Civil and Environmental Research
ISSN 2224-5790 (Paper) ISSN 2225-0514 (Online)
Vol.12, No.1, 2020

The Causes and Effects of Delay of Building Construction in Ethiopia, Southern Nation Nationalities of People Region in Gurage Zone (Case of Wolkite Town)

Nesru Serani Dusso [1] Tadele Wodaje Bayeh [2*]
1.College of Business & Economics, Department of Project Planning & Management JigJiga University, PO box 1020 JigJiga, Ethiopia
2.College of Business & Economics, Department of Management JigJiga University, PO box 1020, JigJiga, Ethiopia

Abstract
Construction projects are successful, when it is completed on schedule with in the agreed budget, expected quality level according to the specification otherwise it leads to so many problem. More than 70% of projects fail or are challenged to achieve their planned objective (Standish Group, 2015).This study identifies the cause and effect of delay of building construction in Sothern nation nationality of people state in case of Gurage zone. The study was conducted by using mixed (quantitative and qualitative) methods of research and a 1 to 5 likert scale questionnaire survey together with focus group were used. A total of 35(thirty-five) questionnaire were distributed and collected from clients, contractors and consultants and two focus group discussion were held to identify the cause and effects of delay factor. The questionnaire were analysed and calculated in degree of severity, frequency of occurrence and importance index. The analysis result showed that the top 10 (ten) causes of delay of BCP in importance index (II%) were economic condition (inflation, currency and LC), fluctuation in price of material, time overrun of the project, slow decision making, improper planning, lack of finance to fund the project completion, preparing incomplete bill of quantity, delay in approval of payment, shortage of material, and change in drawing and design respectively. The top five effect of delay of BCP in importance index were increase in financial cost of project (budget overrun), time overrun of the project, poor quality of completed project, abandonment of building projects, and wastage and underutilization of human resources and materials.
Keywords: Building construction, Economic condition, Delay causes, Effects of delay, time overrun.
DOI: 10.7176/CER/12-1-02
Publication date: January 31st 2020

1. Introduction

Construction projects play a great role in the economic development of nation. However, the current practice of construction industry faces a lot of problem and a rare event are completed on the scheduled time, budget and desired quality of the stakeholders. Construction projects are successful, when it is completed on schedule with in the agreed budget, expected quality level according to the specification.

1.1. The Characteristics of the Study Area

In Ethiopia public construction projects are fast growing and highest recipient of government budget in terms of government development programme. Public construction project consume an average of nearly 45% of annual government capital budget (MFEDE, 2017/18).

Gurage zone is one of the zone administration of southern nation and nationality of people state (SNNPR). Gurage zone has four (4) towns and sixteen (16) worda administration and Wolkite is the capital of Gurage zone, it is 155km far from Addis Ababa to Jima road and 255km far from the capital city of SNNPRS Hawasa. Building construction is growing in fastest rate in the whole administration of Gurage zone to full fill the needs of building for office, health, education and other public services.

According to annual report of Gurage zone construction department (2010) there are a total of 101 building under construction. The report emphasises most of the constructions were not running based on their schedule, agreed budget and only (15%) of projects were completed. Because of inefficient performance of building construction project, they are forced to incur additional cost to provide service on rented office and leads to unplanned utilization of budget. (GFED, 2010).

1.2. Statement of the problem

Werku koshe, K.N.Jha, (2016), studies investigating the causes of construction delay in Ethiopia, showed that in Ethiopia only 8.55% projects have been finished to the original targeted completed date.

Public and private construction projects have been increasingly growing in SNNPRS Gurage zone especially in wolkite town time to time. According to Gurage zone statistical and abstract document (2010), from which 101

building construction project that have been completed based on scheduled agreement, only 15 (14.8%) projects were completed by their schedule, 40 projects were above 50%, and 46 project are below 50%.
From 101 construction projects 34 (33.6%) were constructed in wolkite town. Only 5 (14.7%) were completed, 17(50%) projects were above 50% and 12(35.3%) of the projects were below 50%. The statistical abstract document shows most of the projects were failed to meet there schedule and budget.

However, the studies were directed as country and enterprise and there is no research which was conducted in the area of the study, delay of construction projects are critical and serious problem in Ethiopia. Therefore, delay of construction project was the major and critical problem and it gave rise to the dissatisfaction of all parties. As per the knowledge of the researcher there are no researches in this case study area.

1.3. Research Objectives

The general objective of the research is to assess the causes and effects of the delay of building construction in Gurage zone wolkite town. Specifically the research addressed:

1. To assess the **causes** of delay of building construction projects in wolkite town.
2. To assess the **effects** of delay of building construction projects.
3. To identify the **responsible body** (client, consultant, contractor, external related factor) for the delay of building construction projects.
4. To rank the causes and effects of delay of building construction.

2. LITERATURE REVIEW

2.1. Theoretical Review

Sanders and Eagle (2001) define delay as an event that causes extended time to complete all or part of a project. Delay in construction is a global phenomenon (Sambasivan and Soon, 2007) affecting not only construction industry but the overall economy of the country as well (Faradi and El-Sayegh, 2006). Delay involves multiple complex issues all of which are invariably of critical importance to the parties to construction contract. These issues concern entitlement to recover cost of delay or the necessity to prolong the project with the consequential entitlement to recovery costs for adjustment to the contract schedules. Questions arise as to the causes of delay and the assigning of fault often evolves in to disputes and litigation (Bolton, 1990).

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

I. Critical and non- critical
II. Excusable but non-excusable

In some contracts, the term controlling item of work will be used. Normally, this refers to critical activities or critical paths that if delayed will delay the completion date (Trauner and Theodore, 2009). 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 the project.

Non – critical delays 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 (Leary and Bramble, 1988). However, non- critical delays may affect the contractor's cost performance, in this case, the contractor may have the right to receive additional performance cost.

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, delay resulting from the following events would be considered excusable (Trauner and Theodore, 2009), these are:-

- General labour strike ,
- Fire,
- Floods,
- Act 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 instruction

These condition may be reasonable, unforeseeable and not within the contractor's control (Trauner and Theodore, 2009), and the analyst will conclude that a delay is excusable based solely on the preceding definition. Decisions concerning delay must be made within 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 be contract completion date (Trauner and Theodore, 2009), for example, some contracts may not allow for any time extensions caused by weather conditions, regardless of how unusual, unexpected, or severe.

Non- excusable delays are events that are within the contractor's control or that are foreseeable. Some examples of non- excusable delays (Trauner and Theodore, 2009).
These are:-

- Late performance of sub-contractors,
- Unlimited performance by supplies,
- Faulty workmanship by contractor or sub-contractors,
- labour strike

Again, the contract is the controlling document that determines if a delay would be considered non – excusable. For example, some contracts consider supplier delays excusable if the contractor can prove that the materials were requisitioned or ordered in a timely manner, but that the material could not be delivered due to circumstances beyond the control of the contractor. Other contracts may not allow such delays.(Trauner and Theodore, 2009).

The owner and the designer or drafter of the contract specification must be sure that the contract documents are clear and unambiguous. Similarly, before signing the contract, the contractor should fully understand what the contract defines as excusable and non- excusable delays (Trauner and Theodore, 2009).

2.2. Empirical review

A number of studies have been carried out to identify the cause of delay in construction projects. Assaf and Al Hejji (2006) conducted a time performance survey of different types of construction projects in Saudi Arabia to determine the causes of delay and their importance according to each project participant (owner, consultant, and contractor). They identified seventy three (73) causes of delay during the research. The common causes of delay identified by all parties were ''change order.''

Sweis et al. (2008) studied the causes of delay in residential projects in Jordan and concluded that financial difficulties faced by the contractor and too many change orders by the owner are the leading causes of construction delay.

Chan and Kumaraswamy (2008) conducted a survey to determine and evaluate the relative importance of the significance factors causing delays in Hong Kong construction projects. They analyzed and ranked main reasons for delays and classified them in to two groups, these are the role of the parties in the local construction industry (i.e. whether client, consultant or contractors) and the type of the project. Results indicated that five major causes of delay were poor site management and supervision, unforeseen ground condition, low speed of decision making involving in all project team, client initiated variation of work.

Abd El-Razek et al. (2008) in a similar study in Egypt found that the most important causes of delay are financing by contractor during construction, delays in contractor's payment by owner, design changes by owner of his agent during construction, and non- utilization of professional construction/contractual management.

Doli et al. (2012) explored the delay causes of construction projects in India. Using selected set of forty five (45) attributes, this study identified the key factors of affecting delay in Indian construction industry and then established the relationship between the critical attributes for developing prediction models for measuring the impact of these factors on delay. Questionnaires and personal interview used to gather data.

Factor analysis and regression modelling were employed to study the implication of the delay factor. From the factor analysis, seven (7) critical factors of construction delay identified these are lack of commitment, communication and clarity in project scope, inefficient site management, improper planning, poor site coordination and substandard contracts. The regression model specified slow owner decision making, poor labour productivity, reluctance, rework due to mistakes were significantly affect the overall delay of the project.

Owolabi et. al (2014) studied the cause and effect of delay on project construction delivery time in Nigeria. They identified fourteen (15) causes for delay of construction projects, these are lack of fund to finance the project completion, change in drawings, lack of effective communication among the parties, lack of adequate information from consultant, slow decision making, contractor's insolvency, variations, project management problem, mistake during construction stage, bad weather, fluctuation in prices of building materials, in appropriate overall organizational structure linking to the project, and labour strike.

And also they identified nine (9) effect of delay of construction projects, these includes:- time overrun, increase in financial cost of project, wastage and under- utilization, tying down of client capital due to non-

completion of the project, dispute between parties, abandonment of building project, reduced profit, litigation, arbitration.

Merid Taye (2016) studied the assessment of time and cost overrun in construction project of defence construction enterprise in Ethiopia. He identified fifteen (15) the cause of time and cost overrun, these includes:- less emphasis to planning, poor contract management, poor per planning process, lack of timely decision, changes in design, failure to update schedule on time, long waiting time for approval of drawing and material sample, incomplete drawing, frequent breakdown of construction plants and equipment, excessive change orders, inadequate early planning of the project, setting unrealistic, contractual claim (extension of time with cost claims), delay in site mobilization, and rework due to wrong work.

2.3. Research gap:

Construction projects have been increasingly growing in Ethiopia. However, few studies were conducted as country and project level and as per the knowledge of the researcher in the area of study, so this shows that as per the researchers awareness there is no research which was conducted in the study area. The statistical abstract document of GZFED (2009 E.C) showed that only 15% of the project were completed based on agreed time schedule. So, delay of construction projects are critical and serious problem in Ethiopia.

2.4. The Conceptual Framework

The following diagram illustrates a conceptual framework the study adopts in carrying out the study. The relationship between the variables is indicated in figure 1

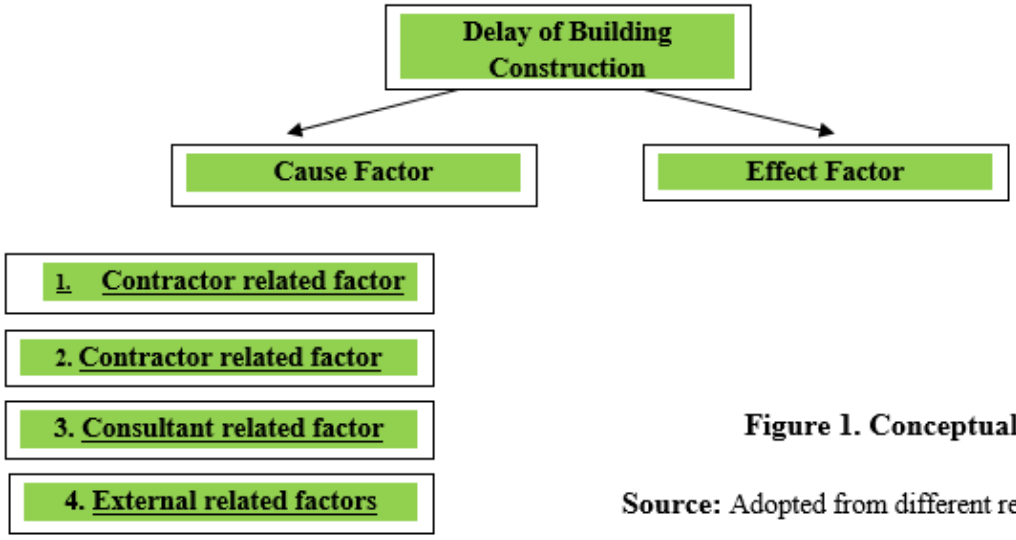

Figure 1. Conceptual framework

Source: Adopted from different researchers

3. RESEARCH METHODOLPGY

The research studies were carried by both quantitative and qualitative (mixed methods). Mixed methods researches emphasize the research problem and use all approaches available in order to come to a better understanding. Sampling unit must be identified before selection of sample. A sample unit may be a geographical unit such as a state, a district, a village, a construction unit, or it may be social unit. Accordingly for this research project study; the sample unit was Gurage zone construction department (GCD), and the population was the employee of GCD, contractors and client who are found in Wolkite town. The size of the population is 55 (fifty-five). These are 28 employees of GCD (14 are engineers, 2 higher officials, 2 planning expert, 2 finance and budget and 8 supportive staff), 12 clients, and 15 contractors. This research study was conducted by purposive sampling technique, to obtain the intended respondents who are expected to have the relevant information of the study area. The sample size has been taken by excluding the supportive staff of the GCD (8 in number), because they are not relevant to the study and to keep the research from biasness. This was the rest of total population of the research area. The sample size was 47 in numbers from which, 35 (thirty-five) respondents were participate in survey study (structured questionnaire) and **(**twelve 12) respondents were participate on focus group discussion. Both primary and secondary data were employed. Delay factors related to clients, contractors, consultants and external factors were included in the questionnaire. Questions related to causes and delay of building construction projects were grouped in to two categories (degree of severity and frequency of occurrence), each on a five scale point likert scale. For degree of Severity 5= Extreme severe, 4= More severe, 3= Severe, 2= Less severe, 1= No effect the study were used and for frequency of occurrence 5= Always occur, 4= Highly occur, 3= Moderately occur, 2= Slightly occur, 1= Never occur were used. SPSS 20) and MS Excel were used to analyse the data collected from

questionnaire.

The data collected from the survey was analysed to identify the causes and effects of delay of building construction using and severity index frequency method (Assaf and Al- Hejji, 2006).

$SI\% = \sum_{a=1}^{5} a(n/N) * 100/5$…….. (1)

Whereas;

- a is the constant expressing weigh for each response range from (1to 5 constantly)
- n is frequency of the responses
- N is total member of respondents

$FI\% = \sum_{a=1}^{5} a(n/N) * 100/5$…….. (2)

Whereas,

- a is the constant expressing weigh for each response range from (1to 5 constantly)
- n is frequency of the responses
- N is total member of respondents

Importance index: the importance index for each cause and effect of delay were calculated by the function of both severity and frequency index to rank the responsible delay factors, which is:

$II\% = [FI\% * SI\%] / 100$…… (3)

Whereas;

II % is importance index percentage
FI% is frequency index percentage
SI% is severity index

4. DATA ANALYSIS AND INTERPERITATION

4.1. Causes of delay of building construction projects

4.1.1. Causes of delay of building construction projects in degree of severity.

Table 1 Causes of delay in severity index

S/N	Causes of delay	N/ respondents		Severity level				Severity index	
			ES	MS	SV	LS	NE	SI%	Rank
1	Economic condition (inflation, currency, LC)	35	19	5	8	1	2	81.71	1
2	Fluctuation in price of material	35	14	10	9	1	1	80.00	2
3	time overrun of the project	35	12	10	11	1	1	77.71	3
4	slow decision making	35	10	13	8	4	0	76.57	4
5	improper planning	35	12	13	4	3	3	76.00	5
6	preparing incomplete bill of quantity	35	11	11	7	6	0	75.43	6
7	lack of fund to finance the project completion	35	10	10	12	1	2	74.29	7
8	change in drawing and design	35	11	10	6	5	3	72.00	8
9	delay in approval of payment	35	9	7	11	8	0	69.71	9
10	shortage of material	35	10	9	6	8	2	69.71	9

Source: own data, 2019

Accordingly, the top ten (10) out of thirty-five (35) causes of delay of building construction projects in degree of severity were identified as Economic condition (inflation, currency and LC), fluctuation in price of material, time overrun of the project etc. as depicted in the table above.

4.1.2. Causes of delay of building construction projects in frequency of occurrence

Table 2 Causes of delay in frequency index

S/N	Causes of delay	Number Of Respondents	Frequency level AO	HO	MO	SL	NE	Frequency index FI%	Rank
1	Economic condition (inflation, currency, LC)	35	13	8	8	4	2	74.86	1
2	time overrun of the project	35	6	15	12	2		74.29	2
3	Fluctuation in price of material	35	9	12	8	4	2	72.57	3
4	slow decision making	35	6	13	11	5		71.43	4
5	lack of fund to finance the project completion	35	8	11	10	4	2	70.86	5
6	improper planning	35	5	15	9	3	3	69.14	6
7	Executive bureaucracy in the owner organization	35	5	11	7	11	1	64.57	7
8	preparing incomplete bill of quantity	35	5	11	7	11	1	64.57	7
9	delay in approval of payment	35	6	8	11	8	2	64.57	7
10	shortage of material	35	5	9	11	8	2	64.00	10
11	political influence	35	7	8	8	9	3	64.00	10
12	Variation of work	35	3	12	11	7	2	64.00	10

Source: own data, 2019

Accordingly, the top ten (10) causes of delay of building construction in frequency index were Economic condition (inflation, currency, LC), time overrun of the project, Fluctuation in price of material are some of frequently appeared causes of delay.

4.2. Effects of delay of building construction projects

The second objective of this study was to evaluate the effects of delay associated to causes 0f delay of building construction projects.

4.2.1. Effects of delay of building construction in degree of severity

Table 3 Effect of delay in severity index

S/N	Effects of delay	Number Of Respondents	Severity level ES	MS	SV	LS	NE	Severity index SI%	Rank
1	Increase in financial cost of project	35	15	13	6	1		84.00	1
2	time overrun of the projects	35	12	11	4	8		75.43	2
3	Poor quality completed work	35	11	12	5	4	3	73.71	3
4	Abandonment of building projects	35	12	6	7	9	1	70.29	4
5	Dispute between parties (client, contractor, consultant)	35	7	11	9	7	1	69.14	5

Source: own data, 2019

The effects of delay of building construction projects identified were tested by the questionnaire. The collected questionnaires were analysed calculated in degree of severity. Accordingly, the top five (5) effects of delay of BCP in degree of severity were increase in financial cost of project (budget overrun), time overrun, poor quality of completed project, abandonment of building projects, and dispute between different parties (contractor, client, consultant).

4.2.2. Effects of delay of building construction projects in frequency of occurrence

Table 4 Effect of delay in frequency index

S/N	Effects of delay	Number Of respondents	Frequency level					Frequency index	
			AO	HO	MO	SO	NO	FI%	Rank
1	Increase in financial cost of project	35	6	20	6	3		76.57	1
2	time overrun of the projects	35	6	15	11	3		73.71	2
3	Poor quality completed work	35	7	8	9	8	3	64.57	3
4	Supplementary agreement	35	5	10	9	10	1	64.57	3
5	Abandonment of building projects	35	6	7	9	12	1	62.86	5

Source: own data, 2019

The effects of delay of BCP identified were tasted by the questionnaire and calculated in the frequency of occurrence. The top five effects of delay of BCP were increase in financial cost of project (budget overrun), time overrun, and poor quality of completed project, supplementary agreement, and abandonment of building projects.

4.3. Ranking of causes and effects of delay of building construction projects

The top causes and effects of delay of building construction projects are identified and ranked by using severity index, frequency index and importance index using the formula at the beginning of the methodology above.

4.3.1. Ranking causes of delay of building construction projects

The causes of delay of building construction projects were analysed and ranked using severity, frequency and importance index percentage.

Accordingly, the top three causes of delay of BCP in importance index (II %) were economic condition (inflation, currency and LC), fluctuation in price of material, time overrun of the project are some of the causes.

Table 5 causes of delay in (II %)

S/N	causes of delay	Severity index		Frequency index		Importance index	
		SI%	Rank	FI%	Rank	II%	Rank
1	Economic condition (inflation, currency, LC)	81.71	1	74.86	1	61.17	1
2	Fluctuation in price of material	80.00	2	72.57	3	58.06	2
3	time overrun of the project	77.71	3	74.29	2	57.73	3
4	slow decision making	76.57	4	71.43	4	54.69	4
5	improper planning	76.00	5	69.14	6	52.55	5
6	lack of fund to finance the project completion	74.29	7	70.86	5	52.64	6
7	preparing incomplete bill of quantity	75.43	6	64.57	7	48.71	7
8	delay in approval of payment	69.71	9	64.57	7	45.01	8
9	shortage of material	69.71	10	64.00	10	44.61	9
10	change in drawing and design	72.00	8	60.57	17	43.61	10

Source: own data, 2019

4.3.2. Ranking Effects of delay of building construction projects

Table 6 Effects of delay in (II %)

S/N	Effect of delay factor	Severity index		Frequency index		Importance index
		SI%	Rank	FI%	Rank	II%
1	Increase in financial cost of project (budget overrun	84.00	1	76.57	1	64.32
2	Time overrun of the project	75.43	2	73.71	2	55.60
3	Poor quality of completed project	73.71	3	64.57	3	47.59
4	Abandonment of building projects	70.29	4	62.86	5	44.18
5	Wastage and underutilization of human resources and materials	67.43	6	62.86	5	42.39

Source: own data, 2019

The effects of delay of building construction projects were analysed and ranked using importance index (II %). According to II% the top three effect of delay of BCP were increase in financial cost of project (budget overrun), time overrun of the project, poor quality of completed project.

4.4. Responsible parties for causes of delay of building construction projects

The causes of delay of BCP are divided in to four sub categories and listed in conceptual framework This cause of delay factors includes client related factors, contractor related factors, and consultant related factors and external factors. Each sub category of causes of delay were calculated and ranked in their importance index (II %).

4.4.1. Client related delay factors

Table 7 Client related factor in (II %)

S/N	causes of delay	Severity index		Frequency index		Importance index	
		SI%	Rank	FI%	Rank	II%	Rank
1	time overrun of the project	77.71	1	74.29	1	57.73	1
2	slow decision making	76.57	2	71.43	2	54.69	2
3	improper planning	76.00	3	69.14	4	52.55	3
4	lack of fund to finance the project completion	74.29	4	70.86	3	52.64	4
5	Variation of work	65.71	6	64.00	6	42.05	5
6	Lack of cash during construction	65.71	6	62.86	7	41.31	6
7	Executive bureaucracy in the owner organization	62.29	11	64.57	5	40.22	7

Source: own data, 2019

4.4.2. Contractor related delay factors

Table 8 contractor related factor in (II %)

S/N	causes of delay	Severity index		Frequency index		Importance index	
		SI%	Rank	FI%	Rank	II%	Rank
1	time overrun of the project	77.71	1	74.29	1	57.73	1
2	slow decision making	76.57	2	71.43	2	54.69	2
3	improper planning	76.00	3	69.14	4	52.55	3
4	lack of fund to finance the project completion	74.29	4	70.86	3	52.64	4
5	shortage of material	69.71	5	64.00	5	44.61	5
6	Variation of work	65.71	14	64.00	5	42.05	6
7	Failure of plan of work application	66.29	12	63.43	7	42.05	6
8	Lack of cash during construction	65.71	15	62.86	8	41.31	8
9	delay in site mobilization	66.86	9	60.57	10	40.50	9
10	late delivery of material and equipment	67.43	7	60.00	11	40.46	10

Source: own data, 2019

4.4.3. Consultant related delay factors

Table 9 consultant related factor in II%

S/N	causes of delay	Severity index		Frequency index		Importance index	
		SI%	Rank	FI%	Rank	II%	Rank
1	time overrun of the project	77.71	1	74.29	1	57.73	1
2	slow decision making	76.57	2	71.43	2	54.69	2
3	improper planning	76.00	3	69.14	3	52.55	3
4	preparing incomplete bill of quantity	75.43	4	64.57	4	48.71	4
5	delay in approval of payment	69.71	6	64.57	5	45.01	5
6	change in drawing and design	72.00	5	60.57	10	43.61	6
7	Variation of work	65.71	12	64.00	6	42.05	7
8	Failure of plan of work application	66.29	8	63.43	7	42.05	7
9	Failure to update schedule on time	66.29	8	60.00	11	39.77	9
10	Poor site management and supervision	66.29	8	60.00	11	39.77	9

Source: own data, 2019

4.4.4. External Delay factors

External delay factors are those factors which are beyond the control of client, contractor, and consultants, but they have critical share for the delay of building construction projects.

Table 10 External delay factor (II %)

S/N	causes of delay	Severity index		Frequency index		Importance index	
		SI%	Rank	FI%	Rank	II%	Rank
1	Economic condition (inflation, currency, LC)	81.71	1	74.86	1	61.17	1
2	Fluctuation in price of material	80.00	2	72.57	3	58.06	2
3	political influence	67.43	12	64.00	10	43.16	3
4	Bad weather	57.71	31	55.43	29	31.99	4
5	Delay in obtaining permits from town	59.43	29	50.86	32	30.23	5
	Average	69.26		63.54		44.92	

Source: own data, 2019

4.5. Summary of responsible parties for delay of building construction projects

Table 11 summery of delay factor (II %)

S/N	causes of delay	Severity index		Frequency index		Importance index	
		SI%	Rank	FI%	Rank	II%	Rank
1	External related factors	69.26	1	63.54	1	44.92	1
3	client related factors	66.69	3	63.43	2	42.61	2
2	Consultant related factors	67.14	2	61.75	3	41.73	3
4	Contractor related factors	65.49	4	60.20	4	39.89	4
	Average	67.15		62.23		42.29	

Source: own data, 2019

Conclusions

The secondary data analysis of the performance of building construction project of wolkite town showed that, from34 projects only 5 (14.7%) were completed, 17 projects were above 50%, and 12 project were under 50% performance. Top ten (10) out of thirty-five (35) causes of delay of building construction projects in degree of **severity** were Economic condition (inflation, currency and LC), fluctuation in price of material, time overrun of the project, slow decision making, improper planning, preparing incomplete bill of quantity, lack of finance to fund the project completion, change in drawing and design, delay in approval of payment, and shortage of material respectively. In degree of **occurrence** were Economic condition (inflation, currency, LC),time overrun of the project, Fluctuation in price of material, slow decision making, lack of fund to finance the project completion, Improper planning, Executive bureaucracy in the owner organization, preparing incomplete bill of quantity, delay in approval of payment, variation of work, shortage of material, and political influence.

The top five (5) out of thirteen (13) effects of delay of building construction projects in degree **severity** were increase in financial cost of project (budget overrun), time overrun, poor quality of completed project, abandonment of building projects, and dispute between different parties (contractor, client, consultant). Top five effects of delay of BCP in frequency of **occurrence** were increase in financial cost of project (budget overrun), time overrun of projects, and poor quality of completed project, supplementary agreement, and abandonment of building projects.

The resolution that have to be taken by all parties raised during focus group discussion were proper planning and scheduling before starting projects, leadership and management commitments, proper controlling of budget and cash flow, strong integration and continuous communication between parties, increasing of the skill of experts, timely monitoring and evaluation of the project progress and taking corrective action on time.

Recommendations

Based on the analysis and discussion, a number of recommendations can be in place. First Client: has to be aware about the project type and size of building project that are going to be carried and the budget required to complete the project at pre planning stage also has to take timely decision associated to variation of work and build strong integration and communication with consultants and contractors to minimize the causes of delay. Attention to pay progress payments regularly to contactors, to avoid delay associated to payment.

Second consultants should consider: prepare clear drawing and design, bill of quantity before tendering the projects. Consultants consider those factors which have impacts during construction stage in preparing design and bill of quantity like cost of materials and equipment, labour cost and others to minimize the effect of internal and external delay factors. Consultants also approve the requested payments on time and monitor the project in progress meeting based on scheduled time and budgets of the project. They should integrate and communicate about the

project progress regularly with contractors and clients.

Finally contractors should consider: to take action on proper management and planning on the issue like how to run and complete the project on their schedule time and budget. They should manage financial resources and plan cash flow only by utilizing budgets for specific projects to avoid the delay associated to miss management of cash and budget. Assign site manager and technical staff to run the project based on schedule time and avoid poor site management problem is advisable.

REFRENCES

Abd El-Razek et. al.(2008) 'Causes of delays in building construction projects in Egypt', Journal of Construction Engineering and Management, 134 (11) 831-841.

Ahmed et. al. (2003) 'Delay in construction: a brief study of Florida construction industry', proceeding of the *39th Annual ASC conference, Clemson University, Clemson, SC,* 257-266.

Al-Momani, H.A. (2000) Construction delay: a quantitative analysis. *International Journal of Project Management 2000; 20:51-59.*

Assaf, S.A. Al-Hejji S. (2006) 'Causes of delay in large construction projects', *International Journal of Project Management,* 24 (4), 349-357.

Bolton, J. (1990) 'Type of claims', Construction and disruption claims, Course manual, Portman Inter-Continental, London.

Callahan, M.T.(1992), Construction Project Scheduling, McGrew-Hill, Inc, New York

Chan Dissanayaka. W., Kumaraswamy MM. (2008) A comparative study of causes of time overruns in Hong Kong construction projects. *International Journal project Manag*ement 1997;15(1):55-63.

Doli et al. (2012) 'Analysing factors affecting delays in Indian construction projects', International Journal of Project Management 30, pp.479-489 (2012).

Eshetu Zenebe, Prof. Emer T. Quezon, Alemu Mosisa, 'Contract claim Analysis on Building Construction Project in Addis Ababa : A case study at Yeka Sub City', *International Journal Of Science and Engineering Research,* Volume7, Issue 7, July- 2016.

Ethiopian building proclamation NO. 624/2009

Faradi, A.S. and El-Sayegh, S.M. (2006) 'Significant factors causing delay in the UAE construction industry', *Construction Management and Economics, 24(11), 1167-1176*

Frank ,FDk and Agyakwah-Baah, AB (2010) ' Delays in building construction in Ghana', *Australian Journal of Construction Economics and Building,* 10 (1/2) 103-116.

Fung I. W. H., L. T. (2006). Construction Delay in Hong Kong civil engineering projects. *Journal of construction engineering management,* 132 (6), 639-49.

Gurage zone Construction Department (2010) annual report.

Gurage zone Finance and Economic Department annual abstract document (2010).

Kong sik wei (2010) Causes, effects and methods of minimizing Delay in construction projects. *Journal of Management In Engineering, 312-332.*

Leary,C.P. and Bramble, B.B. (1988), "project delay: Schedule analysis models and techniques", Project Management Institute Seminar/Symposium, San Francisco, California, sept. 17-21, 63-69.

Mansfield et. al (1994), causes of delay and cost overrun in Nigerian construction projects. International Journal of Project Management 12(4), 254-260.

Merid Taye (2016) 'Assessments of Time and Cost Overruns in construction projects: in case study at Defence Construction Enterprise in Ethiopia' IGNOU-SMU, School of Management studies.

Ministry Finance and Economic Development of Ethiopia (2017/18), annual budget report.

Owolabi et. al. (2014) 'Causes and effects of delay on project construction delivery time', *International Journal of Education and Research.*Vol. 2 No.4 April 2014.

Standish Group (2015). Haze. The Standish Group International, Inc

Sweis et. al. (2008) 'Delays in construction projects: The case of Jordan', *International Journal of Project Management* 26 (6), 665-674.

Trauner, J. T. (2009), "Construction delays- Documenting Causes'', Wining Claim; Recovering Costs, R.S. Means Company Inc.USA

Werku Koshe, K. N. Jha. (2016) Investigating Causes of Construction Delay in Ethiopian Construction Industries. *Journal of civil, Construction and Environmental Engineering*. Vol. 1, No. 1, 2016, pp. 18-29. doi: 10.11648/j.jccee.20160101.13