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ST.MARY'S UNIVERSITY
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FACTORS THAT AFFECT PERFORMANCE OF BOND
INSURANCE IN CONSTRUCTION PROJECTS :
THE CASE OF TSEHAY INSURANCE S.C.

BY: BIZUALEM KETEMA

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ETHIOPIA

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A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL
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DECLARATION

I, the undersigned, declare that this thesis of factors that affect performance of bond insurance in construction projects in case of Tsehay Insurance S.C. is my original work. It has not been submitted for any degree in other university and all the materials used in this study have been duly acknowledged.

Bizualem Ketema

Candidate

Signature

Date

CERTIFICATION

This is to certify that Bizualem Ketema has properly completed her research work entitled “Factors that affect performance of bond insurance in construction projects in case of Tsehay Insurance S.C. with our guidance through the research time. In my recommendation, her task is appropriate to be submitted as a partial fulfillment requirement for the Master of art Degree in Business Administration.

Research Advisor

Taye Amogne, (PHD)

Signature

Date

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Abbreviations

FIDIC	International Federation of consulting Engineers
BPM	Building Project Management
SI	Sum Insured
GNP	Gross National Product
PAR	Performance Appraisal
PM	Project Management
GDP	gross domestic product
UCBP	University Capacity Building Program
RII	Relative Importance Index
ERA	Ethiopian Roads Authority
ECAA	Ethiopian Civil Aviation Authority
ICE	Institute of Civil Engineering
ICB	International Competitive Biding
ISO	International Standards Organization
WB	World Bank
ESC1	Employer selection criteria 1 (How much projects at hand)
ESC2	Employer Selection Criteria 2 (Elapsed time b/n bid opening & bid award)
ESC3	Employer Selection Criteria 3 (Escalation problem)
ESC4	Employer Selection Criteria 4 (Project Nature)
CPF1	Contractor Performance Factor 1 (Financial Capacity)
CPF2	Contractor Performance Factor 2 Time factor)
CPF3	Contractor Performance Factor 3 Quality Factor)
CPF4	Contractor Performance Factor 4 ((Labour Factor)
CPF5	Contractor Performance Factor 5 Employer Satisfaction)
CPF6	Contractor Performance Factor 6 (Delayance of Payment)
CPF7	Contractor Performance Factor 7 (Environmental Factor)
ISC1	Insurance Selection Criteria 1 (Equivalent collateral Factor)
ISC2	Insurance Selection Criteria 2 (Previous Performance of Contractor)
ISC3	Insurance Selection Criteria 3 (Professional Capacity Factor)
ISC4	Insurance Selection Criteria 4 (Nature of the project)

Abstract

Bond insurance one of the cover that has been given by the insurance company for their customers. This bond insurance was a profitable business and most of the time the insurance company want to issue these kind of insurance. However, Tsehay Insurance Share Company currently faces a significant Bond Insurance performance gap so the researcher want to assess the factors that affect performance of bond insurance in construction projects in Tsehay Insurance Company.

To investigate the problem the study was conducted in twelve branches of Tsehay Insurance Share Company who serve the public for more than five years. The researcher use mixed type of research approach. Three participants of bond insurance, the insurance company employees, the contractors and the client were asked to get pertinent information and based on these information ranks were given. To get this information 194 /one hundred ninety four/ questioners were prepared for these three parties. Based on the information collected the clients were the first contributor of the problem, and the contractors were the second contributor of the problem. Finally, the insurance company became not the contributor of the case but the victim of the case.

Based on the conclusion recommendation for the three parties were suggested and lastly the research gives information for the future study.

Key terms; construction project, bond insurance

CHAPTER ONE: INTRODUCTION

1.1. Background of the study

Insurance is a contract, represented by a policy, in which an individual or entity receives financial protection or reimbursement against losses from an insurance company. The company pools clients' risks to make payments more affordable for the insured. Insurance policies are used to hedge against the risk of financial losses, both big and small, that may result from damage to the insured or her property, or from liability for damage or injury caused to a third party.(Julia, 2021)

Every insurance company collect premium from their customers from different insurance policies that they sale. From different insurance covers which is provided by the insurance companies are Motor insurance, Fire & lightning Insurance, Burglary & house breaking Insurance, Health insurance, Bond insurance and others(Chen, 2021)

Bond insurance has been introduced relatively recently. Until the 1970s, no one worried about governments or companies' defaults. However, after 1975, when New York City Government & lately Washington public power supply, a large pacific North West utility company, went close to bankruptcy, this crated the vulnerability of investing in bonds. A number of companies thus thought to offer a form of bond insurance. The first such bond insurance company, AMBAC Financial group Inc. was formed in 1971. A second firm, MBIA first appeared in 1983 the number of bond insurers has increased over years.(Baily, Litan & Johnson, 2008)

Bond insurance is a risk mitigation tool commonly used in general contracting and similar fields. Also known as, "financial guaranty insurance". Bond insurance guarantees the repayment of the principal and all associated interest payments to bondholders in the event that a payment is defaulted by the issuer.(Wiley & Sons, 2010).

In contrary to other non-life insurance policies, in bond insurance other than the insured and the insurer, there are other participating parties. The insured, the employer and the contractor or principal. So, it needs due attention upon approval or giving to this kind of insurance cover. Project owners ensure that the selected construction contractors do not fail. Therefore, the surety bonds are a source of assurance regarding the completion of construction projects (Bouteiller&Coogan,2019)

So, to talk about bond insurance and how it works it is necessary to talk about different construction projects because success of bond insurance is directly related to success of project.

Projects that require construction bonds include Building construction, Road construction, Water works, sewerage lines and others construction owned by government or private organizations or individuals.

Bonds are effective tools for ensuring that tender bids and construction contracts are honored. However, like any tool, getting the most out of it, a bond requires an understanding of how it works Proper maintenance and proper use is needed. (Boswall, 1985).Contractors may need a construction bond when working on a specific type of project. For every project, the bond acts as an agreement between the contractor and project owner assuring the contractor will fulfill all the terms. (Killugh, 2020).

Construction bond plays a fundamental role in strengthening the liability relationship between the contractor and the project owners, which increases the likelihood of successful project completion (Dunn & Sedgwick pp15).(Wateridge, 1995) notes previous researches appear to differ on defining project success. Critical Success Criteria and Success Factors in Project Management is a commonly discussed topic but rarely agreed upon. In an effort to find a generic definition of project success, (Baccarini, 1999) concludes that literatures on project management by various authors do not present a consistent interpretation of the term project success.

(Rahel, 2016) studied assessment of cause and impacts of local contractor's time and cost performance in Ethiopian roads authority projects. Causes of delays during construction phase on road projects due to failures of contractor, Consultant and Employer in Addis Ababa City Road Authority were also cited (Yosefet al., 2017).

(Iyer&Jha 2005) Stated that measuring the performance of any construction project is a very complex process because modern construction projects are generally multidisciplinary in nature and they involve participation of designers, contractors, subcontractors, specialists, construction managers, and consultants.

Even if bond insurance contributes for the economic value of the insurance company but also for the government, due consideration in bond insurance related to construction bond is not yet given. Several studies have been conducted related to insurance in different subject areas like success and failure of construction industry, but no study was conducted in bond insurance related to construction industry. Sincebond insurance is a very necessary type of cover for mitigating risk, or transferring the obligation to the party who are capable to shoulder it, it should be studied. So based on the researcher view further studywill be needed regarding this area. Therefore,this paper tries to fill the gap and address the factors that affect performance of bond insurance inconstruction projectsin case of Tsehay Insurance Share Company.

1.2. Statement of the problem

The construction industry in Ethiopia has been developing tremendously since 2001. The GDP contribution of the industry has been raised to 5.6% and approaches to the sub-Saharan average (6%). Meanwhile, the Gross Domestic Capital Formation (GDCF), which was about 60 percent in 1996/97, has reached nearly 75% in 2002/03. Beyond its contribution to the nation, the industry is also the sixth major contributor of the content infrastructure stock following South Africa, Egypt, Morocco, Algeria and Nigeria. Since construction industry and bond insurance have direct relation, the Insurance company benefited from this kind of business. However, this opportunity reversed from time to time. (Zewdu & Argaw, 2015).

(Fortune, 2022) written the construction industry, which contributes nearly a fifth of the country's gross domestic product (GDP), has been primary driving force for the public investment-led development model the government has implemented over the last two decades. Growing by a yearly average of 11pc, the industry is a source of employment for five percent of the national workforce of over 41 million according to the Ethiopian Statistical service. Now this sector become jeopardizes and this in turn affects the bond insurance industry too.

Based on this newspaper the Ethiopian Construction Contractors Association, under the leadership of Girma Habtemariam, has around 2,400 members. The lobby group has seen mediations between contractors and their clients over issues of price escalation slowly become its main preoccupation in recent years. Nearly four decades in the industry, Girma has never seen construction professionals faced with as many challenges as they are now. Political unrest, forex shortages, price fluctuations in fuel and metal products in the international market, and illicit practices by traders of construction inputs are to blame. "Contractors take the fall and get all the blame for project delays while all these issues are present," he said.

The development of public infrastructure and far-reaching government schemes, such as Ethiopia Vision 2025 are not only driving the growth of the construction industry in Ethiopia but also for the construction materials market in Ethiopia. The Ethiopian construction equipment market revenues are predicted to grow at a CAGR of 6.1% during 2019-2025. (Dublin, 2019)

Risks associated with construction and the potential losses demand that insurance is an important aspect of construction work as a way of mitigating the risks. Currently, there is a growing body of interests in construction insurance, supporting interactions between the construction industry and the insurance industry. Internationally, the distinct types of insurance covers have increased the complexity of insurance, the contractual provisions and the nature of the claims made hence making it sensitive to disputes.

Although, dispute resolution is a core concern of insurance law, unlike any other financial service provider, insurers' obligations are depending on events-such as fires, thefts, health problems, and litigations. (Sally, 2018).

Therefore, the issues reach to unmanageable to the insurance companies even for the reinsurers. Therefore, the insurance companies start to ask for equivalent collateral even for their customers to avoid this kind of risk.

Uncertainty adds to the complexity of a project, so can be considered as a constituent dimension of a project (Williams, 1999). In recent years in Tsehay Insurance Share Company, these were not the case. Since it was a very profitable business and they want to get bond insurance to compensate the motor claim and other class of business. And now a day's bond insurance becomes the most claimable class of business. That is why most insurance want to avoid this class of business, but this trend is dangerous since it fails to fulfill the Porto folio mix of different class of business.

(Fortune, 2022) wrote about construction industry continues to wallow in the murky waters brought on by the COVID-19 pandemic, foreign currency shortages and illicit business in the trade of building materials. Construction firms increasingly avoid contracts that include the responsibility to buy the materials for fear of runaway inflation.

Since performance problem of bond insurance was not addressed before and no sufficient studies were conducted, the researcher want to evaluate the factors that affect the performance of bond insurance in construction projects in Tsehay Insurance Company.

When we talk about construction bond in Tsehay insurance during the five years from 2017-2021 under study the premium collected from Bid bond was Birr 1,853,071.85, from Performance bond Birr 37,679,421.20 and from advance payment bond Birr 27,140,947.81 with a total amount of Birr 66,673,440.86. To get this premium the company leaves at risk with a claim paid amount of Birr 9,448,847.67 and an outstanding of Birr 187,189,496.66.

The company was expected to collect 50,000,000.00 /Fifty Million Birr/ from 2017 to 2022 but they collected Birr 66,673,440.86. In the contrary, the company expected to have a claim of not more than 25% of the total collected amount. However, as we see from the figures it becomes 208% of the total collected premium. This was a very terrifying issue and that was the reason why the researcher want to investigate the case.

If this was not the case, Tsehay insurance Share Company will get an additional profit from bond insurance more than what was stated for the past five years

And this may in turn lead the insurance company to participate in many investments having this additional profit. Not only these, the government may get tax income from the premium that the insurance company collected.

Due to the above problem the insurance company losses their profit from the sector and even they are forced to put this much amount of money as an outstanding leaving the other class of business at risk. Besides this amount of outstanding is almost 20% of the total premium collected for five years.

To overcome performance problem of bond insurance faced by Tsehay Insurance share Company and make the sector more profitable the study had been conducted. Besides, the paper tries to give valuable information for owners/clients and especially for contractors to alleviate performance problem in construction industry.

1.3. The Research questions

1. How is the client/owner of the project contributing for the performance of bond insurance?
2. How is the insurance company contributing for the performance of bond insurance?
3. How is the contractor contributing for the performance of bond insurance

1.4. Objective of the paper

1.4.1. General objective

The general objective of this study is to assess factors that affect performance of bond insurance in construction projects in case of Tsehay Insurance S.C.

1.4.2. Specific objectives

1. To assess how the client contribute for the performance of bond insurance.
2. To determine the contribution of the insurance company for the performance of bond insurance in construction projects.
3. To assess the contractors contribution towards the performance of bond insurance.

1.5. Significance of the study

Since the insurance company gets income from the service they render, they can make bond insurance more profitable based on the research under study. Through this research, the insurance company, specifically Tsehay Insurance Share Company, will further realize how the bond insurance should be given to contractors and strong preventive measure against various failures of bonds was considered.

It helps to have further reconsideration of how they select their customers to give bond insurance. Disputes regarding the bond insurance will be minimized and this intern helps the insurance company to avoid unnecessary costs. This study will give awareness to Contractors and client show they can minimize their risk of failures. Moreover, the analysis part of the study will convey valuable information for future research that will explore how the various Insurance companies make good income from bond insurance.

1.6. Scope of the study

Even if there is one governmental Insurance Company & eighteen private Insurance Companies in our country, the study was conducted only on factors that affect the performance of construction Bond insurance in Tsehay Insurance Company in Addis Ababa Branches. Now a day's many contractors and suppliers need different types of bonds from the insurance industry, but due to different reason that may investigate in this paper lead to failure, this decrease the good performance of the company as well as the contribution to the overall gross profit of the company as a whole. Therefore, the study tries to offer findings for Tsehay Insurance S.C. to alleviate the problem.

1.7. Limitation of the study

There are three major limitations in this study that could be addressed in future research:-

Previous studies are limited, Specifically in Bond Insurance no prior research are found. So, the researcher want to investigate the performance problem of bond insurance related to construction bonds and give more insight about the subject under study.

Location limitation, the study only concentrates on twelve branches in Addis Ababa town who serve the public for more than five years. It will be more valid if it considers all the branches in Addis Ababa &outline branches too.

The study has been limited to Bond insurance related to construction projects. But there are many other bonds in insurance but since the study was limited to construction bonds, the paper under study was bid bond, performance bod and advance payment bond.

1.8. Operational Definition of Variables

Employer/Client: A public organization for whom the construction project is being undertakes.

Contractor: A natural or juridical person under contract with an owner to construct the building construction projects.

Project: Building/road/water cannel construction projects constructed

Building: A permanent or temporary construction used for the purpose of Education, office, Hall

Construction: means the construction of new building projects

Escalation: a document or system that defines when escalation should happen and who should handle incidents at each escalation level in the project under study.

Work: New, Maintenance, upgrading & Rehabilitation projects

1.9. Organization of the Paper

The research study was organized into five Chapters. The first chapter Contains the Introduction Part which Consists of back Ground of the study, statement of the problem, research question, hypothesis, objectives of the research, significance of the study and definition of terms. The Second chapter have been presented related to literature Reviews.

The third chapter was concentrated on the research methods and methodologies. The fourth Chapter has been addressed the discussion of findings and data analysis. The fifth chapter, which was the last chapter of the research discuss on the conclusions and recommendations. Based on the findings, the paper also makes suggestions for future research and study.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1. Theoretical Framework of the study

In Canada, numerous exceptions in the various construction insurance policies are offered. For example, the property insurance policy in Canada explicitly excludes the contractor from covering losses arising from various natural occurrences and human causes such as pollution, vandalism, earth movements, and temperature changes amongst other issues.

Risks are inevitable and cannot be eliminated. It can, however, be transferred (Murdoch & Hughes, 2000). One of the main roles of a contract is to distribute risks between the parties. Standard forms of contracts contained express risks distributing provisions. Risk transferring contracts commonly exist between the various parties concerned in construction (Robinson et al. 1996).

(Iyer & Jha, 2005) stated that measuring the performance of any construction project is a very complex process because modern construction projects are generally multidisciplinary in nature and they involve participation of designers, contractors, subcontractors, specialists, construction managers, and consultants. A construction project will usually involve a number of agencies like subcontractors and suppliers whose performance will directly affect the performance of the total project in relation to the accomplishment of a successful project completion. Owners and contractors are always at a risk of non-performance of these agencies, which may sometimes lead to catastrophic results for the owner or the main contractor. Surety bonds have been a traditional way of mitigating such risks.

(Pheng & Chuan, 2006) defined project success as the completion of a project within acceptable time, cost and quality and achieving client's satisfaction. (Kuprenas, 2003) stated that project performance measurement means an improvement of cost, schedule, and quality for design and construction stages.

(Faridi & El-Sayegh, 2006) reported that shortage of skills of manpower, poor supervision and poor site management, unsuitable leadership, shortage and breakdown of equipment among others contribute to construction delays in the United Arab Emirates.

Unlike most insurance policies, surety bonds do not protect (or provide coverage to) the owner of the policy (the bond). A surety bond is typically written to protect, indemnify, or provide a financial guarantee to third parties such as customers, suppliers or state taxpayers. (Julia, 2021).

Most big construction contracts, multi-million purchasing agreements, and especially government contracts, involve the utilization of performance bonds.

In Ethiopia, in government procurement agreements, it is mandatory to furnish performance bonds. (Federal Public Procurement Directive, Ministry of Finance and Economic Development, 2010).

(Dunham, P. 2008) revealed that a bond could be easily called without the need to refer the claim through litigation or arbitration. It is also agreed that the bonds act as protection from non-completion wherein solvency may be regarded as one of the factor. (Levine, M. & J. Wood, 1991) revealed that the contractor's financial failure is the major cause for a bond to be called for.

However, as discovered through law cases, in solvency alone is not the trigger for the release of a bond. It has become a thinly disguised solvency guarantee and a strong weapon in the employer's hands to ensure prompt completion. (Chappel et. al., 2001).

The literature review that was done through previous studies, journals, construction management books, and engineering journals were studied only related to construction industry, even not agreed upon what the success of projects are measured or performance of contractors are measured. But construction industries have many problems which can affect the performance of construction bonds due to lack of time, cost, material shortage and so many other factors. Since no concrete results are find in prior research, to avoid the research gap the researcher tries to assess what factors that affect bond insurance related to construction industry.

(Thomas, 2002) identified the main performance criteria of construction projects as financial stability, standard of quality, health and safety, progress of work, resources, relationship with clients, relationship with consultants, management capabilities, claim and contractual disputes, relationship with subcontractors, reputation and amount of subcontracting.

Since construction, bond performance is directly related to the contractor and their project (Enshassi et al., 2006) studied causes of contractor's business failure in developing countries. Based on their study factors were grouped to five, which are: Managerial factor, Financial Factor, Business Growth, Business environment & Political factors

The researcher wants to investigate what are the factors that affect performance of bond insurance. Since bond insurance has been related to construction industry deep overviews of different scholars were cited, of course they had been different views of their own. So, different studies were given different reasons why construction industry failurity occur.

2.1.1. What is insurance?

Insurance is an arrangement by which a company or the state undertakes to provide a guarantee of compensation for specified loss, damage, illness, return for payment of a specified premium.

(Merriam-Webster.com). It can also be a coverage by contract in which one party agrees to indemnify or reimburse another for loss that occurs under the terms of the contract.

2.1.2. Historical Overview of Insurance in Ethiopia

Traditional protection of risks in Ethiopia can be found in the form of Edir and Equib where people get in some financial contribution to save themselves and losses of properties from unexpected troubles in the future. According to some researches year 1951, marked the beginning of a new chapter in the history of Insurance industry in Ethiopia in that it witnessed the launching for the first time entirely owned by Ethiopians called “Imperial Insurance Company” formed by the initiatives taken by some enlighten Ethiopians and the expatriates, which brought significant development in financial sector of the economy lead to the coming in to existence some eighteen company in 1954 operating in different parts of Ethiopia engage in offering coverage for life, marine, motor and fire or property Insurance services. Proclamation No. 281/70 which was the first Governmental act on the supervision of Insurance business in the country brought about a significant change, in that the government control in place for it feel the promotion and protection of the public Interest was timely as the scope of Insurance business in the country expanded and Insurance registration license was setup under the Minister of trade and Industry tourism. (Hailu, 2007)

2.1.3. Construction Bond insurance

(Kelleher & Currie, p439) emphasize that insurance is an essential component in construction project planning as it provides an avenue through which project owners can cover potential losses in addition to minimizing disputes amongst diverse project participants. Construction insurance is considered to be relatively complex and highly specialize.

(Bunni, p181) defines construction insurance to include “all contracts of indemnity within the activities of the construction industry where insurance is chosen as the medium through which liabilities are shift. Construction insurance encompasses numerous branches of insurance, professions, and disciplines.

In order to succeed in offering construction insurance, it is crucial for insurers to develop a comprehensive understanding of the complexities and intricate challenges associated with different aspects such as building, mathematics, and engineering.

Such understanding will increase the effectiveness of insurers undertaking statistical, economic, and probability calculations (Sido & Cushman, p154).

Out of many insurance covers given by different insurance companies, the under mentioned ones are the most applicable construction bond:-

2.1.3.1. Bid bond

The selection of construction contractors is undertaken through a bidding process. The bid bond is a “guarantee that the contractor has submitted the bid in good faith” (Giacomelli 2021).

Therefore, the contract between the contractor and the project owner will be based on price bid in addition to providing the payment and performance bonds as required. (Jenkins& Wallace, p5).

2.1.3.2. Performance bonds

Performance bonds are designed with the objective of “protecting project owners from financial losses that might occur in the event that the contractor fails to execute the project in accordance with the predetermined terms and conditions of the construction contract” (Kelleher & Abernathy, p46) In Ethiopia, both conditional and unconditional performance bonds are commonly used, but they have not yet been clearly defined under Ethiopian laws. While performance bonds issued by banks are titled as “unconditional performance bonds” the performance bonds issued by insurance companies are titled as “conditional performance bonds”.

By law, banks can issue both conditional as well as unconditional performance bonds, but they almost invariably issue the latter. Insurance companies, however, are prohibited from issuing unconditional performance bonds (National Bank of Ethiopia, Licensing and Insurance Business Directive No. SIB24/2002).

(Gidey, 2021) studies a literature related to performance bond disputes in Ethiopia. Based on the study, performance bond usually encountered 10% bond in the UK the cost is relatively low. The cost will depend upon the experience and substance of the contractor and the length of the contract and the size of retention. Ultimately, it depends upon the nature and substance of the contractor.

2.1.3.3. Advance Payment bond

Contractors will often request the developer or client gives them an advance payment or down payment to cover the cost of materials or equipment at the start of a contract. A concern for the client in such a situation is that they might pay a large sum up front but the contractor fails to fulfill the contract or goes insolvent. In this case, a bond would compensate the client. The success of a contractor at the end of a successful construction project is when he has received all the payment budgeted for him on the project at the right time.

This payment is the total estimated cost of material, labor and profit overhead due to the contractor for a construction project, which includes; performance bond, bid bond, advance payment and retention bond.(Ibrahim et.al, 2013)

(Ellis, 1991) revealed that advance payment to contractors is the live wire catalyst of most successful project in the construct for the lost advance payment. The Purpose of this bond includes ensuring the quality of work, solving the financial problem of delay of payment; preventing the delay of work; and to speed up the progress of work.

Bonds can be either ‘on demand’ or unconditional and ‘conditional’. An unconditional bond is, exactly as it sounds, a bond that allows the beneficiary to claim the money almost without any condition (except for some minor conditions such as the requirement of a written request being submitted within the valid term of the bond, etc.).

However, based on national Bank, Licensing & supervision of insurance business department announced that Prohibition of Issuance of Certain Types of Bonds by Insurance Companies under Directive No. SIB/51/2020. Based on (1stAmendment) said whereas, it becomes necessary to amend Directive No. SIB/24/2004, to allow the National Bank of Ethiopia to grant exemption, where appropriate, from the restriction imposed on issuance of unconditional bonds;

After these amendments, 4th August, 2020, the insurance company issues only conditional bond/sometimes called as default bond/ and payment is usually conditional upon the employer who makes the call providing the amount of loss, which he has suffered.In practice, therefore, a conditional bond may require litigation before any payment can be obtained.

2.1.3.4. Maintenance Bonds

A maintenance bond secures a guarantee against any flawed materials or workmanship for a set time duration following a finished project. If the project is discovered to be flawed during this duration, the bond’s amount can be used to pay for any damages and repairs that need to be made. (Cotney, 2022)

2.1.3.5. Supply Bonds

A supply bond guarantees that the suppliers are accountable for supplying materials and equipment, as described in the purchase order. If the supplier does not provide the agreed upon supplies, the bond amount can than be used to compensate the purchaser for their loss. (Cotney, 2022)

2.1.3.6. Site Improvement Bonds

A Site Improvement Surety Bond is a type of contract bond that is also sometimes referred to as a construction bond, a performance bond, and a subdivision bond. Site improvement bonds and subdivision bonds are very similar. They are both used to protect public funds and publicly owned property. Project owners provide these bonds to public agencies at the project owner's' expense. The project owners are also required to pay for the improvements to public property, which when finished, become property of the public agency and the community at large. The key difference between the two surety bonds is that site improvement bonds guarantee upgrades to existing structures where a subdivision bond guarantees improvements concerning new structures.(Cotney, 2022)

2.1.3.7. Subdivision Bonds

A subdivision bond requires contractors to build public structures (i.e., sidewalks) in subdivisions, in accordance with local specifications. If a contractor fails to do this, the bond amount can be used to finish the project properly. (Cotney, 2022).

2.1.4. Project Performance

In the Civil Construction Project, after the change of government in 1991a steady increase in projects was observed. Not only was the growth in the number of engineering projects financed locally, but the contribution of foreign financing agencies as well as the participation of international contractors as well as consultants in major civil engineering projects also increased. For instance, the ERA currently runs about sixteen projects financed through international bilateral agreements executed by international contractors and consultants, with fifteen more in the pipeline.

The Ethiopian Civil Aviation Authority runs about four internationally financed projects while the Addis Ababa Roads Authority runs the Addis Ababa Ring Road Project (AARRP) under construction by the China Road and Bridge Construction Company (CRBCC)

As a result, construction firms are able to market standardized products in different countries (Han et. al 2001).

Therefore, international construction projects involve a multitude of trade and expertise; possibly from many different countries where the work is executed on the site belonging to the employer (Cox & cox 1991).

2.2. Project Performance

2.2.1. Projects failure

(Pheng & Chuan, 2006) defined project success as the completion of a project within acceptable time, cost and quality and achieving client's satisfaction. Based on FIDIC the Contractor shall be responsible for Adequacy, Stability & Safety of all site operations and methods of construction.

A study by Standish Group 2015 based on criteria of budget and time with the result for 50,000 projects around the world showed that only 29% of the projects were successful, 52% were challenged and 19% failed.”

Based on the study by (Kumar, 2011) Construction project management, studied the project failure attributes resulting in adverse handling performance, Cost Performance, quality performance and contractual dispute occurrence is aresulting in project performance.

2.2.2. Projects failure Outside Ethiopia

Project failure is not only our country issue it is also the issue of any other countries. Based on (Okereke, 2017) List of some failed and abandoned project deliverables are as follows:

From Wikipedia publication prior to the 2008 financial crisis, bond insurers suffered few material losses. Notable exceptions in the municipal sector include: a 1984 Ambac loss on its exposure to the Washington Public Power Supply System (WPPSS), which helped establish the value of bond insurance;

Moreover, a 1998 MBIA loss on its exposure to Allegheny Health, Education and Research Foundation (AHERF), which declared bankruptcy. As publicbonds.org points out, a 1994 Business Week article called MBIA "an almost perfect money machine". The Business Week story noted that, as of that time, MBIA had seen only one loss.

By the late 1990s and early 2000s, about 50% of U.S. municipal bonds were insured. Although penetration of insurance in the municipal bond market is far lower today than when numerous triple-A insurers were active, the ability of Assured Guaranty to continue insuring municipal bonds that were issued during a prolonged period of low interest rates and narrow credit spreads is evidence that a market continues to exist for municipal bond insurance.

NASA’s Mars Climate Orbiter was launched on schedule. It travelled in space for 9½ months before it approached the vicinity of Mars. As soon as it began its ‘insertion’ maneuver, its signal

was lost and never recovered again. (Shenkar et al., 2005). These may in turn affect the insurance company due to bond insurance given to the customers.

2.2.3. Projects failures in Ethiopia

(Al-Momani, 2000) stated that the success of any project is related to two important features, which are service quality in construction delivered by contractors and the project owner's expectations.

(Heng & Chuan, 2006) defined project success as the completion of a project within acceptable time, cost and quality and achieving client's satisfaction. Project success can be achieved through the good performance of indicators of the project.

Major government projects that cost billions of dollars have failed due to inefficient and unprofessional management, corruption and nepotism, according to a government sponsored study obtained by ESAT. Three hundred twenty seven /327/ pages document prepared by the Policy Study and Research Center (PSRC) and obtained by ESAT revealed that 73% of the government sugar projects were not realized and none of the 10 sugar factories has become operational.

The document says the projects have miserably failed as people with no knowledge of project management and people who were given the job due to their connections with those in power than them.

Projects are getting more complex (Baccarini, 1996; Chang & Christensen, 1999) and an increasing tendency in recent years to draw attention to the particular challenges posed by complex projects (Cooke-Davies et al., 2007).

Repi (koshe) waste to energy to produce 50KW per day & 185GWH of electric power later become 25KW production due to the waste coming out from the capital is not enough to generate 50MW of power and there were some problems regards assumptions and test results. (IGNIS, 2013). Besides it was behind schedule for about one year.

With projects reported to be continually failing, focusing on IT-IS projects, Atkinson (1999) questioned this failure with respect to the criteria for success, particularly with respect to the commonly used 'iron triangle' – time, cost and quality. He asserted that the reason for projects to be labeled as failed could be due to the criteria used for success. They proposed an alternative framework to consider project success criteria, notably the 'Square Route'. This is a shift away from the exclusive process driven criteria and consists of the following four key components: - the 'iron-triangle'; the information system (the technical strength of the resultant system); organizational benefits and stakeholder/ community benefits.

2.3. Empirical Literature review

The purpose of the research was to assess factors that affect performance of bond insurance in construction projects in Tsehay Insurance Company. Many of the literature had been related to construction projects and/or Contractor's failure in relation to construction projects but not related to bond insurance. So further study will be needed, so the researcher tries to fill the gap around this area and give the insurance company why they are forced to pay much amount of money for the defaulter. Besides, it tries to add knowledge to the contractors and want to inform them that what the factors that lead them to fail.

In this section, four pieces of literature were included. All the researches were related to construction projects what their problem and what factors affects their performance. So, it gives knowledge and information about the area. Except one study in Ethiopia, the others are from outside Ethiopia that is one from Gaza, one from Oman, one from American and one publication is considered.

(Shaban, 2008) studied about factors Affecting the Performance of Construction Projects in the Gaza Strip. Based on his study construction projects performance problem appears through different directions. There are many constructed projects fail in time performance, others fail in cost performance and others fail in other performance indicators.

In 2006, there were many projects, which finished with poor performance because of many evidential reasons such as: obstacles by client, non-availability of materials, roads closure, amendment of the design and drawing, additional works, waiting the decision, handing over, variation order, amendments in Bill of Quantity and delay of receiving drawings (UNRWA, 2006 & 2007). For example, project of Repair of 58 Shelters at Khanyounis area finished with problems in both of time and cost performance (UNRWA, 2007).

In addition, there are other indicators of performance in the Gaza strip such as project managers, coordination between participants, monitoring, and feedback and leadership skills. However, there are three important issues related to failures and problems of performance in the Gaza strip, which are political, economic and cultural issues.

(Mohammad, 2019) studied in Oman that Construction projects are often complex and high-risk endeavors. Complexity is inherent in a construction project. Construction can be said to be a manufacturing process minus the controlled and predictable environment of a factory. These are manufacturing processes which are prone to a number of high-risk elements and to add to this there lies a challenge of completion on time, and to achieve this a major emphasis lies in doing things right in the first time.

The coordination of the sheer number of agencies involved in a major construction project is a major challenge to deal with. First the designs have to be finalized by the architects and the designers and then during the construction process a number of agencies have to be coordinated to make the project a success. A major concern of the main contractors on any construction project is the adequacy of the performance of its subcontractors. Although there are always contractual (Supply of Goods and Services Act 1982, UK), legal (Insurance Act 2015), statutory remedies to mitigate the risk of contractual nonperformance of subcontractors and contractors, but these remedies may or may not have actual value, like in cases where the subcontractor becomes insolvent, it would be difficult for the main contractor to recover anything for the default of the subcontractor.

Singleton Relands publication it stated that there is financial risk associated with any commercial venture. This is particularly true of construction projects, most of which involve significant investment and their successful completion requires a coordination of proper technical design with appropriate materials and sound construction practices. The process engages a variety of different participants carrying out complicated operations that are connected to and rely on proper performance by other participants. These operational risks are compounded by a complex commercial component involving multiple contracts and payment schemes. Given this complicated arrangement, it is not surprising that mistakes are made and disputes arise.

The resulting claims can have a devastating effect on the project or the business of its participants. Insurance and bonds are, consequently, two essential aspects of the strategy used to manage commercial risk on construction projects.

Contractor Failure Analysis was studied by (Russel, 1991) in American about the possibility exists for any construction contractor to fail to fulfill the contract requirements associated with a facility. Contractor failure occurs when a contractor is unable to perform his/her contractual duties, thus requiring the facility owner to invoke the contract's nonperformance clause.

(Tadesse, Zakaria & Zoubeir, 2016) in Ethiopia studied on assessment on Performance and Challenges of Ethiopian Construction Industry: in this study it has been demonstrated that the level of construction project management practice in terms of adapting general project management procedures, project management functions, tools & techniques are unsatisfactory. Particularly the level of practice in terms of safety, risk and time management was found to be very low. Regarding challenges, the study identified that time, cost and risk management as the most challenging issues for professionals in managing their day to day's activities. The assessment on the extent of deviation from plan on these issues reinforce the result.

The amount of schedule slippage ranges between 61-80% and that of planned costs and other variables such as risk, quality, resources utilization and safety deviates in the range of 21-40% from predetermined requirements, planned or anticipated at the beginning.

Based on the above studies construction industry failurity or challenge has been studied but not related to bond insurance. So, by setting dependent & independent variables the researcher wants to investigate about the subject matter under study. Besides the study will help to give information for further study.

2.4. Research Gap

For the development of the country, it is known that financial institutions specifically Banks and Insurances' play significant role. So based on the researcher view many scholars wrote about construction projects failure in different perspectives, So the researcher want to investigate or want to assess what are the performance problem of bond insurance related to construction projects.

(Jeffrey, 1990) researched about project failure factors were considered as personnel, Technical tasks, schedule/plan and client acceptance. Based on this research they conclude that there was a limitation on unforeseen events like environmental factors and change in government regulations.

(Dago, 2018) addressed Global project failure as effective communication and expectation gap of customers. Based on this research in the limitation party they said that impact of project management leadership style and non-technical factors should be considered.

(Montequín,Balsera,Fernández, &Fernández1, 2018) had been studied on analyzing the combinations of failure factors by means of self-organizing maps (SOM) and clustering techniques, thus getting different patterns about the project managers perception on influencing project failure causes and hence project complexity. The analysis was based on a survey conducted among project manager practitioners from all over the world to gather information on the degree of influence of different factors on the projects failure causes. Limitation of this study was that only the perception of project managers is considered. The study may be extended considering other project stakeholders.

(Discenza& Forman2007) considered project failure was related to three broad categories' like people factor, project process factor & communication factor. The limitation of these paper was beyond the three categories other factors were not considered.

(Gumaste, 2018) researched on his research ten reasons for project failure was mentioned as: inadequate project planning, scope creep, use of unpredicted tools and techniques, shortage of resources /requirements/, no or poor risk management, lack of user engagement, and the like.

2.5. Conceptual Framework

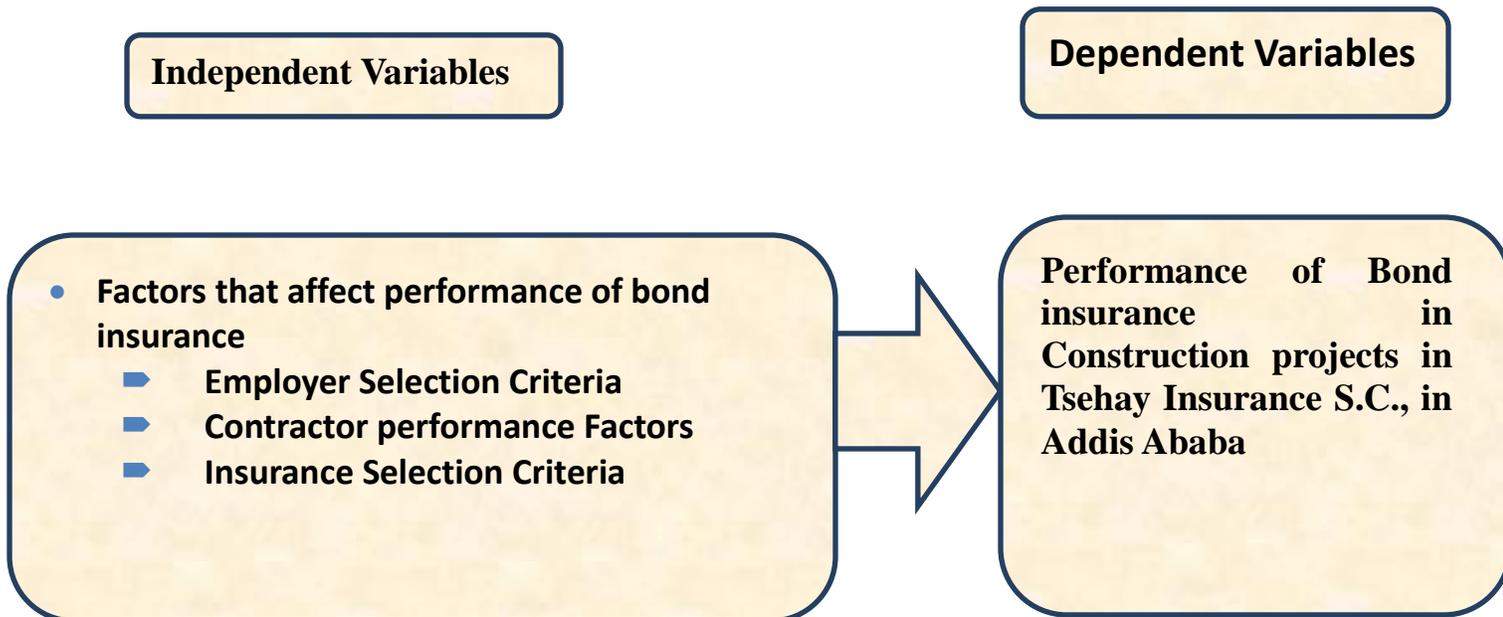
2.5.1. Factors that affect performance of bond insurance in Construction projects

The selected contractor has a big influence on the project and its success. Hence, the selection of the appropriate contractor is a critical and vital task. (Ahmed Sari, 2007)

Performances of construction bonds have many determinant factors, which are related to construction Industry. (Cheung et al., 2004) remarked seven main key indicators for performance, which have time, cost, quality, client satisfaction, client changes, business performance, and safety and health. Therefore, the factors that affect construction bond are directly related to factors that affect construction.

This is the most commonly used procedure too obtain and select contractors/construction firms for Execution of construction projects. In broad-spectrum, the aim of competitive bidding (price-based) is to obtain the least possible price for a particular project, service or facility.

The variables had been described below–



- In independent variable of Factors that affect performance of bond insurance there are variables which are responsible for the performance as stated below:-
 - Employer Selection Criteria
 - Number of projects at hand
 - Elapsed time b/n bid opening & award gap
 - Escalation problem
 - Least bidder become a winner
 - Contractor performance Factors
 - Financial capacity factor
 - Time factor
 - Quality factor
 - Labour factor
 - Employer satisfaction factor
 - Delayance of payment factor
 - Environmental factor
 - Insurance Selection Criteria
 - Equivalent collateral
 - Previous performance of the contractor
 - Professional capacity of contractor
 - Nature of the project

CHAPTER THREE: RESEARCH DESIGN & METHODOLOGY

3.1. Description of the study area

The study was conducted in Addis Ababa, on Tsehay Insurance Share Company. The size of the study is limited to Addis Ababa branches who serve the public from more than five years, since that can be easily accessed. The study will contribute to the insurance company, to the contractor and to the client. This can help to see the other side of the way or principle they are following related to construction industry. The research is explanatory, since it tries to investigate the case that factors that affect performance of bond insurance in construction projects in Tsehay Insurance Company for the first time. From year to year-Insurance companies paid huge amount of money for the bond that fail in the process. So, the researcher want to assess the cases of this problem. These may help all the three parties, specifically, the insurance company to avoid paying much amount of money in the field.

3.2. Research Design of the paper

(Leedy, 1997) defines research design as a plan for a study, providing the overall framework for collecting data. (MacMillan & Schumacher, 2001 p.166) define it as a plan for selecting subjects, research sites, and data collection procedures to answer the research question(s). They further indicate that the goal of a sound research design is to provide results that are judged credible.

In this paper, Quantitative and quantitative research design method or mixed design methodology had been used. In addition to this deductive reasoning method is used. Quantitative research, according to (Merwe, 1996), is a research approach aimed at testing theories, determining facts, demonstrating relationships between variables, and predicting outcomes. The emphasis here is on studying a situation or a problem in order to explain the relationship between variables. Besides the study aims to know and have unexplored aspects of the subject matter, how, what & why of the research question will be intended to answer this kind of question.

(Saraswati 2021) the researchers also used explanatory research design it helps to explain the relationship between the performance of Bond insurance & independent variables.

3.2. Population

Population in statistics is the entire set of items from which data can be drawn for a statistical study. It can be a group of individuals, a set of items etc. that makes up the data pool for a study. (Banerjee, 2010) A population is a complete set of people with a specialized set of characteristics, and a sample is a subset of the population.

Tsehay Insurance Company has 32 branches that have 19 branches in Addis Ababa & 13 branches in Outline countries. From Addis Ababa branches, which open before five years, are twelve/12/ branches. Tsehay Insurance has 303 employees. From these employees my population is Higher Management, branch managers, senior under writers, claim & legal department employees. Therefore, the researcher population is 200 employees. 102 bond customers of the Tsehay insurance company and 100 employers/clients was selected.

3.3. Sample size

Sample represents the group of interest from the population, which will be used to represent the data. It is an unbiased subset of the population that best represents the whole data. A sample represents the group of interest from the population, which you will use to represent the data. The sample is an unbiased subset of the population that best represents the whole data. (Ravikiran)

The study focuses on Tsehay Insurance company bond customers who are direct relation to the subject matter under study.

Since the population is limited, we can use the below mentioned formula

Formula of Slovin's formula as

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

Where N: population size

n: sample size

e: significance level, with 95% confidence level the significant level become 5% or 0.05)

$$n = 402 / (1 + (402 * .05 * .05))$$

$$n = 200$$

3.4. Sampling Techniques/methods

There are two main sampling techniques. These are Non-random sampling and Random sampling. The researcher had been used Qualitative & quantitative data sampling method.

3.5. Sources of Data

The researcher collects the data from both primary and secondary sources. Primary sources are sources from those working on different branches Managers, underwriters, claim departments, and Contractors who fulfill their obligation & failed to fulfill their contractual obligation on bond by preparing questionnaire.

Secondary data gathered from annual Reports of Tsehay insurance S.C regarding bond insurance as well as other existing relevant literature from different books, journals, websites and documents related to bond insurance.

3.6. Data Analysis Technique

Following the gathering of completed questionnaires, total responses from each data collected from respondents and were analyzed by using SPSS software and frequency percentage of data manually. This helps for different groups, assess relation-ship between variables and test hypothesis. Data were analyzed by calculating mean, mode, median and standard deviation. Since it provides data analysis for descriptive statistics, numeral outcome predictions, and identifying groups, the software is helpful for data transformation, graphing and direct marketing features to manage data smoothly. Qualitative method have been be used to have in depth study and define problems regarding the issue.

3.7. Validity & Reliability

3.7.1. Validity

Based on (Dudovskiy) Research validity in surveys relates to the extent at which the survey measures right elements that need to be measured. In simple terms, validity refers to how well an instrument as measures what it is intended to measure.

Qualitative data is as important as quantitative data, as it also helps in establishing key research points. However, since it cannot be quantified, the question on its correctness is critical.

Validity relates to the appropriateness of any research value, tools and techniques, and processes, including data collection and validation (Mohamad et al., 2015). We can consider the research with high validity, if it produces results that correspond to characteristics, real properties, , and variations in the physical world. In this study we are going to use content validity which identifies is the extent to which a measuring instrument provides adequate coverage of the topic under study. If the instrument contains a representative sample of the universe, the content validity is good.

3.7.2. Reliability

The reliability of an instrument is the degree of consistency, which measures the attribute; it is supposed to be measuring (Polit& Hunger,1985). The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool.

The test is repeated to the same sample of people on two occasions and then compares the scores obtained by computing a reliability coefficient (Polit & Hungler, 1985).

Cronbach's coefficient alpha (George & Mallery, 2003) is designed as a measure of internal consistency, that is, do all items within the instrument measure the same thing? Cronbach's alpha is used here to measure the reliability of the questionnaire between each field. The normal range of Cronbach's coefficient alpha value is between 0.0 and + 1.0. The closer the Alpha is to 1, the greater the internal consistency of items in the instrument being assumed. The formula that determines alpha is simple and makes use of the items (variables), k, in the scale and the average of the inter-item correlations.

$$\alpha = \frac{k r}{1 + (k - 1) r}$$

It is assessed the fields' structure validity by calculating the correlation coefficients of each field of the questionnaire and the whole of questionnaire.

As the number of items (variables) in the scale (k) increases, the value α becomes large. Also, if the inter correlation between items is large, the corresponding α will also be large.

Since the alpha value is inflated by a large number of variables then there is no set interpretation as to what is an acceptable alpha value. A rule of thumb that applies to most situations is: $0.9 \leq \alpha \leq 1.0$ Excellent $0.8 \leq \alpha < 0.9$ Good $0.7 \leq \alpha < 0.8$ Acceptable $0.6 \leq \alpha < 0.7$ Questionable $0.5 \leq \alpha < 0.6$ Poor $0.0 \leq \alpha < 0.5$ Unacceptable the Cronbach's coefficient alpha was calculated for each field of the questionnaire. The identical values of alpha indicate that the mean and variances in the original scales do not differ much, and thus standardization does not make a great difference in alpha.

Table 1 Reliability of overall variables

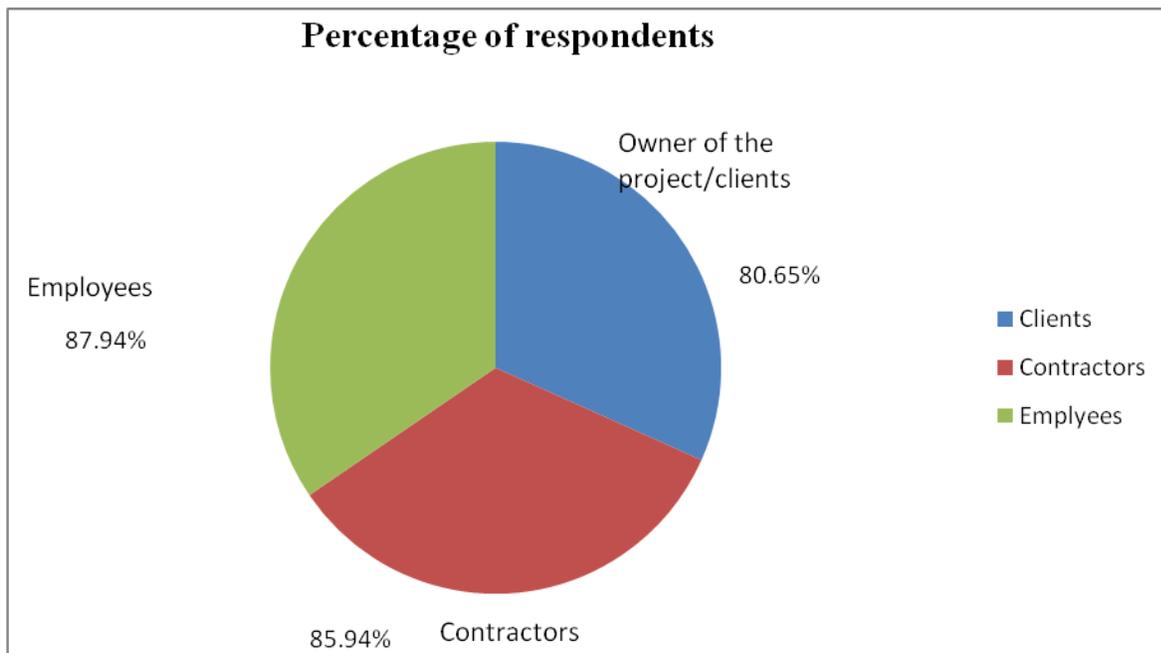
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
Number of projects at hand (ESC1)	48.38	177.325	.936
Elapsed time b/n bid opening & award gap (ESC2)	47.87	163.510	.922
Escalation problem (ESC3)	48.08	162.656	.923
Least bidder become a winner (ESC4)	48.01	168.479	.926
Financial Capacity factor (CPF1)	48.25	164.652	.923
Time factor (CPF2)	48.61	165.766	.928
Quality Factor (CPF3)	48.42	159.263	.920
Labour factor (CPF4)	49.05	167.305	.930
Employer satisfaction factor (CPF5)	48.64	154.884	.917
Delayance of payment (CPF6)	48.05	170.092	.928
Environmental Factors (CPF7)	49.16	166.766	.931
Equivalent collateral (ISC1)	49.29	158.727	.923
Previous performance of the contractor (ISC2)	49.36	155.334	.918
Professional Capacity of contractor (ISC3)	49.21	154.416	.917
Nature of the project (ISC4)	49.26	158.051	.921

Table 7 shows the values of Chronbach's Alpha for each filed of each questionnaire variable and the entire questionnaire. For the above fields, values of Chronbach's Alpha were in therange from 0.9 to 1.00 these means the range ensure that the reliability of every field of them were excellent Thereby, it can be said that it is proved that the questionnaire were reliable.

CHAPTER FOUR: DATA ANALYSIS & INTERPRETATION

The study attempted to assess factors that affect performance of bond insurance in construction projects in case of Tsehay Insurance Share Company. To get pertinent data Two hundred questioner were distributed and from these questioners one hundred seventy /170/ respondents were collected. The questionnaires had been distributed to the respondents via Telegram and physically by hand to get fast response. The responses were based on their perception and experience so far in the subject area.

Figure 1 Percentage of Respondents



Out of 62 questioners distributed to clients 50 (80.65%) were received. while from 64 questioner that was distributed to contractors 55 were collected.. The rest 65 from 74 questioners (87.94%)were received from employees of Tsehay Insurance Company. Each respondent was analyzed for their personal experience in the construction industry and the experience of their organization.

4.1 Demographic Profile of Respondents

Table 2 Demographic Profile of Respondents

Demographic characteristics	Category	Insurance employees		Contractor		Client	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Gender	Male	45	69.23%	53	96.36%	45	90%
	Female	20	30.77%	2	3.64%	5	10%
	Total	65	100%	55	100%	50	100%
Age Categories (Years)	20-25	5	7.70%	-	-	-	-
	25-35	10	15.38%	8	14.55%	6	12%
	35-45	29	44.61%	15	27.27%	17	34%
	Above 45	21	32.31%	32	58.18%	27	54%
	Total	65	100%	55	100%	50	100%
Education Level	Higher Diploma	-	-	29	52.73%	2	4%
	First degree	47	72.31%	23	41.82%	40	80%
	Master	18	27.69%	3	5.45%	8	16%
	PHD	-	-	-	-	-	-
	Total	65	100%	55	100%	50	100%
Experience (Years)	1-5	22	33.85%	5	9.09%	20	40%
	5-10	43	66.15%	20	36.36%	17	34%
	>10	-	-	30	54.55%	13	26%
	Total	65	100%	55	100%	50	100%

Source: (Own Source, 2022)

As indicated in table 4.1, from the insurance employees 69.23percent of the respondents were male and30.77 percent of them were female. These indicate the majority of the Insurance employees’ respondents were male.

From the contractors respondents 96.36 percent of contractors were male and the remaining 3.64 percent of the respondents under this category were female. Based on the respondents female contractors were very few.

From the respondents of Employer/client ninety percent(90%) were male and the rest ten percent (10%) were female. When we consider the whole view, majority of the respondents were male.

When we look at the age categories, from the employees of Tsehay Insurance Company majority of the respondents were in the age range of 35-45 years. The next majority groups from the above age groups were in the age range of above 45 years, i.e. 32.31 percent of the respondents are under these categories. The remaining 15.38 percent and 7.70 percent were from the age range of 25-35 and from 20-25 respectively.

From the total contractors under study, majority of the respondents were in the age limit of more than 45 years. 58.18% of them were under this range of age. 27.27 percent of the respondents were under the age group of 35-45 and the remaining 14.55percent of contractors respondents were under the age group of 20-25.

The clients age group also investigated and 54 percent of them were above 45 years of age. 34percent of them were from the age category of 35-45. The rest 12 percent of the respondents were from the age group of 25-35. There were no respondent under the age group of 20-25.

The above table also reveals that most of the respondents of the insurance employees,47 percent of them were first-degree holder and the rest 18 percent were master degree holder. There were no respondents under higher diploma& PHD category.

When we consider Contractors, 52.73 percent of them have higher diploma and 41.82 percent of them were Degree holder. Only 5.45% of the respondents under this category were Master's degree holder. There were no PHD holders under these categories.

Based on the study by (Robert Barnes, 2020) to be a contractor four criteria's should be fulfilled:-

1. Register with the government
2. Certain experience& qualification
3. Fulfill staff requirements
4. Submit record of past performance & audited statement of accounts.

Based on the above table with the above criteria, if the person have higher diploma and his age is greater than 18 years it is enough to be a contractor. That is why most of them were not holding Degree or Masters.

An individual who are interested inbecoming contractors often learn the skills of the trade through hands-on training and working on a construction site. Before becoming a contractor, many people have a job as a laborer.

When we consider the client respondents 80 percent of them were degree holder and 16 percent of them were Master's degree holder. The rest 2 respondents 4% of them were higher diploma.

With regard to experience, 33.85 percent of the employees were serving the insurance company for 1-5 years. The majority of the respondents (66.15) serve the company for a range of 5-10 years of experience. There were no respondents who serve the company above 10 years of service. Since the company has serving the public for only ten years.

From the respondents of contractors 54.55% of them were serving the company for more than 10 years and 36.36 percent of them work from 5-10 years. The rest 9.09 percent of the respondents served their company from 1-5 years.

When we consider clients, 40% of the respondents work from 1-5 years. The minority of the groups serves their companies above 10 years and the percentage were 26. From 5-10 years of service, 34% of them were under this category.

Table 3 Position of Respondents

	Position	Frequency	Percentage
Current Position of the Insurance employees	Underwriter officer	30	46.15%
	Claim Dep't	8	12.31%
	Branch manager	12	18.46%
	Legal dep't	2	3.08%
	Higher Mg't group	13	20%
	Total	65	100%
Current position of Contractors	Owner of the organization	30	60%
	Project Manager	15	30%
	Site Manager	5	10%
	Total	50	100%
Position of Employers/clients	Quality Expert	20	40%
	Contract administration expert	20	40%
	Senior expert	10	20%
	Total	50	100%

The Insurance company employees' respondents had five categories'. These were underwriting officer, Claims Dept. employees, Branch Manager, Legal Department, Higher Management group. From these groups majority of the respondents thirty (46.15%) of them were underwriting officer, twelve respondents were Branch manager. Thirteen respondents (20%) were from higher management group. The rest eight respondents and two respondents were from claims Dept. employees and legal department employees respectively.

When we consider contractors, 60% of them were owner of the organization. That means they are working for their own organization and they get the work from bid. Thirty-five respondents (30%) of them were Project manager and the rest 10% of them were site manager.

Positions of employer/client were also considered. And based on the table 40% of them were quality expert and the rest 60% were distributed to 20% senior expert & 40% contract administration expert.

4.2. Factors affecting the performance of bond insurance

Employers/clients, staffs of insurance company and contractor perception on factors affecting the performance of bond insurance in construction projects the case of Tsehay Insurance Share Company in Addis Ababa were ranked based on their agreement. Accordingly, their response presented in the following tables were based on Likert scale and discussed based on the responses.

They are merely numerical labels. Based on Likert scale we have the following table (Cheung et al, 2004)

Table 4 Ordinal Scale used for data measurement

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Scale	5	4	3	2	1

The relative importance index method (RII) is used here to determine respondents for the relative importance of the key performance factors in construction projects. RII is computed as (Cheung et al) and helps to the soundness of the variables, which was the first category for which RII was calculated. According to (Johnson & LeBreton, 2004), RII is helpful in finding the contributions of specific variables to the entire system or phenomenon. In order ascertain empirically the factors that contribute to the performance of bond insurance and preference of selection criteria of employer/client, contractors & employees, RII is used, which is calculated using 2004; Iyer & Jha, 2005):

$$R_{II} = \frac{\sum W}{AXN}$$

Where RII = Relative Importance Index

W is the weight given to each factor by the respondents and ranges from 1 to 5

A = the highest weight = 5

N = the total number of respondents

4.2.1. Overall response rank

Table 5 Overall Response Rank

Sn.		Factors	Rank	RII
1	Employer Selection Criteria	Client consider number of projects at contractors hand (ESC1)	6	.748
2		Elapsed time b/n bid opening & award gap (ESC2)	1	.849
3		Escalation problem (ESC3)	4	.807
4		Least bidder become a winner (ESC4)	2	.822
5	Contractor Performance Factor	Financial Capacity factor (CPF1)	5	.773
6		Time factor (CPF2)	8	.701
7		Quality Factor (CPF3)	7	.739
8		Labour factor (CPF4)	10	.613
9		Employer satisfaction factor (CPF5)	9	.696
10		Delayance of payment (CPF6)	3	.814
11		Environmental Factors (CPF7)	11	.591
12	Insurance Selection Factor	Equivalent collateral (ISC1)	14	.566
13		Previous performance of the contractor (ISC2)	15	.551
14		Knowing Professional Capacity (ISC3)	12	.581
15		Nature of the project (ISC4)	13	.572

Source: (questioner, 2022)

According to the response, most of them agree on the most important performance factor of bond insurance related construction bonds were elapsed time between bid opening and bid award date difference. These performance factor as it has been ranked in the above table, it was first from all categories and the RII = 0.849. According to (Lockwood, 2022) when a bid award is delayed the contractor's situation may change. Their backlog may increase, material costs and lead times may change dramatically and labor may be committed to other jobs as project owners navigate staff shortages, work-from-home impacts and other challenges, a significant amount of time may elapse between a bid submission and the owner awarding the contract.

Based on the perception of the respondents, the second factor agreed by most of the respondents as performance problem was least bidder become a winner. RII level become 0.822. In line with these agreement (Holt et al., 1995), it was revealed that choosing a contractor needs to be based on the value of money instead of automatically selecting the lowest bidder as the primary aim of the process is to identify the most optimum tender and not the lowest bidder. (Shrestha et al. 2014) argued that many clients have varied methods of quantifying the criteria, while others resort to a subjective assessment of contractors based on the information solely provided by them. (Morkūnaitė et al., 2017) found the same trend in the current times where clients select contractors based on the lowest bid, making the lowest price a dominant requirement in project award. In contrast, (Morkūnaitė et al., 2017) argue that only considering the lowest price as a requirement for awarding the contract may cause the client to choose an “unqualified, incompetent, inexperienced, and insufficiently financed contractor”. (Polat, 2016) also asserted that selection of an inappropriate contractor can result in massive additional costs caused from a rework of the project due to “poor quality of work, claims, disputes, litigation, adversarial working conditions, penalties, abandonment of work, and even bankruptcy

The third factor that believed by the respondents that affect performance of bond insurance was Escalation problem. Even if the inflation has been very high, the employer did not adjust the price escalation during the work; so they are suffered from this wide inflation. The RII level here was 0.807. Based on the study by (Flyvbjerg et al., 2002) project cost escalation is a major problem for government agencies. Over the time span between the initiation of a project and the completion of construction, many factors influence projects final costs.

(Mansfielld, Ugwu & Doran, 1994) suggested that in developing countries the lack of proper phasing of construction projects can contribute to the economy to become “overheated”. This leads to shortage of construction materials as the demand will exceed the supply, this in turn leads to a climb in the cost of construction materials; this inevitably gives rise to project cost overruns, with consequential effects on inflation and a decline on efficient activity in the construction industry.

Delayance of payment was another factor that was agreed by all group of respondents as the fourth factor that affects performance of bond insurance. Even if the contractors resist all the above factors, since the employer do not pay the amount of work done to the contractors timely they encounter financial problem. Based on (Ayodele & Alabi, 2011) view that delayed payment result to the loss of continuity of construction activities and consequent breakdowns in the command structure and communications.

This leads the contractor to demobilize their work force and they are forced to pay wage for ideal labour. When they get the payment it become difficult to collect the lab our again and this intern affect the construction projects. So based on the agreement level RII become 0.840.

Financial Capacity problem considered as the fifth factor based on the view of the respondents. And the agreement level was 0.773. According to (Harris&McCaffer,2013) contractors' financial capacity is the resource that requires to smooth the progress of implementation of the construction work on site. It is made up of money at hand, bank credit, overdraft, credit purchases, and work-in-progress and invoiced amount. Based on (Harris &McCaffer,2013) financial capacity also includes resources needed to grease the daily business of the construction firm.

The sixth factor that respondents had been ranked that affect performance of bond insurance is the employer are not investigating how many projects are at hand on the selected contractor. This means most of the time the contractors have many works at hand and keep on buying bid to get more and more work. So they receive the payment from one project and they are not used these money for the project itself. Since they may have another project suffer financially, they dump the money for that project and leave one here and another there. If the employer ask or investigate how many projects at hand before award these problem were not happen. So here, the RII level becomes 0.748.

The factor that seen by the respondents as the seventh factor were quality factor. Based on their view the RII was 0.739. (Mane) cited the quality management system (QMS) of the construction industry includes quality planning, quality control, and quality assurance. The main goal of construction is to ensure that the construction project is successfully completed within the constraints of better quality, a certain period and less possible costs, based on specification. Quality factor are not only affect the performance of bond insurance but also the project success. For most companies the quality-related cost range from 25 to 40 % of operating expenses (Juran& Godfrey, 2000).

(Cheung et al., 2004) are in agreement with our result, that quality factor affects the project performance and the degree of owners satisfaction.

Time factor also the issue that agreed by all respondents were the eight factor. Based on this agreement level the RII =0.701. (Reichelt & Okuwoga, 1998) identified that the time performance problem is related to poor time control and updating. (Lyneis, 1999) obtained that project schedule must be controlled by the dynamic feedback process let them to extend the time limit of the project.

The ninth factor that had been ranked by respondents was employer/client dissatisfaction becomes the factor of performance of bond insurance. The RII become 0.696. Client satisfaction is associated with many attributes (Boasson & Wettestad, 2016) and the dynamic nature of clients' requirements makes all these attributes crucial.

Achieving the satisfaction attributes as a guide generates trust, greater confidence, use of more effective work procedures, improved quality of project outcomes, meeting of project deadlines and consequently client satisfaction (Omonori & Lawal 2014).

The indicators of client satisfaction include; the number of complaints issued to project managers and their ability to solve these promptly (Sarhan et al., 2017); performing work successfully (Chan & Dansoh, 2017); supporting clients and fulfilling their financial requirements.

The respondents had ranked labour factor, as the tenth position with RII equals 0.613. Labor force, total in Ethiopia reported in 2021 was 55,899,321, according to the World Bank collection of development indicators, compiled from officially recognized sources.

Ethiopia - Labor force, total - actual values, historical data, forecasts and projections were sourced from the World Bank on May of 2022. This seems that there had been more work forces in our country.(Samson &Lema, 2002), are with the same agreement with our result as labour factor affect quality performance of construction projects.

Environmental factors were considered as the eleventh factor and level of agreement by respondents were RII =.591 Clause 44.1 of the FIDIC form of contract stipulates that in the event of exceptionally adverse climatic conditions, the Engineer may (after due consultation with the employer and the contractor) determine the amount of any extensions that may be granted to the contractor. This clause is anticipated to cover the contractor from delays that he may suffer as a result of result of exceptionally adverse climate conditions, such as heavy rainfall. In the event that the occurrence of heavy rainfall causes delays, then the contractor is entitled to extensions of time.

From twelfth factor, those affect performances of bond insurance by respondents were not knowing professional capacity of contractor. Based on their agreement level the RII = 0.581.

The thirteenth factors were nature of the project, that means simplicity/complexity of the project and the RII were 0.572. From the fourteenth to fifteenth factors that affect performance of bond insurance as seen by respondents were equivalent collateral factor, and previous performance of the contractor respectively. The RII factor shown here was 0.566 and 0.551 respectively.

These factors contribute less for the performance of bond insurance in Tsehay Insurance share Company in Addis Ababa based on the perception of the respondents.

Table 6 Case Processing Summary

	Case Processing Summary					
	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
Employer/Owner Selection criteria (ESC)	170	100.0%	0	0.0%	170	100.0%
Contractor Performance Factor (CPF)	170	100.0%	0	0.0%	170	100.0%
Insurance Selection Criteria (ISC)	170	100.0%	0	0.0%	170	100.0%

Source: (SPSS analysis)

Based on table6 above,the overall respondents were one hundred seventy and there were no missing value considered. Therefore,100 % of the respondents are filled based on the variable of Employer selection criteria (ESC), contractor performance factor (CPF)& Insurance selection criteria (ISC).

Table 7 Descriptive Statistics

	Descriptive Statistics												
	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
						Statistic	Std. Error			Statistic	Std. Error	Statistic	Std. Error
ESC1	170	4	1	5	636	3.74	.096	1.256	1.578	-.967	.186	-.111	.370
ESC2	170	4	1	5	722	4.25	.085	1.108	1.229	-1.664	.186	2.062	.370
ESC3	170	4	1	5	686	4.04	.095	1.235	1.525	-1.250	.186	.486	.370
ESC4	170	4	1	5	699	4.11	.083	1.085	1.177	-1.491	.186	1.746	.370
CPF1	170	4	1	5	657	3.86	.084	1.093	1.195	-1.076	.186	.537	.370
CPF2	170	4	1	5	596	3.51	.105	1.368	1.873	-.594	.186	-.905	.370
CPF3	170	4	1	5	628	3.69	.094	1.231	1.515	-.822	.186	-.284	.370
CPF4	170	4	1	5	521	3.06	.106	1.377	1.895	-.173	.186	-1.176	.370
CPF5	170	4	1	5	592	3.48	.103	1.347	1.813	-.580	.186	-.851	.370
CPF6	170	4	1	5	692	4.07	.084	1.096	1.202	-1.341	.186	1.194	.370
CPF7	170	4	1	5	502	2.95	.112	1.463	2.140	-.021	.186	-1.405	.370
ISC1	170	4	1	5	481	2.83	.109	1.427	2.036	.082	.186	-1.379	.370
ISC2	170	4	1	5	468	2.75	.104	1.362	1.856	.244	.186	-1.156	.370
ISC3	170	4	1	5	494	2.91	.105	1.364	1.861	.144	.186	-1.166	.370
Valid N (listwise)	170												

Mean can be used to get an overall idea, or picture, of the data set. Mean is best used for a data set with numbers that are close together from all respondents that were collected; the static mean is between ranges from 2.83 to 4.25. The overall mean become 3.034. Therefore, the mean range is between the overall mean. The environmental factor (CPF7), Equivalent collateral (ISC1), previous performance of contractor (ISC2), professional capacity of contractor (ISC3) and nature of the project (ISC3) was below the overall mean.

Standard deviation shows how the data are clustered around the mean. Low standard deviation means data are clustered around the mean, and high standard deviation indicates that data are more spread out. Thus the above standard deviations were deviate from the means with minimum value. According to table 8, most of the data have a skewness of negative value. These implied that the data have a longer or fatter tail on the left side of the distribution, while insurance selection criteria in case of ISC1, ISC2, ISC3, ISC4 have positive skewness and these implies that, the data have a longer or fatter tail on the right. The mean of positively skewed data will be greater than the median.

Kurtosis is a measure of whether the data are heavy-tailed or light-tailed relative to a normal distribution. That is, data sets with high kurtosis tend to have heavy tails, or outliers. Data sets with low kurtosis tend to have light tails, or lack of outliers. A uniform distribution would be the extreme case.

Negative excess values of kurtosis (<3) indicate that a distribution is flat and has thin tails. Platykurtic distributions have negative kurtosis values. A platykurtic distribution is flattered (less peaked) when compared with the normal distribution, with fewer values in its shorter (i.e. lighter and thinner) tails.

All the value of kurtosis except Elapsed time between bid opening & bid award (ESC2), Escalation problem (ESC3), Least bidder become a winner (ESC4) which had a positive kurtosis, the rest have a negative value. But since the negative values were near to zero, even if it has negative kurtosis, it tends to near to normal distribution.

4.3. Factors that affect performance of bond insurance by Insurance Company

Table 8 Summary of Factors by Insurance Company

S.N.	Factors	Rank	RII
I. Bond Performance Factors			
1	Profitability	1	0.880
2	Gross written Premium	3	0.769
3	Claim paid/outstanding	2	0.723
II. Factors that affect performance of bond insurance			
Employer selection criteria factors			
1	Number of projects at hand by the selected contractor	8	0.745
2	Elapsed time between bid opening & bid award gap	1	0.935
3	Escalation problem	3	0.831
4	Only Least bidder become a winner	2	0.865
Contractor performance factors			
5	Financial Capacity factor	5	0.809
6	Time factor	6	0.788
7	Quality Factor	7	0.748
8	Labour factor	10	0.612
9	Employer satisfaction factor	9	0.680
10	Delayance of payment	4	0.812
11	Environmental Factors	11	0.575
Insurance selection criteria factors			
12	Equivalent collateral	12	0.535
13	Previous performance of the contractor	15	0.502
14	Knowing Professional Capacity	13	0.538
15	Nature of the project	14	0.526

Based on the insurance employee respondents majority of them believe that the performance of the bond insurance was measured by the profitability of the class. The RII was 0.88. Based on the study by (Ahmeti, 2022) profitability expresses the ability to make a profit from all the business activities of the company. Since the performance of bond insurance determined by the profitability of the class, the respondents ranked first from the three dependent variables. The second rank based on them was the premium that we collect matters. Based on their view to determine the performance of bond insurance what is collected in terms of money had big significant. The third view related to performance of bond insurance was the claim paid/outstanding what matters.

The first factor that affects performance of bond insurance in construction projects that were seen by the staff members of the insurance company was time gap between the bid opening date and the bid award. As shown in table 9 the overall rank also depicts this result. Based on the perception by employees of the insurance company, they believe that the failurity of the project was mostly because of this issue. The RII level was 0.935.

The second factor seen by the insurance company staff members was least bidder become the winner. The RII level here is 0.865. The customary practice of awarding contracts to a lowest bidder was established to ensure the lowest cost of completing a project. (Irtishad, 1993)

Delays in meeting the contract duration, increment of the final project cost due to high variability, tendency to compromise quality, and the adversarial relationship among contracting parties are the major drawbacks associated with responsive low bid award procedure (Gezeta, 2004).

Moreover, the low-bid award system encourages unqualified bidders in the competition and in contrary; it discourages qualified contractors to participate. That is why most projects are failed and these lead to failurity in bond insurance.

The third factor that has seen by the insurance staff member as a problem was escalation problem and the RII was 0.831. Cost escalation is the increase for money required to construct a given project above the initially budgeted sum. It also arises, if the actual cost of construction is in excess of the originally estimated amount. (Majid, Zakaria, et. al., 2012)

Delayance of payment seen by the insurance company as the fourth factor. Its RII was .812. Delay was generally acknowledged as the most common, costly, complex and risky problem encountered in construction project and could be liable to considerable pressure on construction time and cost (Ayudhya, 2012)

The staff members saw financial capacity as the fifth factor that affect performance of insurance company. Its RII was 0.809. There are many reasons for the delayance of payment. One factor contributing to delayed payment is when contractors fail to agree with the valuation of work on site (Adballa & Hussein, 2002).

Time factor become the sixth factor and its RII was .788. Quality factor become the seventh factor and the RII was 0.748.

The eight factor became the employer should investigate how many projects at contractors hand. Since it became difficult to handle projects if the number projects at hand become increased. So based on their perception the RII was 0.745

The ninth and tenth factor that has been considered by the insurance company staff respondents are employer satisfaction level. (Samson &Lema 2002); (Iyer&Jha 2005) obtained that client satisfaction is important to have smooth work. The RII factor becomes 0.680 &labour factor became the tenth factor based on the respondents perception. The RII factor becomes 0.612

Table 9 Descriptive Statistics

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Projects at hand	65	1	5	3.72	1.329	-.912	.297	-.358	.586
Escalation problem	65	1	5	4.15	1.189	-1.458	.297	1.223	.586
Financial Capacity	65	1	5	4.05	.837	-1.572	.297	4.223	.586
Elapsed time	65	1	5	4.68	.731	-3.120	.297	11.571	.586
Least bidder winner	65	1	5	4.32	.812	-1.749	.297	4.464	.586
Time Factor	65	1	5	3.94	1.197	-1.231	.297	.742	.586
Quality Factor	65	1	5	3.74	1.338	-.875	.297	-.405	.586
Labour Factor	65	1	5	3.06	1.509	-.136	.297	-1.499	.586
Employer selection factor	65	1	5	3.40	1.285	-.387	.297	-.963	.586
Delayance of payment	65	1	5	4.06	1.059	-1.266	.297	1.077	.586
Environmental factor	65	1	5	2.88	1.409	.156	.297	-1.221	.586
Equivalent collateral	65	1	5	2.68	1.470	.341	.297	-1.290	.586
Previous performance	65	1	5	2.51	1.348	.576	.297	-.840	.586
Professional capacity	65	1	5	2.69	1.457	.278	.297	-1.326	.586
Nature of the project	65	1	5	2.63	1.353	.358	.297	-.921	.586

Source :(SPSS software, 2022)

From sixty-five respondents that were collected from Insurance employees the ranges were four/4/. The mean of all variables were between a minimum of 2.51 and maximum of 4.68.

Mean can be used to get an overall idea, or picture, of the data set. Mean is a best way used for a data set with numbers that are close together. Low standard deviation means data were clustered around the mean, and high standard deviation indicates data are more spread out. The above standard deviation is more than zero it indicated that the data points are not close to the mean.

According to all response that depicts on table 14 negative values of skewness depicts that to a longer or fatter tail on the left side of the distribution, that is left tail is longer than right tail. while positive skew for insurance selection criteria refers to a longer or fatter tail on the right.

The mean of positively skewed data will be greater than the median That was value of mean is the greatest one followed by median and then by mode.

Kurtosis is related to the thickness of the tails and/or the center of distribution. When we consider kurtosis is 0, it means the sample data is normally distributed.

For the values that had negative values, it has a negative kurtosis that means it has a thick tail and for the positive values, it has a positive kurtosis that had been a very thick tail.

4.3.16. How often the company monitors the performance of bond insurance

Table 10 Performance of Bond Insurance

	Frequency	Percentage
Periodically	35	53.38%
Quarterly	2	3.08%
Bi-Annually	13	20.00%
Annually	15	23.08%
Total	65	100%

From sixty-five /65/, respondents of the insurance company employees thirty-five /35/ respondents (53.38%) said that we monitor the performance of the bond periodically, if the need appears. Fifty respondents (23.08%) of them said that we monitor the bond insurance annually.

Thirteen /13/ respondents (20%) of them were monitor bi-annually and the rest two (3.08%) of them said that we monitor the bond quarterly.

(Dara, 2021) has been written about successful project management has never relied on a “set it and forget it” mentality. In order to run efficient projects, PMs need to not only launch said projects, but monitor and track their progress. While project monitoring is regularly overlooked or viewed as just another box to check off on the PM’s task list, it’s a vital part of the project lifespan.

4.3.17. Are you checking the status of the project?

Table 11 Frequency & percentage of checked projects

	Frequency	Percentage
Yes	22	33.85%
No	43	66.15%
Total	65	100%

The number of respondents that were checking the status of the projects that were giving on bond insurance was twenty-two(33.85%) whereas forty-three(66.15%) respondents were not checking. That means after giving the bond the insurance employees were not checking the status of the project. These lead the insurance company to have no idea about the project until the claim arises.

4.3.17. Techniques used to collect information about customer/contractor to give the bond

Table 12 Information on customer bond

	Frequency	Percentage
Interview	22	33.85%
Survey	-	-
Statistical data	-	-
Observation	2	3.08%
Company profile	35	53.84%
Questioner	6	9.23%
Total	65	100%

From the total 65 respondents majority of the respondents ,thirty five of them (53.84%) get information about their customer from the company profile they collect, twenty two(33.85%) of the respondents collect the data by interviewing the customer.

No respondents get the information from the statistical data & from survey. The remaining eight respondents, two of them (3.08%) were collect the data by observation & six of them (9.23%) were from questioner.

4.3.18. State number of bonds issued for your customer for the past five years in the company

Table 13 Number of bonds issued

	Frequency	Percentage
Bid bond	97	14.81%
Performance bond	420	64.12%
Advance Payment bond	138	21.07%
Total	655	100%

The company issued different types of bonds for the year 2017 to 2021. Ninety Seven bid bonds were issued during the period. 420 performance bonds& 138 Advance payments were issued. From the data, the company issued more performance bond than other bonds.

4.3.19. Number of failed bonds during the period

Table 14 Summary of number of failed bonds

	Frequency	Percentage
Bid bond	1	1.43%
Performance bond	39	64.29%
Advance Payment bond	23	34.28%
Total	63	100%

Source: (questioner, 2022)

Based on the report that was collected from the claim department from the total bond issued by the insurance company under consideration, one bid bond was failed. This comprises 1.43% from the total. Majority of the bonds failed was performance bond, which was 39 bonds (64.29%) and twenty-three (34.28%) advance payment bonds were failed.

4.3.20. Bid bond/Performance & Advance payment bond amount range failed during the past five years

Table 15 Range of amounts of bond failed

Range of amount /Birr/	Bid bond		Performance Bond		Advance payment bond	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
<1Million	1	100%	13	33.33%	9	39.13%
1-5 Million	-	-	20	51.28%	10	43.48%
5-10 Million	-	-	1	2.56%	2	8.69%
10-15 Million	-	-	3	7.69%	1	4.35%
15 million	-	-	2	5.13%	1	4.35%
Total	1	100%	39	100%	23	100%

Source: (Claim Department report, 2022)

From the Year 2017 to 2021, number of bid bond, Performance bond & advance payment bond failed was investigated. And based on table 23 that was collected from the report of claim departments, sixty three /63/ bonds were failed.

One bid bond was failed during the period with a bond amount of less than Birr 200,000.00 and this makes the range of less than one Million. From the total thirty-nine /39/ bonds failed majority of the bonds were under the range of amount from One Million to five million Birr.

Based on the view of the respondents said that the contractor with Grade of less than IV prone to failure, since they have no capacity.

The second number for the failed project was from a range of less than one million that was 13 bonds (33.33%). One Performance bond was failed with a bond amount /Sum Insured/ range from five million to ten million. Three performance bonds were failed from ten to fifteen million and lastly two performance bonds were failed above fifteen million Birr range.

From twenty-three advance payment bonds failed, 9 bonds (39.13%) were with an amount of less than one million and ten advance payment bonds (43.48%) were failed with a range of One million to five million. Two-advance payment bonds were failed from a bond amount range of five million to ten million and one advance payment bond with a bond amount range from Birr ten to fifteen million. The rest one bond with an amount of more than Birr fifty million. These shows most advance payment bonds failed during the period was from one million to five million Birr.

4.4. Factors that affect by the Employer/Client

Table 16 Factors that affect by Employer/Client

S.N.		Rank	RII
Employer selection criteria factors			
1	Number of projects at hand by the selected contractor	8	0.676
2	Elapsed time b/n bid opening & bid award gap	5	0.744
3	Escalation problem	3	0.760
4	Least bidder become a winner	7	0.716
Contractor performance factors			
5	Financial Capacity factor	1	0.868
6	Time factor	4	0.748
7	Quality Factor	2	0.808
8	Labour factor	10	0.624
9	Employer satisfaction factor	9	0.652
10	Delayance of payment	6	0.732
11	Environmental factors	11	0.608
Insurance selection criteria factors			
12	Equivalent collateral	12	0.592
13	Previous performance of the contractor	15	0.540
14	Knowing Professional Capacity	14	0.564
15	Nature of the project	13	0.584

Source :(Questioner, 2022)

The first factors that affect performance of bond insurance in Tsehay Insurance Company based on Employer/client respondents' agreement were financial factor problem with RII equal 0.868. Based on their view financial problem were the most sever one related to bond insurance failurity. Since most of the contractors were not financially capable, they are forced to leave or stop the project. The entire problem related to the project was because of this problem as the respondents view.

The second factors that were considered by client were quality factor. Since for the client the quality is the best things they are going to consider it become the second factor. Based on their view the RII became 0.808. Based on (Iyer&Jha2005) Quality factor affects the project performance.

The employer saw escalation factor as the third factor. Based on their view since the project's cost inflated upon passage of time, it leads to inflation of materials. However, escalation problem was not considered by most of the clients this problem become a crucial issue. The RII=0.760.

The employer saw time factor as the fourth factor. Based on their view since the contractors do not finish the intended project based on schedule they encounter a problem and this in turn lead to the insurance company to pay unnecessary claim. The RII=0.748.

The factor that was considered by the employer/client as the fifth factors are elapsed time between bid opening & bid award gap. The RII was 0.744.

The sixth factors that affect performance of bond insurance agreed by all employers are delayance of payment. Since the contractor had been not financially capable delayance of payment, affect the cash flow of the contractor and may lead to liquidity that is why most of the time contractors borrow huge amount of money from banks to finish the project at hand. The RII was 0.732.

Least bidder become a winner factor was considered by them as the seventh factor. Even if they know the problem of giving the award for the entity who submits least bid, they did not consider as the best considering factor. The RII was 0.716.

The employer/client also considered the number of projects at hand by contractor as the eighth factor. Based on their opinion they give little attention for the factor that is why they did not ask the contractor upon award time how many projects at hand. The RII here was 0.676.

Employer satisfaction factor considered by them as the ninth factor, based on their view if the contractor fulfills all the above factor we are not much consider our satisfaction factor. So they give this rank. The RII was 0.652.

Labour factor considered as the tenth factor & its RII was 0.624. As we all know in our country we have cheap labour force. Even if the cost of daily laborers wage increase from time to time and the quality of the work force decreased the contribution to the performance of bond insurance is not as such significant, based on the employers view.

Environmental factors, equivalent collateral, nature of the project, professional capacity & previous performance of contractor were ranked from Eleventh to fifteenth. The RII=0.608, 0.592, 0.584, 0.564, 0.540 respectively.

The top five ranks that was given by employer/client were financial capacity factor, Quality factor, Escalation problem time factor & elapsed time between bid opening and bid award time respectively.

4.3.16. Are your companies having an external consultant for the project?

Table 17 Frequency of projects with external consultants

	Frequency	Percentage
Yes	30	60.00%
No	20	40.00%
Total	50	100%

From the total fifty respondents thirty employer respondents had been working with an external consultant for the projects and twenty of the employers' were not had an external consultant for the project they have, only an internal consultant control the project.

4.3.17. Were you checking the progress of the project periodically?

Table 18 Project Progress

	Frequency	Percentage
Yes	28	56%
No	22	44%
Total	50	100%

Twenty-eight respondents (56%) of them said that we control the project progress periodically. To get the project before they fail, the employers believe to check the progress of the project. Twenty-two respondents (44%) of them were not controlling the progress of the project periodically.

4.3.18. When the project failed, do you investigate the cause of the failures?

Table 19 Projects with cause of Failure

	Frequency	Percentage
Yes	45	90%
No	5	10%
Total	50	100%

From the questionnaires that were collected, majority of them were investigating the failure cause and 10% of them said that we are not investigating the cause.

4.4. Factors that affect performance of bond insurance by contractors

Table 20 Factors that affect bond insurance by Contractors

S.N.		Rank	RII
Employer selection criteria factors			
1.	The employer investigates how many projects are at hand of the selected contractor	5	0.818
2.	Elapsed time between bid opening & bid award gap	3	0.844
3.	Escalation problem	4	0.822
4.	Only Least bidder become a winner	2	0.869
Contractor performance factors			
5.	Financial Capacity factor	9	0.644
6.	Time factor	15	0.556
7.	Quality Factor	7	0.665
8.	Labour factor	12	0.604
9.	Employer satisfaction factor	6	0.756
10.	Delayance of payment	1	0.891
11.	Environmental Factors	13	0.593
Insurance selection criteria factors			
12.	Equivalent collateral	14	0.578
13.	Previous performance of the contractor	10	0.618
14.	Knowing Professional Capacity	8	0.647
15.	Nature of the project	11	0.615

The contractor respondents' agreement in the first position with RII equal 0.891 were delayance of payment. These issues become more sensitive from all variables by contractor.

For some reason, delayed payment has become a norm in the construction industry and is one of the biggest challenges for the contractors in many parts of the world. Based on (Kemal 2021) delayance of payment would be due to the employer may not have the necessary funding arrangements, delay the payment for their own financial advantages, complex process and procedure (payment review, certification and release of money), lack of proper process implementation, unrealistic cash flows, disagreement on the valuation of works at site.

In some cases, contractor also contributes to this situation by not providing adequate supporting documents, making incorrect valuation, or maybe not following the procedures.

Contractual Provisions for Delayed Payment – FIDIC Red Book – 1999

Sub-Clause 14.8 [Delayed Payment] deals with the consequence of the delayed payment.

If the Contractor does not receive payment in accordance with Sub-Clause 14.7 [Payment], the Contractor shall be entitled to receive financing charges compounded monthly on the amount unpaid during the period of delay.

This period shall be deemed to commence on the date for payment specified in Sub-Clause 14.7 [Payment], irrespective (in the case of its sub-paragraph (b)) of the date on which any Interim Payment Certificate is issued.

Least bidder become a winner was the second priority given by the contractor & its RII was 0.869. The third factor was elapsed time between the bid opening & bid award date become wide and its RII was .844. Escalation problem become the fourth factor and its RII was 0.822.

Contractors project at hand also considered by the contractor as the fifth factor & its RII was .818. Employer satisfactions become the sixth factor and its RII was 0.756.

Quality factor also considered by the respondents as the seventh factor & its RII was 0.665

The eighth factor was professional capacity should be considered & its RII was 0.647.

The ninth factor was financial capacity factor & its RII was 0.644.

The tenth factor is previous performance of the contractor & its RII was 0.618.

4.4.16. Have you ever been reject the bid award?

Table 21 Frequency of rejected/unrejected bid bond

	Frequency	percentage
Yes	2	3.64%
No	53	96.36%
Total	55	100%

All the respondents of the contractors were requested to know whether they reject a bid award or not. However, most of the contractors 96.36% of them said that we did not reject the bid after bid award. Two of the respondents (3.64%) of them were reject the bid after they get the award.

4.4.17. Type of business/organization/

Table 22 Type of business

	Frequency	percentage
General Contractor	7	12.73%
Building contractor	33	60.00%
Water works contractor	5	9.09%
Private Limited company	10	18.18%
Total	55	100%

From the total respondents of contractors under study 60% of them were building contractors. Ten respondents (18.18%) were under the category of private limited company. The rest 12.73% and 9.09 % of the contractors respondents were under the category of General contractors & Water works respectively.

4.4.18 you have cash flow schedule for each project?

Table 23 Frequency of projects with cash flow

	Frequency	percentage
Yes	20	36.36%
No	35	63.64%
Total	55	100%

To determine whether the contractor has a cash flow schedule for each project, fifty-five respondents were taken. From them thirty-five (63.64%) of them has no cash flow schedule and Twenty (36.36%) of the respondents have a cash flow schedule for their projects.

4.4.19. Do you prepare a work progress report for each project report?

Table 24 Frequency of work progress report

	Frequency	percentage
Yes	22	40%
No	33	60%
Total	55	100%

The above table shows that thirty-three (60%) of the respondents have no work progress reports for their projects and the rest twenty-two (40%) of the respondents prepare work progress report.

CHAPTER FIVE: CONCLUSION & RECOMMENDATIONS

5.1. Conclusions

Bond insurance is an important guarantee for the construction projects. Since it have at least three participates like contractors, employers and insurance companies in addition to regulators' and governments, it is the riskiest and very complex one.

The aim of this paper was to assess factors that affect performance of bond insurance in construction projects in case of Tsehay Insurance Company in Addis Ababa. To assess the factors three types of questioner were prepared to know the perception of the insurance company, the perception of the employer and the contractor in these issues.

So based on these data the following based on the perception of the three parties, the insurance company, employer/client and contractor top ten factors that affect performance of bond insurance were identified. Based on priority from first rank to tenth rank their perception were Elapsed time between bid opening and bid award gap, least bidder become a winner, escalation problem, delayance of payment, financial capacity factor, how many projects at hand, quality factor, time factor, employer satisfaction factor, and labour factor. Based on the data, the researcher had been concluded the following issues.

Based on the qualitative and quantitative data that was collected by the researcher, the employers/clients were the most or the first contributors for the performance of bond insurance. Since the clients do not set honest & realist goals related to cost, schedule, and quality of the project, the contractors suffer from all these factors. So, they, themselves, facilitate the failurity of the project and indirectly the failurity of the bond insurance. They want to get all work done without extra pay even if the inflation of materials becomes unrealistic even per one day. To cover their unrealistic objective they invite or give award to unqualified contractors with minimum/least bid amount. So, they are the one responsible for the failurity of the project.

The second contributor for the performance of bond insurance is the contractor itself. Without building their financial capacity, they enter in to more contracts than they can afford. Inadequate cash flow system, debt burden by banks and then liquidity problem will encounter. To avoid their cash problem they want to handle all the works by themselves without recruiting the deserved professionals, or the respective project manager. They become the site manager, the project manager and the owner of their organization. Therefore, they lead the project to fail and become the burden to the insurance company that they believe them and give the respective bond insurance even without collateral.

The third party is the insurance company. Based on the data that derived from all the three party perception they are the victim of the case but not the contributor for the failurity of bond insurance. But we can't omit their problem too. Since they are not issuing the bond insurance with proper care by having collateral as the banks, they become the victim and forced to pay much amount of money to the client. Therefore, they leave their Company at cost.

5.2. Recommendations

5.2.1. Recommendation for the insurance Company

- Performance problem in bond insurance become costly and leaves the insurance company to incur more expense and more claimants' disputes. So the insurance company should give due attention when they give a bond insurance and should have an equivalent collateral than issuing based on their customer ship only. These avoid the insurance company to pay huge amount of money upon disputes.
- The head office should set rigid plan and schedule to control the branches, when they issue the bond and avoid issuing bonds for new customers who have no profile in the company.
- Even if the insurance company are not contributing much for the failure of bond insurance, planned schedule should be developed to see the performance of the contractor periodically. They should investigate how the project is going and refrain to renew if the project is not at good condition.

5.2.2. Recommendation for the employer/client

- The bid should not be based on least price bidder factor. They should consider the demand and supply of the market condition of the country before they announce the award. Other system should be addressed than list price bid. They should set the project cost based on the current market price of inputs and due consideration should be given for the bid.
- The employer should consider the capability of the contractors before they give the award. These will be done by investigating how many of the work is done and how many projects are at hand. Besides financial statement from different banks should be requested to know their financial status at least for the past months.
- Owners of the project/client should facilitate the payment upon request, based on the criteria and necessary documents that they supplement. This avoids cash flow problem of the contractor and in turn avoid delay of projects, claim of the project and any disputes.

5.2.3. Recommendation for the contractors

- They should use the payment of the project for the project works only. Some contractors buy new car, new house and other infrastructure when they get the payment. So the researcher recommend to use the payment to the respective project honestly.
- They should plan and try to work with professionals. Since most of the contractors are not professionally capable, they have to recruit the deserved professional to fill the gap. Professionals like architectures, subcontractors and/or supervisors should recruit to work each project with qualified person. If necessary, they should arrange training program for their employees.
- They should consider cost of the project based on current price when they fill the bid. And it is better to leave the bid than winning with minimum bid price and leave the project to leave the insurance company at cost.
- They should develop their financial capacity to work with quality and even if they did not get much profit, they have to keep their promise to finish the project. These will develop their good will also.
- The contractor should prepare time schedule may be by CPM method or consider the slack time that is based on the project schedule. These helps to finish the project timely.

5.2.4. Recommendations for future research

- To conclude this study, as a researcher of the study the following recommendations are proposed for further researcher who have intention to study factors that affecting the profitability and performance of bond insurance in the construction projects:
- Even if there were no research that was done regarding the research topic, carried out, I believe as a researcher, this study will be used as a foundation for further studies. Therefore, I recommend this study to be used for further study to study and evaluate the factors in construction projects in Ethiopia as a whole.

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Appendix A: Questioner

ST. MARRY UNIVERSITY
SCHOOL OF POSTGRADUATE PROGRAM
MASTERS IN BUSINESS ADMINISTRATION

QUESTIONNAIRE FOR THE ORGANIZATION

This research is being conducted as part of a graduate study in St. Marry University. The information obtained from this survey shall be kept anonymous and completely confidential and used for research purposes only. Your participation in this survey is much needed and I will be grateful if you could answer the following questions. The purpose of this questionnaire is to assess your reactions to a series of statements on factors that affect performance bond in construction projects in case of Tsehay Insurance S.C. in Addis Ababa. There is no right or wrong answer, and what is required is for me to get a sense of how you see issues from where you sit as a staff of Tsehay Insurance Share Company, staff of contractor or employer. These questions will provide insights into how factors that affect performance bond in construction projects in case of Tsehay Insurance S.C. is viewed, and what its factors that affect performance of construction Bond. The questionnaire requires in most instances a tick (✓) in the boxes provided.

Please feel free to provide answers to any of the questions in more detail.

SECTION 1: BACKGROUND INFORMATION

1.1 Please indicate your gender

a. Male b. Female

1.2 What is your age range?

a. 20-25 b. 25-35 c. 35-45 d. Above 45

1.3 Please indicate your education level.

a. Higher diploma b. Degree
c. Masterse. PHD d.

1.4. How long have you been an employee of the company?

a. 1-5 b. 5-10 years c. >10 years

1.5 What is your current position in the organization?

1.5.1. Insurance company

- a. Branch Manager b. Underwriting Officer c. Claims Dept.
d. Higher Management group e. Legal Department

1.5.2. Contractor

- a. Owner of the organization b. Project Manager c. Site Manager

1.5.3. Employer/client

- a. quality Manager b. Contract Administration expert c. Senior Expert

SECTION TWO: Factors Affecting the Performance of Construction Projects

The under mentioned numbers are factors affecting the performance of bond insurance in construction projects. Based on your experience, please indicate your opinion on the importance of the following factors as key performance affecting construction projects in Tsehay Insurance Share company (Please tick the appropriate one).

Indicate your feeling in each by SA-strongly agree (5), A-agree (4), N-neutral (Not sure) (3), D-disagree (2), SD-strongly disagree (1).

No	Criteria	Factors	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Employer Selection Criteria	Client consider number of projects at contractors hand					
2.		Elapsed time b/n bid opening & award gap					
3.		Escalation problem					
4.		Least bidder become a winner					
5.	Contractor Performance Criteria	Financial Capacity factor					
6.		Time factor					
7.		Quality Factor					
8.		Labour factor					
9.		Employer satisfaction factor					
10.		Delayance of payment					
11.	Environmental Factors						
12.	Insurance Selection Criteria	Equivalent collateral					
13.		Previous performance of the contractor					
14.		Knowing Professional Capacity					
15.		Nature of the project					

SECTION THREE: Factors that affect performance of bond insurance in construction projects by the Insurance Company

Instruction: Please, read each question and give appropriate answer to assess the current **factors that affect performance of bond insurance in construction projects in Tsehay Insurance Share Company** regarding the system of construction bond plan.

Indicate your feeling in each by SA-strongly agree (5), A-agree (4), N-neutral (Not sure) (3), D-disagree (2), SD-strongly disagree (1).

S.N.	Factors	Rank	RII
I. Bond Performance Factors			
1	Profitability	1	0.880
2	Gross written Premium	3	0.769
3	Claim paid/outstanding	2	0.723
II. Factors that affect performance of bond insurance			
Employer selection criteria factors			
1	Number of projects at hand by the selected contractor	8	0.745
2	Elapsed time between bid opening & bid award gap	1	0.935
3	Escalation problem	3	0.831
4	Only Least bidder become a winner	2	0.865
Contractor performance factors			
5	Financial Capacity factor	5	0.809
6	Time factor	6	0.788
7	Quality Factor	7	0.748
8	Labour factor	10	0.612
9	Employer satisfaction factor	9	0.680
10	Delayance of payment	4	0.812
11	Environmental Factors	11	0.575
Insurance selection criteria factors			
12	Equivalent collateral	12	0.535
13	Previous performance of the contractor	15	0.502
14	Knowing Professional Capacity	13	0.538
15	Nature of the project	14	0.526

3.16. How often your company monitor the performance of bond insurance?

- Monthly Quarterly Bi-annually annually

3.17. Are you checking the status of the project under construction?

Yes No

3.18. Which of the following tools & techniques are used to collect Information about your customer to give bond insurance?

(You can give more than one answer)

1. Interview 2. Statistical data review
3. Survey 4. Observation (field visit)
5. Company Profile review 6. Questionnaire

3.19. State Number of bonds issued for your customers for the past five Years in your branch?

- a. Bid Bond -----
b. Performance bond -----
c. Advance Payment bond -----

3.20. Number of Failed Bonds during the period

- a. Bid Bond -----
b. Performance bond -----
c. Advance Payment bond -----

3.21. Bond amount failed during the past five years?

- Less than One Million
- From One Million to Five million
- From Five million to Ten Million
- From Ten Million to Twenty Million
- Greater than Twenty Million

3.22. When did you say bond insurance is successful?

3.23. Is the insurance company can measure the efficiency of the bond insurance?If Yes by what method?

3.24. How can you control the claim of the bond insurance? Are you checking periodically?

3.25. Is the performance of bond insurance directly related to income of the company or claim of the company?

3.26. Is the performance of bond insurance directly related to Profitability of the company?

SECTION FOUR: Determining the contributions of the employer for the performance of bond insurance

Please, read each question and give appropriate answer regarding the contributions by the employer for the performance of bond insurance in construction projects. Indicate your feeling in each by SA-strongly agree (5), A-agree (4), N-neutral (Not sure) (3), D-disagree (2), SD-strongly disagree

No	Criteria	Factors	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Employer Selection Criteria	Client consider number of projects at contractors hand					
2.		Elapsed time b/n bid opening & award gap					
3.		Escalation problem					
4.		Least bidder become a winner					
5.	Contractor Performance Criteria	Financial Capacity factor					
6.		Time factor					
7.		Quality Factor					
8.		Labour factor					
9.		Employer satisfaction factor					
10.		Delayance of payment					
11.		Environmental Factors					
12.	Insurance Selection Criteria	Equivalent collateral					
13.		Previous performance of the contractor					
14.		Knowing Professional Capacity					
15.		Nature of the project					

4.4.16 Is your company have an external consultant for the project?

Yes No

4.4.17. Were you checking the status of the project?

Yes No

4.4.17. When the project failed, do you investigate the cause of the failures?

Yes No

SECTION FIVE: contribution of contractor for the performance of bond insurance in construction projects

Please, read each question and give appropriate answer regarding the contributions by the employer for the performance of bond insurance in construction projects. Indicate your feeling in each by SA-strongly agree (5), A-agree (4), N-neutral (Not sure) (3), D-disagree (2), SD-strongly disagree (1).

No	Criteria	Factors	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Employer Selection Criteria	Client consider number of projects at contractors hand					
2.		Elapsed time b/n bid opening & award gap					
3.		Escalation problem					
4.		Least bidder become a winner					
5.	Contractor Performance Criteria	Financial Capacity factor					
6.		Time factor					
7.		Quality Factor					
8.		Labour factor					
9.		Employer satisfaction factor					
10.		Delayance of payment					
11.		Environmental Factors					
12.	Insurance Selection Criteria	Equivalent collateral					
13.		Previous performance of the contractor					
14.		Knowing Professional Capacity					
15.		Nature of the project					

4.5.16. Tick Type of Business/Organization

- a. General Contractor
- b. Building contractor
- c. Water works contractor
- d. Private Limited Company

4.5.17. Have you ever been reject the bid award?

Yes

No

4.5.18. Do you have cash flow schedule for each project?

Yes

No

4.5.19. Do you work progress report based on schedule?

Yes

No

4.5.20. Do you encounter a failurity of project

4.5.21. How do you manage your project

4.5.22. What method should be used by insurance Company to minimize bond failure?

THANK YOU!

Appendix B. INTERVIEW

Interview for Senior Management of Tsehay Insurance S.C. Dear Respondents, the purpose of this interview is to request you to provide information about bondinsurance in your company. The information supplied will be used for purely and exclusive for academic purpose and will be treated with a lot of confidentiality. Please answer the following questions genuinely and fill in the spaces provided.

1) Describe how your insurance company give bond insurance for contractors.

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2) Do your branches get approval from the head office for any bonds issued?

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3) Describe some of the difficulties you encounter to select contractors to issue bond insurance.

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4) How do you determine the capacity of the contractor?

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5) What strategy do you want to follow to avoid bond failures?

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THANK YOU!

INTERVIEW

Interview for Contractors. Dear Respondents, the purpose of this interview is to request you to provide information about construction projects your organization. The information supplied will be used for purely and exclusive for academic purpose and will be treated with a lot of confidentiality. Please answer the following questions genuinely and fill in the spaces provided.

1) Describe how your organizations handle construction projects?

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2) Do your organization decide how much projects take during the year?

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3) Describe some of the difficulties you encounter to Handle or finish the project.

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4) Do you have an insurance company you are proud of to get bond insurance?

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5) How do you handle different projects at hand?

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6) What do you suggest to avoid project failure in your organization?

THANK YOU!

Appendix C : Insurance company bond issued and amount of claim paid

Table Premium collected from Bid Bond, Performance Bond & Advance Payment bond from 2017 – 2021

Years	Bid Bond	Performance Bond	Advance Payment Bond
As of June 30, 2017	520,746.13	5,744,279.79	5,029,995.67
As of June 30, 2018	504,083.49	5,167,342.49	3,382,929.07
As of June 30, 2019	150,899.57	6,270,416.97	4,142,330.22
As of June 30, 2020	374,542.11	7,847,891.55	2,386,436.55
As of June 30, 2021	302,800.55	12,649,490.40	12,199,256.30
Total	1,853,071.85	37,679,421.20	27,140,947.81

From the year 2017 to 2021 Claim Paid & Claim Outstanding

Year	Bid Bond		Performance bond		Advance Payment Bond		Total outstanding
	Paid	Out-standing	Paid	Outstanding	Paid	Outstanding	
2017	-	-		1,904,526.56	-	936,131.61	2,840,658.17
2018	-	-	6,271.00	14,398,970.57	165,043.66	7,317,557.89	21,716,528.46
2019	-	-	2,191,591.51	29,525,536.59	138,708.66	4,316,831.22	33,842,367.81
2020	-	-	628,369.12	50,698,502.58	304,399.71	6,681,166.43	57,379,669.01
2021	-	200,000.00	4,683,003.15	16,005,041.19	1,331,460.86	55,405,232.02	71,410,273.21
Total			7,509,234.78	112,532,577.49	1,939,612.89	74,656,919.17	187,189,496.66