



**ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS
GRADUATE PROGRAM DEPARTMENT OF PROJECT MANAGEMENT**

Assessment of Project Distress Prevention Strategy

A case of Addis Ababa City Road Authority

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Assessment of Project Distress Prevention Strategy

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DECLARATION

“I Mesfin ShibeShi do hereby declare that, this research paper entitled “**Assessment of project distress prevention and intervention strategies A case of Addis Ababa City Road Authority**” is my own and to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent that has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.”

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Table of Contents

Acknowledgement	iv
List of Figures	vii
List of Tables	viii
List of Acronyms	ix
Abstract.....	x
CHAPTER ONE	1
1. Introduction.....	1
1.1 Back ground of the study	1
1.2. Statement of the problem	3
1.3. Research Questions.....	4
1.4. Objectives of the study.....	4
1.4.1. General Objective	4
1.4.2. Specific objectives of the study.....	4
1.5. Definition of Terms.....	5
1.6. Significance of the study.....	5
1.7. Delimitation of the study	6
1.8. Limitations of the study	6
CHAPTER II.....	7
2.1. Literature Review.....	7
2.1.1. Introduction.....	7
2.1.1.1. Theoretical Review	7
2.1.1.2. Empirical Review.....	31
CHAPTER III METHODOLOGY	35
3.1. Research Design.....	35
3.2. Target Population.....	35
3.3 Data collection instrument and approach.	36
3.4. Data Processing and Analysis Methods	37
3.5. Validity and Reliability of Instruments.....	37
3.6. Ethical Issues	37
CHAPTER IV RESULTS AND DISCUSION	38

4.1. Introduction.....	38
4.2. RESPONSE RATE AND DEMOGRAPHIC DATA	38
4.2.1. Gender Composition	38
4.2.2. Age Composition.....	39
4.2.3. Work Experience.....	39
4.2.4 . Educational Background	40
4.2.5. Job Title	40
4.3. Likert scale analysis	41
4.3.1. Requirement Gathering	41
4.3.2.. Project plan	42
4.3.3. Work Breakdown structure (WBS) Construction	43
4.3.4. Stakeholders involvement	44
4.3.5. Dynamic risk management.....	46
4.3.6. Scope change management.....	47
4.3.7. Contractor Management	48
4.3.8. Clint ownership	49
4.4. Reliability statistics.....	50
4.5. Correlation Analysis	50
CHAPTER V	54
CONCLUSION AND RECOMMENDATION.....	54
5.1 Introduction.....	54
5.2. Conclusions.....	54
5.4 Future Study.....	56
References.....	57
Appendix I: Questionnaire.....	59
Appendix II. List of three selected ongoing construction project at AACRA	67

List of Figures

Figure2- 1 Components of failure (pessimistic planning).....	22
Figure2- 2 Components of failure (optimistic planning)	23
Figure2- 3 Mitigation strategies	24
Figure2- 4 conservative trends to signal potentially distressed projects	28
Figure2- 5 tighter control limits as an early warning of potentially distressed project.....	28
Figure2- 10 Recovery strategies of distressed project	34

List of Tables

Table4- 1 Gender of the Respondents.....	38
Table4- 2 Age of the respondents	39
Table4- 3 Work Experience of the respondents.....	39
Table4- 4 Educational Background of the respondents	40
Table4- 5 Job Title of the respondents.....	40
Table4- 6 Frequencies and percentages of the ratings of Requirement Gathering	42
Table4- 7 Frequencies and percentages of the ratings of Project plan.....	43
Table4- 8 Frequencies and percentages of work Breakdown structure (WBS) Construction.....	44
Table4- 9 Frequencies and percentages of the ratings of Stakeholders involvement	45
Table4- 10 Frequencies and percentages of the ratings of Dynamic risk management	46
Table4- 11 Frequencies and percentages of the ratings of Scope change management.....	47
Table4- 12 Frequencies and percentages of the ratings of Contractor Management	48
Table4- 13 Frequencies and percentages of the ratings of Clint ownership	49
Table4- 14 Reliability statistics.....	50
Table4- 15 correlations	51

List of Acronyms

AACRA	Addis Ababa City Road Authority
APM	Agile Project Management
AC	Actual cost
CMCs	Construction Management Consultants.
CPI	Cost Performance Index
EV	Earned value
EPMO	Enterprise project management office
GTP	Growth and Transformation Plan
HRMS	Human Resources Management System
IT	Information Technology
MPxEmertxe	Project Management
PMI	Project Management Institute
POS	Project Overview Statement
PMBOK	Project Management Body of knowledge
PMLC	project management life cycle
PV	planned value
ROW	Right of Way
SPI	Schedule performance Index
SWOT	Strength, weakness, Opportunity, Threat
TCE	Transaction Cost Economics
TPM	Traditional Project Management
xPM	Extreme project Management

Abstract

This study attempted to investigate the factors that contribute for project distressed and the prevention measure taken to avoid the project from failing. The study aimed at examining reasons which are affecting project performance that related with project distress, and, to establish early warning system and prevent projects from becoming distressed. The study adopted a descriptive research method. The descriptive research design helped in observing the relationship between project distress management and factors failed in requirements gathering and documentation, proper planning, dynamic risk management, stakeholder involvement, scope change management, contractor management and client ownership. The study utilized both primary and secondary data to obtain firsthand information from Addis Ababa Cit Road Authority (AACRA). The sampling technique used was purposive sampling technique which endeavors to get an example of components in light of the judgment of the researcher. The data from the interviews were analyzed using a qualitative approach. The study demonstrated that the level of project distress management is unsatisfactory in the case of AACRA.

Key words: Project, Project Management, Project Distress, Project Distress Management, Prevention Strategy

CHAPTER ONE

1. Introduction

It is already known that Failing of projects is a common phenomenon in the current society. Projects in Ethiopia encountered so many project troubles and challenges that might cause not only a great deal of time and cost overrun but also failed to attain the intended ultimate purpose. This may be due mainly related to the problem of project management for the reason that, lack of appropriate project distress management strategy (prevention and intervention strategies) .Thus, taking into account the aforementioned problem this study attempts to assess project distress management strategies in Addis Ababa City Road Authority (AACRA) perspective.

1.1Back ground of the study

Many projects in developing countries encounter considerable time, cost over runs and fail to realize their intended benefit or even totally terminated and abandoned before or after their completion (Idoko, 2008). As [(ofori, 2006) & (Jakale, 2004)] concluded, the construction industry in developing countries failed to meet expectations of governments, clients and society as a whole.

Previous, research works by [(Adams, 1997), (Loge, et al. 2004) and others] have indicated poor managerial capability of contractors to be one of the critical problems of the construction industry. Researches by (Dlung wana & Rwelamila, 2004) and others have also strongly emphasized the importance of improving the management skill of constructors' project management capability can significantly contribute to the overall improvement of contractors' capability to deliver successful projects.

Likewise, effectively utilizing professional consultancy services is an important issue for project clients. However, multifaceted challenges emerge in client–consultant collaboration practices (Liu et al. 2004). On the one hand, the organization boundary between clients and CMCs complicates the capability integration between them. Paradoxically, CMCs are involved to provide knowledge-intensive services to clients, whereas knowledge transfer across the client–consultant interface is found to be much less frequent than expected (Nesheim and Hunskaar 2015). This is ascribed to the goal incongruence problem (Ling 2004; Liu et al. 2004; Kartam et al. 2000). Even worse, problems, such as the CMC– contractor conspiracy (Sohail and Cavill

2008) and CMCs' dereliction of duty (Wang et al. 2009), also prevail in practice, reflecting a failure to integrate CMCs' capabilities in contributing to project success. According to the transaction cost economics (TCE), clients should align tasks with project participants' advantages to reduce transaction cost (Reve and Levitt 1984). However, in many projects, inappropriate client–consultant responsibility allocation restricts the utilization of CMCs' capabilities. As evidenced by many projects, effective collaboration between CMCs and clients can contribute significantly to project success (Hardison et al. 2014).

Additionally, some clients will fully participate in acceptance procedures and not be forced to sign off until they are completely satisfied that their requirements have been met and expected business value achieved. Some might sign off simply to get the project out of the way and get on with their business. Others might not really understand the project and sign off in ignorance rather than risk being exposed (Robert K. Wysocki, 2012).so both has prominent effect to project become distressed.

Construction projects in Ethiopia Alike to the case with other developing countries shares many of the problems and challenges, which might need serious attention for the development of the sector's performance.

The history of the Addis Ababa city's road construction projects begins from the inception of the city. At present Addis Ababa city road authority (AACRA) has done remarkable progress in the city roads expansion and upgrading in the last 11 years since the establishment. Today the city roads length reached 4148 Kms the road network coverage reached 15.64% compared with the developed area of the city. According to the authority Growth and Transformation Plan (GTP) will meet the city road network reach to 25 % By 2020 G.C.(AACRA profile,2017), Even though ,Addis Ababa City Road Authority (AACRA) set out a plan to achieve its GTP II , the construction projects are subjected to serious pitfalls due to numerous factors including:-A growing schedule slippage due to a bad estimate, issues of ROW and inadequate technical and managerial pitfalls, a continuous change of Top management & un willingness to make tough decision, A loss of critical resources. As a result, these may projects become distressed.

Accordingly, improving the performance of the sector supposed to be a priority action as well as should take up certain project distress management strategies. Therefore the purpose of this proposal is to assess project distress prevention and intervention strategies of Addis Ababa City

Road Authority (AACRA) to reduce project failure and in the process of assessment of prevention and intervention strategies of project seeking answer to the research questions.

1.2. Statement of the problem

As (Robert K. Wysocki, 2014), the failure rates for information technology (IT projects) are documented to range from 70 percent and higher. That level of performance has persisted for several years with no sign of any meaningful change for the better.

The industry hasn't found an effective strategy for reducing that failure rate. Many of the reasons for this are related to the methodology that is being used. Data that collected from all corners of the globe suggest that only 20 percent of projects fall into the TPM quadrant, but the approaches to managing the projects remain relatively unchanged. TPM approaches are forced upon such projects for lack of an alternative, which is not much more than a failure waiting to happen.

The construction sector is one of the most important contributors for the political, economic, social and technological development of one country Existing facts show that about 50% of the Federal capital budget of Ethiopia is routed to the development of physical infrastructure, from this nearly 33% were for the road projects. A number of study in the public sector show that more than 80% of the construction projects are delayed, run over budget and/or lack the management. (Ashebir Shiferaw, Wubishet Jekale Mengesha, Murad Mohammed. 2017).

Ethiopian construction industry especially in road construction projects, shares many of the problems and challenges, perhaps with great severity. Given the critical role plays in Ethiopia, improving the performance of the industry ought to be apriority action (Abadir H .Yimam, 2011)

In accordance with the previous ten years accomplishment project assessment result, the road sector development program revealed that the execution of most of Addis Ababa road projects resulted in cost and time over run that is, those road projects were not completed on time, within budget, and desired quality causing of project's profit, increasing cost and leading to technical and managerial problems between project's parties. Moreover, Cost overrun is also considered another big problem which hinders road project progress, since it decrease the contractor profit leading huge losses leaving the project in a big trouble [Hans Joachim and Behailu Demeke (2006),]

Similar findings revealed almost all road projects in Addis Ababa city are completed ending with additional cost and time above the planned or signed agreement and with qualities below

that was stipulated in the contract and leading to their deterioration before the designed life cycle period. There are several causes for these problems and the main ones begin the existence of obstruction in the right of way (ROW) limit, lack of belongingness among stakeholders, lack of experienced professionals faced during planning, designing, implementation and operation of road projects and lack of proper management (AACRA, 2012, Temesgen, 2014).

Indeed, all the indicated problems create a risk in achieving three main objective; schedule, Budget, and quality which can cause conflict between owners and contractors which can lead to claims (Edieb, 2007)

In the case of AACRA the failure of construction projects is all about strategy formulation. As a matter of practice there is no study to focus on prevention of project distress by investigating project management tools, steps, processes and other internal and external factors contributed for project success or failure. Hence this paper is initiated to fill the gap and foster research:-

- To assess project distress prevention strategies of project to reduce project failure and
- To assess the challenges to implement appropriate project distress management strategies and, to recommend and hold up the performance of Addis Ababa City Road Authority.

1.3. Research Questions

Main research question is intended to revolve, what the project distress prevention strategies are to reduce project failure in Addis Ababa City Road Authority (ACCRA) i.e., in specific terms, need to be addressed:

- What are the prevention strategies of Addis Ababa City Road Authority's to reduce project distress?
- What are the challenges to implement prevention strategies?

1.4. Objectives of the study

1.4.1. General Objective

General objective of the study is:-Assessing project distress prevention strategies to reduce project failure/increase success/ in Addis Ababa City Road Authority (ACCRA).

1.4.2. Specific objectives of the study

Particularly, the study has the following sub-objectives:

- To identify prevention strategies of projects to reduce project failure in ACCRA.
- To identify the challenges of prevention strategies of projects in ACCRA.

1.5. Definition of Terms

A project is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements.

Distressed project: A distressed project is one that is synonymous with overruns in any one or more of these aspects (time, cost, quality, and/or scope) and/or does not meet the specific benefits for which it was undertaken in the first place.

Failed project: A project is considered a failure when it has not delivered what was required, in line with expectations.

Prevention strategies:-are proactive practices and processes that you can employ to significantly reduce the number of projects that become distressed.

1.6. Significance of the study.

Despite the project team's best efforts, some projects are destined for problems. Sometimes it's the team's fault, what is important is to protect the project against the unexpected and to have early warning signs in place to minimize the impact of the coming problems. But the inevitable still happens, whenever the performance of a project falls outside nominal values, it is judged to be a project in distress. Most important is knowing how to establish an early warning system and prevent a project from becoming distressed. Thus" how can it be returned to a state of normalcy?" is the question then.

Hence, in case of AACRA there are so many project troubles, like technical & managerial problems which require formulating proactive practices and processes that can employ to significantly reduce the number of projects that become distressed and project has been deemed to be in distress.

As the matter of practice the problem is all about the fragile strategy formulation, that is, proper execution of Using Steps, Tools, Templates, and Processes for formulating prevention & intervention strategies have been not studied yet.

The study would be much imperative to enhance awareness and understanding about project distress management to top level managers and project team and reduce project distress in the performance of AACRA.

This research has also afford the recommendations of distress project management tools for formulating prevention & intervention strategies in construction projects in order to reduce or mitigate project failure .

More over the result of this research would also benefit Government organization as well as other sector experts and researchers to offer as groundwork effort to hold up for related future researches.

1.7. Delimitation of the study

This study is carried out with a major focus and limited to assessing project distress prevention strategies that can affect the achievement of road construction projects in the case of Addis Ababa City Authority. For the reason that, the Resource restraint (financial, time & other resources), the scope of the study is restricted to AACRA. The target populations of the research comprise top level managers, Directorate directors, Representative engineers or external consultancies, contractors, Team leaders and other project team experts.

1.8. Limitations of the study

This study explored project distress prevention strategies and their challenges upon road projects of AACRA. Since this study is carried out with a major focus on AACRA, the findings are specific to project distress prevention strategies, the main challenges case, and specific distressed project locations. More over lack of sufficient secondary data and unwillingness of respondents to fill all the questionnaires may consider as limitations encountered in the process of the study, Hence, the result and analysis may not be specifically applicable to other situations.

CHAPTER II

2.1. Literature Review

2.1.1. Introduction

This chapter presents the theoretical, empirical review about the topic and conceptual framework of project distress management with main focus of prevention strategies, challenges and gaps that the study intends to fill.

2.1.1.1. Theoretical Review

2.1.1.1.1. Projects and project management

A project is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification (Robert K. Wysocki, 2014)

A project is a temporary endeavor undertaken to create unique product or service, or a known product or service in a unique environment. A set of inter-related and controlled activities with start and finish dates, undertaken to achieve a unique objective conforming to specific requirements, including the restraints of time, cost and resources. (PMBOK)

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. . (PMBOK)

The Project Management Institute formally defines project management as follows: “The application of knowledge, skills, tools and techniques to project activities to meet the project requirements.”

Distressed project

Whenever the performance of a project falls outside nominal values, it is judged to be a project in distress. How it got to that state is a question that needs answering. Most important, is knowing how to establish an early warning system and prevent a project from becoming distressed. But understand that even the best efforts will not be 100-percent effective, and a project can still become distressed. The question then becomes: How can it be returned to a state of normalcy—if at all? The following characteristics are symptomatic of a distressed project:

The project has exhibited a performance trend that, if continued, will result in its failure. The project's performance has exceeded one or more metric values and is a high risk for failure. The project has recently experienced some significant change that may result in failure. 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.

Many studies have been done over the years that attempt to discover the reasons for project failure. The failure rates for information technology (IT projects) are documented to range from 70 percent and higher! That level of performance has persisted for several years with no sign of any meaningful change for the better. The industry hasn't found an effective strategy for reducing that failure rate. Many of the reasons for this are related to the methodology that is being used.

Traditional Project Management (TPM) is the default approach and seems to be outside the mainstream of contemporary project types. Data that collected from all corners of the globe suggest that only 20 percent of projects fall into the TPM quadrant, but the approaches to managing the projects remain relatively unchanged. TPM approaches are forced upon such projects for lack of an alternative, which is not much more than a failure waiting to happen.

From interviews conducted, a number of factors emerge repeatedly as possible reasons why their projects become distressed or fail. The following are some:-

2.1.1.1.2. Reasons for project distress

1. Poor, Inadequate, or No Requirements Documentation

It is impossible to generate complete requirements documentation at the beginning of a project. That is no excuse for doing a sloppy job. Once requirements have been generated following the definition, 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. You can employ a number of Agile Project Management (APM) project management life cycle (PMLC) models if requirements documentation is less than satisfactory or if you expect a high rate of change.

2. Inappropriate or Insufficient Sponsorship

Some sponsors take their job of sponsorship seriously. Others do not. As project manager, you should keep the project very visible to your sponsor. Have face-to-face meetings if there is any doubt about your sponsor's attentiveness to the project. You will certainly sense inattentiveness when they are sitting across the desk from you.

Sending them informal notes of project happenings just to keep them connected is another tool. You have to keep them excited about the project and how it is going to contribute value to the organization. If there is some way for you to make them look good to their management as a result of this project, doing so would be a smart move on your part.

3. Complexity of Requirements Not Recognized

Don't assume that the project is simple. That thinking leads to a sloppy job of requirements gathering and documentation. You are heading for trouble if you can't get requirements done correctly, realize what you have or don't have, and then choose the best-fit PMLC model. Your risk management plan must anticipate the unusual and have the appropriate mitigation plans in place. As requirements become more complex or less complete and clearly documented, the risk of the project becoming distressed goes up.

4. 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. But be careful that you don't hurt your own reputation in the process. You needn't be defensive, just honest. Some projects have a very powerful sponsor. They may defend the project beyond reason, but few are willing push back or take them on

5. Lag Time between Project Approval and Kick-Off

Getting a project approved is one thing. Getting it started is another. 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, so avoid using those in your project schedule if possible. You are also at some risk of losing team members due to the delay, especially those who have scarce skills that you need but so do others.

6. 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. Despite your pleas, senior management says something like this:

“You’ll figure out how to do it anyway. You always have.” Most project managers are helpless to do anything here except keep quiet. Many do not have the tools to push back with an intelligent business argument.

7. Estimates Done With Little Planning or Thought

Far too many project managers don’t take estimation seriously. They throw some numbers at the plan, and if no one objects, the numbers stay. 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. Unless they have been a credible source in the past, you will want some validation of the estimates they provide. Getting a second opinion from someone who is not on the project can be a good validation strategy.

8. over commitment of Staff Resources

This continues to be a major problem. Projects are often approved without assessing staff availability. You may have the skills needed, but the people with those skills are already committed to other projects and cannot work your project into their schedules. Dealing with this situation effectively requires a Human Resources Management System (HRMS) with skills inventories and staff scheduling capability.

9. Inconsistent Client Sign-Off

Some clients will fully participate in acceptance procedures and not be forced to sign off until they are completely satisfied that their requirements have been met and expected business value achieved. If they have been meaningfully involved throughout the project, that’s a good sign that they will be meaningful participants in the acceptance procedures, and their signature is testimony that requirements have been met. Not all clients are like this, however. Some might sign off simply to get the project out of the way and get on with their business. Others might not really understand the project and sign off in ignorance rather than risk being exposed.

10. 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. Estimates that are made and then changed to accommodate a tight deadline are sure signs of a weak plan and one that is destined for trouble. What may have been a solid and well-thought-out plan initially has undergone so many changes and patchwork fixes that it is now a jumbled mess and has lost its credibility with the team.

11. Unmanageable Project Scope

APM projects expect change and are structured to accommodate it, but there must still be vigilance over scope change. Tracking the frequency and cumulative number of additions to the Scope Bank are two metrics you should have in place. Over the cycles of the APM, a healthy project will show convergence. If changes are requested at an increasing rate, that is a sign of a project out of control. 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 (Robert K. Wysocki, 2012)

PM solution (2011) identified the following causes of troubled projects. The top five causes of troubled projects where:-

- 1) Requirements:** - Unclear, lack of agreement, lack of priority, contradictory, ambiguous and imprecise
- 2) Resources:** - lack of resources, resources conflicts, turnover of key resources, poor planning.
- 3) Schedules:** - too tight, unrealistic, and overly optimistic.
- 4) Planning:** Based on insufficient data, missing items, insufficient details, and poor estimates.
- 5) Risks:** Unidentified or assumed, not managed

2.1.1.1.2.2. Pitfalls in project management

1. Insufficient project support

The project is established by the base organization. It is a challenge to make this cooperation work. The project owner is the senior executive who has the main responsibility for the project on behalf of the base organization. The relationship between the project and the project owner is essential to the project. In particular, we shall consider the degree to which the project owner supports the project.

The project owner's attitude and the preliminary work done to establish the project; can provide the foundation for the project. If there are cracks in this foundation, the total project will suffer. We first address the dangers to projects that have little or no support of the project owner or the base organization in general.

A. Unaligned project and organization plans: - a close correlation between the organization plans and the desired results from the project should exist. The project must fit into the overall plans of the organization. The projects goals and organizational objectives must be in harmony. Furthermore, the project's activities must be given adequate priority by the organization.

Unfortunately, it is not uncommon to find project work initiated without any connection to other organization plans. This is often true of new IT systems that can have major impacts on the people, organization and other systems. If a PSO project is not evaluated in the larger context, a conflict can easily occur between the direction in which the organization's management wants the organization to develop and the way in which the project work contributes to that development.

If a project lacks support, there is no doubt who will be the loser in this tug of war. Neither leadership nor project management method can save a project that has little backing within the organization. A project without steady support from the top can end dramatically. When the organization's management realizes that a project is heading for collusion with more important plans, they will "pull the plug." The project is then choked slowly by a lack of necessary resources and decisions. In all discussions about resources the project invariably loses owing to its lack of support. The project may continue but without the hope of reaching its original goals. People step in to do the work that should have been done by others. For example, in an IT project, programmers do jobs that should have been done by the users, because the users give insufficient priority to the project and do not provide resources for it. The result is an IT system with insufficient user input.

2. Poor project definition:

A. Imprecise goals :- The floundering of many projects can be traced back to unclear or imprecise goals, with insufficient effort being put into defining the problems that the project should solve. It is an unfortunate human tendency to spend insufficient time on this and race on to design solutions before the problem is properly defined. When selecting a new IT system, it is easy for project members to enter quickly into discussions regarding technical matters before being clear on the changes the new system is meant to achieve. It is natural for technically oriented people to like concrete activities such as programming. Those activities are more engaging for them than abstract activities such as deciding what should be achieved. We know that imprecise or even incorrect goals will have harmful effects on our projects and yet we are lured to the 'fast track'. How can we avoid this? We need methods and tools that 'force' project management to spend time on defining what the project shall achieve and therefore create a sound foundation for the project work.

B. Unbalanced levels of ambition;-A PSO project results in different types of changes. With a focus on technical changes (a personal computer installed to access a new IT system), will users have the knowledge and skills to operate the equipment and the application software? And who is ensuring that organizational changes will clarify their new areas of responsibility?

There is often a tendency in the specifications of projects to overemphasize the technical aspects and ignore the people and organizational aspects. We find it easier to imagine the concrete, technical tasks rather than the abstract, organizational and human ones. Project managers must balance the PSO goals of projects. They must ensure that the technology introduced is the right response to the needs of the organization, and that the organization is left with the right people, with the right skills and adequate structures to use the technology. If the imbalance of these goals is apparent to the users they might resist the new system and cause the project to fail completely. Project management must believe in the benefits of balanced PSO goals before it implements methods and tools that will help its project achieve appropriate balance.

3. Undefined principles and policies of project work

Well-defined principles and policies for project work create the climate that ensures a project functions well. Sometimes these principles and policies are not agreed upon. Questions that should be answered in the general project guidelines include:

- What is the organization and line management's responsibility for the project work?
- Who is responsible for committing resources?
- What are the policies for making resources available?
- What are the tools and methods to be used for the management of the project?
- How are coordination and cooperation to be achieved?

If these general guidelines for project work are not defined in advance, a project's momentum could be reduced. Valuable project time of the entire team is lost discussing principles that should have been clarified at the outset. A project is based on a certain understanding of the way people are to cooperate. If that understanding proves to be wrong, the project members will cease to work in harmony, and their efficiency will drop.

It is wise to state the principles and policies of project work before the project starts. In organizations that use projects extensively, one can often find project manuals or other written material stating the relationship between the project and the base organization.

A.PITFALLS IN PLANNING

Many factors can create pitfalls in planning. Here we sum up the most dangerous.

1. The planning level is uniform

The most serious pitfall in planning is to select one planning level that is uniform and consequently impractical. Making a plan at one level, we must either choose a plan that is too broad in scope, with insufficient detail for some of the people involved, or choose one that is too detailed, and hence does not present the overview of the project. We need to view a plan at two levels at a minimum. One would be broad in scope and function as an overview plan that can be used in discussing the deliverables of the project. It can be used in the dialogue between the project owner and the project manager. It is not practical to use a detailed plan for reporting to senior managers. They are interested in whether or not the project will achieve its goals and they cannot see this in a mass of detailed activities. They need an overview such as a milestone plan that shows them whether or not the project is on target. If a milestone is missed, they may want additional information to show what corrective action should be taken. If the project is on target, they need only to be shown that it is. On the other hand, the project staff cannot use a plan that is too broad in scope to coordinate their activities. If the tasks are too large, progress cannot be measured at regular intervals. There is a great chance of misunderstandings and the project members may do the work incorrectly or at an insufficient pace. Therefore, a more detailed view of the plan must exist to help coordinate the activities of the project members.

Project management requires at least two levels of planning, a milestone plan and an activity plan. The former level allows management to focus on 'what'; and the latter level allows team members to focus on 'how'.

2. The planning range is psychologically unsound

There is a tendency in many projects to focus on the overall final deadline. Too much attention is given to this date. By being concerned only about a point that lies far into the future the project members can feel that there is plenty of time to do the work. Consequently, the project may be viewed as a low priority and if Parkinson's Law holds, project members will fill the time with ineffective or inefficient work, or no work at all. People tend to believe that any task may be postponed till the last possible finishing time. Project managers should set definitive short-term targets for the completion of work. To set short time horizons, the plan must contain goals and

activities that are controllable in the short term, and towards which the project members can strive.

3. The planning method discourages creativity

At the opposite end of the spectrum from 'broad' plans are the unwieldy, overly detailed plans. Many of us have seen networks with thousands of activities. These plans hamper communication rather than enhance it. Appropriate tools communicate the plan and report progress on single sheets of paper. A milestone plan and an associated definition of role responsibilities are on one sheet of paper each. Managers should not be burdened with comprehending reams of data in the short time they have available. The activities associated with each milestone are on one sheet of paper. Project members must be able to see their work easily and must not be burdened by having to trace a trail through a tortuous network with thousands of activities. If the planning level, tools and range are cumbersome, then the project members will not engage in creative discussions about the plan. It is important that the language used in the plan be understandable to people, not just the specialist; it must be free of jargon.

Planning should be a group activity, where the relevant parties work together to solve the task at hand. It is in the execution of the task that people should take individual responsibility. However, it is common for the situation to be reversed. Inexperienced project managers plan the work in privacy, and then delegate the implementation to the group.

4. Over-optimism

Over-optimism might be due to genuine optimism or lack of realism, depending on your viewpoint. We have worked with companies with detailed methods for estimating the work content and cost of projects. These methods and empirical data are used to plan a project, but then they are overtaken by optimism. The managers look at the estimates, and think they are too high. They presume that it must be possible to do the work more quickly and cheaply. However, if you use estimating methods you must trust them and accept the results, otherwise the effort is wasted. The other situation that can lead to this type of self-deception is when the project must be 'sold' to the base organization, or to an outside customer. To make the project attractive, the project manager reduces the estimates of work content and cost and then convinces himself that the new estimates can be achieved. Unfortunately, they usually cannot. Another form of over-optimism is to underestimate the time required to achieve procedural changes. Empirical data exist to estimate the time required for technical activities. Further, if the progress of change is

dependent on certain decisions being made within the organization, it is common to ignore the political factors underlying the decision, and to underestimate the time required.

The result is that insufficient time and resources are given for the procedural tasks. Time is not allowed for people to acquire new attitudes and new knowledge. Critical tasks are done inadequately and must be redone. Resources are wasted. Over-optimism with projects is dangerous. To avoid this pitfall, those who will do the work must be involved in the planning; those who are responsible for the implementation must be realistic. It is important to consider the time and resources required to achieve a change; to unfreeze, to implement the change, and to refreeze the organization. These resources must be included in the plan.

5. Overestimating competence and capacity

This pitfall is related to the previous one and can contribute to it. Estimates of time and cost are often based on ideal resources, or ideal circumstances. However, the knowledge and experience of the staff available, and the time they can devote to the project, may be less than ideal. The important point is that plans must be formulated to take into account the actual constraints.

Further, users are often approached too late to provide resources for the project, or they are asked early enough but without obligation. Thus, when his input is required, the user has not made alternative arrangements, and the resources required are not available.

Factors ignored there is a tendency to plan a project as if the outside world does not exist. However, people become ill, they go on holiday and they attend courses and seminars. These factors reduce their capacity. The reduction can be as much as 20–30 per cent.

Furthermore, the plan may omit some activities. Because projects are unique, previous experience cannot prepare us for all the activities that may be involved. If we attempt to make a list of all the activities at the start of a project, like many people do when they plan at the detail level alone, something is bound to be forgotten. Checklists of activities from previous, similar projects help, but since no two projects are identical they must be used carefully. To overcome this pitfall we suggest a rolling-wave approach to activity planning.

B.PITFALLS IN ORGANIZING

1. Alternative organizations are not considered

When implementing an organization to manage a project, few stop to reflect upon alternative ways to organize. It has become so common to adopt a hierarchical structure, with steering

committee (or management group), project manager, project groups and deference or consultative groups, that the possibility of others structures' is ignored.

The organizational structure should be chosen to suit the particular project at hand. The traditional hierarchical structure, with a steering committee, project manager and project groups, is best suited to projects that imitate the base organization. Such projects are usually large, and have purely technical goals such as the construction of a bridge or a road. The people working on the project devote their entire time to it during their involvement. The final users of the product are not involved until during, or after, commissioning. The lines of communication and principles of cooperation are likely to have been well defined and tested during previous projects. This is often the case in contracting companies where project work is the usual role of the base organization.

This hierarchical organization structure is not the best alternative for PSO projects. In these types of projects, project members divide their time between project work and their normal duties in the base organization. For such situations we believe that the task-oriented matrix structure is preferable.

2. Responsibilities and principles of cooperation are not defined

The matrix organization requires that the lines of communication and the principles of cooperation be clarified. Decisions regarding how to resolve conflicts of priority between project work and the demands of the base organization are necessary. However, this is seldom done adequately and the project organization will not function properly.

3. Key resources are not available

The usual consequence of failing to clarify responsibilities and the principles of cooperation is that resources will be unavailable when required. Lack of the necessary resources will of course delay the project. The key resources are always people with specialist skills, and they are often the busiest people in an organization. Their line managers must agree to release them to the project at the right time.

A well-functioning matrix organization is dependent on agreements between line managers and the project regarding when to release resources for project work.

4. Lack of motivation

The problem is aggravated if line managers do not arrange to cover the work of the key personnel assigned to work on projects. Those people must then do their normal work in addition

to the project work. It is easy to understand why project members placed in this situation dislike project work, lose motivation, and inevitably delay the project. The result of accumulating delays will upset plans made by other managers releasing resources, and the project will enter a downward spiral. A line manager's personal objectives can conflict with a project's goals. A project may be forced upon him from higher organizational levels, or he may not be familiar with development work. He may not have the energy or ability to attend to both project work and his daily routines. Faced with this situation, a line manager may sit on the fence, watching the project's progress. The consequence is that he will distance himself from decisions for which he has responsibility until it is too late.

Even if the project manager understands the line manager's lack of commitment to the project, he must not accept the situation and try to live with it, because a reluctant line manager can kill a project. The project manager must gain agreement with line managers regarding their responsibility to the project. If they cannot agree, negotiations must be escalated to higher levels in the base organization until the problem is resolved. But remember, if the line manager is to be committed, the problem must be resolved, not stamped on.

5. The project manager as leader

The last organizational pitfall is the selection of the wrong person as project manager. It is not uncommon to select a good technician, but such people are often not suitable.

Let's recall the important functions of a project manager: to plan, to organize and to control. A good technocrat will know the technical aspects of the work better than anyone else, but he may have problems delegating. He may believe, quite rightly, that he can do the works better and faster than his staff, and attempt to do so, with catastrophic results. He consequently neglects his managerial responsibilities as he works himself to death on the tasks he has assumed.

Who should be project manager – a technical expert, or a user?

This question is irrelevant because the person should be chosen for his leadership qualities rather than his background. The project manager should be someone who:

- Has the time and energy;
- Can plan, organize and control the work methodically;
- Can inspire others to work;
- Can communicate in the best possible way with the base organization and the project participants.

C.PITFALLS IN CONTROLLING

Formulating a good plan is the first step in project management, and organizing the activities of project members is the second. However, project management is not about running ahead of the project members with the plan. It is about providing collaborative leadership from within the team. Control is an important part of that leadership. Control is:

- Reporting progress of the project in relation to the plan;
- Analyzing variance between progress and the plan;
- Deciding which actions should be taken to eliminate variances;
- Taking action.

1. Misunderstanding the purpose of control

Many people do not understand the purpose of project control. The purpose is not to wield a stick, to apportion blame, or to punish the guilty. The purpose is to monitor progress, and to take corrective action in time.

We must stress the point that control is more than just monitoring and reporting progress. In many projects, control merely means writing a few familiar quotes to the project manager on the current status, or extending some lines on a bar chart to show how far the project has progressed. Perhaps the project manager reads what he gets and then conscientiously files the report, but that is where it usually ends. Reporting becomes a ritual you do because you are told to, rather than an activity you take seriously. Serious control means evaluating the consequences of deviations from the plan and acting upon them.

Poor integration between plans and progress reports to facilitate control, the plan should encourage it. Therefore, we suggest that the reports should be written on the plan, so that it is reviewed whenever a report is made. This is not usually the case because plans are structured in such a way that control is an enormous administrative burden. They tend to be voluminous, but do not contain information that allows deviation to be analyzed effectively.

2. Responsibility without authority

The project manager will be unable to control if he does not have the same formal authority as the equivalent managers in the base organization from whom he is obtaining resources. If a project member has a conflict of priority between the project manager and his line manager, there is seldom any doubt where his loyalty lies.

He will choose his line manager because the line manager pays his salary, and he must work for him when the project is finished. The project manager is ultimately responsible for achieving the project's goals, and therefore must be given commensurate authority. A project manager with charisma will derive some authority from his personality, called personal power. However, average people will manage most projects, and what they lack in personal power they must be given in terms of positional power. Their authority to control the project must be reflected in the project's organization.

3. No formalized communication

A mistake made by many project managers is not to review their staff's progress formally. For them, reviewing progress consists of striking up a conversation around the coffee machine. However, this kind of unsystematic, informal monitoring is inadequate, and is never taken seriously.

It is beneficial to have informal conversations on a project, because it aids creative communication, but for effective control, some communication must occur formally at regular intervals. Contact should occur at set times, with a predefined format. If not, staff loses respect for the review process and control will be ineffective.

D.PITFALLS IN EXECUTION OF PROJECT WORK

In the last four sections we described pitfalls that can arise in setting the management of a project: its foundation and subsequent planning, organizing and controlling. If these managerial details are wrong, professional technical competence is not enough to ensure success. Likewise, no amount of management aids can ensure success if professional technical competence is lacking. Both are crucial to success.

To end this discussion we consider some professional technical pitfalls that can arise in the project work. Many will be unique to a particular professional discipline.

1. Problems of cooperation

One of the traits of a project already mentioned is that it requires a variety of resources. This can lead to a number of pitfalls in cooperation during implementation, especially the cooperation of unacquainted people.

Many people underestimate the difficulty of getting people to work together. This is further complicated if they have not worked together before. In the extreme, no time or effort is put into creating cooperation, because the project manager does not believe it is important. This may be

due to a lack of competence of the project manager, who may not know how to enhance cooperation or who may wrongly believe that the project members are used to working together. It is normal for the future users to be represented on the project team. The different experience of the users and the experts can make cooperation difficult. The tools used by the experts can further complicate collaboration. Methods that describe the project's objectives in a way that is foreign to the future users, or use of jargon they cannot understand, hampers communication.

The experts must describe the project in a language the users can understand, while retaining a degree of precision that describes succinctly the project's intent.

Project members may not all work by the same rules and procedures, or work may be documented in different ways. This weakens cooperation and reduces the potential for project members to benefit from each other's experience. It will also reduce the project manager's flexibility, as it will be hard to transfer people from one activity to another. Further, it is difficult to introduce new staff, as they must be trained in a variety of procedures. It is vital to define the principles of cooperation, and to establish a common set of rules and procedures to be used by people while working on the project.

2. Problems of goal setting

We discussed earlier the needs for precise and well-balanced goals. The scope of the project must also be defined. It is common that the project participants do not devote enough time to clarifying these matters.

Changes will inevitably occur during execution of a project, but uncontrolled changes can kill a project as the members are sucked into the spiral of planning and re-planning. Changes must be controlled and only included in the plan after they have been properly specified.

3. The choice between these must be negotiated with stakeholders.

The scenario above was between an imperfect, adequate solution, and targets of time and cost. To be able to judge whether the imperfect solution is adequate, the project manager must plan and control quality using milestones for control throughout the project. Leaving the assessment of quality until the end is dangerous, since it is then impossible to change it without incurring significant cost (Erling s Andersen kristoffer v Grude Tor Haug.2009)

2.1.1.1.3. The many faces of failure

The true definition of failure is when the final results are not what were expected, even though the original expectations may or may not have been reasonable. Sometimes customers and even

internal executives set performance targets that are totally unrealistic in hopes of achieving 80–90 percent. For simplicity’s sake, let us define failure as unmet expectations. With unmeetable expectations, failure is virtually assured since we have defined failure as unmet expectations. This is called a planning failure and is the difference between what was planned and what was, in fact, achieved. The second component of failure is poor performance or actual failure. This is the difference between what was achievable and what was actually accomplished.

Perceived failure is the net sum of actual failure and planning failure. Figures 2–1 and 2–2 illustrate the components of perceived failure. In Figure 2–1, project management has planned a level of accomplishment (C) lower than what is achievable given project circumstances and resources (D). This is a classic under planning situation. Actual accomplishment (B), however, was less than planned. A slightly different case is illustrated in Figure 2–2. Here, we have planned to accomplish more than is achievable. Planning failure is again assured even if no actual failure occurs. In both of these situations (over planning and under planning), the actual failure is the same, but the perceived failure can vary considerably.

Today, most project management practitioners focus on the planning failure term. If this term can be compressed or even eliminated, then the magnitude of the actual failure, should it occur, would be diminished. A good project management methodology helps to reduce this term. We now believe that the existence of this term is largely due to the project manager’s inability to perform effective risk management.

In the 1980s, the failure of a project was largely a quantitative failure due to:

- Ineffective planning
- Ineffective scheduling
- Ineffective estimating
- Ineffective cost control
- Project objectives being “moving targets”

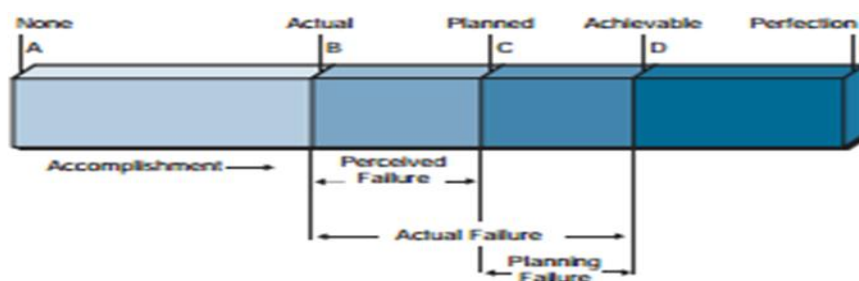


Figure2- 1 Components of failure (pessimistic planning)

During the 1990s, the view of failure changed from being quantitatively oriented to qualitatively orient. A failure in the 1990s was largely attributed to:

- Poor morale
- Poor motivation
- Poor human relations
- Poor productivity
- No employee commitment
- No functional commitment
- Too many unresolved policy issues
- Conflicting priorities between executives, line managers, and project managers

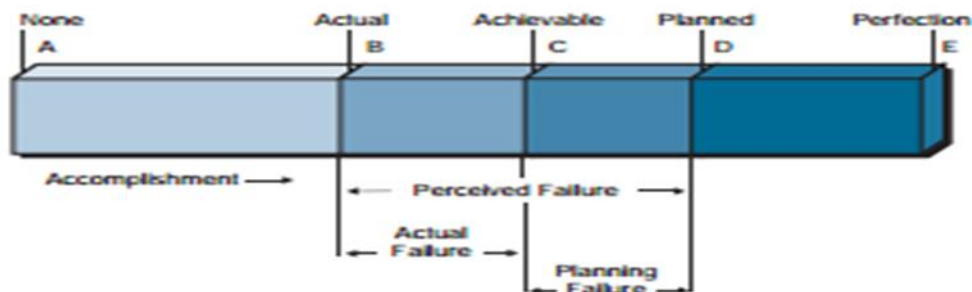


Figure2- 2 Components of failure (optimistic planning)

Although these quantitative and qualitative approaches still hold true to some degree, today we believe that the major component of planning failure is inappropriate or inadequate risk management, or having a project management methodology that does not provide any guidance for risk management. Sometimes, the risk management component of failure is not readily identified. For example, look at Figure 2–1. The actual performance delivered by the contractor was significantly less than the customer’s expectations. Is the difference due to poor technical ability or a combination of technical inability and poor risk management? Today we believe that it is a combination.

When a project is completed, companies perform a lessons-learned review. Sometimes lessons learned are inappropriately labeled and the true reason for the risk event is not known. Figure 2–2 shows that opportunities for trade-offs diminish as we get further downstream on the project. There are numerous opportunities for trade-offs prior to establishing the final objectives for the project. In other words, if the project fails, it may be because of the timing when the risks were analyzed.



Figure2- 3 Mitigation strategies

2.1.1.1.4. Managing distressed projects

In general, there are two types of strategies for dealing with distressed projects. Every project that becomes distressed was once not in distress, and there are prevention strategies to minimize the likelihood of projects becoming distressed. Despite your diligence, the prevention strategies might not work due to prevailing conditions beyond your control, and your project will still become distressed. If this happens, there are intervention strategies that you can use. This section describes both strategy types

2.1.1.1.5. Prevention management strategies

Prevention strategies are proactive practices and processes that you can employ to significantly reduce the number of projects that become distressed. For the typical company situation, you may be able to enhance some of the processes covered previously in this book to decrease the likelihood of a project becoming distressed. These enhancements are briefly discussed in the next subsection. Again, it is not possible to eliminate all projects from falling into the distressed category, but you can significantly reduce their numbers. In establishing your prevention strategies, you have to take your efforts to the next level. Considering the high failure rate of projects, if for some reason you find these efforts burdensome to do on every project; you might consider them as part of your risk management plan and be more selective in how you apply them.

Although there is no guarantee that prevention strategies will actually prevent a project from becoming distressed, they are your best protection against such an outcome. In this section, some specific prevention strategies discuss you might use to reduce the likelihood of a project becoming distressed, which are also irreplaceable tools for formulating prevention strategies (Robert K. Wysocki, 2012, 2014):

A. Requirements Gathering

Knowing that complete requirements documentation is difficult if not impossible at the beginning of the project, you should take extra care in 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. Factor the client into that experience, and the difficulty increases even further. The client may be relatively inexperienced in identifying requirements and doesn't seem to engage in the process with the enthusiasm and commitment you would like. Perhaps a workshop approach makes sense. All of these factors suggest using a PMLC model that is closer to the APM, Extreme Project Management (xPM), and Emertxe Project Management (MPx) end of the project landscape than you might have otherwise selected. Err on the side of being more suspect of the completeness and accuracy of the requirements. As the project commences, you may find reason to move back toward the Adaptive and even Iterative end of the landscape and use a different PMLC model. The issue to consider here is completeness and clarity of the Requirements

B. Breakdown Structure (RBS) and what PMLC model is the best fit for such a project. Be cautious in your choice of PMLC model.

Make sure you are not backing yourself into a corner by making assumptions about solution content and committing to something that won't work. Err on the side of pessimism rather than optimism, and you will be on safer ground. Say that all signs suggest that the project can be managed using a Linear or Incremental PMLC model. For this project, the safe ground might be to use an Iterative PMLC model regardless of your confidence in the defined solution. You may have some history working with this client on previous projects. That will be a big contributor to your decision on the best-fit PMLC model.

If the project has never been done before (for example, one that involves the development of a new system), you might do requirements decomposition using two completely different approaches and use the results to cross-check and confirm that decomposition. Once

requirements decomposition has been confirmed, consider simulating the solution by building a quick prototype (not a production prototype) around the confirmed RBS. Test your prototyped solution with a broad audience of end users to further confirm the requirements.

C.WBS Construction

If the project is closer to the TPM end of the landscape, the Work Breakdown Structure (WBS) becomes the foundation of your choice of PMLC model. Generating a clear and complete WBS is the most difficult part of the project planning process. Building the WBS is a very intense and tiring exercise. You and the planning team will find yourselves rushing just to get the exercise over.

Resist that temptation. If you felt rushed at the end, come back to the WBS a few days later. Share what you have with a trusted colleague and get that person's opinion. Objectivity is important here. Don't be afraid to criticize your work. You don't get this part right, the risk of project failure increases.

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. Recall from the pain curve discussed that the maximum pain occurs in the generation of the WBS. Doing it right is just plain hard work, but you have to get it right. Don't shortchange the exercise. Do it right! The following three strategies help me complete the WBS effort as painlessly as possible:

- Use all of the project team members and client representatives that have been identified. You need as much expertise and as many pairs of eyes as you can assemble. Bring them together in one place for a single planning meeting. Any other approach is a distant second in terms of effectiveness.
- Put the initial version of the WBS, aside for a few days and come back to it with a critical eye, there will be enough loss of memory about what you did, and you should be able to approach validating it with a bit more objectivity. It's amazing how many logic faults you will find.
- Defend the WBS in front of a few respected peers who did not participate in building the WBS, They can be far more objective than you or the planning team and may find some problems with your WBS that you couldn't see.

D. Dynamic Risk Management Process

A lot of risk management plans gather dust on the shelf of the project manager. They were completed as part of project planning and never looked at again. Those plans that are referred to are referred to after the fact. That's too late. Effective risk management is probably your 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. Remember, as the project type moves from TPM toward xPM, project risk increases, and so should the intensity of your risk management efforts.

E. Scope Change Management Process

Scope change is the bane of the TPM project, and lack of it is the bane of APM, xPM, and MPx projects. In either case, you must have a well-defined and well managed change management process in place. And most importantly, it must be understood and accepted by the client. In the case of TPM projects, the process must put some controls on the frequency and number of change requests. In the case of APM, xPM, and MPx projects there is a certain level and frequency of change requests that must happen, and you must put metrics in place to track that cumulative history.

Scope change is an area that often gives rise to most project problems. It doesn't really 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.

F. Milestone Trend Charts

The milestone trend chart is one of the few metrics that I know of 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. This information is made available early enough in the project time line to give the project team time to analyze and correct any anomalies. The milestone trend chart is an excellent early warning system and should be part of every monitoring and control process.

Milestone trend charts are of recent vintage, introduced them in 1995. As a protection against potentially distressed projects, you might want to consider establishing very conservative trigger values, trends, and control limits that hint of potential distressed projects.

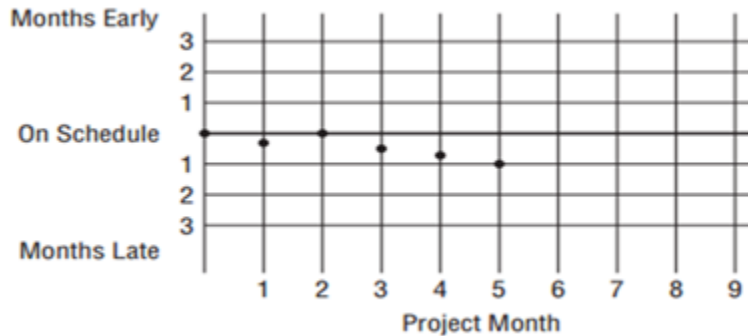


Figure2- 4 conservative trends to signal potentially distressed projects

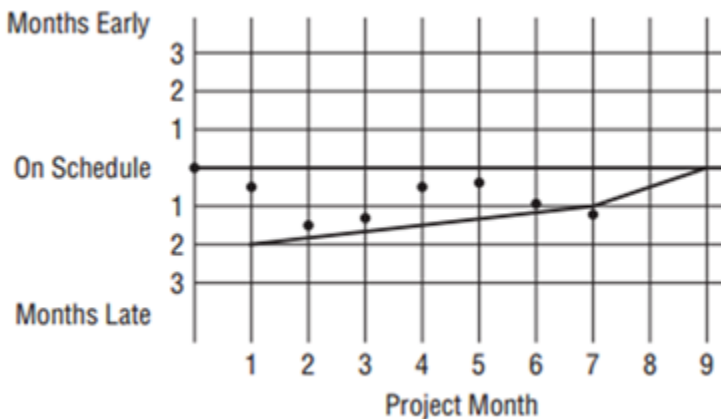


Figure2- 5 tighter control limits as an early warning of potentially distressed project.

Figure 2-5: Tighter control limits as an early warning of a potentially distressed project

Figure 2-4 is one example where tightening the trend pattern will get the attention of the project manager sooner rather than later. Recall that a trend in the same direction for four or more consecutive report periods signals a potential problem that could lead to a distressed project. For good reason, you might tighten that to three or more as shown in Figure 2-4. If a project displays this type of pattern, look deeper into the causes and fix them.

Figure 2-5 is an example of tightening control limits using trigger values that dictate a potentially distressed project as you reach the outer schedule of the project. The solid line in the late section of this project shows a control limit that ranges from 8 weeks late by reporting month 1, to 4 weeks late by reporting month 7, and then to 2 and 0 weeks late for the two remaining months of

the project. The issue here is that the closer you get to the scheduled project completion date, the less likely you are to be able to make up serious slippages. A 2-week slippage in the first month of a 9-month project is nowhere near as serious as a 2-week slippage in the last 4 weeks of a project. Sooner or later you can't get there from here. This is the reason for tightening the control limits as you move to the outer part of the project schedule. Without that tightening, you will reach a point where the slippage cannot be made up, and the project will fail to meet the scheduled completion date.

G. 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.

Earned value analysis, also called earned value management (EVM), has been used in the federal government for nearly 50 years. Only recently has it become popular in the private sector.

Actual cost (AC), earned value (EV), and planned value (PV) yield one additional level of analysis. The SPI and CPI are further refinements. They are computed as follows:

$$\text{SPI} = \text{EV} / \text{PV}, \quad \text{CPI} = \text{EV} / \text{AC}$$

Schedule Performance Index

As you saw in Chapter 7, the SPI is a measure of how close the project is to performing work as it was actually scheduled. If the SPI is greater than 1, the project is ahead of schedule. Obviously, this is desirable. An SPI value below 1 would indicate that the work performed was less than the work scheduled—hence, the project is behind schedule. The trend in SPI values tracked over time will be an indicator of problems.

Cost Performance Index

CPI is a measure of how close the project is to spending on the work performed to what you planned to spend. If the CPI is greater than 1, you are spending less than was budgeted for the work performed. If you are overspending for the work performed, the CPI will be less than 1.

Trend plots (like the milestone trend charts) are intuitive displays of the project history with respect to schedule and cost variances from plan. These indices are displayed graphically as trends compared against the baseline value of 1.

H. Integrating Milestone Trend Charts and Earned Value

Using both milestone trend charts and the EV for a project provides you with yet another early warning sign of potential distress. the milestone trend chart format could use the SPI and CPI trend data to alert the project team of potential distressed project situations. To use these graphical tools, you should establish boundaries for the plots. Any trend line outside of the boundaries would trigger some form of corrective action to be taken

2.1.1.1.6. Challenges to implement distressed project prevention strategies

1. Uncertainties:-Even if we plan as well as we can, uncertainties prevail. Plans are not reality. Events happen outside the control of the project and affect it. Even within the project we will not have full control; people are not machines, and performance varies. It is very important to get a picture of the uncertainties associated with the project and then decide how to deal with them.

2. Problems of activity execution:-If a project team consists of a fixed number of people, members may be under-utilized at times. To stop them from becoming dissatisfied, the project manager may try to keep them busy by starting work out of sequence before previous tasks are completed. If the results of the latter turn out to be other than expected, the former must be repeated. All work must be done in the correct order. The technical work must not become the sole objective as it is done to meet project goals that usually also include targets for scope, time and cost. Experts often find it difficult to accept that they are not given enough time to find the perfect solution.

There is a certain professional prestige in seeking an elegant solution. However, targets of time and cost are usually also important considerations requiring us to accept balanced solutions. The project manager must balance technical solutions and time and cost goals. (Erlings Andersen kristoffer v Grude Tor Haug., 2009)

3. There is a failure to decompose the project into smaller feasible steps.
4. Lack of proper change control
5. Poor planning Poor WBS specification
6. Failure to clearly define requirements
7. Poor choice of requirements definition approach
8. Poor preparation for requirements definition
9. Poor project integration management (Robert K. Wysocki, 2014)

2.1.1.2. Empirical Review

Why projects fail?

According to 9th global project management survey from the Project Management Institute (PMI), underperforming organizations typically have less than a 60 percent chance of completing projects on time and on budget, or in meeting intended goals and business intent. Whereas, “organizations that invest in proven project management practices waste 28 times less money,” and typically meet intended goals, on time and on budget 80 percent of the time.

One of the top reasons for project failure is misalignment between project goals and business strategy. In fact, organizations that establish an enterprise project management office (EPMO), aimed at aligning projects and strategy, have 33 percent fewer projects that are deemed failures. Other reasons for project failure include:

- A lack of executive sponsorship and support
- Vague business goals or requirements
- Unrealistic project scope or scope that is not closely controlled
- Insufficient time dedicated to planning
- An inability to bridge the gap between strategy formulation and implementation
- Insufficient or misallocated resources, including talent
- Unforeseen unmitigated risks
- Misaligned project management methodologies
- A haphazard approach to project management
- Talent that is spread too thin (not dedicated)
- Project managers or team members that lack the necessary training and knowledge

Now that we have gone through some of the potential pitfalls when managing projects, the first step in increasing the chances of success is to start by identifying the people, processes, technologies, and techniques necessary for success. (Moiria Alexander, December 15, 2017)

In construction, projects can be distressed directly or indirectly by many factors and these may result in reduced efficiency. Distress can be defined as budgeted hours being exceeded because of unexpected activities in the construction phase. Although there have been studies completed to quantify the losses for distressed projects in the past (CII 2001; Hanna et al. 2002), Fight (2005) indicates any project regardless of its size can fall into a distress condition because of mismanagement, problems associated with contractors and suppliers to mention but a few.

Azadinamin (2012) indicates that financial and non-financial sources could act as major sources of a financial distress, in which the non-financial sources could have a negative impact on financials of the company, and hence, leading to the state of distress. Additionally, Pustylnick (2012) states that there are various reasons for a project to be in distress which include financial and non-financial factors such as managerial, organizational, and financial reasons.

One of the reasons that a project may fail is scope creep. Scope creep is the uncontrolled changes in a project. Ming and Meng (2009) developed two categorizations for the reasons and their results of changes on a project. Crawford and Nahmias (2010) and Crawford et al. (2006) studied the required competencies to prevent scope creep in projects. They reported on the study carried out to look at the differences in approach and practice of project, program and change managers as a source for verifying the capabilities required to successfully manage change initiatives. Yet, the project's success means more than just meeting triple constraints, i.e. time, cost and scope. This highlights other success dimensions such as the business outcomes, which can be achieved through a proper alignment between the project management process and the organizational strategy (Patanakul&Shenhar, 2012; Shenhar et al., 2000; Morris & Jamieson, 2005).

A study done by Fageha&Aibinu (2013) indicates 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.

Failure to consider and clarify stakeholders' expectations and concerns at early stage in the project can result in extraordinary risks being ignored and may lead to difficulties in running the project, and hence poor performance (Atkinson, Crawford & Ward 2006).

Therefore, project scope definition is critical for enhancing satisfaction of stakeholders as well as successful implementation of construction project (Heywood & Smith, 2006).

A study done in Nigeria by (Zuofa&Ochieng (2014) emphasized on factors of project failure and said that corruption and lack of professionalism are among the main causes of project failure in Nigeria. This study adds that most frequently projects are considered failures when they fail to meet their targeted cost, time, or scope.

Findings from Zuofa&Ochieng (2014), study shows that corruption, lack of professionalism, inexperienced personnel and lack of requisite skills were among the key issues identified as being responsible for most project failures in Nigeria.

Olalusi and Otunola (2012) who identified 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) cited in the same study said that failures in projects were still common in Nigeria. Their study attributed the failures to poor planning, lack of top management support, inadequate skill and expertise of project managers. Similarly, Oyewobi, Ganiyu, Oke, Ola-Awo and Shittu (2011) established that the causes of unethical project performance and retarded development in the Nigerian construction industry can be attributed to corruption and corrupt practices.

Recovery Strategies of Distressed Project

Table 4.8 shows the results of recovery strategies of distressed project from the viewpoint of respondents from project owner, Contractor, Consultant, and local administrative people. The data obtained from respondents were analyzed using RII by computing the mean score for each factor according to the respondent's responses. The mean scores were ranked from the highest to the lowest and represented on a statistical table. The distress mitigating factor that scored the highest mean was considered to be a very highly effective means of recovery strategy of distressed projects in road construction industry.

Table 2.1 Ranking of recovery strategies of distressed project

Sn.	Recovery strategy	RII	Rank
1	Properly re-planning the project	0.99	1
2	Replace the existing non-performing project team	0.97	2
3	Realizing adequate control and monitoring system	0.96	3
4	Improving communication-stakeholder management	0.92	4
5	Employing appropriate risk management system and resolving problematic technical issues	0.92	4
6	Increase the budget	0.90	6
7	Add and/or remove resources (add owned equipments and minimize rental equipments)	0.78	7
8	Redefining the project	0.44	8

Figure2- 6 Recovery strategies of distressed project

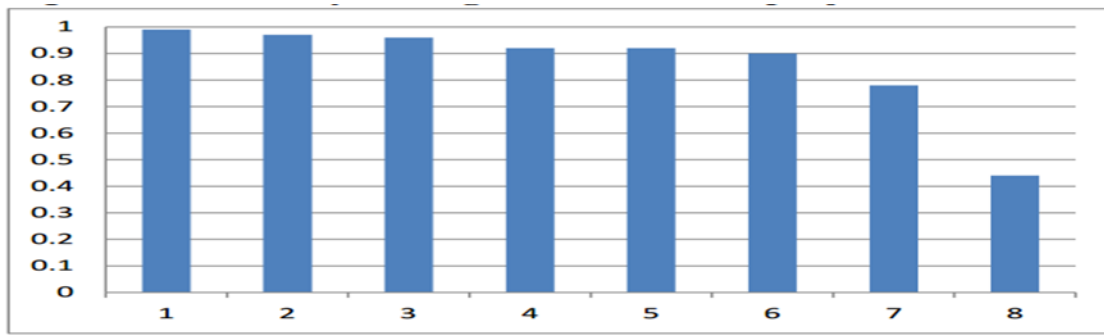


Table. 2-1. and figure 2.10 showed that properly re-planning the project, replace the existing nonperforming project team, realizing adequate control and monitoring system, improving communication-stakeholder management, employing appropriate risk management system and resolving problematic technical issues, and increase the budget are the top six effective recovery strategies received RII value of ≥ 0.9 from respondents of the study.

The remaining work item of the project is so challenging. It is time taking and needs utmost effort to achieve. The usual assumptions of performance may not be practical. Detail re-planning of the remaining work item was ranked first and categorized as the most effective method to achieve goals. Replacing the non-performing project team got the second rank by respondents to mitigate slippages of the project. The study revealed that there is no overall motivation on the project team for rescue. As one can surmise, the characteristics and composition of the project team in an implementation crisis is drastically quite different than the team whose project is rocking along successfully. The heightened urgency and gravity of the crisis situation at hand requires strong leadership and team members who likely will be called on to: work together for the first time, work outside of normal schedules, think outside of the box to solve problems quickly and effectively, be flexible, be open and adaptable to change as the situation will evolve and may grow worse before it gets better. Employing adequate controls is the third most effective method to rescue the project. This involves the process of controlling and monitoring of the realization of the other recovery strategies. The remaining portion of the work is so demanding of close supervision and adequate controls. (Israel Abate, 2018)

The above studies have emphasis on difference issues that are to be causes of project failure ,Many of these studies did not look at the project failure prevention in as a factor that contributes to project success

CHAPTER III METHODOLOGY

3.1. Research Design

In order to resolve the research problem as well as to achieve its objectives, this study has applied the descriptive research method. A descriptive research design is used to attain information regarding the current state of the phenomena and to describe ‘what exists’ with respect to variables or conditions in a situation (Anastas, 1999). It answers questions of who, what, when, where, and how associated with a particular research problem, and this helps to gain an “accurate profile of events, person or situations” (Saunders et al., 2012, p.171). Based on the explanation on Saunders et al.’s (2012) this research uses descriptive survey method to answer the research aim that is to assess and explain the overall situation of project distress management strategies on project success.

3.2. Target Population

A population refers to an entire group of persons or elements that have at least one thing in common. The entire population of this study was 82 people mainly from the client or owner side of the project; such as Planning Directorate, Regulatory Directorate, Design Directorate, Engineering procurement Directorate, of Project team leaders, project team members of Addis Ababa City Road Authority. Moreover, project management consultancy (PMC)/representative engineers, project contractors also included in the study. The questioners were distributed and the interview was conducted with concerned participants of project. Therefore the primary data for sampling is focused on those who are ones in the area of projects operations and management.

3.2.1. Sampling technique and Sample size

Sampling technique:-This study focused on a limited number of informants by means of purposive sampling technique .This involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest (Cresswell & Plano Clark, 2011). So it applied to get data and information-rich cases from different Directorate (Planning, Design, contract administration, engineering procurement) which deal with all projects management work and project success or failure.

Sample size: - the sample size of this study was 68 persons from Addis Ababa City Road Author applying Yamane's sample size determination (Yemane's, 1967),

$$n = N / (1 + N(e^2))$$

Sample size = $82 / (1 + 82(0.05)^2) = 68$.

Where,

n = the desired sample size; **N** = total number of population and **e** = the level of precision or the quality of being care full and accurate which is equal to **0.05**,

3.3 Data collection instrument and approach.

Data collection is simply how information is gathered; every researcher has two general approaches to data collection, namely primary and secondary data, accordingly, two methods, like questionnaire and personal interviewing (semi structured) was used ,these were, developed based on the PMBOK and some of them adopted from the works of prior researchers on PMM, project recovery strategies, analysis of scope change management, early warning sign of projects distress, collaboration on construction project consultant, financial distress restructuring journal articles ,and they were modified to project distress prevention strategy purpose.

Questionnaires: the questionnaire list was developed based on the PMBOK, and distributed to staff of AACRA, mostly for Planning, Design, contract administration, and engineering procurement.)

Interview: was held with top level management from regulatory directorate, operation directorate, Road asset directorate, and institutional change and support Directorate directors of Addis Ababa City Road Authority (AACRA), Project management consultancy (PMC) / representative engineers, project contractors as well.

3.3.1. Primary data collection

Main source of the primary data were collected from Directorate Directors, project team leaders, project manager, project management consultancy (PMC)/representative engineers, project contractors, and various project team members of AACRA.

3.3.2. Secondary data collection

The researcher has collected secondary data through documents review and analysis of secondary data from various sources used as useful source of information for the study, relevant

books, text books, journals, organization's past and current written documents or reports on the relevant issues and internal policy and procedure manual were used.

3.4. Data Processing and Analysis Methods

After collection of data, data was processed to meaningful results. Data processing refers to the transformation of respondent's view into meaning form. Both quantitative and qualitative techniques were used to process and analyze the collected data. Using these techniques, the presentation and organization of findings made it very easy to comprehend and draw conclusions based on findings. The qualitative data was analyzed by setting responses for respondents based of which response that was repeated several times. The data obtained from the questionnaire respondents used to assess the quality management practices and problems was analyzed using SPSS (Version 20). After organizing, coding, and defining variables, responses of the cases were entered into the software. Then for analysis, descriptive statistical methods were used, and results were presented using tables and figures.

3.5. Validity and Reliability of Instruments

Reliability: - Reliability analysis was carried out for internal consistency with regard to respondent's data on project distress management rating using Cronbach's alpha and in principle Cronbach's alpha of 0.7 is acceptable for internal consistency of data obtained from respondents. Therefore, the reliability is checked based on the data process on SPSS.

Validity: - The researcher was strived the validity of questioners to be checked and commented by the advisor of the researcher, friends and project management professionals before distributing to the respondent about its relevance. Moreover, validating the survey involves collecting relevant evidence for the conclusions reached about project distress prevention and intervention strategies on the project success.

3.6. Ethical Issues

The researcher has declared that all participants were voluntary participate in the data collection by collaborating in filling of the questionnaire. By doing so, the respondents are free of any harm like psychological harm, exploitation, invasion of privacy, and more importantly their views were very confidential and anonymous. Moreover, the questionnaire does not have any connection with the respondents since it is done for education purpose.

CHAPTER IV RESULTS AND DISCUSION

4.1. Introduction

This part of the study aims to demonstrate results to attain the objective of the study. The result of the survey was discussed by triangulating the different source results.

Quantitative data was analyzed by employing descriptive and explanatory statistics using statistical package for social science (SPSS) version 20. 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.

A total of 68 questionnaires were distributed to various respondents of interest for the study. Out of the covered population, 61 were responsive and representing a response rate of 89.7%. This was consistent line with Orodho (2009) that a response rate above 50% contributes towards gathering of sufficient data.

4.2. RESPONSE RATE AND DEMOGRAPHIC DATA

4.2.1. Gender Composition

The Gender or demographic statistics shown in the figure below show the distribution of respondents by gender. Participants were asked to indicate their gender by selecting the appropriate option provided (male or female). Accordingly only 50 (80.6%) of the respondents were male while the remaining 11 (17.7%) were female. This shows that the sample population was dominated by male respondents.

Table4- Gender Composition of the respondents

	Frequency	Percent	Valid Percent
Male	50	80.6	82.0
Valid Female	11	17.7	18.0
Total	61	98.4	100.0
Missing System	1	1.6	
Total	62	100.0	

Source own survey 2019

4.2.2. Age Composition.

From the analysis on age of the respondents, it was found that only 44 respondents (71.0%) were at the age between 20 to 30 and, 17 respondents (27.4%) were the age between 31 to 40. This profile shows that majority of the respondents are youth.

Table4-2 Age Composition of the respondents

	Frequency	Percent	Valid Percent
20 to 30	44	71.0	72.1
Valid 31 to 40	17	27.4	27.9
Total	61	98.4	100.0
Missing System	1	1.6	
Total	62	100.0	

Source own survey 2019

4.2.3. Work Experience.

The study chose to consider respondent's level of experience in the project area, which is vital towards knowledge of project management. 45 (72.6%) of the respondents have 1 to 5 years, 14 (22.6%) have between 11-15 years, and only 1 (1.6) % of them have above of experiences. This profile shows that more experienced employee does not have in the organization.

Table4-3 Work Experience of the respondents

	Frequency	Percent	Valid Percent
1 to 5	45	72.6	73.8
6 to 10	14	22.6	23.0
Valid 11 to 15	1	1.6	1.6
above 15	1	1.6	1.6
Total	61	98.4	100.0
Missing System	1	1.6	
Total	62	100.0	

Source own survey 2019

4.2.4 . Educational Background

From the analysis on educational background of the respondents, it was found that 2 (3.2%) respondents have diploma, 55 (88.7%) have Bachelor Degree, 3 respondents 4 (6.5%) are masters degree and above. This summary shows that majority of the respondents have Bachelor degree or first degree level.

Table4-4 Educational Background of the respondents

	Frequency	Percent	Valid Percent
Diploma	2	3.2	3.3
Degree	55	88.7	90.2
Valid Masters	3	4.8	4.9
PhD.	1	1.6	1.6
Total	61	98.4	100.0
Missing System	1	1.6	
Total	62	100.0	

Source own survey 2019

4.2.5. Job Title

As far as job title of respondents is concerned 53 (85.5 %) were Engineers,1 (1.6%) team leader,1 director (1.6%) and 6 were other. This indicates that most of them had inadequate project management knowledge.

Table4- 1 Job Title of the respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Engineer	53	85.5	86.9	86.9
Valid Team leader	1	1.6	1.6	88.5
Other	6	9.7	9.8	100.0
Total	61	98.4	100.0	
Missing System	1	1.6		
Total	62	100.0		

Source own survey 2019

4.3. Likert scale analysis

The respondent were Asked to indicate their perception of the degree of application of appropriate distress management variables on five point likert scale where I represented “strongly disagree”, “disagree”, ”neutral”, ”Agree” ”strongly agree” for validation purpose. A mean value of 2.5 or 50 % as cut off point fixed as optimum value by grouping of 51 items in to eight groups.

Furthermore means limits in Likert scale analysis, are essential to build the context analysis index insight (Mostefa Kayed, 2016), and can use these limits:-

1.00-1.49, 1.50-2.49, 2.50-3.49, 3.50-4.49, 4.50-5.00 or 1.00-1.80, 1.81-2.60, 2.61-3.40, 3.41-4.20, 4.21-5.00 . Therefore to analyze the context the second category (1.00-1.80, 1.81-2.60, 2.61-3.40, 3.41-4.20, and 4.21-5.00) of limit was applied.

4.3.1. Requirement Gathering

As the result indicates most of the respondents had strongly disagreed and disagree .Furthermore the mean value on requirement gathering and documentation processes is 2.23 (44.6 %). So the value is below the fixed cutoff point and fall on 1.81-2.60 mean limit which was mostly be inclined to disagree.

Therefore this result consistent with the previous research of (leon A., R.Mckenan, and L.zuang, 2016) that highlighted, if the function, performance and reliability requirements are not gathered and documented the project is deemed too disappointed.

Table4- 2 Frequencies and percentages of the ratings of Requirement Gathering

	Strongly-Disagree	Dis-Agree	Neutral	Agree	Strongly Agree
There are clearly defined Requirements from the beginning	14(22.6%)	27(43.5%)	16(25.8%)	3(4.8%)	1(1.6%)
There are Requirements Workshops to motivate stakeholders and satisfy an immediate need.	10(11.1%)	26(41.9%)	19(30.6%)	4(6.5%)	2(3.2%)
There is Stakeholder Participation in Requirements Elicitation and Decomposition	24(38.7%)	17(27.4%)	13(21.0%)	6(9.7%)	1(1.6%)
There is requirements collecting, defining, documenting, and managing stakeholders 'need to meet the project objective.	22(35.5%)	15(24.2%)	15(24.2%)	7(11.3%)	2(3.2%)
There is a process to rank the project requirement.	12(19.4%)	17(27.4%)	28(45.2%)	3(4.8%)	1(1.6%)
There is Project Scope Statement that describes, in detail, the project's deliverables and the work required to create those deliverables	11(17.7%)	21(33.9%)	22(35.5)	7(11.3%)	0(0%)
Total N=61, M=2.23(44.6%), S.D.761					

Source own survey 2019**4.3.2.. Project plan**

As the result indicates the results from the table 4.7 most of the respondents had strongly disagreed and disagree, in addition the mean value on planning processes is 2.34 (46.8 %). So the value is below the fixed cutoff point and fall on 1.81-2.60 mean limit which was mostly be inclined to disagree.

This result consistent with the previous research of (Hamed Kaze, 2017) that, project planning is associated with project success .further more (zwikael, 2009) and (Tomas et.al. 2008) project plan and its completeness have positive relationship with project success.

Table4- 3 Frequencies and percentages of the ratings of Project plan

	Strongly-Disagree	Dis-Agree	Neutral	Agree	Strongly Agree
There is Defining all of the work of the project	21(39.9%)	18(29.0%)	10(16.1%)	9(14.5%)	3(4.8%)
There is Estimating how long it will take to complete the work	18(29.0%)	15(24.2%)	18(29.0%)	10(16.1%)	0(0.0%)
There is Estimating the resources required to complete the work	16(25.8%)	22(35.5%)	15(24.2%)	8(12.9%)	0(0.0%)
There is Estimating the total cost of the work	15(24.2%)	27(43.5%)	7(11.3%)	11(17.7%)	1(3.2%)
There is Documenting the project plan	17(27.4%)	16(25.8%)	20(32.3%)	8(12.9%)	0(0.0%)
There is Sequencing the work	15(24.2%)	22(35.5%)	15(24.2%)	8(12.9%)	1(1.6%)
There is Building, Analyzing and adjusting the project schedule	9(14.5%)	26(41.9%)	22(35.5%)	3(4.8%)	1(1.6%)
There is Gaining senior management approval to launch the project	15(24.2)	17(27.4%)	24(38.7%)	5(8.1%)	0(0%)
Total N=61, M=2.34(46.8%), S.D 0.513					

Source own survey 2019

4.3.3. Work Breakdown structure (WBS) Construction

As the result indicates the results from the table 4.8 most of the respondents had strongly disagreed and disagree, in addition the mean value on Work Breakdown Structure (WBS) construction is 2.34 (46.8 %). So the value is below the fixed cutoff point and fall on 1.81-2.60 mean limit which was mostly be inclined to disagree.

This result consistent with the previous research of (T.Ragani Dvis, 2012) that, project's Work Breakdown Structure can determine that project's success. The WBS provides the foundation for project planning, cost estimation, scheduling and resource allocation.

Table4- 4 Frequencies and percentages of the ratings of work Breakdown structure (WBS) Construction

	Strongly-Disagree	Dis-Agree	Neutral	Agree	Strongly Agree
There is WBS (work breakdown structure) Prepared in defining scope in your project.	20(32.3%)	14(22.6%)	15(24.2%)	10(16.1%)	2(3.6%)
There is WBS (work breakdown structure) used in preparing the estimate.	18(29.0%)	26(41.9%)	7(11.3%)	8(12.9%)	2(3.2%)
There is WBS (work breakdown structure) used in preparing the budget.	10(16.1%)	26(41.9%)	20(32.3%)	5(8.1%)	0(0.0%)
There is WBS (work breakdown structure) used in preparing the used wwhen defining the scheduled activities	19(30.6%)	15(24.2%)	15(24.2%)	12(19.4%)	0(0.0%)
There is breaking down project in to smaller tasks.	20(32.2%)	18(29.0%)	14(22.6%)	8(12.9%)	1(1.6%)
There is dividing all work into pieces with clear objectives and tools to perform them.	19(30.6%)	18(29.0%)	13(21.0%)	9(14.5%)	2(3.6%)
Total N=61, M=2.34 (46.8%), S.D 0.704					

Source own survey 2019

4.3.4. Stakeholders involvement

As illustrated on the table 4.9, Indicates most of the respondents had strongly disagree and disagree on project Stakeholders involvement, its mean value is 2.38 (47.6%). Thus the mean value is below the fixed cutoff point and fall on 1.81-2.60 mean limit which was mostly be inclined to disagree.

. This result consistent with the previous research of (J.mungatu and P.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.

Table4- 5 Frequencies and percentages of the ratings of Stakeholders involvement

	Strongly-Disagree	Dis-Agree	Neutral	Agree	Strongly Agree
There is identifying the people, groups, or organizations that could impact or be impacted by the decision, activity, or outcome of the project.	25(40.3%)	9(14.5%)	15(24.2%)	9(14.5%)	3(4.8%)
There is effective Communications and work with stakeholders to meet their needs and expectations, address issues as they occur, and foster appropriate stakeholder engagement throughout the project life cycle	17(27.4%)	19(30.6%)	19(30.6%)	6(9.7%)	0(0.0%)
There is Monitoring overall project stakeholder relationships and adjust strategies and plans for engaging stakeholders	13(21.0%)	21(33.9%)	16(25.8%)	11(17.7%)	0(0.0%)
There is project progress review with stakeholders	19(30.6%)	15(24.2%)	18(29.0%)	7(11.3%)	2(3.2%)
There is development appropriate management strategies to effectively engage stakeholders throughout the project life cycle based on their needs and potential impact on project success	20(32.3%)	14(22.6%)	16(25.8%)	11(17.7%)	0(0.0%)
There is Person responsible for implementing the strategy (the person within the project who is responsible to carry out the strategy).	20(33.2%)	15(24.2%)	17(27.4%)	5(8.7%)	4(6.5%)
Total N=61, M=2.38(47.6%), S.D.768					

Source own survey 2019

4.3.5. Dynamic risk management

As illustrated on the table 4.10, Indicates most of the respondents had strongly disagree and disagree on ratings of Dynamic risk management its mean value is also 2.33 (46.6%). Thus the mean value is below the fixed cutoff point and fall on 1.81-2.60 mean limit which was mostly be inclined to disagree.

. This result consistent with the previous research of (Tadesse Ayalew,Zakiria D. & others,2016) that project management functions, tools and techniques to be un satisfactory and identified risk management is as the most challenging issue.

Table4- 6 Frequencies and percentages of the ratings of Dynamic risk management

	Strongly- Disagree	Dis-Agree	Neutral	Agree	Strongly Agree
There is Determination and documentation of the characteristics of risk which may affect the project	18(29.0%)	21(33.9%)	18(29.0%)	4(6.5%)	0(0.0%)
There is Prioritization of risks for further analysis or action by assessing their probability of occurrence and impact.(qualitative analysis)	10(16.1%)	21(33.9%)	24(38.7%)	6(9.7%)	0(0.0%)
There is analyzing of the effect of identified risks on overall project objectives(quantitative analysis)	14(22.6%)	19(30.6%)	21(33.9%)	7(11.3%)	0(0.0%)
There is development of options and actions to enhance opportunities and reduce threats to project objectives	13(21.0%)	26(41.9%)	17(27.4%)	5(8.1%)	0(0.0%)
There is implementation of risk response plans, track identified risks, monitor residual risks, identify new risks.	11(17.7%)	25(40.3%)	21(33.9%)	4(6.5%)	0(0.0%)
There is developing risk response strategy (example :avoid, transfer, mitigate,accept.)	17(27.4%)	19(30.6%)	18(29.0%)	7(11.3%)	0(0.0%)
There is a Continuously updating the risk response plan and strategy	13(21.0%)	21(33.9%)	19(30.6%)	7(11.3%)	1(1.6%)
Assigning risk response owner to take responsibility for the management of selected risks	15(24.2%)	17(27.4%)	20(32.3%)	8(12.9%)	1(1.6%)
Total N=61, M=2.33(44.6%), S.D 0.747					

Source own survey 2019

4.3.6. Scope change management

As illustrated on the table 4.11, Indicates most of the respondents had strongly disagreed and disagree on ratings of Scope change management, its mean value is also 2.49 (49.8%). Thus the mean value is below the fixed cutoff point and fall on 1.81-2.60 mean limit which was mostly be inclined to disagree.

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

Table4- 7 Frequencies and percentages of the ratings of Scope change management

	Strongly- Disagree	Dis-Agree	Neutral	Agree	Strongly Agree
There is well- defined and well manage scope change management process in place.	21(33.9%)	13(21.0%)	16(25.8%)	8(12.9%)	3(4.8%)
There is the scope change management system prepared by a qualified team.	21(33.9%)	17(27.4%)	17(27.4%)	6(9.7%)	0(0.0%)
There is project team members involvement in the preparation of scope change management plan	16(25.8%)	22(35.5%)	14(22.6%)	9(14.5%)	0(0.0%)
There is management and control scope change during the implementation Project.	17(27.4%)	22(35.5%)	15(24.2%)	7(11.3%)	0(0.0%)
There is scope statement with as much detail to prevent scope creeping as possible	15(24.2%)	23(37.1%)	16(25.8%)	7(11.3%)	0(0.0%)
There is Evaluation and prioritization of all changes to the project implementation plan at the institutional level.	21(33.9%)	22(35.5%)	17(27.4%)	1(1.6%)	0(0.0%)
There is project implementation on time and within the approved budget and scope	17(27.4%)	19(30.6%)	19(30.6%)	6(9.7%)	0(0.0%)
Total N=61, M=2.49(49.8%), S.D 0.698					

Source own survey 2019

4.3.7. Contractor Management

As illustrated on the table 4.12, Indicates most of the respondents had strongly disagree and disagree on ratings of Contractor Management. , its mean value is also 2.21(44.2%). Thus the mean value is below the fixed cutoff point and fall on 1.81-2.60 mean limit which was mostly be inclined to disagree.

This result consistent with the previous research of (Worku Haru& Kumar Neeraj, 2016) that found in effective planning and scheduling and unqualified and inadequate experienced labour of contractors is significant cause of delay in construction.

Table4- 8 Frequencies and percentages of the ratings of Contractor Management

	Strongly- Disagree	Dis-Agree	Neutral	Agree	Strongly Agree
There is proper planning and construction method by contractors	13(21.0%)	33(53.2%)	7(11.5%)	8(12.9%)	0(0.0%)
There is no conflict between contractor and other parties (client, consultant...)	16(25.8%)	23(37.1%)	17(27.4%)	4(6.5%)	1(1.6%)
There is qualified contractors' technical staff	20(32.8%)	20(32.8%)	15(24.6%)	5(8.1%)	1(1.6%)
There is communication by contractor with other construction parties	20(32.8%)	26(41.9%)	11(17.7%)	4(6.5%)	0(0.0%)
There is no difficulty in financing project by contractors.	18(29.0%)	30(48.4%)	13(21.0%)	0(0.0%)	0(0.0%)
There is effective scheduling of project by contractor	16(25.8%)	26(41.9%)	19(30.6%)	0(0.0%)	0(0.0%)
There is no rework because of errors during construction	15(24.2%)	22(35.5%)	17(27.4%)	7(11.3%)	0(0.0%)
There is no delay in commencement	19(30.6%)	21(33.9%)	17(27.4%)	4(6.5%)	0(0.0%)
Total N=61, M=2.21(44.2%), S.D. 0.839					

Source own survey 2019

4.3.8. Clint ownership

As illustrated on the table 4.13, Indicates most of the respondents had strongly disagree and disagree on ratings of Clint ownership, its mean value is also 2.39 (47.9%). Thus the mean value is below the fixed cutoff point and fall on 1.81-2.60 mean limit which was mostly be inclined to disagree.

This findings of the research consistent with the previous work of (Maoshan Q., Qi Wan, Wan An, 2017) that found effectively managing and utilizing contract management consultancy's capability underpin the success of the project process ,client contributions are more direct and significant .

Table4- 9 Frequencies and percentages of the ratings of Clint ownership

	Strongly-Disagree	Dis-Agree	Neutral	Agree	Strongly Agree
There is client involved in the first phase of the project life cycle	16(25.8%)	12(19.4%)	25(40.3%)	6(9.7%)	2(3.2%)
There is no delays in decision making by owner	17(27.4%)	21(33.9%)	12(19.4%)	8(12.9%)	3(4.8%)
There is communication by owner with other construction parties	18(29.0%)	22(35.5%)	11(17.7%)	7(11.3%)	3(4.8%)
There is Change orders by owner during construction	12(19.4%)	25(40.3%)	21(33.9%)	3(4.8%)	0(0.0%)
There is early issuing of approval documents by owner	13(21.0%)	22(35.5%)	23(37.1%)	3(4.8%)	0(0.0%)
There is Selection of appropriate contractors	12(19.4%)	21(33.9%)	22(35.5%)	6(9.7%)	0(0.0%)
There is application of construction management procedures for early detection of construction problems	8(12.9%)	27(43.5%)	23(37.1%)	3(4.8%)	0(0.0%)
There are competent technical staff/ personnel	18(29.0%)	15(24.2%)	19(30.6%)	9(14.5%)	0(0.0%)
Total N=61, M=2.39(47.9%), S.D 0.690					

Source: own survey 2019

4.4. Reliability statistics

Reliability analysis was carried out for internal consistency with regard to respondent's data on project distress management rating using Cronbach's alpha and in principle Cronbach's alpha of 0.7 is acceptable for internal consistency of data obtained from respondents. Therefore, the reliability is checked based on the data process on SPSS.

Table 4.14 Reliability statistics

Table4- 10 Reliability statistics

Cronbach's Alpha	N of Items
.789	9

4.5. Correlation Analysis

The strength of associations of pairs of variables under study was determined by correlation relationships.

4.5.1. Pearson correlation

As depicted below on Table 4.15 shows the Pearson correlations that, for the relationships between the variety of variables and appropriate project distress management in Addis Ababa City road construction projects. Results of the analysis are in Table 4. 16, illustrates that correlation between appropriate project distress management and Requirement gathering in the projects of road development, there is a positive coefficient 0.441, with p-value of 0.000. The result indicates that significant at $\alpha = 0.05$ and that if the project requirements are gathered and documented, it will have a positive impact on appropriate project distress management in road construction projects. The correlation results between appropriate project distress management and project planning, WBS, Stakeholder involvement, Dynamic risk management, scope change management, contract management in the road projects ,there is a positive coefficient 0.563, with p-value of 0.000, 0.491, with p-value of 0.000, 0., 455with p-value of 0.000, 0.516, with p-value of 0.000, 0.520, with p-value of 0.000, 0.311, with p-value of 0.015, 0.538, with p-value of 0.000 respectively ,The result indicates that , significant at $\alpha = 0.05$ and that if all the above mentioned variables manage properly it will have a positive impact on appropriate project distress management in road construction projects.

Table4- 11 correlations

		Correlations								
		There is an appropriate project distress management	Requirement Gathering	Project plan	work Breakdown structure (WBS) Construction	Stakeholders involvement	Dynamic risk management	Scope change management	Contractor management	Clint ownership
There is an appropriate project distress management	Pearson Correlation	1	.441**	.563**	.491**	.455**	.516**	.520**	.311*	.538**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.015	.000
	N	61	61	61	61	61	61	61	61	61
Requirement Gathering	Pearson Correlation	.441**	1	.264*	.254*	.161	.247	.254*	.340**	.269*
	Sig. (2-tailed)	.000		.040	.048	.215	.055	.048	.007	.036
	N	61	61	61	61	61	61	61	61	61
Project plan	Pearson Correlation	.563**	.264*	1	.128	.337**	.310*	.311*	.408**	.317*
	Sig. (2-tailed)	.000	.040		.326	.008	.015	.015	.001	.013
	N	61	61	61	61	61	61	61	61	61
work Breakdown structure (WBS) Construction	Pearson Correlation	.491**	.254*	.128	1	.276*	.225	.294*	.297*	.265*
	Sig. (2-tailed)	.000	.048	.326		.031	.081	.022	.020	.039
	N	61	61	61	61	61	61	61	61	61
Stakeholders involvement	Pearson Correlation	.455**	.161	.337**	.276*	1	.039	.358**	.341**	.120
	Sig. (2-tailed)	.000	.215	.008	.031		.764	.005	.007	.356
	N	61	61	61	61	61	61	61	61	61
Dynamic risk management	Pearson Correlation	.516**	.247	.310*	.225	.039	1	.165	.153	.360**
	Sig. (2-tailed)	.000	.055	.015	.081	.764		.203	.240	.004
	N	61	61	61	61	61	61	61	61	61
Scope change management	Pearson Correlation	.520**	.254*	.311*	.294*	.358**	.165	1	.330**	.145
	Sig. (2-tailed)	.000	.048	.015	.022	.005	.203		.009	.264
	N	61	61	61	61	61	61	61	61	61
Contractor management	Pearson Correlation	.311*	.340**	.408**	.297*	.341**	.153	.330**	1	.313*
	Sig. (2-tailed)	.015	.007	.001	.020	.007	.240	.009		.014
	N	61	61	61	61	61	61	61	61	61
Clint ownership	Pearson Correlation	.538**	.269*	.317*	.265*	.120	.360**	.145	.313*	1
	Sig. (2-tailed)	.000	.036	.013	.039	.356	.004	.264	.014	
	N	61	61	61	61	61	61	61	61	61

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Finally on the top of quantitative analysis the researcher asked respondents (interviewee) to explain existing challenges that affect the performance of AACRA. The following are categorized as follow:-

1. Political and legal

- Right of way issue.(Relocation and compensation limit)
- Lack of speedy trial (justice issue or delay of justice)
- Political considerations and decisions affect project plan quality.
- Inadequate coordination of government projects..

2. Organizational challenges

- Inadequate project management domain knowledge (PMBok).
- Lack of appropriate project management strategy (other than site visit, review meeting and report).
- Poor project management tools ,templates and systems.(software application)
- Ineffective project planning and design details because of political consideration and insufficient technical staff capacity.

- There is Poor scope change management system whenever the design change request is demanding.
- Stakeholders like authority of water and sanitation, Ethio-telecom, electric power authority involvement in project integration and communication with them is very poor.
- lack of Risk management plan
- Poor consultant and contractor management system
- Poor tender system
- Lack of technical staff commitment.
- Inadequate top management support and poor tough -decision.

3. Consultant and contractors.

- Inadequate capacity in project management knowledge area.
- Fragile technical support (old design, No risk management plan at all)
- Lack of skilled professionals
- In adequate competence both in Material, Knowledge and as a result Poor performance.

All the aforementioned challenges had severe impact on project performance in AACRA, these findings are consistent with the previous researches of (J.T. Kuriuki, 2008) that:-

- **Lack of Stakeholders' Involvement:**-Project success or failure is strongly related to the perceptions of each individual project stakeholder and their willingness and ability to act either for or against the project.
- **Poor Planning:**-Project success is dependent on execution of a well thought-out plan. To ensure successful completion, detailed project plans must be prepared and followed throughout the project.
- **Poor Communication:**-Projects sometimes fail due to poor communication. Effective communication also enhances the chances of success through coordination of the project activities.
- **Lack of Executive Support:**-Projects are about change and like any other change initiative, top executive support is necessary for a project to succeed. Senior management involvement and support creates the required culture and trust among the stakeholders. In addition, top management involvement ensures clarity of the project

objectives, availability of resources and reduction of resistances during project execution. Thus, active involvement of the top executives increases the likelihood of the project success.

- **Scope Creep:**-Failure in some projects may be attributed to scope creep. Scope creep refers to uncontrolled and unexpected changes in project requirements as the project progresses. With scope creep, a series of small changes (none of which appears to affect the project individually are introduced), can accumulate to have a major overall impact on the project success. For instance, although the project requirements might be changed, there may be no increase in resources (time, people, budget) resulting in project delay or termination. Managing scope creep is thus one of the most critical activities for the project manager if a project is to succeed.
- **Poor Requirements:**-In some projects, goals, objectives and vision may not be clear due to lack or existence of poorly defined requirements. Projects with poorly defined requirements have problems in co-ordination, scope creep, definition of resource requirements (time, cost, and people), and measurement of success.
- **Project Methodology:**-In most organizations, the use of project's life cycle model helps in identifying and understanding of the total breadth and longevity of the project. However, several variations of project life cycle models and implementation methodologies exist. Although, the methodology adopted should be dependent on the distinctive nature of the project, some organizations use inappropriate models borrowed from other projects. This normally leads to inefficiencies, delays and roles conflicts during project implementation.
- **Project Leadership:**-The success of any project is contingent upon good leadership. The leadership style adopted by a project manager toward the team has a major impact on project performance in the areas of overall cost, time, quality of work, and stakeholders' satisfaction
- **Lack of Control:**-Successful completion of a project requires existence of a control system that is capable of tracking project progress to milestones. Tracking of project progress enhances implementation of corrective actions as a way of ensuring project success. Lack of control mechanism results in project being delayed, over budgeted and not meeting specifications.

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1 Introduction

Project distress attributed may possibly be due to lack of requirement gathering and documentation, poor project plan, lack of risk management plan, lack of stakeholder involvement, lack of scope change management, poor WBS, lack of senior management support and contract management. So, this empirical study was undertaken to assess the impact of the aforementioned variables on project distress prevention and intervention strategies and major challenges that have significant effect on an appropriate project distress management in AACRA. On the basis of the major findings of the study, the following conclusions and recommendations were made.

5.2. Conclusions

Even though it is impossible to eliminate all projects from falling into distress, establishment of an appropriate project management strategy (prevention and intervention) enhances the chance of project success or reduce project failure.

As the study demonstrated that the level of project distress management strategy is unsatisfactory and this is explained by inadequate reliability requirement gathering and performance. poor project planning and scheduling, , inadequate key stakeholder involvement, poor risk identification and management technique , inadequate scope change management system, ineffectively managing and utilizing contract management consultancies, Moreover,

- Most of the technical staff are youth and inexperienced on the area of project management tools, techniques and processes and the overall readiness of the organization is not audited by external auditor.
- Consultants had poor competence to deliver appropriate technical support to update the design off A.A roads and how to integrate the utility organizations' plan and construction projects and
- Contractors' lack of skilled professionals and fragile performances resulted in project distress.

- The existence of the Right of Way (ROW) issue was hindering A.A road projects

As far as challenges are concerned, the study identified that:-

1) Political and legal limits

- ROW issue,
- political considerations and poor governance,
- Justice delay or lack of speedy trial.

2) Organizational challenges

- Lack of PMBoK domain of technical staff,
- poor Risk management system, poor tender system (i.e. lowest evaluated bidder approach),
- Inadequate application project management planning, tools, techniques and system (software)/automation.

3) Consultants and contractors.

- Fragile technical support and Poor competence (Material and Knowledge base)

5.2.1. Contextualization of AACRA

Even though AACRA has done a remarkable progress in the last eleven years in the city's road projects since its establishment, the practice of adapting appropriate project management tools and techniques, training, coaching and mentoring to build the capacity of technical staff, and developing an appropriate project distress management strategy (prevention and intervention) is insufficient, because the Median (2.33) is below the fixed cutoff point.)

5.3 Recommendations

- Since most of the technical staff are youth and in experienced, ACCRA should establish training management system to update and build the capacity of the employee on the area of project management tools, methods and processes, templates and steps.
- The design of A.A roads should be updated in accordance with the growth of the city and should be integrated with utility organizations' plan and construction projects in order to avoid project delay and increased cost (Time and Cost overrun).
- The project execution: - people, process and system readiness should be audited by external auditors (Project management professional.) to assess the overall process readiness and project management practice of the organization.

- Since ROW and relocation is one of the major causes of project distress, they should be treated separately and establish system at sub city and woreda level which is accountable for.
- Project design and project supervision should be addressed by separate consultant to avoid negligence during project lifecycle.
- By and large Ababa City Road Authority (AACRA) should consider requirement gathering and documentation practices, proper planning and completeness, Work Breakdown Structure (WBS) construction, process practices and tools including activity list, key Stakeholders involvement the initial and planning stage, risk management plan and strategy, scope change management, Contractor management as consider Clint ownership as strategy in order to have appropriate project distress management strategy.

5.4 Future Study

As of the financial, time limit and other constraints this study was limited to assess project distress prevention and intervention strategy in AACRA. Since the application of knowledge, skills, tools, and techniques of project management is irreplaceable strategy to prevent projects from becoming distress, thus future researches can be conducted further considering the effect external and internal factors on project distress prevention strategy of various project based organizations

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APPENDICES

Appendix I: Questionnaire

QUESTIONNAIRE FOR PROJECT DISTRESS PREVENTION AND INTERVENTION STRATEGIES

Dear respondent:

Introduction

My name is Mesfin shibeshi Wolde .I am a final year post graduate project management student at Addis Ababa University CoBE/SOS. Intended for fulfillment of the work Requirements, I am required to conduct a research in my area of study. In this regard, the main objective of my study is to **assess project distress prevention and intervention strategies** in construction project effectively.

I hereby do request your permission to collect information from you using this questionnaire. Completion of this questionnaire is voluntary and confidentiality of information is assured. No individual data will be reported.

Best Regards for all!

Mesfin ShibeShi

ID.No.GSR/0705/10

Tell.0911197485;

E-mail, lsmesfin2011@gmail.com

Part one

PLEASE ANSWER ALL QUESTIONS BY TICKING ONE BOX

- + What is your Gender? 1. Male ☐ 2. Female ☐
- + What is your Age Group? 20 to 30 ☐ 31 to 40 ☐ 41-50 ☐ 51-60 ☐ above ☐
- + How long have you been working in this organization? 1 to 5 ☐ 6 to 10 ☐ 11 to 15 ☐ above ☐
- + Your background/level of education? Diploma ☐ degree ☐ masters ☐ PhD ☐
- + What is your Job Title? Engineer ☐ Team leader ☐ Project Manager ☐ Director ☐ Other ☐

Part Two

Please indicate the importance of following factors that contribute to the success or resulted in failure of your project, scoring “X” or “√” for each questions on tables based on your opinion.

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

No	Items	1	2	3	4	5
	PREVENTION & INTERVENTION VARIABLES					
I.	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 is requirements collecting, defining, documenting, and managing 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					
II.	Project plan					
	There is Defining all of the work of the project					
	There is Estimating how long it will take to complete the work					
	There is Estimating the resources required to complete the work					
	There is Estimating 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 senior management approval to launch the project					
III.	work Breakdown structure (WBS) Construction,					
	There is WBS (work breakdown structure) prepared in defining scope in your project.					
	There is WBS(work breakdown structure) used in preparing the estimate.					
	There is WBS (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.					
IV.	Stakeholders involvement					
	There is identifying the people, groups, or organizations that could impact or be impacted by the decision, activity, or outcome of the project.					
	There is Communications and work with stakeholders to meet their needs and expectations, address issues as they occur, and foster appropriate stakeholder engagement throughout the project life cycle					
	There is Monitoring overall project stakeholder relationships and adjust strategies and plans for engaging stakeholders					
	There is project progress review with stakeholders					
	There is development appropriate management strategies to effectively engage stakeholders throughout the project life cycle based on their needs and potential impact on project success					
	There is Person responsible for implementing the strategy (the person within the project who is responsible to carry out the strategy).					
V.	Dynamic risk management					
	There is Determination and documentation of the characteristics of risk which may affect the project					
	There is Prioritization of risks for further analysis or action by assessing their probability of occurrence and impact.(qualitative analysis)					
	There is analyzing of the effect of identified risks on overall project objectives(quantitative analysis)					
	There is development of options and actions to enhance opportunities and reduce threats to project objectives					
	There is implement risk response plans, track identified risks, monitor residual risks, identify new risks, and evaluate risk process effectiveness					
	There is developing risk response strategy (example :avoid, transfer, mitigate,accept.)					
	There is a Continuously updating the risk response plan and strategy					
	Assigning risk response owner to take responsibility for the management of selected risks					
VI.	Scope change management					
	There is well- defined and well managed scope change management process in place.					
	There is the 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 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					
VII.	Contractor management					
	There is proper planning and construction method by contractors					
	There is no conflict between contractor and other parties (client, consultant...)					
	There is qualified contractors' technical staff					
	There is communication by contractor with other construction parties					
	There is no difficulty in financing project by contractors.					
	There is effective scheduling of project by contractor					
	There is no rework because of errors during construction					
	There is no delay in commencement					
VIII.	Client ownership					
	There is client involved in the first phase of the project life cycle					
	There is no delays in decision making by owner					
	There is communication by owner with other construction parties					
	There is Change orders by owner during construction					
	There is early issuing of approval documents by owner					
	There is Selection of appropriate contractors					
	There is application of construction management procedures for early detection of construction problems					
	There are competent technical staff/ personnel					
D V	There is an appropriate project distress management					

INTERVIEW QUESTIONS FOR TOP LEVEL MANAGERS(CLIENT/OWNER)

Dear Respondent:

My name is mesfin shibeshi wolde attending project management in graduate program and conducting research on Project distress prevention and intervention strategies , intended for fulfillment of the Requirements for the Degree of Master of project management with focus on Addis Ababa Road Authority(AACRA).

The research will investigate the following issues:

- 🌈 Whether and to what extent **project distress prevention and intervention strategies** are being applied in managing construction projects in AACRA.

The research output will provide information about project distress prevention and intervention strategies in construction projects . in addition the result provides the framework for preventing projects from becoming in trouble and ensure success.

Your precious effort in participating in this research will also contribute to the development of project distress prevention and intervention strategies in AACRA.

Thank you in advance for your cooperation in participating on the research!!.

Mesfin ShibeShi
TELL. 0911197485

1. Position/role in the organization?
2. Do top level management of your organization have a base of project management knowledge?
3. Does your organization top level management provide support to the project? if yes, (what are your contribution on requirement gathering, planning, risk management, scope change management?)
4. Does your organization TLM communicate effectively with project team consultant and contractors?
5. Do key project stakeholders participate in major project review?
6. How does your organization coordinate different stakeholders?
7. Does senior management make effective decision through involvement in the monitoring and controlling phase of the project?

8. Is top management frequently informed about the progress of projects or constant report by the project team members when project falls behind the schedule?
9. Is there effective review to analyze the current situation of the project?
10. What are your organization's strategies to prevent projects from becoming distressed?
11. What are the main challenges in your organization?

INTERVIEW QUESTIONS FOR CONTRACTORS

1. Position /role in the company ?
2. What is the category of your organization?
3. What is the grade of your organization?
4. Have you worked as Project Manager? If yes for how long?
5. Have you received any Project Management related training ?
6. If yes what was the highest level of training you received?
7. For how long has your organization been in the construction business?
8. Has your company worked with AACRA in the past?
9. Does your organization have Project Management processes ,methodologies and qualified technical staff?
10. Are project management process,methodologies and procedures applied formally in managing projects in your organization? If so:-
 - 10.1. Are there **clearly defined Requirements** from the beginning during construction?
 - 10.2. Is there **effective planning and scheduling** of your construction projects?
 - 10.3 **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?
 - 10.4 Is there **risk management system** in your organization?
 - 10.5 Is there **scope change management** systems?
11. Do your organization have delay in commencement?
12. What are the main challenges in your organization ?
13. Does your organization impliment strategies to prevent project distress or failur?

INTERVIEW QUESTIONS FOR CONSULTANTS

1. Position/ role in the company ?
2. Do your organization have a base of project management knowledge?
3. For how long has your organization been in the consultancy business?
4. What was your organization most concerned with?
5. Has your company worked with AACRA in the past?
6. Does your organization **communicate effectively with project team ,TLM (client) and contractors?**
7. what is your contribution on **feasibility study and planning**(to monitor requirement gazing,sheduling,?
8. what is your contribution on **design process and evaluation?**
9. what is your contribution on **contractor qualification and tender evaluation?**
10. what is your contribution on **risk management, scope change management?**)
11. Is there **effective review to analyze the current situation** of the project?
- 12. What are the strategies to prevent project distress?**
13. What are the main challenges in your organization?

Appendix II. List of three selected ongoing construction project at AACRA

Projects name Actual time	Planned cost(Birr)	Actual cost (Birr)	Planned time	Actual time	performance
Lideta-Tsebel	338,193,589.86	550,042,177.90	2year	8year	90%
Keranio- medhanialem	115,215,708.55	135,109,062.3	8month	3year	93%
CMC overpass bridge	134,342,619.41	181,566,636.50	8month	5year	60.62%

Source:- AACRA