if there is any doubt about your sponsor's attentiveness to the project. Look for added value opportunities and communicate those with the sponsor.

Complexity of Requirements Not Recognized

The risk management plan must anticipate the unusual and have the appropriate mitigation plans in place. As requirements become more complex or less complete and documented, the risk of the project becoming distressed goes up.

Unwillingness to Make Tough Decisions

How easy it is to get a project approved, and how hard it is to pull the plug on the most distressed of projects. If you want to get the sponsor's attention, recommend terminating their hopelessly distressed project. Some projects have a very powerful sponsor. They may defend the project beyond reason, but few are willing to push back or take them on.

Lag Time Between Project Approval and Kick-Off

If the time between approval and startup is too long and the completion date is firm, project risk goes up. Any date-dependent tasks are compromised by the delay.

No Plan Revision After Significant Cuts in Resources or Time

Budget cuts, staff cuts, and shorter deadlines are not unusual. Under those circumstances, many project plans are not changed.

Estimates Done with Little Planning or Thought

Far too many project managers don't take estimation seriously. The correct strategy is to get estimates from staff members who have done the tasks before or will be assigned to do the task on this project. Getting a second opinion from someone who is not on the project can be a good validation strategy.

Overcommitment of Staff Resources

Projects are often approved without assessing staff availability. Dealing with this situation effectively requires a Human Resources Management System (HRMS) with skills inventories and staff scheduling capability.

Inconsistent Client Sign-Off

Some clients might sign off simply to get the project out of the way and get on with their business. Others might not understand the project and sign off in ignorance rather than risk being exposed.

No Credibility in the Baseline Plan

If the baseline plan has undergone several revisions and changes at management's and the client's request, there may be serious doubt that it can be achieved.

Unmanageable Project Scope

Tracking the frequency and a cumulative number of additions to the Scope Bank are two metrics you should have in place. TPM projects do not expect scope change requests, so some control over the number and frequency must be in place. Management reserve is an effective tool and should be included in every TPM project plan.

PM solution, (2011) also identified the top five causes of troubled projects in terms of requirements (Unclear, lack of agreement, lack of priority, contradictory, ambiguous and imprecise), resources (lack of resources, resources conflicts, turnover of key resources, poor planning), schedules(too tight, unrealistic, and overly optimistic), planning(based on insufficient data, missing items, insufficient details, and poor estimates) and risks (unidentified or assumed, not managed).

Ahmed et al, (2003) classified delay factors in construction projects as the internal causes which arise from within the project stakeholders (clients, contractors, and consultants) and external factors that occur as a result of unforeseen factors. These factors arise not from the project participants. These may include the following; weather conditions, natural disasters, sub-surface conditions, etc.

According to (Nicklas, Stefan, Robert ,2015), there three main reasons for project failure are over-optimism, poor execution, and weakness in organizational design and capabilities.

Distressed projects have another thing in common; they lack adequate controls. Specifically, they do not have robust risk-analysis or risk-management protocols and

don't provide timely reporting on progress relative to budgets and timelines. The data used to report on project progress are typically outdated (as they generally rely on payments to contractors rather than on actual work performed) and not aligned with the true progress of the project. Also, baselines get adjusted time and again, and contractors and owners use different metrics to measure progress. It is problematic when there are multiple estimates of the cost and time performance of the project relative to the baseline, which means there is no common understanding of performance. This limits the partners' ability to figure out how to accelerate project delivery and cost overruns (Nicklas, Stefan, Robert ,2015).

2.2.6 Project distress management strategies

In general, there are two types of strategies for distress management in projects. “The first one is prevention strategies used to minimize the likelihood of projects becoming distressed, But despite due diligence, the prevention strategies might not work due to prevailing conditions beyond our control, and a project will still become distressed, If this happens, there are intervention strategies that we can use” (Wysocki, 2011).

2.2.6.1 Prevention strategies

“Prevention strategies are proactive practices and processes that you can employ to significantly reduce the number of projects that become distressed” (Wysocki, 2011). Although there is no guarantee that prevention strategies will prevent a project from becoming distressed, they are your best protection against such an outcome.

According to (Wysocki, 2011) some of the prevention strategies that might be used to reduce the likelihood of a project becoming distressed are:

Requirements Gathering: Knowing that complete requirements documentation is difficult if not impossible at the beginning of the project, care should be taken when identifying the list of requirements. As project complexity increases, the task is even more difficult mostly due to the dependence between requirements becoming more complex.

Work Breakdown Structure (WBS) construction: Generating a clear and complete WBS is the most difficult part of the project planning process. Having a complete and correct WBS is critical to the success of a Linear or Incremental PMLC model. The entire project plan is based on the assumption that you have a complete WBS. Whatever difference there is between your WBS and a complete WBS will probably be reflected in the number of scope change requests you get. Processing those scope change requests will seriously compromise the project plan.

Dynamic Risk Management Process: Effective risk management is the best weapon to protect the project from becoming distressed, but it has to be monitored continuously for any changes that might suggest heightened attention to one or more risks.

Scope Change Management Process: Scope change is an area that often gives rise to most project problems. It doesn't make a difference whether this is the result of doing a poor job on gathering and documenting requirements or dealing with a client who has lots of ideas. If there is no management control exercised over the frequency of scope change requests, there are going to be problems. The time to process a scope change request comes from the value-added work time of the team members, which means an aggravated schedule, errors, and ultimately, schedule slippage. The seeds of distress have been planted.

Milestone Trend Charts: The milestone trend chart is one of the few metrics that looks ahead in the project schedule for expected slippages and warns the project manager ahead of time that there may be problems later in the schedule if established trends persist.

Earned Value Analysis: Tracking trends in schedule performance index (SPI) and cost performance index (CPI) values and displaying them in the form of a milestone trend chart is one of the most intuitive metrics that I know of for early warnings of cost or schedule problems.

2.2.6.2 Implementation of prevention strategies

Many factors affect the implementation of prevention strategies. These are Uncertainties, Problems of activity execution, a failure to decompose the project into smaller feasible steps, Lack of proper change control, Poor planning, Poor WBS specification, Failure to clearly define requirements, Poor choice of requirements definition approach, Poor preparation for requirements definition and Poor project integration management (Wysocki, 2011).

2.2.6.3 Intervention strategies

Although it is usually senior management that decides to actively intervene in a troubled project to recover it, it's the project manager who usually leads the execution of the intervention process. The project manager is often replaced with a new project manager or consultant, someone more experienced to head the recovery effort. Firms without a standard project management methodology were far more likely to replace the project manager from outside the organization than those with a methodology (22% vs. 9%) (Flynn, 2014).

For the sake of recovering a project to its original scope expectations, the earlier the project is recognized as sliding the better. “It is a foregone conclusion that the schedule and budget will need to be expanded to allow for original scope expectations to be met. In cases where schedule and budget can't be expanded, the scope is decreased to meet these constraints. When a project has slipped into serious distress, recovering scope expectations in a stressful environment without major time and cost overruns is a feat in and of itself” (Flynn, 2014).

According to (PM solution,2011) findings, the top five actions most often taken in a project recovery intervention are Improving communication (stakeholder management), Redefining the project (reducing the scope, re-justifying the project financially.), Adding and/or removing resources, resolving problematic technical issues and Replacing the project manager or bringing in a consultant to manage recovery

2.2.6.4 Implementation of intervention strategies

Project distress intervention/recovery strategies may differ from industry to industry and from project to project. But as a general guideline the following six-phase process was proposed by (Kerzner,2011) and (Williams,2011) to recover distressed projects and decrease the chances of project failure.

Understanding phase

The purpose of the understanding phase is for the newly assigned RPM to review the project and its history, the business case, project objectives, assumptions, and familiarize himself with stakeholders.

Audit Phase

The audit phase is where a critical assessment of the project's existing status is done. Which includes assessing the actual performance, identify flaws, performing root cause analysis, prioritize problems, and being prepared to address the most serious ones.

Since recovery cannot be accomplished in isolation, it is important to interview the team members as part of the audit phase. This may very well be accomplished at the beginning of the audit phase to answer the previous questions. The team members may have strong opinions on what went wrong as well as good ideas for a quick and successful recovery.

Tradeoff phase

When the project first began, the constraints were most likely the traditional triple constraints. Time, cost, and scope were the primary constraints, and tradeoffs would have been made on the secondary constraints of quality, risk, value, and image/reputation. When a project becomes distressed, stakeholders know that the original budget and schedule may no longer be valid. In this phase, the RPM identifies the tradeoffs, the expected causalities, what can and cannot be done, what must be fixed first, and the risks involved.

Then the team prepares a checklist of early warning signs that indicate whether intervention is taking place or if the situation is deteriorating further. Once the tradeoffs have been discovered, the stakeholders decide whether the project is worth saving or not.

Negotiation phase

In this phase items important to stakeholders will be identified, prioritized then approved. Additional support from the stakeholders may be necessary to cut through the bureaucracy that could impact rapid decision making. Stakeholders must be willing to insulate the team from any pressures that can impede the recovery process. It may be necessary to establish new channels of communication.

Restart phase

After the stakeholders have agreed to a recovery plan, the team will be briefed on the stakeholder negotiations as well as the recovery plan and milestones. This is done by fully engaging the project sponsor as well as the key stakeholders for their support, and addressing any changes to the roles and responsibilities of the team members.

Execution phase

During the execution phase, the project manager must focus upon certain back-to-work implementation factors such as learning from past mistakes, stabilizing scope, rigidly enforcing the scope change control process, providing effective and essential communications, maintaining positive morale, adopting proactive stakeholder management and insulating the team from politics.

Flynn (2014) also developed an approach free of non-value-added deliverables and is amid at quickly and accurately getting to the heart of the distressed project, and implementing the corrective action plan. This approach is known as the life cycle approach and it has three phases.

1. **Entering Phase**

This phase involves:

Scope Development: Developing the consulting scope to recover a distressed project generally involves achieving clarity around and documenting the initial project expectations (history), current organizational assessment of the project, expectation of the recovery assignment, scope of authority, internal contacts and key resources, and agreement on the approach (variations) to an assignment (Flynn, 2014).

Schedule initial interviews and data gathering: To properly assess the project, a varied group of individuals who are directly and indirectly involved with the project must be interviewed (Flynn, 2014). At a minimum, the following resources should be interviewed: These personnel include Project sponsor, project manager, management staff, project team, support staff, and customers (Flynn, 2014).

Analysis and assessment phase: Depending on the point of entry, i.e., the level of current distress this phase can be the most labor-intensive of the assignment and not glamorous one either (Flynn, 2014). This is where the picture of the project, last and present comes together. One must have a great deal of tact yet possesses plenty of tenacity to get the nexus of the distress without alienating everyone at the same time (Flynn, 2014).

Conduct initial interviews, data gathering, documentation and data review evaluation and probative interviews: After conducting the initial interview, the first step is to review project charter, scope statements, project estimates including basis of estimate documentation, project schedules, project design basis documentation, and reviews, communication management strategy, scope change management strategy, risk management strategy, procurement- vendor management strategy, project controls management strategy (Flynn, 2014).

Developing Conclusions and Solution approaches: Projects are unique in their specific characteristics, yet sources of distress usually align with benchmark findings and common empirical results from one distressed project to the next (Flynn, 2014). Solutions are comprised of specific responses to causal factors and vary project to project based on culture, organization, resource level, management buy-in (Flynn, 2014).

Gaining approval and consensus (findings and solutions): Difficulty of ease in gaining approval, validation, and the consensus is usually and directly related to the level at which the causal factors occur (Flynn, 2014).

2. **Execution and Control Phase**

"Of the four required phases involved in recovering the distressed project, the Execution and Control phase signals a temporary sigh of relief. Although much more work will be required, it signals that we have properly assessed the issues with the prior project difficulties and our solution has been validated and approved" (Flynn, 2014). This phase involves:

Execution planning: Elements of a sound project execution plan (or project plan) include the following areas and will vary from industry to industry: Project management, risk management, communications management, quality management, design management, information management, resource management, and procurement management (Flynn, 2014).

Roles and Responsibility Determination: With a solid execution plan in place and the team resources identified, alignment sessions are utilized to review all deliverables, major roles, support roles, interdependencies, and the required timing for deliverable development (Flynn, 2014).

Schedule and Budget Development: In this phase, the definitive master schedule and associated budget baseline (supported by definitive execution plan) will be developed (Flynn, 2014).

Project Control Strategies in Place: Key milestones identified and attributed with deliverables, key deliverables with clear completion metrics, formal execution reviews (performance and risk relation), earned value and burn rate strategies (monitoring and trending analysis), and defined and consistent performance reporting requirements for team members (Flynn, 2014).

Deliverable Execution and Validation: "Once controls strategies are in place deliverable execution may begin again. Our control strategies and practices will assist in

trending actual performance against our baselines and incrementally validating deliverable execution (and reacting to variance)" (Flynn, 2014).

3. **Closing Phase**

In many projects, organizations begin to strip resources from projects as they appear to be reaching the finish line (Flynn, 2014). The project manager will want to guard against this by modeling (in the risk assessment) the adverse effects of prematurely diverting key resources to other projects (Flynn, 2014).

In summary, with a detailed and methodical approach to recovering projects, the effort need not be cathartic yet, it is still a wiser and less stressful approach to commit to the proper planning and diligence initially (Flynn, 2014). Recovery project management is not easy, and there is no guarantee it can or will be successful. But saving a potentially troubled project from disaster is certainly worth the added effort.

2.3. Empirical Review

Even though researches regarding project distress are limited many researchers have studied about factors that result in project failure such as factors causing project delays and cost overruns as well as the consequences of poor planning, scope management, and risk management which are described as major causes of project distress in the theoretical review.

A study done by (Fageha and Aibinu, 2013) indicated that "adequate front-end project planning with clear project scope definition can alleviate the potential for cost overrun, inadequate project planning and poor scope definition can lead to expensive changes, delays, rework, cost overruns, schedule overruns, and project failure."

(Chalabi and Camp, 1984) had established that in developing countries where workers are relatively unskilled, adequate planning at the very early stages of the project was important for minimizing delay and cost overruns in most projects.

Planning has long been a subject of discussion in the building industry. Many guides have been developed and much knowledge resides with experienced practitioners. However, early planning in many cases is not performed well in the building industry.

Consequently, the building sector suffers from poor or incomplete scope definition, frequently experiencing considerable changes that result in significant cost and schedule overruns (Cho at el, 2001).

According to (Divakar & Jebin, 2018) Poor scope definition, Inaccurate activity cost estimate, Poor WBS definition, Change in the schedule, Unrealistic schedule imposed in contract, Ineffective frequency of project budget updates, Lack of proper training and experience of a project manager, Not implementing project management tools like primavera p6 for monitoring and control are critical factors affecting effective implementation of the cost management process.

Similarly, (Olalusi and Otunola, 2012) put forward that incorrect estimation, lack of available skilled personnel, inadequate planning, poor risk management, misunderstanding of the work requirement, corruption to be among reasons for failed construction projects in Nigeria.

Akinyokun, Angaye, and Ubaru, (2009) also attributed the reason projects fail to poor planning, lack of top management support, inadequate skill, and expertise of project managers.

Dissanayaka and Kumaraswamy, (1999) identified that project complexity, client type, the experience of team, and communication are highly correlated with the time performance. Whereas project complexity, client characteristics, and contractor characteristics are highly correlated with the cost performance.

Iyer and Jha, (2006) also stated that project manager's competence, top management support, project manager's coordinating and leadership skill, monitoring and feedback by the participants, decision making, coordination among project participants, owners' competence, social condition, economical condition, and climatic condition highly affect the cost and schedule of a project.

Despite all the researches and efforts being made towards preventing project failure, (Nega, 2008) concluded that it is common to see construction projects failing to achieve their mission of creating facilities within the specified cost and time. This implies again the extent of projects fails to meet their plan or requirement. Hardly few projects get

completed on time and within budgets in construction project share exposed to uncertain environments because of such factors as complex nature of construction projects; the presence of various interest groups such as the project owners, end-users, consultants, contractors, financiers, materials, equipment, project funding, climatic environment, the economic and political environment, and legal regulations.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Details of the research design, data source and collection methods, sampling technique and sample size, procedure of data collection, questionnaire and the method of data analysis is presented in this chapter

3.2 Research design

Saunders, (2012) classified research studies into three types: Exploratory Studies, Descriptive Studies, and Explanatory Studies. The particular type followed in a piece of research is determined by the research questions being skewed (Saunders,2012).

This research was a Descriptive study. It describes the current status of Project distress management practice in the construction industry of Ethiopia. In other words, it tries to investigate the nature of the problem that exist and what has been done to solve or address those problem.

The research used both primary and secondary data. Primary data collected through questionnaire and interview while secondary data was collected form agreement document, performance report and individual project files.

Even though, a case study is known to give detailed information and better insight it was not used in this research as it takes substantial time and resources, further difficulty of selecting representative cases and difficulty of generalizing results are also additional reasons for not using case studies.

3.3 Population and Sampling

3.3.1 Target population

The population of this study was Sunshine Construction plc which is a Grade 1 local contractor with years of experience in the construction industry and currently working on different construction projects.

The study focuses on 3 active sunshine construction projects and which currently under distress. Namely, Bole Marriot international hotel project, Bole Beshale sunshine real estate Project, and CMC-2 sunshine real estate Project.

The main reason for choosing Grade -1 contractors for the study were, Grade-1 contractors are the highest-level contractors in Ethiopia and they usually undertake most of the large projects given to local contractors. hence, impact of any improvement achieved will significantly contribute to the overall improvement of the construction industry's performance. Grade-1 contractors also have better organizational, human and financial capability than contractors at lower level. hence, they are better suited for starting efforts of PM development and improvement in the industry.

Since their establishment Sunshine construction plc has been engaged in various construction projects for over 36 years making it one of the oldest private contractors in the country with years of experience relatively large financial capital and currently undertaking many construction projects in Addis Ababa city making it suitable for this study.

3.3.2 Sampling technique

15 respondents (project managers, Team Leaders and Engineers) from 3 Projects (Bole Marriot international hotel project, Bole Beshale sunshine real estate Project, and CMC-2 sunshine real estate Project) were selected using purposive sampling based on their experience, positions in their respective organization, knowledge and involvement.

Purposive sampling is a non-probability sampling method and it occurs when "elements selected for the sample are chosen by the judgment of the researcher. Researchers often believe that they can obtain a representative sample by using a sound judgment, which will result in saving time and money (Black,2010).

3.4 Data collection

The study used both primary and secondary data. Survey instrument was questionnaire which was manually distributed and collected by the researcher, which then entered to SPSS version 27 software for analysis.

The questionnaires (attached as Annex I of this study) were sent to the project managers and the project team members. The questionnaire has three parts. Part one consisted demographic data, part two coved project distress prevention strategies adopted form (Shi be shi,2019) and part three covered project distress intervention strategies.

Responses to the survey questions were based on five-point Likert-scale in order to enable project managers and teams to respond to each statement in terms of their own degree of agreement or disagreement. To validate the study findings, interview was held with the respondents (project teams) with the help of questions attached as Annex II of this study.

The secondary data used in this research were information's gathered through a literature review regarding causes of distress in construction project and different management strategies. Literature reviews was carried out to enhance the understanding of theory regarding the research problem. The materials for literature reviews were such as books, articles, internet, journals, project documents and other's research papers. The information, which were relevant, are then used as a benchmark against primary data collected to support the research.

3.5 Data Analysis

The findings of the study were interpreted with appropriate statistical data analysis techniques on the basis of the nature of the data collected for the study. Some of the descriptive data analysis techniques were percentages, mean, standard deviation and coefficient of variation. The data collected from the respondents were analyzed both quantitatively and qualitatively using SPSS version 27.

3.6 Scale Reliability and Validity

Reliability: Reliability is the extent of how reliable is the said measurement model in measuring the intended latent construct. Reliability analysis was carried out for internal consistency with regard to respondent's data on project distress management using Cronbach's alpha. The values of Cronbach's alpha above 0.7 are considered acceptable

and those above 0.8 are considered meritorious (Nunnally, 1978; Litwin, 1995). After checking 80 items on the questionnaire Cronbach's alpha of 0.886 were obtained.

No of Items	Scale	Cronbach's alpha
80	1-5	0.886

Source: Own survey data (2020)

Table 3.1 Reliability statistics

Validity: To ensure the validity, the questioners were checked and commented by the advisor of the researcher, friends and project management professionals before distributing to the respondent about its relevance.

3.7 Ethical Considerations

To ensure informed consent, respondents were provided with all the relevant information about the study in order to ensure that they understand the nature of the study, objectives of the research and the benefits to the research. This process further ensured that the study will not misbehave the behavioral norms established by the organization being under study. In addition, findings were reported in a complete and honesty fashion, without misrepresenting any responses given or intentionally misleading readers and researchers interested in this study.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1. Introduction

This chapter covers data analysis, presentation, and interpretation of the information gathered from the respondents, starting from the respondent's demographics. It also tackles the research questions where each of the questions is answered by the analysis of the obtained data.

The qualitative data was analyzed by the use of content analysis applying descriptive statistics such as measures of central tendency and dispersion along with frequencies, and percentages to organize and summarize numerical data whose results will be presented in tables for easy interpretation of the findings. The statistical program used for the analysis and presentation of data in this study was SPSS version 27.

Out of the targeted 15 sample respondents, complete responses were obtained from 13 respondents giving a response rate of 86.6%. This response rate is representative of the population and conforms to (Mugenda and Mugenda ,2003) requirement that a response rate of 70% and above is very good, 60% is good and 50% is adequate. Accordingly, 86.6% response rate was considered very good for further analysis.

The result and discussion below are devised in three parts corresponding to the research questions and also the sections of the questionnaire. These divisions can help tackle one question at a time. The first part of the results and discussion contains the findings of the questions directed towards identifying the factors leading to project distress. A total of 14 potential factors that can cause distress were selected from previous studies. Thus, respondents were asked to rank those potential factors in a five-point scale range from 1 to 5 on how much they affect their particular projects. In the second part, respondents were asked to describe the prevention strategies employed on their particular projects based on 8 prevention strategies gathered from related literature. In the third part, respondents were asked to describe the intervention strategies in place and their implementation on their particular projects using a five-point scale ranged from 1 to 5 and the results are presented and discussed accordingly.

4.2. Demographics of the participants

A demographic profile of the respondents is summarized in Table 4.1.

Characteristics	Category	All Respondents (n=13)	
		Number	Percentage
Gender	Male	5	38.5
	Female	8	61.5
Age	20-30	7	53.8
	31-40	5	38.5
	41-50	1	7.7
Education Level	Bachelors	10	76.9
	Masters	3	23.1
Job Title or Function	Project Manager	2	15.4
	Team Leader	2	15.4
	Engineer	9	69.2
Work Experience (Years)	2-5	8	61.5
	6-10	3	23.1
	11-15	2	15.4

Source: Own survey data (2020)

Table 4.1 Demographic data of the respondents

Gender: about 38.5% of the respondents were men while 61.5% were female. This indicates that the majority of respondents were women.

Age: about 7.7% of respondents were in the age range of 41 to 50, 38.5% in the range 31 to 40, and 53.8% in the rage 20 to 30. The age structure of the respondents revealed different levels of job experience in their respective projects that could bring a reliable source of information for this research.

Educational level: about 76.9% of respondents had bachelor degree followed by holders of master's degree which accounted for 23.1% of the respondents. These findings imply

that the respondents had a sufficient level of education to comprehend and answer the questions without difficulty.

Job function: while 15.4% of respondents accounted for project managers, about 15.4% of respondents were project team leaders while 69.2% are engineers. Respondents' job function shows that the selected sample respondents have a position that is relevant to the present study.

Years of experience: in terms of experience in development project works, about 61.5% of respondents had experiences ranging from 2 to 5 years, 23.1% had 6 to 10 years, and about 15.4% had 11 to 15 years of experience. This result suggests that the respondents had considerable experience in development project life cycle management and can respond to the questions raised in the questionnaire based on their experience in the projects.

Project management Education: while 69.2% of the respondents had project management formal education, 30.8% didn't. Out of the 69.2%, 23.1% had master's degree in project management and 46.2% had short term training. This result suggests that the respondents had considerable knowledge of project management and can respond to the questions raised in the questionnaire based on their knowledge and experience in the projects.

4.3. Reasons for Project Distress

To analyze the factors causing distressed, the mean value is used to calculate the mean of the distribution of each factor. The factors were then ranked based on the frequency of response by the respondents. The factors that scored the highest mean were ranked top factors that cause project distress.

From Table 4.2 the results show that the respondent ranked most important Reasons for project distress in sunshine construction plc were poor project implementation strategies (3.5385), Project environment (3.4615), Lack of integrated Planning (3.2308), Unwilling to make the tough decisions, (3.2308) and Lag time between project approval and kickoff (3.0769). poor project implementation strategies is ranked first and is the most important factor which impeded the smooth execution of the project for the intended purpose.

Importance and ranking of Reasons for project distress by Mean value		
Reasons for project distress	**Mean**	**Rank**
poor project implementation strategies	3.5385	1
Project environment (Physical, Economic and Socio-political)	3.4615	2
Lack of integrated Planning	3.2308	3
Unwilling to make the tough decisions	3.2308	4
Lag time between project approval and kickoff	3.0769	5
No plan revision after significant cuts in resources or time	2.9231	6
Complexity of requirements not recognized	2.8462	7
Inconsistent client signoff	2.6923	8
Unmanageable project scopes	2.4615	9
Estimated done with little planning or thought	2.3846	10
Inappropriate or insufficient sponsorship	2.3846	11
Poor, inadequate or no requirement documentations	2.3077	12
Overcommitment of staff resources	2.1538	13
No credibility in the baseline	2.1538	14

Source: Own survey data (2020)

Table 4.2 Reasons for project distress in sunshine construction plc

4.4. Project distress prevention strategies

The respondents were asked to indicate their perception using a Likert Scale, which is a type of rating scale used to measure attitudes or opinions. With this scale, respondents are asked to rate items on a level of agreement in the description analysis measuring instrument used to evaluate project distress prevention strategies implementation from 1 to 5.

1= strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree. Accordingly, a factor takes its average for the questions under it with no decimal point. Although to summarize the narrative outcomes, the researcher used criterion-referenced definitions for rating scales to describe the collected data.

Mean rating	Respondents level of agreement	Description of respond agreement level
1.00 - 1.49	Strongly disagree	Very low
1.50 - 2.49	Disagree	Low
2.50 - 3.49	Neutral	Medium
3.50 - 4.49	Agree	High
4.50 - 5.00	Strongly agree	Very high

Table 4.3 Criterion-referenced scale definitions

Source: internet

Requirement Gathering

As the result indicates most of the respondents had neutral, and agree. Furthermore, the mean value in requirement gathering and documentation processes is 3.67. So, the value falls between 3.50-4.49 mean limit which was inclined towards Agree.

The detailed briefing on the functional and technical requirements of construction projects needs careful planning and considerations and assessment to ensure appropriate and effective design and construction process. (kagioglou Cooper, Aoud, 1999) and if the function, performance, and reliability requirements are not gathered and documented the project is deemed too disappointed. (leon, Mckenan, and zuang, 2016)

Questions	**Responses**		Mean	Sd
There are clearly defined Requirements from the beginning	Strongly Disagree	0	3.7692	.599
	Disagree	0		
	Neutral	4 (30.8%)		
	Agree	8(61.8%)		
	Strongly Agree	1(7.7%)		
There are Requirements Workshops to motivate stakeholders and satisfy an immediate need.	Strongly Disagree	0	3.6154	.650
	Disagree	0		
	Neutral	6(46.2%)		

	Agree	6(46.2%)		
	Strongly Agree	1(7.7%)		
There is Stakeholder Participation in Requirements Elicitation and Decomposition	Strongly Disagree	0	3.7692	.438
	Disagree	0		
	Neutral	3(23.1%)		
	Agree	10(76.9%)		
	Strongly Agree	0		
There are requirements collecting, defining, documenting, and managing of stakeholders need to meet the project objective.	Strongly Disagree	0	3.9231	.640
	Disagree	3(23.1%)		
	Neutral	8(61.5%)		
	Agree	2(15.4%)		
	Strongly Agree	0		
There is a process to rank the project requirement.	Strongly Disagree	0	3.6154	.506
	Disagree	0		
	Neutral	5(38.5%)		
	Agree	8(61.5%)		
	Strongly Agree	0		
Aggregate Mean (μ) = 3.67 Sd = 0.597				

Source: Own survey data (2020)

Table 4.4 Frequencies and percentages ratings of Requirement gathering

Project plan

As indicated in table 4.5 most of the respondents had neutral, and agree responses, besides, the mean value on planning processes is 3.480. So, the value falls between 2.50-3.49 mean limit which is inclined towards Neutral.

This result consistent with the previous research of (Hamed, 2017) that, project planning is associated with project success. The objective of the development of the project plan is to create a consistent, coherent document that can be used to guide project execution and control (Gupta et al, 2008). The plan should include general plans regarding all areas of

the project, such as; project objectives, schedule, budget, etc. A project with a poorly developed project plan is most likely to be poorly executed with high costs and delays as a result (Antvik & Sjöholm, 2007) furthermore (Tomas et.al. 2008) deducted project plan and its completeness have a positive relationship with project success.

Questions	**Responses**		Mean	Sd
There is Definition all of the work of the project	Strongly Disagree	0	3.4615	.776
	Disagree	2(15.4%)		
	Neutral	3(23.1%)		
	Agree	8(61.5%)		
	Strongly Agree	0		
There is Estimation of how long it will take to complete the work	Strongly Disagree	0	3.8462	.555
	Disagree	1(7.7%)		
	Neutral	0		
	Agree	12(92.3%)		
	Strongly Agree			
There is Estimation the resources required to complete the work	Strongly Disagree	0	3.6923	.630
	Disagree	1(7.7%)		
	Neutral	2(15.4%)		
	Agree	10(76.9%)		
	Strongly Agree	0		
There is Estimation the total cost of the work	Strongly Disagree	0	3.5385	.877
	Disagree	2(15.4%)		
	Neutral	3(23.1%)		
	Agree	7(53.8%)		
	Strongly Agree	1(7.7%)		
There is Documenting the project plan	Strongly Disagree	0	3.6923	.751
	Disagree	1(7.7%)		

	Neutral	3(23.1%)		
	Agree	8(61.5%)		
	Strongly Agree	1(7.7%)		
There is Building, Analyzing and adjusting the project schedule	Strongly Disagree	0	2.9231	.862
	Disagree	5(38.5%)		
	Neutral	4(30.8%)		
	Agree	4(30.8%)		
	Strongly Agree	0		
There is Gaining of senior management approval to launch the project	Strongly Disagree	0	3.4615	.660
	Disagree	1(7.7%)		
	Neutral	5(38.5%)		
	Agree	7(53.8%)		
	Strongly Agree	0		
Aggregate Mean (μ) = 3.480	Sd =0.729			

Source: Own survey data (2020)

Table 4.5 Frequencies and percentages ratings of Project plan

Work Breakdown structure (WBS) Construction

As the result from the table 4.6 indicates most of the respondents had neutral, and agree, also, the mean value on Work Breakdown Structure (WBS) construction is 3.718. So, the value falls between 3.50-4.49 mean limit which was mostly be inclined to Agree.

This result consistent with the previous research (Antvik & Sjöholm, 2007). that, when more specified requirements are known, the deliverables are subdivided into smaller, more manageable groups, through the use of a Work Breakdown Structure, WBS. By dividing major tasks into smaller work packages, the accuracy of cost, time, and resource estimates are improved. A WBS also makes it easier to assign clear responsibility to each group of tasks, which is necessary for the project organization to gain control of the project

Questions	**Responses**		Mean	Sd
There is work breakdown structure prepared in defining scope in your project.	Strongly Disagree	0	3.7692	.72501
	Disagree	1(7.7%)		
	Neutral	2(15.4%)		
	Agree	9(69.2%)		
	Strongly Agree	1(7.7%)		
There is work breakdown structure used in preparing the estimate.	Strongly Disagree	0	3.7692	.72501
	Disagree	1(7.7%)		
	Neutral	2(15.4%)		
	Agree	9(69.2%)		
	Strongly Agree	1(7.7%)		
There is work breakdown structure used in preparing the budget.	Strongly Disagree	0	3.6923	.75107
	Disagree	1(7.7%)		
	Neutral	3(23.1%)		
	Agree	8(61.5%)		
	Strongly Agree	1(7.7%)		
There is work breakdown structure used when defining the schedule activities	Strongly Disagree	0	3.6154	.65044
	Disagree	1(7.7%)		
	Neutral	3(23.1%)		
	Agree	9(69.2%)		
	Strongly Agree	0		
There is dividing all work into pieces with clear objectives and tools to perform them.	Strongly Disagree	0	3.6154	.50637
	Disagree	0		
	Neutral	5(38.5%)		
	Agree	8(61.5%)		
	Strongly Agree	0		
Aggregate Mean (μ) = 3.718 Sd =0.652				

Source: Own survey data (2020)

Table 4.6 Frequencies and percentages ratings of Work Breakdown structure (WBS) Construction

Stakeholders involvement

As illustrated on the table 4.7, the result indicates most of the respondents had disagree neutral and agree on project Stakeholder's involvement, its mean value is 2. 769. Thus, the mean value falls between 2.50-3.49 mean limit which indicates Neutral but was mostly be inclined to Disagree.

This result consistent with the previous research of (Mungatu and Mulyugi ,2017) that, Failure to involve the key stakeholders in the initial and planning stages of the project cycle led to project delay and thus also increased cost of the project relocating and redesigning. (Freeman, 2007) believe identifying stakeholder information is an important task for assessing stakeholders' information is important as it is the backbone in the project success.

Before any management activities, information about the project and stakeholders around requires extensive research and analysis. The information includes project missions, full list of stakeholders, area of stakeholder's interests, and their needs and constraints to the project and before every stakeholder management activity, the project management team should have a better understanding of the tasks and objectives of the particular stage of the project Lifecycle, including the issues of such as cost, schedule, budget (Yang, 2009). (Jergeas, 2000) further proved that "setting common goals, objectives and project priorities" is significant for improving stakeholder management, and he also suggested that the purpose of the project should be understood, and feedback from stakeholder be solicited to achieve alignment between stakeholder and project team, since this the way that expectations could be managed, and hidden agendas could be brought to the surface and project priorities could be established.

Questions	**Responses**		Mean	Sd
There is a procedure of recognizing the individuals, or groups, that could affect or be affected by the choice, action, or result of the project undertaking.	Strongly Disagree	0	2.615	.76
	Disagree	7(53.8%)		
	Neutral	4(30.8%)		
	Agree	2(15.4%)		
	Strongly Agree	0		

There is Communication and working with all parties who have a stake in the project to fulfill their necessities and desires, address issues as they happen, and cultivate proper commitment all through to the end of the project.	Strongly Disagree	0	2.692	.75
	Disagree	6(46.2%)		
	Neutral	5(38.5%)		
	Agree	2(15.4%)		
	Strongly Agree	0		
	Disagree	5(38.5%)		
	Neutral	4(30.8%)		
	Agree	4(30.8%)		
	Strongly Agree	0		
There is project progress review with stakeholders	Strongly Disagree	1(7.7%)	2.692	.94
	Disagree	5(38.5%)		
	Neutral	4(30.8%)		
	Agree	3(23.1%)		
	Strongly Agree	0		
There are improvements made by fitting administrative procedures to successfully draw in all parties involved thought the undertaking, depending on their requirements and potential effect on venture achievement	Strongly Disagree	0	3.0	.70
	Disagree	3(23.1%)		
	Neutral	7(53.8%)		
	Agree	3(23.1%)		
	Strongly Agree	0		
There is Person responsible for implementing the developed management strategy (the person within the project who is responsible to carry out the strategy).	Strongly Disagree	0	2.692	.75
	Disagree	6(46.2%)		
	Neutral	5(38.5%)		
	Agree	2(15.4%)		
	Strongly Agree	0		
Aggregate Mean (μ) = 2.769 Sd =0.797				

Source: Own survey data (2020)

Table 4.7 Frequencies and percentages ratings of Stakeholders involvement

Dynamic risk management

As illustrated in the table 4.8, which Indicates most of the respondents had disagree neutral and agree on ratings of Dynamic risk management its mean value is also 2.961. Thus, the mean value falls between on 2.50-3.49 mean limit which was mostly be inclined to Neutral.

This result consistent with the previous research of (Gajewska and Ropel,2011)) that an Unstructured form of risk management is to some extent used in the construction sector. Thus, the application of actual risk management into companies should not be difficult. Knowledge is the factor that is missing for organizations to implement risk management.

The higher the level of uncertainty a specific risk has, the more sensitive it is concerning the objectives. In other words, the risk events which are the most critical to the project are the most sensitive and appropriate action needs to be taken. (Heldman, 2005)

Questions	**Responses**		Mean	Sd
There is Determination and documentation of the characteristics of risk that may affect the project	Strongly Disagree	0	3.3077	.75107
	Disagree	2(15.4%)		
	Neutral	5(38.5%)		
	Agree	6(46.2%)		
	Strongly Agree	0		
There is prioritization of potential risks for additional investigation or activity by evaluating their likelihood of happening and effect.	Strongly Disagree	0	2.6923	.75107
	Disagree	6(46.2%)		
	Neutral	5(38.5%)		
	Agree	2(15.4%)		
	Strongly Agree	0		
There is analyzing of the effect of identified risks on overall project objectives.	Strongly Disagree	0	2.6923	.75107
	Disagree	6(46.2%)		
	Neutral	5(38.5%)		
	Agree	2(15.4%)		

	Strongly Agree	0		
There is system to capture opportunities and manage threats	Strongly Disagree	0	3.0769	.75955
	Disagree	3(23.1%)		
	Neutral	6(46.2%)		
	Agree	4(30.8%)		
	Strongly Agree	0		
There is a plan to identify, monitor and evaluate potential risks	Strongly Disagree	0	2.8462	.55470
	Disagree	3(23.1%)		
	Neutral	9(69.2%)		
	Agree	1(7.7%)		
	Strongly Agree	0		
There is a Continuous updating of the risk response plan and strategy	Strongly Disagree	0	2.6923	.75107
	Disagree	6(46.2%)		
	Neutral	5(38.5%)		
	Agree	2(15.4%)		
	Strongly Agree	0		
There is an Assigning of risk response owner to take responsibility for the management of selected risks	Strongly Disagree	0	3.0000	.70711
	Disagree	3(23.1%)		
	Neutral	7(53.8%)		
	Agree	3(23.1%)		
	Strongly Agree	0		
Aggregate Mean (μ) = 2.961 Sd =0.724				

Source: Own survey data (2020)

Table 4.8 Frequencies and percentages ratings of Dynamic risk management

Scope change management

As illustrated on the table 4.9, Indicates most of the respondents had disagree neutral and agree on ratings of Scope change management, its mean value is also 2.879. Thus, the

mean value is below the fixed cutoff point and fall on 2.50-3.49 mean limit which was mostly be inclined to Neutral.

This result consistent with the previous research of (Hamed, 2017) that the main causes of scope change were introduced as Poor documentation, Poor change control, Poor information transformation, & External changes.

Questions	**Responses**		Mean	Sd
There is well-defined and well managed scope change management process in place.	Strongly Disagree	0	2.7692	.83205
	Disagree	6(46.2%)		
	Neutral	4(30.8%)		
	Agree	3(23.1%)		
	Strongly Agree	0		
There is a scope change management system prepared by a qualified team.	Strongly Disagree	0	2.8462	.80064
	Disagree	5(38.5%)		
	Neutral	5(38.5%)		
	Agree	3(23.1%)		
	Strongly Agree	0		
There is project team members involvement in the preparation of scope change management plan	Strongly Disagree	0	2.7692	.83205
	Disagree	6(46.2%)		
	Neutral	4(30.8%)		
	Agree	3(23.1%)		
	Strongly Agree	0		
There is scope statement with as much detail to prevent scope creeping as possible	Strongly Disagree	0	2.9231	.86232
	Disagree	5(38.5%)		
	Neutral	4(30.8%)		
	Agree	4(30.8%)		
	Strongly Agree	0		
There is project implementation	Strongly Disagree	0	2.6923	.85485

on time and within the approved budget and scope	Disagree	7(53.8%)		
	Neutral	3(23.1%)		
	Agree	3(23.1%)		
	Strongly Agree	0		
Aggregate Mean (μ) = 2.879 Sd =0.839				

Source: Own survey data (2020)

Table 4.9 Frequencies and percentages ratings of Scope change management

Contractor management

As illustrated in the table 4.10, Indicates most of the respondents had disagree neutral and agree on ratings of Contractor Management, its mean value is also 2.84. Thus, the mean value is below the fixed cutoff point and fall on 2.50-3.49 mean limit which was mostly be inclined to Neutral.

This result consistent with the previous research of (Worku and Jha, 2016) found ineffective planning and scheduling and unqualified and inadequate experienced labor of contractors is significant cause of delay in construction. Similarly, (Hussein, 2018) identified a potential delay causes on real estate construction projects as Shortage of construction material, inappropriate structure linking all parties involved in the project, delay by sub contracts and lack of communication between these parties are also found as delay causing factors.

Questions	**Responses**		Mean	Sd
There are proper planning and construction methods	Strongly Disagree	0	3.1538	.89872
	Disagree	4(30.8%)		
	Neutral	3(23.1%)		
	Agree	6(46.2%)		
	Strongly Agree	0		
There is no conflict between contractor and other parties (client, consultant...)	Strongly Disagree	0	2.4615	.66023
	Disagree	8(61.5%)		
	Neutral	4(30.8%)		
	Agree	1(7.7%)		

	Strongly Agree	0		
There is no difficulty in financing project by contractor.	Strongly Disagree	0	2.6923	.85485
	Disagree	7(53.8%)		
	Neutral	3(23.1%)		
	Agree	3(23.1%)		
	Strongly Agree	0		
There is effective scheduling of project by contractor	Strongly Disagree	0	3.1538	.89872
	Disagree	4(30.8%)		
	Neutral	3(23.1%)		
	Agree	6(46.2%)		
	Strongly Agree	0		
There is no rework because of errors during construction	Strongly Disagree	0	2.2308	.43853
	Disagree	10(76.9%)		
	Neutral	3(23.1%)		
	Agree	0		
	Strongly Agree	0		
There is no delay in commencement	Strongly Disagree	0	2.3077	.48038
	Disagree	9(69.2%)		
	Neutral	4(30.8%)		
	Agree	0		
	Strongly Agree	0		
Aggregate Mean (μ) = 2.84 Sd =0.696				

Source: Own survey data (2020)

Table 4.10 Frequencies and percentages ratings of Contractor management

Client ownership

As illustrated in the table 4.11, which Indicates most of the respondents had strongly disagree and disagree on ratings of Clint ownership, its mean value is also 2.99. Thus, the

mean value is below the fixed cutoff point and falls on 2.50-3.49 mean limit which was mostly be inclined to Neutral.

This finding of the research is consistent with the previous work of (Helen et al, 2015) that found client's experience, client ability to brief, client's ability to make a decision, client's knowledge of construction project organization, client confidence in the construction team, technical skills of project team leaders and motivating skills of project team leaders the main factors affecting the effectiveness of construction project.

Questions	**Responses**		Mean	Sd
There is client involvement in the first phase of the project life cycle	Strongly Disagree	0	2.9231	.95407
	Disagree	6(46.2%)		
	Neutral	2(15.4%)		
	Agree	5(38.5%)		
	Strongly Agree	0		
There is no delay in decision making by owner	Strongly Disagree	0	2.4615	.66023
	Disagree	8(61.5%)		
	Neutral	4(30.8%)		
	Agree	1(7.7%)		
	Strongly Agree	0		
There is communication by owner with other construction parties	Strongly Disagree	0	3.2308	.72501
	Disagree	2(15.4%)		
	Neutral	6(46.2%)		
	Agree	5(38.5%)		
	Strongly Agree	0		
There are Change orders by owner during construction	Strongly Disagree	0	3.3846	.65044
	Disagree	1(7.7%)		
	Neutral	6(46.2%)		
	Agree	6(46.2%)		
	Strongly Agree	0		

There is an early issuing of approval documents by owner	Strongly Disagree	0	2.9231	.86232
	Disagree	5(38.5%)		
	Neutral	4(30.8%)		
	Agree	4(30.8%)		
	Strongly Agree	0		
There is application of construction management procedures for early detection of construction problems	Strongly Disagree	0	2.7692	.72501
	Disagree	5(38.5%)		
	Neutral	6(46.2%)		
	Agree	2(15.4%)		
	Strongly Agree	0		
There are competent technical staff/ personnel	Strongly Disagree	0	3.4615	.66023
	Disagree	1(7.7%)		
	Neutral	5(38.5%)		
	Agree	7(53.8%)		
	Strongly Agree	0		
There is an appropriate project distress management	Strongly Disagree	1(7.7%)	2.7692	.83205
	Disagree	3(23.1%)		
	Neutral	7(53.8%)		
	Agree	2(15.4%)		
	Strongly Agree	0		
Aggregate Mean (μ) = 2.99 Sd =0.758				

Source: Own survey data (2020)

Table 4.11 Frequencies and percentages ratings of Client ownership

Implementation of prevention strategies

To analyze the factors affecting the implementation of distress prevention strategies the respondents were asked to state how much these factors affect their respective projects for this purpose 10 factors collected from the literature of previous studies. The factors were then ranked after calculating the mean value form frequency of responses then those with the highest mean values were ranked most significant factors affecting the implementation of distress prevention strategies.

From Table 4.12 the results show that the respondent ranked most important factors affecting the implementation of distress prevention strategies in sunshine construction plc were Lack of proper change control (3.3077), Uncertainty (3.2308), and Problems of activity execution (3.2308). which is consistent with (Hussein, 2018) finding that is design change and material change are the most influential delay causing factor in real estate construction and the culture of thinking to change while the construction is on the process must be avoided by effectively utilizing the design stage to eliminate future changes.

Uncertainties that are caused by external factors such as deficiencies of reinforcement bars and cement, construction equipment and materials, unpredicted soil and climate condition, absence of sufficient foreign currency and changes import and construction regulations also a highly affect the successful completion of a certain project and should also be accounted for during preparation of the risk management plan.

Importance and ranking of Factors affecting implementation of prevention strategies by Mean value		
Factors that affect implementation of prevention strategies	**Mean**	**Rank**
Lack of proper change control	3.3077	1
Uncertainties	3.2308	2
Problems of activity execution	3.2308	3
Poor preparation for requirements definition	2.6923	4
Poor choice of requirement definitions approach	2.6154	5
Poor project integration management	2.6154	6

Failure to decompose the project into smaller feasible steps	2.5385	7
Failure to clearly define requirements	2.3846	8
Poor WBS specification	2.3077	9
Poor planning	2.2308	10

Source: Own survey data (2020)

Table 4.12 Factors affecting implementation of prevention strategies in sunshine construction plc

4.5. Project distress Intervention strategies

From Table 4.13 and 14 the results show that sunshine construction plc is in good shape when it comes to the use of intervention strategies in comparison to preventive strategies. From the responses, we can see that there is some clarity regarding developing the scope to recover a distressed project (3.3077) which is done by conducting the initial interview of personnel who were, directly and indirectly, involved with the project. These personnel include Project sponsor, project manager, management staff, project team, support staff, and customers (3.9231).

After the interview additional data is gathered, documented for data review and evaluation (3.7692). Then upon gaining approval and consensus on the findings (solution) another schedule and budget will be developed (4.0000), the roles and responsibilities will be assigned (3.7692) and the execution will begin.

Even though there is some effort to identify what mistakes were made in the past so that lessons learned and best practices can be discovered to prevent a recurrence of the mistakes (3.1538). But still lacks periodic critical health checks using earned value measurement reporting, essential communications, maintaining positive morale and Adopting proactive stakeholder management (2.7692)

Questions	**Responses**		Mean	Sd
There is a clarity regarding Developing the scope to recover a distressed project.	Strongly Disagree	0	3.3077	.481
	Disagree	0		

	Neutral	9(69.2%)		
	Agree	4(30.8%)		
	Strongly Agree	0		
There is assessment and logging of project history, a set forward a plan to recover the project, delegation of tasks to respective team consensus to put that in motion.	Strongly Disagree	0	3.1538	.689
	Disagree	2(15.4%)		
	Neutral	7(53.8%)		
	Agree	4(30.8%)		
	Strongly Agree	0		
There is an initial interview of personnel who are directly and indirectly involved with the project. These personnel include Project sponsor, project manager, management staff, project team, support staff, and customers	Strongly Disagree	0	3.9231	.277
	Disagree	0		
	Neutral	1(7.7%)		
	Agree	12(92.3%)		
	Strongly Agree	0		
There is a data gathering, documentation and data review, evaluation and probative interview	Strongly Disagree	0	3.7692	.599
	Disagree	0		
	Neutral	4(30.8%)		
	Agree	8(61.5%)		
	Strongly Agree	1(7.7%)		

Source: Own survey data (2020)

Table 4.13 Project distress Intervention strategies in sunshine construction plc

Questions	**Responses**	Mean	Sd	
There is Gaining approval and consensus (findings and solution)	Strongly Disagree	0	3.7692	.439
	Disagree	0		
	Neutral	3(23.1%)		
	Agree	10(76.9%)		
	Strongly Agree	0		
There is Execution planning	Strongly Disagree	0	3.6923	.481
	Disagree	0		
	Neutral	4(30.8%)		
	Agree	9(69.2%)		
	Strongly Agree	0		
There is Roles and responsibility determination	Strongly Disagree	0	3.7692	.439
	Disagree	0		
	Neutral	3(23.1%)		
	Agree	10(76.9%)		
	Strongly Agree	0		
There is Schedule and budget development	Strongly Disagree	0	4.0000	.408
	Disagree	0		
	Neutral	1(7.7%)		
	Agree	11(84.6%)		
	Strongly Agree	1(7.7%)		
There is Project control strategies in place using milestone chart, log frame	Strongly Disagree	0	3.2308	.725
	Disagree	2(15.4%)		

and the use of centralized status reporting system.	Neutral	6(46.2%)		
	Agree	5(38.5%)		
	Strongly Agree	0		
There is Deliverable execution and validation	Strongly Disagree	0	3.4615	.66
	Disagree	1(7.7%)		
	Neutral	5(38.5%)		
	Agree	7(53.8%)		
	Strongly Agree	0		

Source: Own survey data (2020)

Table 4.14 Project distress Intervention strategies in sunshine construction plc

Questions	**Responses**		Mean	Sd
There is a review of the project and its history. Which include the project charter, business case, project objectives and assumptions)	Strongly Disagree	0	3.9231	.759
	Disagree	4(30.8%)		
	Neutral	6(46.2%)		
	Agree	3(23.1%)		
	S. Agree	0		
There is a critical assessment of the project's existing status. Such as Assessing the actual performance to date, Identifying the flaws, performing a root cause analysis, Looking for hidden failure points	Strongly Disagree	0	4.0000	.408
	Disagree	0		
	Neutral	1(7.7%)		
	Agree	11(84.6%)		
	S. Agree	1(7.7%)		
There is Identifying of what mistakes were made in the past so that lessons learned and best practices can be	Strongly Disagree	0	3.1538	.555
	Disagree	1(7.7%)		
	Neutral	9(69.2%)		

discovered to prevent a recurrence of the mistakes	Agree	3(23.1%)		
	Strongly Agree	0		
There is Looking at the issues log and seeing if the issues are people issues. Prioritizing the problems and being prepared to address the most serious problems first.	Strongly Disagree	0	3.4615	.519
	Disagree	0		
	Neutral	7(53.8%)		
	Agree	6(46.2%)		
	S. Agree	0		
There is Identification of items important to the stakeholders (e.g., time, cost, value) and ways to maximize remaining value while minimizing additional investment.	Strongly Disagree	0	3.1538	.899
	Disagree	4(30.8%)		
	Neutral	3(23.1%)		
	Agree	6(46.2%)		
	Strongly Agree	0		
There is Identification of which constraints to be changed, Prioritization of the tradeoffs and Getting their buy-in.	Strongly Disagree	0	3.5385	.519
	Disagree	0		
	Neutral	6(46.2%)		
	Agree	7(53.8%)		
	S. Agree	0		
There are periodic critical health checks and using earned value measurement reporting, providing effective and essential communications, maintaining positive morale and Adopting proactive stakeholder management.	Strongly Disagree	0	2.7692	.9268
	Disagree	7(53.8%)		
	Neutral	2(15.4%)		
	Agree	4(30.8%)		
	S. Agree	0		

Source: Own survey data (2020)

Table 4.15 Factors affecting implementation of Intervention strategies in sunshine construction plc

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Introduction

This chapter mainly focused on key findings of the research problem analysis, measures to be taken to improve the sector, and the conclusion of the study. The recommendations constitute principally managerial level policies.

5.2. Summary

This research was set to find answers to the following: 1) What factors are leading to project distress, 2) what prevention strategies in place to reduce project from getting into distress and 3) the implementations of intervention strategies for the distressed projects at sunshine construction plc. Rigorous field works were conducted and below are the main findings:

From the study, the major five factors causing distress at sunshine construction plc were poor project implementation strategies, Project environment (Physical, Economic and Socio-political), Lack of integrated Planning, unwilling to make the tough decisions, and Lag time between project approval and kickoff.

Other factors affecting the construction industry were also been identified from the literature, but they were found to have less impact in sunshine construction plc, those factors are No plan revision after significant cuts in resources or time, Complexity of requirements not recognized, Inconsistent client signoff, Unmanageable project scopes, Estimated done with little planning or thought, Inappropriate or insufficient sponsorship, Poor, inadequate or no requirement documentations, Overcommitment of staff resources and no credibility in the baseline

The study revealed several distress prevention strategies in terms of requirement gathering, preparation of project plan, Work breakdown structure, stakeholder involvement, dynamic risk management process, scope change management process, contractor management, and client ownership. After evaluation of the practice of each

strategy, it is found that sunshine construction plc has problems in areas of dynamic risk management, scope change management, and contractor management.

Specifically, in terms of prioritization of risk and analyzing them by assessing their probability of occurrence and impact on allover project objective which is the result of failure to continuously update the risk response plan and strategy.

There is a little involvement of project team members in the preparation of project scope management plan which is another factor affecting the on-time implementation of projects within the approved budget and scope.

There is also difficulty financing the project by the contractor as the project budget kept increasing due to rework, delay in commencement, and decision making by the owner.

The study further revealed the intervention strategies being employed to rescue the project from a state of distress.

There is some clarity regarding developing the scope to recover a distressed project, initial interview of personnel who were, directly and indirectly, involved with the project, data gathering, documentation for data review, and evaluation. There is also gaining approval and consensus on the findings (solution), schedule and budget development, roles and responsibilities assignment, and execution planning.

Even though there is an effort to identify what mistakes were made in the past so that lessons learned and best practices can be discovered to prevent a recurrence of the mistakes. There is a lack of periodic critical health checks using earned value measurement reporting, essential communications, maintaining positive morale, and Adopting proactive stakeholder management.

5.3. Conclusion

Construction projects are often rushed without sufficient planning, budgetary allocation, and appropriate assessment of requirements and possible risks. Which in turn result in several challenges such as continuous modification, scope changes, conflicts, and unnecessary risks that could have been avoided otherwise.

Without the implementation of proper project management tools, steps, processes, and consideration of other internal and external factors a project is destined to be doomed.

Based on the result obtained from this research, the following conclusions were drawn.

There are several factors that cause project distress, and affect the success of a certain project. Since all factors does not have the same effect, each factor should be ranked and prioritized as to address more pressing issues as soon as possible, thus decreasing the probability of distress.

For sunshine construction plc, poor project implementation strategies (in areas of cost, scope, stakeholder, risk management), Project environment (Physical, Economic and Socio-political environment e.g. inflation, material shortage, government regulation), Lack of integrated Planning, unwilling to make the tough decisions (time sensitive decisions), and Lag time between project approval and kickoff were found to be major factors to cause distress and require more attention.

Regarding Project distress prevention and intervention strategies of sunshine construction plc: Instead of focusing on only designing, preparing work breakdown, and rush to construction, the contractors should also focus on overall management aspects of the projects.

Using only several processes does not guarantee the success of a project, project planning should be incorporated with risk management, scope management, and stakeholder management, and so on. In fact, all the 10 project management knowledge areas should be given equal emphasis as they all contribute towards the successful completion of a project. That is within scope, quality, budget, and time while considering possible risks and resource availability.

The project management process groups have clear dependencies and are typically performed in each project and highly interactive with one another. The required process groups and their processes are guides for applying appropriate project management knowledge and skills during the project implementation.

Finally, the developed project plan should be continuously updated and used in all phases of the project including Execution, monitoring and control, and closing phase of the project.

5.4. Recommendation

The construction industry involves a wide range of stakeholders, each with a great variety of interests, concerns, requirements, and potential opportunities. Proper identification of those stakeholders is crucial to identify their respective needs and manage their expectations.

To do that effectively top-level or management should support and highly be involved in the stakeholder management process, certain individuals at the director level should be tasked with the responsibility of overseeing stakeholder management activities.

The project managers should also be highly skilled negotiators and communicators to be capable of managing individual stakeholder's expectations and creating a positive culture change within the overall organization project.

There should be proper risk identification, assessment, and prioritization based on their possible impact on the projects.

Possible risks should be categorized into technical risks (uncertainty of resources and availability of materials inadequate site investigations or incomplete designs, substandard quality, inadequate Health & Safety practices), management-related risks (uncertain productivity of resources), sociopolitical risks (customs and import restrictions and difficulties disposing of equipment), financial risks (inflation, local taxes, availability and fluctuation in foreign exchange) and environmental risks (natural disasters, weather, and seasonal implications) as it helps to analyze the overall effect on project objective and address them properly.

Besides, the risk register and the risk response plan should be updated continuously as the nature of the possible risks evolve as the project progresses.

One of the causes of project distress is frequent scope change, to address this issue there should be a well-defined and well-managed scope management process in place. For

example, clearly describing project scope and details of activities to be accomplished by involving project team members and stakeholders to avoid frequent scope change requests and unexpected challenges from internal and external factors.

If there is a change request it should be managed in a way that it does not create a scope creep as well as affect the project budget and schedule in a negative way.

To manage financial distress the organization should focus on finding better ways to finance the project, as further delays will only increase the cost of the project. Similarly, it should also work on minimizing reworks caused by errors during construction as a way to save unnecessary expenditures.

Finally, by applying proper construction management procedures for early detection of construction problems project distress could be prevented. If not, managed without causing significant damage.

5.5. Limitation and Suggestion for future study

This study like others has its limitations. While these results are valuable, the limitation of this study must also be considered. The research is limited to Sunshine construction plc. Wider research consisting of different stakeholders of the construction industry as well as more construction organizations of various Grade levels should be conducted.

Since construction projects are growing rapidly similar research should be performed in various provinces or cities. Also, to provide more reliable data, it is required to carry out studies for each specific type of construction projects, including highways, dam construction projects, utilities, etc.

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Annex I Questionnaire

QUESTIONNAIRE FOR PROJECT DISTRESS PREVENTION AND INTERVENTION STRATEGIES

Dear respondent:

First of all, I would like to express my earnest appreciation for your generous time, honesty, prompt responses and for assisting me in my project work.

My name is Yohannis Tekalign Tuji, I am a MA student in Project Management at Addis Ababa University School of Commerce. As part of my MA project work, I am studying **Project distress management strategies (both preventive and intervention strategies) in the construction industry**. I kindly request you to participate in this research study by completing the attached questionnaire.

Please note that your views in this questionnaire shall not be, in any way, used for any other purpose rather than the advancement of this study.

You are therefore assured that your views on the content of this questionnaire shall not be used in any way that might cause damage to your reputation as an individual or otherwise. Information provided will be treated with high level of confidentiality. Individual responses will not be identifiable as they will be treated in aggregate when reporting the findings.

Best Regards for all!

Yohannis Tekalign Tuji

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PART I. DEMOGRAPHIC DATA

1. Name of the project (Organization)_____

2. Gender: ☐ Male ☐ Female

3. Age (years): ☐ 20 – 30 ☐ 31 – 40 ☐ 41 – 50 ☐ 51 - 60

4. Please indicate your highest level of education attained

☐ PhD ☐ Master's degree ☐ Bachelor degree ☐ Diploma

5. Your position in the project: _____

6. Years of experience in project works: ☐ 2- 5 ☐ 6 - 10 ☐ 10 - 15 ☐ > 15

7. Do you have educational background or training on project management field?

☐ Yes ☐ No

8. If your answer for question No. 7 is yes, specify the type of training _____

PART II. PREVENTION STRATEGIES

Instructions: Please tick [√] in the provided space which is the most suitable answer.

No	Symptoms of distressed projects	YES	NO
1	**Performance trends**		
	Have you observed a decrease in performance such as not being able to meet deadlines as per stated baselines (initial plan) during the execution of the project?		
2	**Slipping schedule**		
	Have you observed a slippage in the schedule of critical activities during the execution of the project?		
	Have you observed a repetitive amendment of project schedule to account for continuous schedule slippage in the project?		
3	**Organizational change**		
	Where there a change in project manager during the execution of the project?		
	Where there a change in project sponsor during the execution of the project?		
	Where there a change in team leaders during the execution of the project?		

Instructions: The following are the reasons for projects to be distressed. Please tick [√] in the provided **space regarding the reasons that affects projects at your organization the most** by using the scales provided below.

1=strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= strongly Agree

No	Reasons for Project Distress	1	2	3	4	5
1	poor project implementation strategies (cost, quality, time, scope, risk)					
2	Lack of integrated Planning (frequent scope change)					
3	Project environment (Physical, Economic and Socio-political)					
4	Poor, inadequate or no requirement documentations					
5	Inappropriate or insufficient sponsorship					
6	Complexity of requirements not recognized					
7	Unwilling to make the tough decisions					
8	Lag time between project approval and kickoff					
9	No plan revision after significant cuts in resources or time					
10	Estimated done with little planning or thought					
11	Overcommitment of staff resources					
12	Inconsistent client signoff					
13	No credibility in the baseline					
14	Unmanageable project scopes					

Instructions: Please tick [√] in the provided space which is the most suitable answer using the given scale.

1=strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= strongly Agree

No	Prevention strategies	1	2	3	4	5
1	**Requirement Gathering**					
	There are clearly defined Requirements from the beginning					
	There are Requirements Workshops to motivate stakeholders and satisfy an immediate need.					
	There is Stakeholder Participation in Requirements Elicitation and Decomposition					
	There are requirements collecting, defining, documenting, and managing of stakeholders need to meet the project objective.					
	There is a process to rank the project requirement.					
	There is Project Scope Statement that describes, in detail, the project's deliverables and the work required to create those deliverables					
2	**Project plan**					

	There is Definition all of the work of the project					
	There is Estimation of how long it will take to complete the work					
	There is Estimation the resources required to complete the work					
	There is Estimation the total cost of the work					
	There is Documenting the project plan					
	There is Sequencing the work					
	There is Building, Analyzing and adjusting the project schedule					
	There is Gaining of senior management approval to launch the project					
3	**Work Breakdown structure (WBS) Construction**,					
	There is work breakdown structure prepared in defining scope in your project.					
	There is work breakdown structure used in preparing the estimate.					
	There is work breakdown structure used in preparing the budget.					
	There is work breakdown structure used when defining the schedule activities					
	There is breaking down projects into smaller tasks.					
	There is dividing all work into pieces with clear objectives and tools to perform them.					
4	**Stakeholders involvement**					
	There is a procedure of recognizing the individuals, or groups, that could affect or be affected by the choice, action, or result of the project undertaking.					
	There is Communication and working with all parties who have a stake in the project to fulfill their necessities and desires, address issues as they happen, and cultivate proper commitment all through to the end of the project.					
	There is project progress review with stakeholders					
	There are improvements made by fitting administrative procedures to successfully draw in all parties involved thought the undertaking, depending on their requirements and potential effect on venture achievement					
	There is Person responsible for implementing the developed management strategy (the person within the project who is responsible to carry out the strategy).					
5	**Dynamic risk management**					
	There is Determination and documentation of the characteristics of risk that may affect the project					
	There is prioritization of potential risks for additional investigation or activity by evaluating their likelihood of happening and effect.					
	There is analyzing of the effect of identified risks on overall project objectives.					

	There is system to capture opportunities and manage threats					
	There is a plan to identify, monitor and evaluate potential risks					
	There is development of risk response strategy (example: avoid, transfer, mitigate, accept.)					
	There is a Continuous updating of the risk response plan and strategy					
	There is an Assigning of risk response owner to take responsibility for the management of selected risks					
6	**Scope change management**					
	There is well-defined and well managed scope change management process in place.					
	There is a scope change management system prepared by a qualified team.					
	There is project team members involvement in the preparation of scope change management plan					
	There is management and control of scope change during the implementation Project.					
	There is scope statement with as much detail to prevent scope creeping as possible					
	There is Evaluation and prioritization of all changes to the project implementation plan at the institutional level.					
	There is project implementation on time and within the approved budget and scope					
7	**Contractor management**					
	There are proper planning and construction methods					
	There is no conflict between contractor and other parties (client, consultant...)					
	There are qualified technical staffs					
	There is communication of contractor with other construction parties					
	There is no difficulty in financing project by contractor.					
	There is effective scheduling of project by contractor					
	There is no rework because of errors during construction					
	There is no delay in commencement					
8	**Client ownership**					
	There is client involvement in the first phase of the project life cycle					
	There is no delay in decision making by owner					
	There are Change orders by owner during construction					
	There is an early issuing of approval documents by owner					
	There is application of construction management procedures for early detection of construction problems					
	There are competent technical staff/ personnel					
	There is an appropriate project distress management					

Instructions: The following are factors that affect the implementation distress prevention strategies. Please tick [√] in the provided space **how much these factors affect projects at your organization** by using the scales provided below.

1=strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= strongly Agree

No	Implementation of prevention strategies	1	2	3	4	5
1	Uncertainties					
2	Problems of activity execution					
3	Failure to decompose the project into smaller feasible steps					
4	Lack of proper change control					
5	Poor planning					
6	Poor WBS specification					
7	Failure to clearly define requirements					
8	Poor choice of requirement definitions approach					
9	Poor preparation for requirements definition					
10	Poor project integration management					

PART III. INTERVENTION STRATEGIES

Instructions: The following questions are used identify intervention strategies followed during the recovery of a distressed project. Please tick [√] in the provided space regarding which tools are currently being used in your organization using the given scale.

1=strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= strongly Agree

No	Intervention strategies	1	2	3	4	5
1	There is a clarity regarding Developing the scope to recover a distressed project.					
2	There is assessment and logging of project history, a set forward a plan to recover the project, delegation of tasks to respective team consensus to put that in motion.					
3	There is an initial interview of personnel who are directly and indirectly involved with the project. These personnel include Project sponsor, project manager, management staff, project team, support staff, and customers					
4	There is a data gathering, documentation and data review, evaluation and probative interview					
5	There is a Developing of conclusion and solution approaches					
6	There is Gaining approval and consensus (findings and solution)					
7	There is Execution planning					
8	There is Roles and responsibility determination					
9	There is Schedule and budget development					

10	There is Project control strategies in place using milestone chart, log frame and the use of centralized status reporting system.					
11	There is Deliverable execution and validation					

No	**Implementation of intervention strategies**	1	2	3	4	5
1	There is a review of the project and its history. Which include the project charter, business case, project objectives and assumptions)					
2	There is a critical assessment of the project's existing status. Such as Assessing the actual performance to date, Identifying the flaws, performing a root cause analysis, Looking for hidden failure points					
3	There is a Determining of "must have," "nice to have," "can wait" and "not needed" activities or deliverables					
4	There is Identifying of what mistakes were made in the past so that lessons learned and best practices can be discovered to prevent a recurrence of the mistakes					
5	There is Looking at the issues log and seeing if the issues are people issues. Prioritizing the problems and being prepared to address the most serious problems first.					
6	There is a process of determining possible tradeoffs when the original requirements could not be met.					
7	The tradeoff process includes what the tradeoffs are, expected casualties, what can and cannot be done, what must be fixed first, the priorities of the constraints changed and What the risks are.					
8	There is Identification of items important to the stakeholders (e.g., time, cost, value) and ways to maximize remaining value while minimizing additional investment.					
9	There is Identification of which constraints to be changed, Prioritization of the tradeoffs and Getting their buy-in.					
10	There is an Introduction of the team to the stakeholders' agreed-upon recovery plan including the agreed-upon milestones and Identifying any changes to the way the project will be managed					
11	There is a Full engaging of the project sponsor as well as the key stakeholders for their support					
12	There are periodic critical health checks and using earned value measurement reporting, providing effective and essential communications, maintaining positive morale and Adopting proactive stakeholder management.					

Annex II - Interview Questions

INTERVIEW QUESTIONS FOR PROJECT DISTRESS PREVENTION AND INTERVENTION STRATEGIES

1. What is your name? (optional)
2. What is your position in the organization project?
3. How long have you worked in the company?
4. What is your working experience?
5. What is your educational qualification?
6. Have you worked as Project Manager? If yes for how long?
7. Have you received any Project Management related training?
8. If yes what was the highest level of training you received?
9. For how long has your organization been in the construction business?
10. Do the projects at your organization often face schedule or cost overrun?
11. Have you encountered major schedule slippage on the projects you have worked on?
12. Where there a change in critical person (project manager, lead engineer, project sponsor) during the execution of projects on your organization? If yes specify which person?
13. Does your organization have Project Management processes, methodologies and qualified technical staff?
14. Are project management process, methodologies and procedures applied formally in managing projects in your organization? If so: -

14.1. Are there **clearly defined Requirements** from the beginning during construction?

14.2. Is there **effective planning and scheduling** of your construction projects?

14.3. **Is there breaking down projects into smaller tasks** and divide all work into pieces with clear short-term time limits, clear objectives and tools to perform them?

14.4. Is there **risk management system** in your organization?

14.5. Is there **scope change management** system?

14.6. Do your organization have delay in commencement?

14.7. What are the main challenges in your organization?

15. Does your organization implement strategies to prevent project distress or failure?

16. How do you identify a distressed project at your organization?

17. What measures do you take to recover the project or to prevent it from failure?

18. How effective do you think your recovery strategies are?

Thank you for your time and honest answer.

Annex III List of Ongoing Construction Projects at Sunshine Construction plc

Projects Name	Planned Cost (Birr)	Actual Cost (Birr)	Planned Time	Actual Time	Current status (%)
Bole Marriot Hotel project	635,243,106.88	736,277,663.90	3(years)	6 (years)	89%
Bole – Beshale Sunshine Real estate project	457,505,712.78	543,474,249.13	3093(days)	3070(days)	72.92%
CMC - 2 Sunshine Real estate project	572,452,613.13	624,664,198.76	1890(days)	2315(days)	67.6%

Source: Sunshine Construction plc