ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

ASSESSMENT ON FACTORS THAT CAUSE PROJECT DELAY: THE CASE OF ADDIS ABABA ISLAMIC AFFAIRS SUPREME COUNCIL

BY

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JUNE, 2011 E.C.

ADDIS ABABA, ETHIOPIA

ASSESSMENT ON THE FACTORS THAT CAUSE THE PROJECT DELAY: THE CASE OF THE AAIASC

THESIS SUBMITTED TO ST.MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS OF THE DEGREE OF MASTER OF MBA IN PROJECT MANAGEMENT

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JUNE, 2011 E.C.

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Mohammed Mahmud (Assistant Professor). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in partial or in full to any other higher learning institution for the purpose of earning any degree.

DECLARED BY

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ACKNOWLEDGEMENTS

Firstly, my gratitude goes to the Almighty Allah who helped and directed me what to do, how to complete my study and for his full support in all my life. **Secondly,** I would like to express my sincere gratitude and thanks to my advisor, Assistant Professor Mohammed Mahmud, not only for his valuable advises and for spending his time with me during the study, but also for his encouragement to look further in the field of project delay factors to advance this thesis. **Thirdly,** I would also like to thank the St. Mary School of graduate studies Student Dean Officials and Member of Staff. **Lastly,** I would like to thank my friends and family for their good looking and appreciation during the study.

ENDORSEMENT

This thesis has been submitted to the St. Mary's University
School of Graduate Studies for the examination with
My approval as a university advisor

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Advisor **Signature**

St. Mary's University, Addis Ababa June, 2019

ACRONYMS	
AAIASC	Addis Ababa Islamic Affairs Supreme Council
ANOVA	Analysis of Variances
CC	Competency Certification
CSFs	Critical Success Factors
KMO	Kaiser-Meyer-Olkin (measure of sampling)
PCFA	Principal Component and Factor Analysis
PMBOK	Project Management Body of Knowledge Areas
PM	Project Management
PMI	Project Management Institute
PMO	Project Management Office
SPSS	Statistical Product and Service Solutions
UNDP	United Nations Development Program

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ABSTRACT

The AAIASC is one of the major Islamic religion followers' institution found in Ethiopia. It was re-established under the general Assembly of the Ethiopian Islamic Affairs council proclamation 24 S/No. 24.2.2 given by the Authority to re-establish the regional Islamic Affairs councils. It was re-established in September 2006 E.C. through the involvement of general Muslim public from Keble up to Addis Ababa city Administration with full participation through the process of free public elections. Starting from an assignment of new management and executive members, the institution has been performing several project and non-project activities in the city and sub city Administrative level. In the construction project perspectives, there was prevalence of the projects delays because of clearly unknown reasons. The researcher was aimed to identify the major factors that contributed to this problem. Major objective of this study was to identify the causes of project delay manifested on the project implementation processes of the selected institution. Scope of the study was de-limited to AAIASC led projects. Mixed Research Approaches (both qualitative and quantitative data analysis techniques) is included in the study. An explanatory design of the study was used. Results of study were collected and discussed through the explanatory data analysis methods. Out of the total of available (40) populations (N), all of (40) population (n) were selected, as a result 100% response rate has been achieved. And Out of the total of 40 /forty/ respondents, 34 (85 %) are male, and 6 (15%) are female. The Major findings of the study showed that, the existence of significant impact of project delays has resulted because of the identified five causes of project delay factors. Conclusion, fromthe questionnaires were developed based on the five point likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) distributed to respondents personally to measure the causes of project delay. Three levels of participants were involved in this study. Among the distributed questionnaires all of them were returned and the data was analysed through SPSS techniques, and finally the results of the study discussed and concluded. Limitations of the study were non voluntary responses, lack of sufficient data, methodological usage, and lack of worked research and etc. Recommendation, the institution must work a lot in order to solve challenges of all causes of the project delays by upgrading technological tools, assigning project manager, Avoidance of being corruptism and establishment of carrot and stick rules and regulations by making an organized and responsibility based supervision and stake holder involvement in the major project works and so forth..

Keywords: *AAIASC, Project Delay, Dependent variable, Causes and Effect of Project Delay*

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Now a days, the project management approaches has been increasing towards the utilization of the modern project management practices for a better execution of projects in line with the objectives of the organizations. On the other hand many organizations have not accustomed to this modern way of planning, implementing and controlling of the project works, because of such gaps many projects would delay. Some of the common delay factors on such organizations could be lack of well-organized plans, lack of proper project designs, inefficient project works, insufficient budgetary sources, absence of skilled labor, absence of proper supervision, cost escalations, inflation, corruption and other external factors has also contributed for such delays (Behens &Hawranek, 1991).

According to Rountos (2005), the management of construction projects require the knowledge of the modern management as well as understanding of the design and the construction process. Construction projects have a specific set of objectives and constraints such as the required time frame for completion. Also they are a costly undertaking to many people. In an effort to reduce the cost, become Penny wise and Pound-foolish. Change is inherent in construction work. The majority of the projects fail to meet deadlines, cost and quality targets.

According to Ahmed et al. (2002), in Abebeit (2013), the inability to complete projects on time and within budget continues to be a chronic problem worldwide and it was identified as worsening. Azhar and Farouqui (2008), in Abebeit (2013), also observed that the trend of cost overrun is common worldwide and that it is more severe in developing countries. Projects are the center pieces of development plans, whereas, Objectives of a plan get reflected in projects. So that, achievement of planned targets rest heavily on successful and timely completion of projects. Generally, a project passes through the different stages of cycle involving including implementation. The success of any project is measured in terms of three important dimensions - time, cost and quality. When a project is completed within time and budget by satisfying the customers' requirements, it is said to be a successful project. Of all these three deciding dimensions, quality is an abstract one and hence a project's quality can be measured mainly with the customer satisfaction. If a project's time of completion is extending, while taking all the necessary measures to bring back the project into track, the project manager should update and convince the customer.

When the cost of project exceeds the targeted budget, in many cases, the developer has to face the brunt and in rare cases only, the customer may be convinced to release additional funds.

The Empirical study made on Investigating Causes of Construction Delay in Ethiopian Construction Industries by Werku (2016),it was focused on only the three perspectives namely; contactors related, consultant related and client related. Besides, the study did not show the level of strength of the casual factors on the project delay. The other perspectives, such as supervisory related, resource related and so forth were not touched well.

Similarly the work of Tsegaye & Hanbin (2017), in Analysis of Delay Impact on Construction Project based on RII and Correlation Coefficient, University of Science and Technology, Wuhan, 1037, China, has indicated that the results of the three stages of project undertakings; that is, Pre-construction, Construction and Post-construction stages, they identified the over helming problems of the project delays. But, this has limited the researcher's understanding of project delays in the case of project delay factors comprehensively, but did not indicate the level of strength and interrelation between the casual factors with the delay of project completion. And many other similar researchers were studied on the project delays, but in similar way they did not answer the problems clearly. Therefore, the investigator has desired to assess the uncovered parts of supervisory perspectives together with the Owner and contractor related causes of the project delays. Hence, this study has identified the factors that cause the project delay in the selected institution.

1.1 Problem Statement

The recent project environment is characterized by the higher complexity, uncertainty, and multiple stakeholders that are competing for the project goals and objectives. The project management practices are greatly influenced by the theoretical approaches and models developed by different academics, practitioners and professional institutions have been challenged. A great issue observed from project management in recent time shows that the nature of project has transformed due to an existence of the large scale, uncertainty, huge cost, and several stakeholders' involvement in project and increase interests in the project benefits (Fortune et al., 2011; Cicmil & Hodgson, 2006).

This reality raises the question of what the project management practice really increases tangible benefits to organization. Anyone can ask the relevant questions regarding the practical issues in the project management, why do projects delay without achieving the

planned, expected completion date and why could not they be successful, if the project management principles, standards, tools, techniques, models, strategies and so on are actually applied in managing on such construction projects. Even though an existence of the difference between the project success and project management success, the two successes were concluded by different researchers as they are complement to each other. A project can succeed despite the failure of the project management, but the implementation of the successful project management practice can increase the potential of success on the overall project scale (Munns & Bjeirmi, 1996).

In the selected institution, there are three projects which were started five years ago, but they are not accomplished until yet as on the expected time, they should have been finished three years ago. These projects are the Masjid (Mosque) construction project, the Addis Ababa head office internal infrastructural development project, and construction project of branch office at the Adama city Administration. The real delay factors for these projects were not known until research has done. Starting from the beginning of (2008 E.C.) the institution has begun to under run many construction and non-construction projects.

Based on the stated gaps the research was aimed to focus only on these three major projects which can be discussed as follows**:**

First: The AAISSC led construction of Masjid, which has been financed by the Surrounding Muslim communities. That is underground plus three levels building, which was launched in 2008 E.C. under the supervision of institutionally represented officials together with publicly assigned Stakeholders with the project financial and material support from the Surrounding Muslim communities.

Second: AAIASC internal infrastructural project which was launched in 2000 E.C. But, its accomplishment has remained until yet.

Third: The third project is found in the Adama city Administration. In this site, the construction of the ground plus four level building was also launched in 2008 E.C. under the supervision of the institutional executive members and surrounding stake holders, which is also not accomplished until yet.

All these construction and non-construction based projects have been delayed due to clearly unknown reasons. Therefore, the researcher has aimed to identify the real causes of delays on these projects, what practical problems are there, which are contributing to the project delay and their impact on the performances of the selected institution and to give suggestions based on the research results.

Studies made by Battaineh et al. (2002), surveyed that, the most significant causes of delay in the traditional type of contract are the contractors and consultants. It is also stated that to imparting extensive delays provide a fertile ground for costly deputies and claim. The result was indicated that, the contractor and consultant had agreed up on**;** the owner interface, inadequate contractor experience, finance and payment, labour productivity slow decision making, improper planning and sub-contractors were among the top factors.

From the empirical studies made by Werku (2016), the major causes of project delay in the Ethiopian construction industries, several delay factors were mentioned by rank order as follows**;**

"Ineffective project planning, delay in progress payments for completed works, lack of skilled professionals in the construction project management in an organization, fluctuating labour availability season to season, late delivery of materials, low productivity of labour, unqualified or inadequate experienced labour, insufficient data collection and survey before design".

Among all those factors, the researcher preferred to study only on the five project delay factors in the selected institution, which have decisive influence on the project performances of similar institutional project undertakings. These are described as follows;

1. *Delay in progress payments for completed project works*
2. *Late Delivery of materials*
3. *Corruption*
4. *Ineffective Project Planning, and Scheduling*
5. *External Factors*

1.2 Basic Research Questions

From the facts discussed in the problem statement, the following basic study questions were developed for further discussion and they were answered after the study has conducted**:**

1. What is the impact of delay in progress payment for the completed project works on the delay of project completion?
2. What is the impact of late delivery of materials for the delay of project completion?
3. What is the impact of corruption for the delay of project completion?
4. What are the major impacts of ineffective project planning and scheduling on delay of project completion?
5. What is the impact of the external factors for the delay of project completion?

1.3 Research Objectives

1.4.1 Major Objective

The general objective of the study is to identify the major causes of the project delay in the Addis Ababa Islamic Affairs Supreme Council led construction projects.

1.4.2 Specific Objectives

1. To identify the Influences of External Factors to the project delay
2. To identifythe impact of absence in the project planning and scheduling for the project delay
3. To identify the impact of delay in the progress payments for completed work to the project delay
4. To identify the impact of the late delivery of materials for the project delay
5. To identify the impact of corruption for the project delay

1.4 Definition of Terms

A. Project: Project is a temporary endeavor undertaken to create a unique product, service, or result. Projects are undertaken to fulfil the objectives by producing deliverables. Projects are undertaken at all organizational levels. A project can involve a single individual or a group. A project can involve a single organizational unit or multiple organizational units from multiple organizations (PMBOK)

B. Project Implementation: To implement a project means to execute all the on and offsite work tasks necessary to bring a project from the feasibility study stage to its operational stage, Behens & Hawranek (1991).

C. Project Delays: The project delays are considered as delayed when their stipulated completion durations have not been achieved. Delays are frequent occurrence in the developing countries such as Thailand, Pakistan, Saudi Arabia, Nigeria, and Vietnam respectively, Sunjka & Jacob (2013). Delay is one of the biggest problems often experienced on the construction project sites. Delays can create negative effects such as increased costs, loss of productivity and revenue; many law suits between owners and contractors and contract termination, Owolabi, et al (2014).

D. The Project Management Process: The project management process or project life cycle represents the linear progression of a project from defining the project through making a plan, executing the work, and closing out the project (Verzuh, 2008).

E. Research Hypothesis: According to Griffin (2009), a hypothesis is a formal statement explaining some outcome. In its simplest form, a hypothesis is a guess. A hypothesis is a proposition that is empirically testable.

1.6 Significance of the Study

The Project delay factors are the major Obstacle for the performances of the public institutions like the AAIASC that implements and administers many different religious and developmental projects. Therefore, the output of this study may contribute to identify the problems associated with the project delays and to provide valuable suggestions for the proper use, implementation, efficient and effective performances of projects. The study may also be used as an input for other researchers to further assess in this specific area of study. Besides, it may also be used as an input for the religious institutional policy makers.

1.7 Scope of the Study

This study has Geographic and Time based Scopes. **Geographically,** the study is delimited to the AAIASC led construction projects. **Based on time dimension**, the study has focused on the practical factors of the project delay at current situation mainly from three years on ward (i.e. from 2008 E.C. to 2010 E.C.)

1.8 Organization of the Study

Organization of this Study has five chapters. **Chapter One** consisted of the introduction part, in that it has discussed the description of the project, general and specific objectives; and the major problems in the problem statement, research questions, research hypothesis, and scope, significance of the study and definition of terms. **Chapter Two** has discussed reviews of the related literatures. **Chapter Three** has focused on the methodological tools used during the study, including the research design, research approaches, population, and data collection instruments. **Chapter Four** has discussed about the data analysis and its interpretation, correlation, regression analysis and hypothesis testing. Finally, **Chapter Five** tried to summarize the findings, conclusion and recommendations.

CHAPTER TWO: REVIEW OF RELATED LITERATURES

2.1 Theoretical Literature Review

2.1.1 The Project Management Process or Life Cycle

A. Definition of Project: The project needs to be properly defined at this stage. This can be a short phase, but it is important for the proper understanding of the project context. Therefore, Project is a temporary endeavor undertaken to create a unique product, service, or result. The temporary nature of projects indicates adequate beginning and end. The project ends when the project objectives have reached or when the project is terminated because its project objectives will not or cannot be met, or when the need for the project no longer exists (PMI, 2007).

B. Project Initiation: Projects are initiated by an entity external to the project such as a sponsor, program, or project management office (PMO), or a portfolio governing body chairperson or authorized representative. The project initiator or sponsor should be at a level that is appropriate to procure funding and commit resources to the project. Projects are initiated due to internal business needs or external influences. These needs or influences often trigger the creation of a needs analysis, feasibility study, business case, or description of the situation that the project will address (PMBK, 2017).

According to cob (2012), the project initiation stage is the stage in which a project's key stakeholders first come together to define the broad outlines of a project. A key objective of this stage is to come to a common understanding of what the project is supposed to produce and estimate what it will take to do so. Essentially, initiation stage can provide can provide information to organizations and results in an assessment of whether a project fits with the organization's profit goals or business model. The relationship of the year (1922-1930), project is a good example. Therefore, employing this approach in the management of organization could yield tangible benefits to such organizations.

C. Project Planning: Building the plan for the project is arguable the next step once the project has been defined and the context of the project understood by the stakeholders. The planning stage involves the formulation and revision of statements of intended activity, whether formalized or otherwise (Maylor, 1999).

Organization need to examine the timing of the project; undergo a critical appraisal of both the project output as well as developing strategy to implement them. In another context Cobb (2012) further noted that this stage take notice of how project task will be arranged across the

project life cycle will be determined and mapped on to a project schedule. The Jersey Airport project is a good example of proper planning (Maylor, 1999). The plans need to be approved by the major stakeholders before any work can actually begin. In view of this, it is argued that if organization employs this approach in managing the organization it can enhance effective and efficient utilizations of resources within the organization.

As revealed in lock (2007), Planning promotes the efficient working and operation when it is done sensibly and logically. Thus a well-planned project stands a far greater chance of being completed within time and budget. It is argued that planning could contribute largely to cost effectiveness and profitability.

D. Project Launch: It is done once the planning is complete and initial resources are committed. Experts and academics have revealed that beginning the actual work on a project is a critical juncture in any projects life and demands a great deal of the leader attention. Experts and academics have revealed that beginning the actual work on a project is a critical juncture in any project's life and demands a great deal of the leaders' attention. This approach was assumed to help organizations in paying attention to details and ensure that business operations went on smoothly without any form of disturbances (Maylor, 1999); (Lock, 2007); & (Cobb, 2012).

E. Project Execution: It is the stage in which tasks are delegated to project team members and most of the project's work is done to keep the project team members and most of the project's work is done to keep the project on track once it has been launched. However, working the project team, leaders need to monitor and control the pace of project work, its costs and performance quality; it is important to state that this approach could help in working with external stakeholder and maintain supports; ensure flow of project resource; minimize but adapt to project pressures, disruptions and changes (Look, 2007); (Cobb, 2012); (Wellman, 2011); & (Aven, 2003).

F. Project Closing: It is the stage at which the final products, services, and other project outcomes are delivered to the client. This stage requires the proper managerial and leadership attention and commitment. The organizations need to examine again the cost, time and quality of the project. Does this reflect the initial plans of the project? Critical reflection on scope and management of the entire project is important. This will probably guide the project management in managing the future projects. It is therefore important that organizations always incorporate this into the overall organizational goals and strategies (Cobb, 2012).

2.1.2 Nature and Characteristics of the Construction Projects

According to Tsegaye (2017), the management of construction project has some differences from the management of other projects. The differences mainly stems from the nature and characteristics of construction projects. The consideration of these differences is important for the successful management of construction projects. Based on the arguments of these researchers, the construction projects generally involve the followings core issues**;**

- *Usually they are capital intensive, complex; require significant management skills, involvement and coordination of wide range of experts in various fields (Chartered Institute of Building, 2002).*
- *They are usually undertaken outside; hence, they are susceptible to many variables such as weather and traffic (Gould & Joyce, 2003).*
- *They must address the geography and conditions of the project site and the relation of the project to the environment. (Project Management Institute (PMI), 2007).*
- *They are subject to a variety of laws and regulations that aim to ensure public safety and minimize environmental impacts (Bennett, 2003).*
- *They are compared to most other industries, construction projects involve relatively intensive labour use and consume large amount of materials and physical tools (Jekale, 2004).*
- *The management of construction projects has much in common with the management of similar types of projects in other industries (Hendrickson). "Much of the content of PMBOK Guide is also directly applicable to construction projects" (PMI), 2007).*
- *Even though, management of construction project is similar to management of other kind of project in many respects, it has also some peculiarities that differentiate it from managing other kind of projects such as software development. For example, unlike the management of many other projects, the project managers in construction project are often changed from one phase to another or some may specialize in only one phase of the construction project (PMI, 2007).*

2.1.3 Types of Project Delays

According to Theodore (2009), the technical meaning of the term delay in construction projects has not been defined correctly, since it has different senses to different conditions during the Project execution. However, the term is normally used as an extended duration or delay in the start or finish dates of any project activities. Therefore, delay causes the time

extension and variation in cost allocation, the impact in time and cost will only occur when the delay lies on the critical path of the programme.

Braimah (2008) also stated that delayed completion of any projects is generally caused by the actions or inactions of the project parties including the contractors, consultants, owners, or others (e.g. Acts of God). Based on these sources and the contractual risk allocation for delay causing events, Braimah has classified project delays in to four categories as follows**;**

(I). Critical or non-critical,

(II). Excusable or non-excusable,

(III). Compensable or non-compensable

(IV). Concurrent or non-concurrent

I. Critical and Non-Critical Project Delay

a. Critical Delays: Delays that result extended project completion times are known as critical delays, (Callahan, et al, 1992). In the case of excusable critical delays, the contractor will generally be entitled to a time extension. Changing the type of structural steel members, while the contractor was erecting structural steel was a clear example of a critical delay that was likely to delay the overall contractors' project completion. However, many delays occur that do not delay the project completion date or milestone date. The concept of critical delays emanates from critical path method scheduling, and all projects, regardless of the type of schedule, have critical activities. If these activities are delayed, the project completion date or milestone date will be delayed. In some contracts, term controlling item of work will be used. According to Trauner & Theodore (2005), the critical delays refers to critical activities or critical paths that if delayed will delay the completion date. Determining which activities truly control the project completion date depends on the following:

- *The project itself*
- *The contractor's plan and schedule*
- *The requirement of the contract for sequence and phasing*
- *The physical constraints of projects*

b. Non-Critical Delays: They are delays incurred off the critical path which do not delay ultimate project performance. If the delay in this case is excusable, the contractor does not have the right to receive a time extension, because this type of delay does not have an effect on the overall completion of the project However, non-critical delays may affect contractor's cost performance; in this case, the contractor may have the right to receive additional performance costs (Leary & Bramble, 1988).

II. Excusable and Non-excusable Delays

In the process of determining the effect of delay on construction project, it is necessary to determine whether the delay is critical or noncritical. It is also required to fine the delays are concurrent or non-excusable. However, delays can also be further classified into compensable or non-compensable delays (Trauner & Theodore, 2009).

a. Excusable Delays: All delays are either excusable or non-excusable. An excusable delay, in general, is a delay that is due to an unforeseeable event beyond the contractor's or the subcontractor's control. Normally, based on common general provisions in public agency specifications, delays resulting from the following events would be considered as excusable delays**:**

- *General labour strikes*
- *Fires*
- *Floods*
- *Acts of God*
- *Owner-direct changes*
- *Errors and omissions in the plans and specifications*
- *Differing site conditions or concealed conditions*
- *Unusually severe weather*
- *Intervention by outside agencies*
- *Lack of action by government bodies, such as building inspection*

These conditions may be reasonable, unforeseeable and not within the contractor's control and the analyst will conclude that a delay is excusable based solely on the preceding definition. Decisions concerning delay must be made within the context of the specific contract. The contract should clearly define the factors that are considered valid delays to the project and that justify time extensions to the contract completion date. Some contracts may not allow for any time extensions caused by weather conditions, regardless of how unusual, unexpected, or severe **(**Trauner & Theodore, 2009).

b. Non-Excusable Delays: Non-excusable delays are events that are within the contractor's control or foreseeable. This type of delay presents no entitlement to a time extension or delay damages for the contractor if the delay can be proved to have affected the whole project. The owner however could be the liquidator to the damages.

For instance, non-excusable delay would be when a contractor fails to provide sufficient manpower to complete the job on time. Client can claim their loss if had in the contract agreement. The Factors that contribute to the non-excusable delays are discussed as follows**:**

- *Late performance of subcontractors;*
- *Untimely performance by suppliers;*
- *Faulty workmanship by the contractor or subcontractors*
- *Labour strike or lack of labour*
- *The usual weather and as expected whether,*
- *The inefficiency of contractor to manage the construction site.*
- *The financial of contractor*
- *Failure to manage their work according to the contract schedule.*
- *Always make mistake or failure to fulfil of owner specification*

The contracts' controlling document also determines if a delay would be considered as non-excusable. For example, some contracts consider the supplier delays excusable if the contractor can prove that the materials were requisitioned or ordered in a timely manner. But, that material could not be delivered due to circumstances beyond the control of the contractor. Other contracts may not allow such delays. The owner and designer or drafter of the contract specifications must be sure that the contract documents are clear and unambiguous. Similarly, before signing the contract, contractor should fully understand what the contract defines as excusable & non-excusable delays (Trauner & Theodore, 2005).

III. Compensable and Non-Compensable Delays

a. Compensable Delays

According to Theodore (2009), compensable delay is when the contractor receives payment due to an additional cost of delay and as well as addition time extension for contract performance, if there is any change in scope of work, late supply of owner materials or information, impeded site access, differing site conditions and failure to provide timely and review shop drawings. Furthermore, this type of delay is for which the innocent party is entitled to both a time extension and additional compensation for the resulting costs.A compensable delay is a delay where the contractor is entitled to a time extension and to additional compensation. Relating back to the excusable and non-excusable delays, only excusable delays can be compensable.

b. Non-Compensable Delays

Non-compensable delays mean that although an excusable delay may have occurred, the contractor is not entitled to any added compensation resulting from the excusable delay. Thus, the question of whether a delay is compensable or not must be answered. Additionally, a non-excusable delays warrant neither additional compensation nor a time extension.

IV. Concurrent or Non-Concurrent Project Delays

a. Concurrent Delays: Alkass said that, concurrent delays refer to delay situations when two or more delays occur at the same time or overlap to some degree. For example, if an owner denies access to a project site for two weeks, and a severe storm prevents the contractor from working on the project for one of those two weeks as well, there will be a concurrent delay of one week. The contractor will be able to recover for delay damages for one week, as a severe storm is not a cause of delay that is compensable and would have prevented the contractor from performing even if the owner did not deny access to the site. However, if there are two concurrent causes of delay, one of which is a relevant event, and the other is not, then the contractor is entitled to an extension of time for the period of delay caused by the relevant event notwithstanding the concurrent effect of the other event.

2.1.4 The Concepts of Delay in Project

According to (Morris, 1994; Bourne & Walker, 2004), the Project management has evolved over the past couple decades as researchers and practioners have attempted to identify the causes of project failure and the various factors that lead to the project success. Traditional project management skills were developed from the requirements of construction and defence industries to plan, control and manage large and complex ‘tangible’ projects.

Hendrickson & Au. (1989), pointed out that the management of construction project requires knowledge of the modern project management as well as an understanding of the design and construction process. Many studies have attempted to identify the causes that put the construction projects behind the planned schedule. Those identified causes had included change in design, poor labour productivity, and inadequate planning. Furthermore, the previous studies showed that; delays can be caused by owners, planners/designers, contractors, or acts of God. However, most studies were focused mainly on identifying delay causes in the construction phase and rarely emphasizing on the planning and design phases.

McManus et al,1996, who evaluated causes of delay in architectural construction projects, concluded had that many delays were manifested during all project phases and primarily had occurred during the construction phase; However, delays that start in the design phase were

identified by including inadequate schedule control by architects, inability of owners to review design in timely manner, late incorporation of emerging technologies into design, and ineffective coordination and or inclusion of project user groups.

Basu (2005) identified the factors at the start of a project that almost certainly lead to project delays and provided insight into the reasons for the delay and their impact on schedule.

Toor & Ogunlana (2008) studied construction delays in Thailand. They found that the problem faced by the construction industry in developing economies like Thailand were identified as**;** Shortages or inadequacies in industrial infrastructure (mainly supply of resources), caused by clients, consultants, and incompetence or inadequacies resulted from contractor's. They recommended that there should be concerted effort by the economy managers and construction industry association to provide the necessary infrastructure for efficient project management.

Chan & Kumara Swamy (2008) conducted a survey to determine and evaluate the relative importance of the significant factors causing delays in Hong Kong Construction Projects. They also analysed and ranked the main reasons for delays and classified them into two groups these were identified as follows**;**

"*The role of parties in local construction industry (Client, Consultants or Contractors)" and " The type of projects, the results were indicated that five major causes of delays**; (**Poor site Management and Supervision, unforeseen ground conditions, low speed of decision making that involving all project teams, client initiated variation and necessary variations of works."*

Odeyinka & Yusif (1997) have addressed the causes of delays in building projects in Nigeria. They classified the causes of delays as project participants and extraneous factors. Client related delays were included as variation in orders, slow decision making and cash flow problems. Whereas Contractor related delays were identified as financial difficulties, material management problems, planning and scheduling problems, inadequate site inspection, equipment management problems and shortage of manpower. And extraneous causes of delay were identified as inclement weather, acts of nature, labour disputes and strikes.

Al-Momani (2000) carried out a quantitative analysis on construction delays in Jordan. The result of his study had indicated that, the main causes of delay in construction of public projects were related to designers, user changes, weather, site conditions, late deliveries, economic conditions and incensement in quantity.

According to Fugar, et al. (2010), material group delay factors were ranked the second most important factors responsible for construction delay in Ghana. The shortage of material problem was related to the ability of client to honour certificate. Such causes of unavailability

of materials on site at right time was due to the suppliers were reluctant to supply materials on credit because contractors could only pay them once the contractor had received the payment from the client related to Manavazhia and Adhikarib survey, they found that material and equipment procurement delays in highway projects in Nepal. Delay in the delivery of materials and equipment to construction sites is often become a contributor to the causes of delay and make the cost overruns in construction projects. The main causes of material and equipment procurement delays were found to be organizational weaknesses, suppliers' defaults, governmental regulations and transportation delays

2.1.5 Project Success or Failure

According to Munns & Bjeirmi (1996), the definition of a project had suggested that as there was an orientation towards higher and long-term goals. Important parameters within those goals were discussed as to be a return on investment, profitability, competition and market ability. A range of variables and factors will affect the ability to achieve these goals, which were identified by the various authors.

The following lists were derived from the writings of Cash & Fox, Baker *et al:* Objectives, Project Administration, Third Parties, and Relations with Client, Human Parties, Contracting, Legal Agreements, Politics, Efficiency, Conflicts and Profit. As also discussed by these authors, the literatures of, Morris and Hugh, were implied that the success of project has dependent on having a realistic goal, completion, client satisfaction, a definite goal, profitability, third parties, market availability, the implementation process, and the perceived value of the project. Only two of the items from these lists would lie directly within the scope of project management as previously defined. This would indicate that the project management and its techniques are only a subset of wider context of the project. The Project management plays a role in project success direct control of the project manager. This would start to explain why projects can succeed or fail independently of the project management process. Different research on project success shows that, it’s difficult to create a universal checklist of project success criteria suitable for all type of projects. Cash & Fox, Baker *et al* in Munns & Bjeirmi (1996)

According to wattertridge (1998), the success criteria in diverse projects differ from project to project depending on a number of issues. For example: On size, uniqueness and complexity.

Pinto & Covin (1998) commented that, to explain the cause of project success, many project management researchers have generated sets of success factors which are assumed to account for much of the variances in project performance.

Morris & Hough (1987) also suggested that projects are influenced by seven forces which help to construct successful project, such as**;**

- *What the project will accomplish and approach to design activity and technology implementation to achieve this*
- *An attitude that reflect the importance attached to the project & deliver support to all through the management level*
- *Employees and their management, project leadership and team work*
- *A system related to planning, reporting and control*
- *An external context of the project that encompasses project sponsorship*
- *Organizational roles, responsibilities, and contractual relationship*
- *External influences such as political, social, technical, legal, environmental, and economic*

According to these researchers, those elements have developed a comprehensive framework depicting the elements of project success, such as attitude, project definition, contract strategy schedule, external factors, financing, the organization's communication as well as resource management and human quality control. They also discussed the concepts of success are both subjective and objective. But, the success varies across the project as well as the product life cycle where various stakeholders are involved.

2.1.6 Project Management Success or Failure

The definition of project management suggests a shorter term and more specific context for success. The outcomes of project management success are many. They would include the obvious indicators of completion to budget, satisfying the project schedule, adequate quality standards, and meeting the project goal. The factors which may cause the project management to fail to achieve these would include;

- *Inadequate basis for project*
- *Wrong person as project manager*
- *Top management unsupportive*
- *Inadequately defined task*
- *Lack of project management techniques*
- *Management techniques mis-used*
- *Project closedown not planned and Lack of commitment to project.*

These factors would suggest that successful project management requires planning with a commitment to complete the project; careful appointment of a skilled project manager; spending time to define the project adequately; correctly planning the activities in the project; ensuring correct and adequate information flows; changing activities to accommodate frequent changes on dynamic; accommodating employees' personal goals with performance and rewards; and making a fresh start when mistakes in implementation have been identified. The narrow definition of tasks in successful project management provides an indicator of why project management success and project success are not directly correlated (Morris & Hough, 1987).

Kumar suggested that by gathering sufficient site information and being aware of project considerations and constraints; it is possible to tailor strategies and methodologies specific to certain situations. Such the well-defined strategies will assist in providing a satisfying and successful implementation of a project (Morris & Hough, 1987).

2.2. Empirical Literature Reviews

2.2.1 Causes of the Project Delay

The findings of research results in the Werku (2016) indicated that, the existence of causes of delay in the Ethiopian public building construction had been identified many. Among those causes the following were considered as the major**:**

Contractors' Financial Difficultieshas revealed that in Ethiopia the owners don't release payments for executed work on time. Those problems that the owners are creating lead to the financial difficulties to contractors and the pitfalls on the progress of the projects. Therefore the owners should have to release payments on time based on contract agreement and prepare sufficient fund in advance to avoid delay in progress payments for executed work and contractor's financial difficulties. So as to accelerates the project progress. According to research, the financial difficulty is defined as getting into situation where a respondent's credit is adversely impacted, such as not paying bills. If the contractors have problem in paying money for labourers' salaries, the materials and equipment to be used for construction work and etc., we can say that they are really in financial difficulties. Werku, K. (2016).

A financial difficulty of contractors has been reportedly as one of the important reasons for delay in construction projects. There found that, delay in payment from the client would eventually cause financial difficulties to the contractor. Thus, most of the construction works cannot be carried out due to these financial difficulties. Furthermore, they postulated that insufficient capital is one of the major causes of financial difficulties among contractors. Poor financial control by the contractor can lead to insufficient capital (Liu, 2010) in Werku (2016).

Escalation of Material Price was found certainly another key factors affecting time performance of most construction projects in Ethiopia. During cost estimation process the estimator should have to consider appropriate inflation factor. Because during the construction period the cost of construction Materials, tools, labours, equipment etc. may vary from time to time. This escalation has, and will continue to cause, such negative impacts as delayed projects, lack of firm price quotes, higher project costs, a significant rise in the incidence of job-site construction materials theft. Some of the more severe impacts can be managed by cooperative efforts to minimize, manage and share risks through proactive changes in project methods and contracts. Werku, K. (2016).

Cost impacts can be mitigated through aggressive value engineering for substitute materials, by developing on time order culture and stockpiling of regular materials, early purchases of those materials subject to escalation risk, and identify critical materials, whose production and procurement takes long time and act early supply commitments. To effectively utilize those methods, Owners, Supervisors and Contractors should seek the early involvement of specialty contractors and their collaboration with the design team. Escalation of materials price or Inflation usually leads to the escalation of prices of materials, equipment and other inputs to the projects. Since this factor is out of control by project parties, they can only minimize delays in the project. So that, cost overruns due to this factor are minimized, since inflation is a time bound factor. Werku, K. (2016).

Sometimes fake scarcity is developed by the providers of materials to make a hyper-inflation in developing countries. The unpredictable inflationary trend was observed in many developing countries. Escalation of material price was also identified as the most influential causes of project delay.Werku, K. (2016).

Ineffective Planning and Scheduling by Contractors, was found as the basic for every construction work. It has a significant impact on the construction delays. It should be developed from the start of the project until completion of a project. The reasons why contractors are not able to follow the planning and scheduling effectively may be due to inexperience staff and shortage of workers at the site, financial problem, and poor site management. Found in their research work. Ineffective planning and scheduling by contractors is the significant causes of delay in construction project.Werku, K. (2016).

Delay in Progress Payments for Completed Works by clients on construction projects in the Ethiopian construction industry were considered to be a factor that causes delay. It was identified to cause severe cash-flow problems to contractors and this can have a devastating effect down the contractual payment chain. Regular monthly payment to contractors for work done removed constraints which otherwise may have impeded project progress to cause delay and cost overruns. Failure to provide adequate funding resources to contractors for the job done will make it difficult for the contractors to meet project objectives. According to the results of study, delay in progress payments for completed works was found to be one of the factors that cause schedule overrun.Werku, K. (2016).

Lack of Skilled Professionals in the Construction Project Management in Contractor Organization was found as a long-term problem and it will continue to push up project time and costs. Education and training capacity given through various higher institutions, organizations etc. are clearly inadequate to meet the need of the large percentage of skilled

workers in the Ethiopian construction sector. The education system is often not delivering the required number of specialists across project management, engineering, surveying, contract management and the skilled or semi-skilled labour.Werku, K. (2016).

Finally, the findings of this research work was found very similar to that of the findings of those researchers who were conducted in other developing countries, these had involved the followings;

"*Delay in progress payments for completed works, low productivity of labour, ineffective project planning & scheduling, contractor's' financial difficulties and unqualified or inadequate experienced labour were the most significant factors that cause delay in the Egyptian construction projects."*

Low productivity of labour, escalation of materials price, contractor's' financial difficulties, and delay in progress payments for completed works, and ineffective project planning were identified as among the significant causes of project delay in Malaysian construction industry. In the same manner, the research had also indicated that, the contractor's financial difficulty, escalation of materials price, and delay in progress payments for completed works, and late delivery of materials were among the major cause of delay in Nigerian construction projects. This similarity in the causes of delay outcome among the different countries has showed that, the causes of project delay were not specific only to some places rather they were identified them as the universal factors.Werku, K. (2016).

2.2.2 Causes and Effects of Project Delay in Ethiopia

According to Tsegaye & Hanbin (2017), the general ranking was considered the average relative important index (RIII) of the impact on the pre-construction, construction, and post-construction stages. So that, the analysis from the study has showed several key causes of delays and they were sequentially described and listed as follows**:**

Corruption in an overall and each stages of construction process was investigated as the most critical causes of delays in the Ethiopian construction projects. It has not identified as a major causes of project delay in previous studies. Therefore, this factor was considered as unique for the Ethiopian construction projects, Tsegaye & Hanbin (2017).

Availability of Utilities at Site, the respondents agreed that the absence of utilities at site, such as water, electricity, or telephone were the common major cause of project delay in the Ethiopian construction; especially in large projects, which is not a common cause to other studies. The cause materializes due to expectancy of the contractors to fulfill the utility and facility by government, Tsegaye & Hanbin (2017).

Inflation or Price increases in Materials had also been identified as the major causes of project delays in other studies. The researcher described inflation or the price increases in material occurred due to an exchange rate increases from imports and it was recommended as, the parties to explore additional materials from the local sources, Tsegaye & Hanbin (2017).

Lack of Quality Materials, the previous studies was also determined as the most important causes of project delay. According to the investigated results, in a very fast developing country, often times demand exceeds the supply and which causes to increase prices and contractors postpone the purchase activities until the prices decrease as a result shortage of quality materials, Tsegaye & Hanbin (2017).

Late Design and Design Document was identified as the most significant causes of project delay in the Ethiopian construction projects. In addition, it has been identified as the major causes of delay and recommends solving by schedule to complete design documents by architecture and follows-up clients, Tsegaye & Hanbin (2017).

Slow Delivery of Material, on the previous studies was identified as the major causes of project delay. The reason for this factor was due to transportation problem to the remote construction sites with little or no transport infrastructures and complicated purchasing process; especially when most of the materials required was imported from the overseas, Tsegaye & Hanbin (2017).

Late in Approving and Receiving of Completed Project Work was identified as the most dominant causes of project delay in the Ethiopian construction project. The research also identified it as the one casual factor for the project delay, Tsegaye & Hanbin (2017).

Poor Site Management and Performance by Contractors was also identified as one of the major cause of project delay in other studies. According to the investigation, poor site management could cause not only delays, but also defects, disputes, and cost overruns. Also, it was recommended that, poor site management and performance overcome by recruiting qualified site managers, allocating optimal number of supervisors and integration of knowledge management processes, Tsegaye & Hanbin (2017).

Late release of Budget or Funds was identified as one of the most important causes of project delays in the Ethiopian construction project. A study result recommended that the clients need to release payment on time unless contractors impairs ability to finance the work. In addition, the contractor should manage his financial resources and plan cash flow utilizing progress payment, Tsegaye & Hanbin (2017).

Ineffective Project Planning and Scheduling was determined as one of the most important causes of project delay by contractors. The researchers described them as it was a continuing process during the construction and that needed to match with the resources and time to develop the work to avoid cost-overrun and disputes. In addition, improper planning at the initial stages of a project was found to manifest throughout the project and causes of delays at various stages and only the project which was well planned could be well executed, Tsegaye & Hanbin (2017).

Analysis of the Study indicated that, the major classification of the causes of delay and it had investigated an external, responsibility, resource, and contract related. On all stages there were influence by different level & sub-group of causes of delay, Tsegaye & Hanbin (2017).

As discussed in Assaf, et al. in (Sadi & Assaf (2006), in Saudi Arabia, a research that was conducted about construction project delay on different type of project in all of the state. From this result the 70% of projects has experienced time overrun. The survey conducted on the 23 contractors, 19 consultants, and 15 owners, 73 causes of delays were analysed and the causes of delays were recognized and the causes were also grouped into nine classes. The outcome of the survey that agreed by all the three parties were changed the order. The overall results were stated that**;**

"The factor related to labour, contractor, and consultant agreed that owner interface, inadequate contractor experience, finance and payment, labour productivity, slow decision making, improper planning and subcontractor are among the major factors."

In Florida, Ahmed *et al* in (Syed, 2003) has identified the major causes of delay in building construction industries. The primary aim of this study was to identify the perception of the different parties regarding causes of delays, the allocation of responsibilities and the different types of delay. It was found that**;**

"Consultants play a very important role in design-related delays because they are in charge of design process in conjunction with owner of the project. Furthermore, delays in payment categories do not have the same negative impact on project completion times as other factors considered in this study such as code, design and construction related issues."

In the study of Shebob (2012), to identify the causes of construction delays, a detailed literature review was carried out using international journals, conferences, and books. He was observed from the previous literature the causes and effects of delays in the construction industry could vary from country to country, due to different environments and the techniques applied, which can affect the construction processes.

The delay factors were considered during the design of questionnaires that aimed to rank the delay factors using the responses collected from the construction industry representatives, including consultants, contractors and owners. The possible delay factors in construction projects were also categorised by Shebob into two (i.e. internal & external delay factors) as follows**:**

*"**The key Internal Delay Factors are;** change orders by the owner during construction; delay in progressing payments; ineffective planning and scheduling by the contractor; poor site management by the contractor; a shortage of labour; and difficulties in financing the project by the contractor."*

*"**The Key External Delay Factors include;** lack of materials and equipment; unavailability of required tools on the local market; and adverse weather conditions. However, the involvement of government, particularly in a developing country, where contracts are awarded to the lowest bidders without analysing the technical capability of contractors, is one of the main external factors delaying a project. Malaysia, Nigeria and Saudi Arabia have all reported this type of problem an external factor"* Tsegaye & Hanbin (2017).

2.3. Conceptual Framework of the Study

2.3.1 The Selected Conceptual Model to this Study

The conceptual frame work elaborates a research problem and summarizes the variables and their indicators in relation to the objective of the study and literature review. The frame work is summarized in schematic diagram with a table that presents the variables and their hypothesized relationship. It shows the relationship of the variables to be studied and supports to keep the research work to focus on objectives of the study. The Conceptual model also shows an association and interrelations to be studied in the research and shows the structure and coherence to the research by simplifying the causes and effects of variables to be searched.

In this study the independent variables are; external factors, Escalation of material prices, Ineffective project planning, and scheduling, Delay in progress payments for completed work, and late delivery of material, and Corruption. But, the dependent variable is delay of project completion. Therefore, through the review of literature, the researcher singled out three major aspects on the factors that cause the project delay in the selected institution. These the three components are explained in the next table.

Similarly, the initial conceptual prepositional models of delay in project delay based on the five (5) groups of factors are proposed by the researcher are explained as follows:

H1: The more Delay in progress payment for completed works have significant impact on the more delay of project

H2: The more LateDelivery of materials has significant impact on the more delay of project

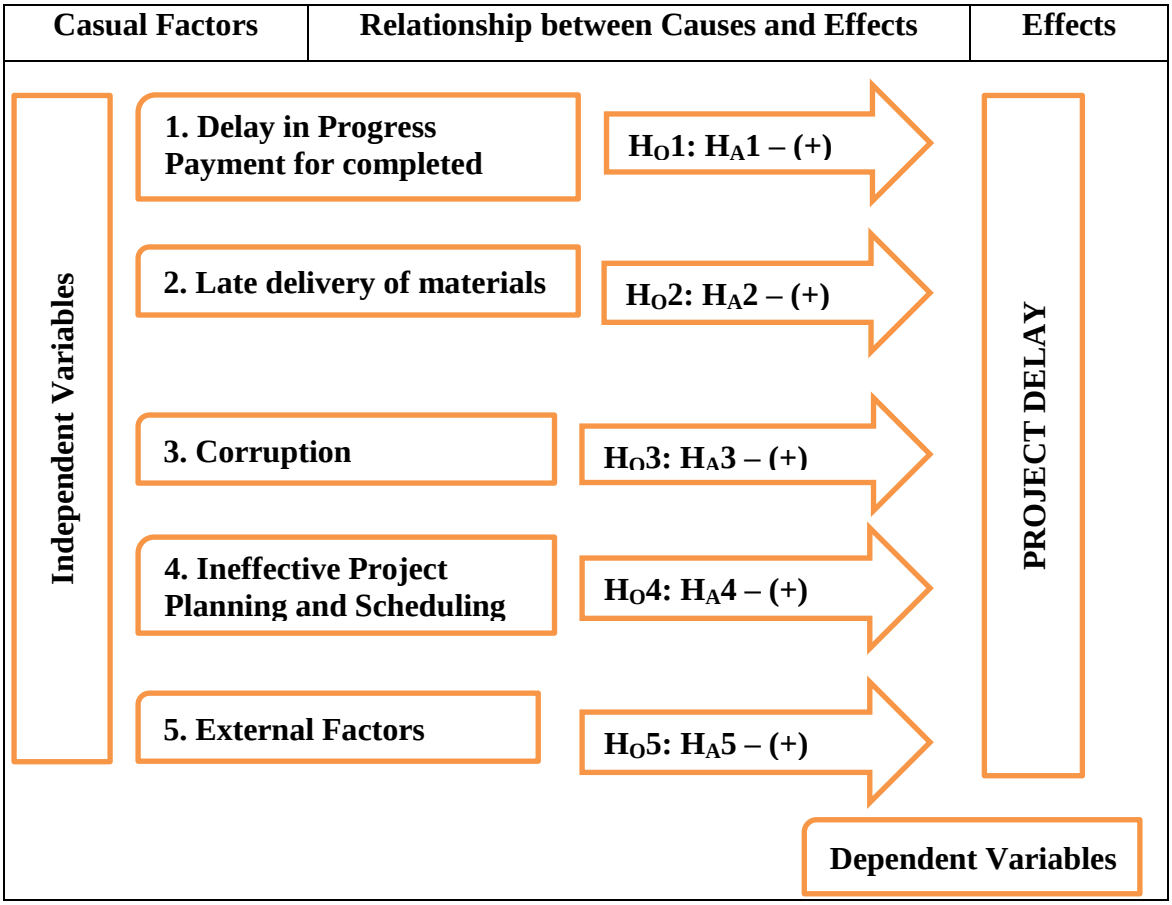
H3: The more existence of Corruption has significant impact on the more delay of project

H4: The more ineffective project planning and scheduling has significant impact on the more delay of project completion on the selected institution

H5: The more External Factors have significant impact on the more delay of the project

The basis to set these hypotheses was to identify whether the casual factors hypothetically have relationships and significant or non-significant impact on the delay of project completion. These hypotheses are also supported by different literatures that made studies on delay of construction projects and in addition the researcher identified these hypotheses from the research questions that were derived from the problem statement in relation to empirical results of Werku (2016), Tsegaye (2017) and many similar authors.

Figure 1: Conceptual model of the study



Source: Initial conceptual model on cause and effect of project delay from researcher based on the objective of study and empirical literature

CHAPTER THREE: METHODS OF THE STUDY

3.1 Research Design

According to Griffin (2009), a research design is a master plan that specifies the methods and procedures for collecting and analysing the needed information. A research design provides a framework or plan of action for the research. Objectives of the study determined during the early stages of research are included in the design to ensure that the information collected is appropriate for solving the problem.

According to Saunders, et al. (2009), the classification of research purpose most often used in the research methods' literature is the threefold one of an exploratory, descriptive and explanatory. However, in the same way as our research question can be both descriptive and explanatory, so our research project may have more than one purpose. Hence, among these the three research designs, the researcher preferred to use an explanatory research design. Studies that establish causal relationships between variables are termed as an explanatory research. The emphasis here is on studying a situation or a problem in order to explainthe relationships between variables.

Therefore, in this study, the researcher will use the explanatory research studies by studying the situation or problem in order to explain the relationship between the major factors, independent and dependent variables, and project delay, Saunders, et al. (2009).

3.2 Research Approaches

A. Qualitative and Quantitative Methods (Mixed Approaches)

As described by the Kothari (1990), the type of research brings to light the fact that, there were two basic approaches discussed on thisresearch were the quantitative and qualitative approaches. Quantitative has involved the generation of data in quantitative form which was subjected to rigorous quantitative analysis in a formal and rigid fashion.

According to Saunder (2009), mixed model research combines quantitative and qualitative data collection techniques and analysis procedures. This means that it may take quantitative data and qualities, that is, it could be converted into narrative that as to be analysed qualitatively.

Alternatively, it was quantified the data qualitatively, by converting it into numerical codes in order to analyse statistically.Based on the above facts the investigator has used the mixed research approaches. The reason why the mixed approaches were selected was that to use

both the qualitative (subjective evaluation) and the quantitative (numerical data analysis). It was more helpful to give significant suggestions.Saunder (2009)

3.3 Population of the Study

According to Kothari (1990), the selected respondents should be a representative of the total population in order to produce a miniature cross-section. The selected respondents have constituted the institutionaltotal population and the selection process was total enumeration. The survey that has been conducted was census survey. The population of this study has interested on the data that could be easily found and collected from the AAIASC led construction projects.

Hence, the measurement of the population was sense measurement which has involved the AAIASC head office total population. Therefore, among the total of forty /40/ available individuals, forty (40) of them were selected and included in the study. The study was made based on the survey questionnaires prepared on the causes of project delay towards the selected institution. This study has constituted; Owners of project (Employees, Staffs and officials); Contractors (Engineers, and Project Workers); and Supervision(Supervisors, Consultants and the Project Control teams). The roles of populations are discussed below**:**

Owners: Owners of the project has involvedthe selected institutional main head office the total of thirty (30) individuals. These were officials, staffs and employees. Whoare directly or indirectly has concern on the institutional project activities. Among the forty (40) available individuals, all of the forty (40) were included in the study.

Contractors: Contractors are the professionals who are involved on the institutional project undertakings. These are contractors, engineers and project workers. They were five (5) in number. All the five members of contractors were included in the study.

Supervision: The Supervisors areindividuals who are involved in the institutional project activities. Such groups of individuals control the progresses of project performances, Supervises, assess additional project financing, make financial and payment arrangements and give comment on the project execution. These include the project teams, supervisors, consultants and external stake holders. They were five (5) in number. These all members of the supervisionwere included in this study.

The three groups of participants were selected by the investigator based on the following categories**;**

- *Owners (Employees, Staffs, and Officials);*
- *Contractors (Contractors, Engineers, and Project Workers);*

- *Supervision (Supervisors, Consultants, and Project Control teams).*

Table 1: Population of the Study

S/No	***Composition of the Population***	***Total***
1	*Project owners (Employees, Officials and Staff)*	*30*
2	*Contractors (Contractors, Engineers and Project Workers)*	*5*
3	*Supervision (Supervisors, Consultants, and Project Control teams)*	*5*
	Sum of the Total population	***40***

3.4 Types of Data and Data Collection Instruments

3.4.1 Sources of Data

While deciding about the method of data collection to be used for the study, the researcher has kept the two types of data sources consequently. These data sources were the primary and secondary data sources. The major information sources of such study were both the primary data sources (questionnaires) and the secondary data sources (literature reviews, books, available documents and publicized guidelines).

A. The Primary Data

For the purpose of collecting the primary data, some questionnaires were developed and delivered to the selected respondents to be answered. On this study, the following individuals were involved. These were;

- Owners (Employees, Officials and Staffs)
- Contractors (Contractors, Engineers and Project Workers)
- Supervision (supervisors, Consultants and Project Control Teams)

B. Secondary Data

For the secondary data sources, different conceptual, theoretical as well as empirical literature reviews wereused. Besides, the project management principles or practices, the Project Management Books, Journal Articles (Academic journals, professional journals), and relevant Project related materials, resource guide lines and some available organizational documents were also used during the study. The data was collected from the reliable data sources.

3.4.2 Data Collection Instruments

According to Kothari (1990), there are several methods of collecting the primary and secondary data, particularly in the surveys. Among those data collection methods, the researcher was preferred to use the questionnaires from the primary data sources, and some empirical literature reviews from the secondary data sources for the study. The questionnaires

were prepared in the written paper format and delivered to the respondents on hand and after the respondents have filled on the questionnaires, it was collected, and then it was organized. Finally, the organized data was interpreted according to the final results of the study.

A. Semi structured Questionnaires

The semi-structured questionnaires were prepared and distributed to the respondents in order to assess the primary sources of data both qualitatively and quantitatively from the selected institution. The questionnaire was prepared in the written paper on a standard format and it was delivered to the respondents'. In that, close ended, and scale level or rank order questionnaires were created for the three groups ofrespondents**;**

(i). Owners (Employees, Officials and Staff)

(ii).Contractors (Contractors, Engineers and Project workers)

(iii). Supervision (Supervisors, Consultants, and Project-Teams)

B. Document Reviews

The purpose of using the document reviews in this study was to gain the better understanding of the institutional project implementation practices. The document review has involved the available secondary data sources and the study has used the practices consisted in the examination of Project performance reports, institutional mission reports, articles, Proclamations, and other relevant documents. The review of such documentation was made to integrate or substitute a base line data and to provide a good background to the causes of project delay in the selected institution. By using these tools at the beginning of this study, the institutional mission was used to help the investigator in order to identify the information gaps that need further support by other supplementary data collection techniques.

3.4.3 The Data Collection Procedures

A. Validity of Instrument

To check the validity, the researcher had searched other relevant evidence that confirms the subject matter. In addition to this, the researcher has used the different literature reviews, contacted different experts, and frequently contacted the advisor and included his advices.

B. Reliability of Data

According to Saunder (2009), Reliability refers to the extent to which the data collection techniques or analysis procedures yield the consistent findings. Based on this fact, the reliability of the study was tested by SPSS data analysis techniques. Similar to these assumptions, the reliability of the studied data was also collected by the investigator.In that, both the primary and secondary data sources were used through the printed paper and face to

face interaction. Data was collected at the office time; the investigator has compiled the data free from his personal bias and at least by making them to be the moderate level of accuracy.

Table 2: Reliability statics

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.859	.866	48

The above table indicates the reliability of the data gathered. To test the reliability of the data Cronbach's Alpha test was conducted. According to Hair et al (2008), in most social science studies reliability coefficient of (0.70) or above was considered as acceptable value. In this case the result of the study indicates Cronbach's Alpha is (0.859), which is acceptable level of reliability on the five point likert scale from 1 (strongly disagree) to 5 (strongly agree) level of agreement.

3.5. Method of Data Analysis

The main aim of this study was to identifythe practical factors that contributed for the project delay on the selected institution.The independent variable that causes the dependent variables to occur was induced in this study, because it was believed to have the significant effect on the dependent variables.

Having this issue in concern, the investigation was made to identify the most determinant delay factorsof construction project on the selected institution. The data that was collected through questionnaires was cleaned to detect some incomplete items. To analyze the demographic data, the descriptive analysis was used. To answer the relationship and causes of the independent and dependent variables inferential statics was used to run using SPSS.In order to analysis the identified data the investigator has used both the Mean scores and the Pearson correlation coefficient that was used to test the relationship of variables based on the five point likert scale questionnaires in the survey. The regression analysis was also conducted to measure the Reliability and the level of significances between the groups of respondents byusing Beta coefficients, and P-value.

CHAPTER FOUR: RESULTS AND DISCUSSIONS

4.1 Results of the Study

The analysis implies a careful examination of the collected and recorded data with the problem statements. Therefore, the responses of participants in this study indicated on the factors that cause the project delay in the selected institution.

4.1.1 Rate Respondents

Based on the characteristics of the questionnaire prepared and distributed to the target respondents and the responses attained from these segments, the data analysis was made using different analytical tools.The investigator has distributed forty (40) questionnaires the target respondents. Out of the distributed,all of them were filled and returned at100% response rate.

4.1.2The Demographic Characteristics

Demographic characteristics of respondents have included the four major perspectives. These are sex, occupation, educational status and work experiences. Based on these four issues the detailed data analysis was made as described by the following table and interpretations.

Table 3: The Demographic Characteristics of respondent

S/N	Attributes	No of Respondents	Frequency (%)
1	**Sex**		
	i. Male	34	85%
	ii. Female	6	15%
	Total	**40**	**100%**
2	**Occupation**		
	i. Religious Institution	30	75%
	ii. Private	10	25%
	iii. Government	0	0%
	Total	**40**	**100%**
3	**Educational Status**		
	i. Less than grade 10	12	30%
	ii. Certificate	3	7.5%

	iii. Diploma	8	20%
	iv. BA/BSC degree	14	35%
	v. Master's degree	3	7.5%
	Total	**40**	**100%**
4	**Work Experience**		
	i. From (1-5)	8	20%
	ii. From (6-10)	10	25%
	iii. From (11-15)	9	22.5%
	iv. Greater than 15 years	13	32.5%
	Total	**40**	**100%**

Source: The Demographic Characteristics of respondents obtained from the result of this study on the selected institution (AAIASC)

The above table (3) shows that, the demographic characteristics of respondents. According to this table, 34 (85%) of respondents are male, while the remaining 6 (15%) are female respondents. With regard to occupation the majority 30 (75%) of respondents work in the religious institution.Similarly the majority 14 (35%) of respondents are BA/BSC degree holders, and most respondents 13 (32.5%) have work experience greater than 15 years. In this category the work experience frequency of respondents who have work experience from (1-5) years are 8(20%), those who have work experience from (6-10) are 10 (25%), who have work experience from (11-15) are 9 (22.5%), greater than 6 years 32 (80%) and the total number of participants work experiences is equal to 40 (100%). From this result the majority have greater than 10 years, 22 (55%). This indicates the majority of respondents have the better knowledge about their institutional project works and respondents have good understanding of the subject matter of study.

4.1.3 Descriptive Statistics of the Participants

Table 4: the Descriptive statics of participants

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
DelayProgressPay	40	2.71	4.43	3.85	.47
DelayMaterials	40	2.67	4.67	3.83	.46
Corruption	40	1.80	5.00	3.88	.72
Ineffective Project Planning and Scheduling	40	2.27	4.73	3.63	.63
External Factors	40	2.63	5.00	3.73	.54
Valid N (listwise)	40				

The output in the above table (5) shows the number of respondents with scores (N), the highest scores (the Maximum), the lowest scores (the Minimum), the average scores the (the Mean), and the Standard deviation (Std. Deviation). The more the individual data points difference from the mean, the larger the standard deviation will be. Conversely, if there is a great deal of similarity between data points, the standard deviation will be quite small. If the distribution becomes normal the majority of observation (95%) should fall within (+- 2) std. deviationfrom the mean. In this case all the std. deviations are below the mean; this shows that the distribution is normal.

- Owner Related Factors: Among owner related factors Corruption (Scored grand mean=3.88, ranked 1st), Delay of progress payment for completed project works (Scored grand mean=3.85, ranked 2nd), Delay in materials (Scored grand mean=3.83, ranked 3rd). Cumulatively grand mean of the owner related factors has scored Average mean (3.85).
- Contractor related Factors: From this section ineffective project planning and scheduling Scored grand mean (3.63).
- Supervision related Factors: External factors scored grand mean (3.73).
- Effect of Project Delay: The effect of project delay is section scored a grand mean (4.28)

4.1.4 Correlation Analysis

a.Pearson Correlation Analysis

Table 5: Pearson Correlation analysis

		Delay in Progress Payment for completed works	Late Delivery of Materials	Corruption	Ineffective Project Planning and Scheduling	External Factors	Project Delay
Delay in Progress Payment for completed works	Pearson Correlation	**1**	.459**	.338*	.111	.102	**.631****
	Sig. (2-tailed)		.003	.033	.497	.532	.000
	N	40	40	40	40	40	40
Late Delivery of Materials	Pearson Correlation	.459**	**1**	.497**	-.023	-.103	**.582****
	Sig. (2-tailed)	.003		.001	.888	.526	.000
	N	40	40	40	40	40	40
Corruption	Pearson Correlation	.338*	.497**	**1**	.168	-.103	**.699****
	Sig. (2-tailed)	.033	.001		.301	.528	.000
	N	40	40	40	40	40	40
Ineffective Project Planning andScheduling	Pearson Correlation	.111	-.023	.168	**1**	.337*	**.586****
	Sig. (2-tailed)	.497	.888	.301		.033	.000
	N	40	40	40	40	40	40
External Factors	Pearson Correlation	.102	-.103	-.103	.337*	**1**	**.410****
	Sig. (2-tailed)	.532	.526	.528	.033		.01
	N	40	40	40	40	40	40
Project Delay	Pearson Correlation	**.631****	**.582****	**.699****	**.586****	**.410****	**1**
	Sig. (2-tailed)	.000	.000	.000	.000	.009	
	N	40	40	40	40	40	40

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

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

The result of correlation analysis on this table indicates that, the correlation between project delay and the independent variables. According to the above data,the dependent variable(project delay) is correlated with Delay in the ProgressPayment for the completed project works at (r = 0.631, p = 0.000); with late delivery of materials at (r = 0.582, p = 0.000); The dependent variables have also correlations between the project delay andcorruption at (r = 0.699, p = 0.000); with ineffective project planning and scheduling at (r = 0.586, p = 0.000); And finally, the dependent variablehas correlation with external factors at (r = 0.410, p = 0.01). As it can be seen from the correlation table, all independent variables have positive relationship with the dependent variable while their strength is remained dependent on the r value which is indicated in the bracket.In the case of their significance, all independent variables are significant at($P<0.05$).

4.1.5 Regression Analysis

I. Assumptions

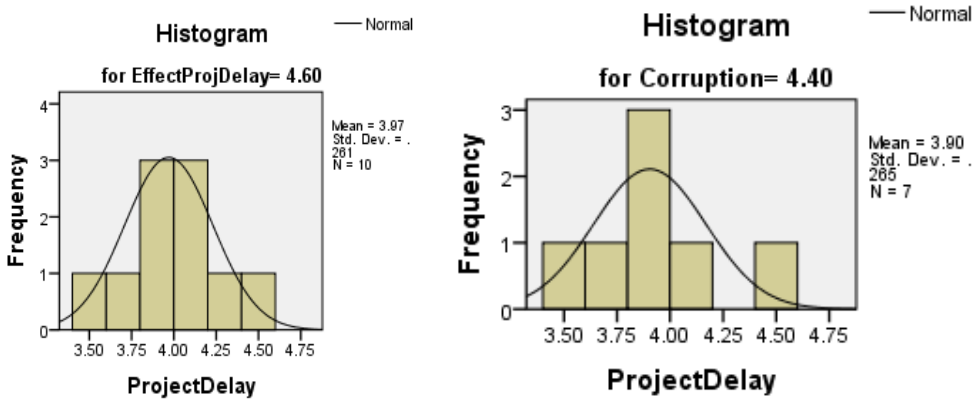
A. Normality

There are three ways to test whether the data is normally distributed or not. Among those types of analyses, the investigator selected one which is more relevant to magnify the comparison between variables namely the histogram.

a. Histogram Drawing Method

By drawing the histogram of the data and getting SPSS to super impose a normal curve, using the graphs, interactive, Histogram then by assigning the variable identified to the horizontal axis, by leaving the vertical as count by clicking on the histogram, the normal curve shall be developed.

Chart 1: Random Normal number from 0 to 40 Chart 2: Normaly distributed random number



The above two histogram charts indicate that, there might be unlikely to see perfect bell shapes with smaller sample sizes, by comparing between the two printed both sets of (40) random numbers, on the left they are generated with equal probabilities of being any frequency of number between (0) and (40), but for the numbers on the right they are generated with a random distribution.

Regression Results

Table 6: The ANOVA table of the regression analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.284	37	.116	728307.94	.000[b]
	Residual	.000	2	.000		
	Total	4.284	39			

a. Dependent Variable**:** Project Delay

b. Predictors**:**(Constant), External Factors, Delay in Progress Payment for completed works, Ineffective Project Planning and Scheduling, Corruption, DelayMaterials

The above ANOVA table describes that the overall variances accounted for the model. In this table, the F-statistics represents a test of null hypothesis which the expected values of regression coefficients are equal to each other and that they are equal to zero (0.000).This means, the F-statics tests whether the R square proportion of variances in the dependent variable accounted for by the predictors is zero (0.000). If all the null hypotheses were true, then which shouldhave indicatedthat there would nothavea regression relationship between the dependent variable and the predictor variables.

But in this case, from among all predictor variables, all of the null hypotheses are not true. Therefore, there is a regression relationship between the dependent variable (project delay) and predictor variables (causes of project delay).

Table 7: The regression analysis of model summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000[a]	1.000	1.000	.00000

a. Predictors: (Constant), ExternalFactors, Delay of ProgressPayment , IneffectiveProject Planning and Scheduling, Corruption, Delay of Materials

The table (7) in above output includes information about the quantity of variances which is explained by the predictor variables. The first (R) in the output is the multiple correlation Coefficient between all of the variables of predictor and dependent variable. In the model the value of R square is simply the squared value of R.That is used to describe the good fit or the amount of variance explained by a given set of predictor variables.

According to Cohen (1992), R square value (0.26) or above values indicates that high effect size. The value of R is 1.000 (100%), the value of R square is 1.000 (100%). From these values the variance in the dependent variable is explained by 100% of the independent variables in the model.

Hence, the R-square 100% indicates that the model explains all the variability of the response data around its mean. The higher the R-squared, the better the model fits the studied data. R-square is better to explain changes in the studied outcome variables.

Table 8: The Coefficients of the Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.056E-016	.000		.000	1.000
	Delay in ProgressPayment for completed works	.200	.000	.281	175623743.71	.000
	Late delivery of Materials	.200	.000	.279	161491464.66	.000
	Corruption	.200	.000	.435	262203033.43	.000
	IneffectiveProject Planning and Scheduling	.200	.000	.378	249586557.38	.000
	ExternalFactors	.200	.000	.328	217316489.77	.000

a. Dependent Variable: Delay of Project

The above table depicts that the coefficient table which provides significance test for each of the independent variables in the model. The unstandardized regression coefficient for the predictor measures the individual effect of each variable in predicting the dependent variable, project delay. As it can be seen from the above statistical output, the beta coefficient of DelayProgressPayment for completed work is 20% at (p=0.000). This implies that a unit (1) increment in the progress payment delay is responsible for 20% delay of projects in the case institution.Similarly, at the corruption level of statistical output, beta coefficient of corruption indicates that, 20% at (p=0.000). This also implies that, a unit(1) increment in the corruption is responsible for 20% delay of the project in the case of institutional project undertakings.

Beta coefficient of late delivery of materials is responsible for 20% at (p = 0.000). This implies that a unit (1) increment in late delivery of material times is responsible for 20% delays of projects in the studied institution. Beta coefficient of the Ineffective project planning and scheduling is responsible for 20% at (p = 0.000), this implies that a unit (1)

increment in the ineffective project planning and scheduling is responsible for 20% delays of projects in the studied institution. Beta coefficient of external factors is responsible for 20%at (p = 0.000), this implies that a unit (1) increment in the ineffective project planning and scheduling is responsible for 20% delays of projects in the studied institution.

All of the independent variables haveshowed significant results in the case of the studied institution. Therefore, the results this study shows that at the 1st stage, corruption, 2nd stage delay in the progress payment for completed works, 3rd stage delay of materials, 4th stage external factors and finally, at 5th stage ineffective project planning and scheduling.

4.1.6 Results of Document Analysis

From the institutional document reviews some multiple set of drawbacks have been identified. Among such drawbacks, the following were the major, which need the proper improvement and structural changes**:**

- Institutional project planning and scheduling practices is very weak
- Cost controlling mechanisms are very traditional and the Project audit has not made until yet, almost on all of the project undertakings,
- Most Purchase of the project materials are not made based on the purchasing management principles
- Projects delay mainly because of lack of sufficient project financing and less existence of external funds,
- Some projects are also delayed because of interruption of the project contractors and executive bodies
- Project manager has not been assigned to manage institutional projects
- Most projects are implemented based on the need and preferences of institutional top executive officials rather than the public interest and involvement.
- Sometimes, Contactors met financial difficulties to finance project work on some projects
- Most projects are reworked due to many reasons and most of the times the contractors do not have contingency plan
- There has been sub-contractors frequent changes
- Some of the institutional executive Officials have skill, knowledge and information gaps towards on the project works
- There has not been set specified relevant measures for the better of future project performances (i.e. the continual project monitoring and evaluation of performance

measurement, awareness creations and stake holder involvement in project work, provision of training and development, facilitation of incentives and remunerations and so forth has not been designed).

- There is gap in management body to provide some relevant criteria's to be set in order to allot the project budgets (i.e. the project plan and performance reports; quality issues; the level of project accomplishment and contractual agreement and so forth are not sufficient).
- There has not implemented an organized project control and follow-up teams and systems. Mismanagement, negligence, project financing, absence of relevant financial management legacies, lack of the needed knowledge and talent management.
- Absence of creativity to increase the institutional budgetary sources, and unable to organize project resources; assess additional budgetary opportunities, constructional and non-constructional project works and absence of the stakeholders' involvement, wealthy partners and the donors in the institutional projects

4.2 Discussions

4.2.1 Discussions of the Hypothesis Testing

The hypothesis testing is a tool used to discuss the results of a hypothesis conducted on a data of sample from the total population. The result of test indicates the analyst whether the alternative hypothesis is true or not. This helps the analystto test a hypothesis through measuring and examining a random sample of population being analysed. In this case, the total available populations are used to execute the SPSS data. To decide whether to reject or accept the hypothesis some criteria is stated as discussed below. When the P- value is obtained from the coefficient tablebeing less than (0.05), the null hypothesis is rejectedand on the contrary the Alternative hypothesis is accepted.

Restrictions for the Hypothesis

The p-value for each term tests the null hypothesis that the coefficient is equal to zero (no effect). A low p-value indicates that it should be rejected the null hypothesis at ($p<0.05$) level. A predictor that has a low p-value is likely to be meaningful addition to this model changes in the response variables.

For the results of this study the following major restrictions has been set as a limitation of the hypotheses**:**

- If p-value < α (0.05), Reject the null hypothesis or otherwise accept

I. Discussions of the 1st Hypothesis result

The Null Hypothesis (H_O)

H_O1: Delay in progress payments for completed work does not have significant impact on the Project delay

Alternative Hypothesis (H_A):

H_A1: Delay in progress payments for completed works has significant impact on the Project delay

Decision: Reject the null hypothesis and accept the alternative hypothesis.

Since p-value (p=0.000), which is below the standard level of alpha (0.05), it is acceptable. It has strong and positive relation between dependent and independent variables. This value has meaningful addition to this model changes in the response variables.

II. Discussions of the 2nd Hypothesis result

The Null Hypothesis (H_O)

H_O2: Delivery of material does not have significant impact on the project delay in the case institution

Alternative Hypothesis (H_A):

H_A2: Delivery of materials has significant impact on the project delay of the studied institution

Decision: Reject the null hypothesis and accept the alternative

Since p-value (p=0.000), which is below the standard level of alpha (0.05), it is acceptable. It has strong and positive relation between dependent and independent variables. This value has meaningful addition to this model changes in the response variables.

III. Discussions of the 3rd Hypothesis result

The Null Hypothesis (H_O)

H_O3: Corruption does not have significant impact on the project delay

Alternative Hypothesis (H_A):

H_A3: Corruption has significant impact on the project delay

Decision: Reject the null hypothesis and accept the alternative hypothesis

Since p-value (p=0.000), which is below the standard level of alpha (0.05), it is acceptable. It has strong and positive relation between dependent and independent variables. This value has meaningful addition to this model changes in the response variables.

IV. Discussions of the 4th Hypothesis result

The Null Hypothesis (H_O)

H_O4: Ineffective project planning and scheduling does not have significant impact on the project delay

Alternative Hypothesis (H_A):

H_A4: Ineffective project planning and scheduling has significant impact on project delay

Decision: Accept the null hypothesis and reject the alternative hypothesis

Since p-value (p=0.000), which is below the standard level of alpha (0.05), it is acceptable. It has strong and positive relation between dependent and independent variables. This value has meaningful addition to this model changes in the response variables.

V. Discussions of the 5th Hypothesis result

The Null Hypothesis (H_O)

H_O5: External factor does not have significant impact on the project delay

Alternative Hypothesis (H_A):

A_H5: External factors have significant impact on the project delay

Decision: Accept the null hypothesis and reject the alternative hypothesis

Since p-value (p=0.01), which is below the standard level of alpha (0.05), it is acceptable. It has strong and positive relation between dependent and independent variables. This value has meaningful addition to this model changes in the response variables.

To sum up,in all the results of the hypothesis testing, reject all the null hypothesesand accept all thealternatives hypotheses (i.e. delay in progress payment for completed works, late delivery of materials, corruptions, external factors and ineffective project planning and scheduling). Since there is linear and significant relationship between the causes of the project delay (independent factors) and the project delay (dependent factors). Similar to these factors, there is also significant and linear relationship between the effect of project delays and the project completion.

Most authors refer to statistically significant as ($p<0.05$) and statistically highly significant as ($p<0.001$). Conversely, a larger or insignificant p-value suggests that changes in the predictor's value are associated with changes in the response.

CHAPTER FIVE: FINDINGS, CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

5.1 SUMMARY OF THE FINDING

Through using the characteristics of the questionnaire prepared and distributed to the target respondents' responses attained from these segments.Theanalysis of data was made by utilizing different analytical tools as discussed earlier. Result of this study has indicated that, the demographic ratio of respondents was sufficient to this study based on the rule of**(n ≥30).**Among the (**N=40**) available populations the researcher has selected all of the forty (**N=40**) responsible individuals and distributed the semi-structured questionnaires on the five levels oflikert scale, through total enumeration methods.

The descriptive statics resultsof the study has indicated that, the highest grand mean was the existence of corruption at (3.88), and the lowest was ineffective project planning and scheduling at (3.63).On the other hand, the effect of project delay has scored a grand mean of (4.28). This result indicates that, all the five delay factors together with the effect of project delay have strong impact on the delay of institutional project completion.

The result of correlation analysis indicates that, the correlation between project delay and the independent variables.Except the external factor, all the independent variables have positive relationship with the dependent variable, while their strength is dependent on the r value which is indicated in bracket. With regard to their significance level, except the two variablesthe ineffective Project Plan & Schedulingand external factors, all variables are significant at ($P<0.05$).

The regression analysis result also indicates that, the value of R-square at the model is used to describe the good fit or the amount of variance explained by a given set of predictor variables. The value of R is 1.000 (100%), the value of R-square is 1.000 (100%). From these values the variance in the dependent variable is explained by 100% of the independent variables in the model.

The coefficient result on the unstandardized Beta depicts that, the significance test for each of the independent variables in the model. Unstandardized regression coefficient for the predictor measures the individual effect of each variable in predicting the dependent variable of the project delay. Among the five causes of project delay factors, all of them were found relevant to this study.

The statistical output of the beta coefficient of all independent variables were (20%) at (p=0.000). which implies that a unit (1) increment in the independent variables is responsible for (20%) delay of projects in the selected institution. In this study, all the independent variables have showed significant results for the selected institution.

The results obtained from the grand mean value are also supported by results of correlation, regression analysis of ANOVA, Coefficient analysis of Model summary. In that, all of the independent variables have showed significant results in the case of the studied institution. Therefore, the results of this study has indicated that at the 1st stage corruption, 2nd stage delay in the progress payment for completed works, 3rd stage delay of materials, 4th stage external factors, and finally at 5th stage ineffective project planning and scheduling.

5.2 CONCLUSIONS

The research undertaking has followed the two sets of methodological stages in this study. The 1st stage has included relevant literature searches, questionnaire design, and data collection, analysis and interpretations. On 2nd stage has included the analysis and interpretation of the data. The theoretical and empirical literature reviews were conducted through books, conference Papers, international Journal articles, and internet sources. Basically, the Questionnaires were developed and administered to assess the perceptions of participants who are concerned on the institutional project works directly or indirectly, in order to identify the causes of project delays. The questionnaires were divided into two parts. The 1st part of questionnaire has introducedto the participants' the purposes of survey, and the Demographic characteristics of respondents with four types of personal questionnaires. The 2nd part of questionnaires has focused on the scale type questionnairesbased on the three perspectives (Owners, Contractorsand Supervisions).

These participants were asked to indicate their agreement on the selected casual factors and on the effects of project delay related questionnaires that were identified from the empirical literaturesand practical performance of the institution on thecauses of project delay. This was made based onthe five point likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) to measure the causes of project delay in the selected institution.In this study the researcher has questioned a total of forty (40) population available participants within the institution. The researcher has questioned himself the selected respondents, since he had limitations oftime and resources available to him.In that,the total population based on census survey was selected purposively by the researcher on his choice. Since the population is found small, the investigator used the total populations available to him.Basedon the

responses collected from theparticipants, the data was collected, organized, analysed and finally interpreted. Out of the total of the selected forty (40) participants, forty (40) of respondents have returned their questionnaires. This study has resulted based on forty (40) valid responses, by representing (100%) response rates. The reliability of data set was analysed on the Statistical Packages for Social Sciences (SPSS) through automatically and manually.

On the second phases of methodological use of the data analysis and discussion part, the three main statistical analyses, namely, an explanatory result analyses, descriptive analysis and the multiple regressions were undertaken based on the data. An explanatory analysis was used todescribe the identified result. Finally, the research hypotheses and the investigated impact of the causes of project delay on the project completion were tested and which was identified by using the multiple and linearregression analyses.

The investigator has used the mixed research approaches in order to use both the qualitative (subjective evaluation) and the quantitative (numerical data analysis). It was more helpful to give significant suggestions.As a result, the outputs of studies on the five factors of project delay wereidentified. From the results of this study, the researcher believed that, focusing only on the mean and standard deviation result was found insufficient to come into a conclusion. Therefore, the coefficient Beta was found as a good measure.

Based on the analysis of Beta, all the independent factors have resulted significant impact for the dependent variable (project delay) by scoring unstandardized Beta (20%) and at significance level of (0.000), that all independent results are found are acceptable. The result of Correlation analysis also supports the above assumption in that; all causes of project delay factors have correlation at ($p<0.05$). All independent variables have strong relationship and they are accepted.

5.3 LIMITATIONS OF THE STUDY

During the study, a number of limitations has encountered for the investigator. Some of the major sources of limitations in this study were unable to acquire sufficient data, usage of methodological tools, initially some respondents were non-voluntary to fill the delivered questionnaires, and getting the accurate information were very challenging. Basically, there was not any study made concerning to this institutional project works. These limitations have somehow influenced the researcher from achieving the intended objective of the study.

5.4RECOMMENDATIONS

Many empirical as well as theoretical reviews of research results has indicated that, the causes of project delay are plenty and the assessment result on such factors have been given different conclusions based on the research environment and capacity of the project undertakings. Theycould not suggest one common causes of project delay for all projects. Based on this truth, the investigator would suggest what hehas been identified in the results of the study that have significant impact on the project delay based Beta Coefficient. All independent variables are identified in this study have significant impact on the institutional project delays. Therefore, the studied institution should work a lot to under control the challenges of corruption and delay in the progress payments for completed work, late delivery of materials, corruption, external factors, and ineffective project planning and scheduling. Since thesefactors have the great impact for the delay of institutional projects and their effect would affect the whole aspect of institutional development. The Institution should worka lot at least on the followings major perspectives:

- To be set the prior planning and scheduling of project works by the contractors. In that,the Bill of quantity, specification plans and faire allotment of project budget, preparation of contingency and scope plans should be included
- Search of additional fund assessment
- Outsourcing some mega projects to the external stakeholders
- Increment of benefits for early accomplishment
- Rewarding model Anti-corruptists
- Upgrade institutional technological tools,
- Assign project managers,
- Utilization of the Modern Project Management Principles,
- Train individuals, officials and concerned stakeholder on project works
- Make an organized and responsibility based supervision and stake holder involvement in the major project works
- Undertaking frequent project Audits
- Struggle to avoidance of being Corruptivism institutionally,
- Establishment of the carrot and stick rules and regulations,
- Reward the model Anti-corruptists and early performers from employees, stakeholders and officials,
- Establishment of quality of project material purchasing systems and procedures

- Frequent assement of changes on the escalation of material prices (inflation)
- These could help the institution to be a better performer and minimize the problems
- The problems identified in the document reviews also can be answered by these the recommendations.

Finally, the researcher was unaware off whether there exists, the intervention of government or other external parties on the institutional project undertakings and how such interventions wouldhave further impact on the institutional project delays.Besides, the impactof natural calamitieson the institutional project delays. And how much does the level of project execution qualities could affect the project completion and by what means could be evaluated the project performance quality issues. These knowledge gaps are left for further research to be done.

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7. APPENDICES

APPENDIX (A): The Questionnaires

I. Survey Questionnaires

This Questionnaire is designed for the purpose of the data collection to Master's thesis in the St.Mary university, entitled with MBA Research program for the partial fulfillment for the requirement of the completion of Master's Degree in project management, by Assessment on factors that cause the project delay. The questionnaire is to be filled based on your knowledge and experience during your stay at the selected institution. For your confidentiality, the collected information will be used only for academic purpose. Therefore, your genuine answer would help to know the problems and as input for further research to be made. This questionnaire is limited to be forty-six (46). It will be appreciated for completing and returning them.

Note that: You are not required to write your name

- Only Mark on the box"" ☐
- Try to give clear and accurate answers for all questions

Part 1: Demographic Questionnaires

I. Please tick (√) your appropriate answer for your personal information

S/N	Demographic Characteristic	The Individuals' Characteristics Description		
1	Sex	i. Male ☐	iii. Female ☐	
2	Occupation	i.Religious Organization ☐	ii. private ☐	iii. Government ☐
3	Educational Status	i. Below10th grade ☐ ii. Certificate ☐	ii. Diploma ☐	iii.BA/BSC degree ☐ iv.. MA/MBA ☐
4	Work Experience	i. From(1-5) ☐	ii. From(6-10) ☐	iii. From (11-15) ☐ iv. Above 15 years ☐

Part-2: The Scale Type Questionnaires

I. Please tick (√) your choice on the causes of Project delay factors on the following three perspectives (Owner related, Contractor related, and Supervisory related factors), based on rank order:

Level of Agreement on the Factors that Cause the Project Delay					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Rank level	1	2	3	4	5

Group 1: Causes of Project Delay related to Owners

S/N	Causes of Project Delay	Level of Agreement				
A	Delay in progress payments for completed works	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Decision making on payments for projects is made slowly					
2	Budget or funds for institutional projects works has caused project to delay					
3	Scarcity of financial resources to execute project works					
4	Institutional administrative procedure is Complicated					
5	Poor communication and coordination among stakeholders					
8	Poor understanding of accounting and financial principles					
9	Fear of owners to pay in advance in case contractors leave the project work due to discomfort					
B	Late Delivery of material					
1	Lack of quality materials in the market as a project input					
2	Damage of construction materials					

	during the process of delivery					
3	Materials are not ordered with full specification					
4	Change of specification on project input delays the process of delivery					
5	Delivery of input from suppliers is lately arrived					
6	Price increases on the materials required for completion of projects					
C	Corruption					
1	Purchase procedure of materials for projects lacks clarity					
2	Material prices are overestimated by bidding committee					
3	Purchase documents are not clearly filed					
4	Materials and financial audit is not conducted properly					
5	Absence of strict binding rules and regulations					

Group 2: Causes of Project Delay related to Contractors

S/N	Causes of Project Delay	Level of Agreement				
D	Ineffective project Planning and Scheduling	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Lack of experience in project schedule and plan preparation					
2	Some stages of the construction processes are reworked due to technical error					

3	Inadequate commitments of contractor					
4	Contractors do not have adequate plan					
5	Contractors have multiple projects and they are busy					
6	Contractors have inadequate financial capacity					
7	Contractors have time management problem					
8	Sub-contractors are not committed and responsible					
9	Wrong time estimate of construction process					
10	Unable to use advanced engineering software design					
11	Insufficient data collection and making of survey before design					

Group 3: Causes of Project Delay related to Supervision

S/N	Causes of Project Delay	Level of Agreement				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
E	External Factors					
1	Escalation of material prices					
2	Lack of accurate information and Existence of uncertainty					
3	Materials required for the projects are not easily accessible in the market					
4	Supplies have shortage of materials due to currency problems					
5	Labor cost is inflated beyond the					

	plans					
6	Poor supervision of the project status are observed					
7	Failure of supervisors in providing status report					
8	Lack of coordination and communication among stakeholders					

II. The Project Delay

S/N	Effects of Project Delay	Level of Agreement				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Project out puts are not delivered to the owners on time					
2	Projects are unnecessarily extended					
3	Projects are incurring more costs than the budget					
4	Suspension of project work					
5	The Overall projects implemented in the institution are delayed					